



Service Manual

MRV INDOOR UNITS

R410A

English Manual



IMPORTANT NOTE:

Read this manual carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.

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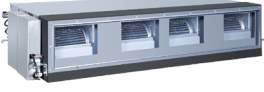




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1. Products Lineup

<p>4-WAY CASSETTE TYPE/PB-700IB</p> <p>AWSI-CBV005-N11 AWSI-CBV007-N11 AWSI-CBV009-N11 AWSI-CBV012-N11 AWSI-CBV016-N11 AWSI-CCV018-N11</p> 	<p>ROUND-WAY SMART AIR FLOW CASSETTE/ Panel for CFV</p> <p>AWSI-CFV007-N11 AWSI-CFV009-N11 AWSI-CFV012-N11 AWSI-CFV016-N11 AWSI-CFV018-N11</p>  <p>AWSI-CFV024-N11</p> <p>AWSI-CFV030-N11 AWSI-CFV038-N11</p> <p>AWSI-CFV048-N11 AWSI-CFV060-N11</p>
<p>4-WAY CASSETTE TYPE/CCV PANEL 90X90</p> <p>AWSI-CCV018-N11 AWSI-CCV024-N11</p>  <p>AWSI-CCV030-N11 AWSI-CCV038-N11 AWSI-CCV048-N11</p> 	<p>ONE WAY CASSETTE TYPE/Panel for CDV to s12</p> <p>AWSI-CDV007-N11 AWSI-CDV009-N11 AWSI-CDV012-N11</p> 
<p>2-WAY CASSETTE TYPE/ P1B-1055IB</p> <p>AWSI-CEV009-N11 AWSI-CEV012-N11 AWSI-CEV016-N11 AWSI-CEV018-N11</p> 	<p>MED ESP DUCT TYPE (50/100Pa)</p> <p>AW-DBV030-N11 AW-DBV038-N11 AW-DBV048-N11</p> 
<p>SLIM LOW ESP DUCT</p> <p>AWSI-DDV007-N11 AWSI-DDV009-N11 AWSI-DDV012-N11 AWSI-DDV016-N11</p>  <p>AWSI-DDV018-N11 AWSI-DDV024-N11</p> 	

<p>HIGH ESP DUCT TYPE</p> <p>AWSI-DCV018-N11 AWSI-DCV024-N11</p>  <p>AWSI-DCV030-N11 AWSI-DCV038-N11 AWSI-DCV048-N11</p>  <p>AWSI-DCV072-N11 AWSI-DCV096-N11</p> 	<p>CONVERTIBLE TYPE</p> <p>AWSI-FAV009-N11 AWSI-FAV012-N11 AWSI-FAV018-N11 AWSI-FAV024-N11</p>  <p>AWSI-FAV028-N11 AWSI-FAV030-N11 AWSI-FAV038-N11 AWSI-FAV048-N11</p> 
<p>N HIGH WALL</p> <p>AWSI-HBV007-N11 AWSI-HBV009-N11 AWSI-HBV012-N11 AWSI-HBV012-N11 AWSI-HBV016-N11 AWSI-HBV018-N11 AWSI-HBV024-N11</p>  <p>AWSI-HBV030-N11</p>	<p>MED ESP DUCT TYPE (50/100Pa)</p> <p>AW-DBV005-N11 AW-DBV007-N11 AW-DBV009-N11 AW-DBV012-N11 AW-DBV016-N11</p>  <p>AW-DBV018-N11 AW-DBV024-N11 AW-DBV028-N11</p> 
<p>HRV</p> <p>AWSI-HRV0800-N11 AWSI-HRV1000-N11</p> 	<p>CONSOLE</p> <p>AW-EAV009-N11 AW-EAV012-N11 AW-EAV018-N11</p> 

2. 4-Way Cassette Type Indoor Unit

2.1 Features



AWSI-CBV005-N11
 AWSI-CBV007-N11
 AWSI-CBV009-N11
 AWSI-CBV012-N11
 AWSI-CBV016-N11

PANEL: CBV PANEL 60X60



AWSI-CCV018-N11
 AWSI-CCV024-N11

PANEL: CCV PANEL 90X90



AWSI-CCV030-N11
 AWSI-CCV038-N11
 AWSI-CCV048-N11

PANEL: CCV PANEL 90X90

Totally new appearance design

AB05-18 adopt the 700*700 panel with 660*570 unit body. And AB18-48 use the same panel, more easy installation and design. Compact and unitary appearance to get perfect harmonized indoor decoration.



Built-in high head drainage

A Standard built-in drain pump can realize up to Max. 600mm drainage head, which creates the ideal solution for perfect water drainage.

Fresh air inlet

Pre-set fresh air inlet hole, which can lead the fresh air from outside into indoor, greatly improves indoor air quality. Long life filter is standard part with the unit.

2.2 Specification

MODEL			AWSI-CBV005-N11	AWSI-CBV007-N11	AWSI-CBV009-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	5.1	7.5	9.6
	Capacity	kW	1.5	2.2	2.8
	Power input	W	80	80	80
	Current	A	0.47	0.47	0.47
Heating	Capacity	kBtu/h	5.8	8.5	10.9
	Capacity	kW	1.7	2.5	3.2
	Power input	W	80	80	80
	Current	A	0.47	0.47	0.47
	Heating capacity at low temp.	kW	2.5	2.5	2.5
Operating current		A	0.47	0.47	0.47
Power consumption		kW	0.08	0.08	0.08
Indoor motor	Brand		Broad Ocean	Broad Ocean	Broad Ocean
	Model		Y5S613B231	Y5S613B231	Y5S613B231
	Type		AC	AC	AC
	Insulation class		B	B	B
	IP class		IP20	IP20	IP20
	Power input	W	72	72	72
	Power output	W	40	40	40
	Capacitor	μF	2μF /450v	2μF /450v	2μF /450v
	Speed (High/Middle/Low)	rpm	760/650/520	760/650/520	760/650/520
Indoor fan	Brand		/	/	/
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		1	1	1
Indoor coil	a. Number of rows		1	1	1
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3	21*13.3	21*13.3
	c. Fin spacing	mm	1.35	1.35	1.35
	d. Fin type (code)		Hydrophilic aluminum		
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube		
	f. Coil length×height×width	mm	1330×13.3×210	1330×13.3×210	1330×13.3×210
	g. Number of circuits		2	2	2

MODEL			AWSI-CBV005-N11	AWSI-CBV007-N11	AWSI-CBV009-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72	72
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		0.8	0.8	0.8
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		Standard 700mm	Standard 700mm	Standard 700mm
	Branch outlet option		No	No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8	0.8
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35	6.35
	Gas pipe	mm	9.52	9.52	9.52
	Drain hose	mm	32	32	32
Panel	Model		CBV PANEL 60X60	CBV PANEL 60X60	CBV PANEL 60X60
	Dimension	mm	700*700*60	700*700*60	700*700*60
	Packing	mm	740*740*115	740*740*115	740*740*115
	Net weight	kg	2.8	2.8	2.8
	Gross weight	kg	4.5	4.5	4.5
Fresh air dimension	mm	Φ100	Φ100	Φ100	
Sound pressure level (H/M/L)	dB (A)	31/29/28	32/30/29	32/30/29	
Sound power level (H/M/L)	dB (A)	45/43/42	46/44/43	46/44/43	
Standard static pressure	Pa	0	0	0	
Indoor air flow (H/M/L)	m ³ /h	650/540/430	700/590/480	700/590/480	
Dimension (W*H*D)	mm	570*260*570	570*260*570	570*260*570	
Packing (W*H*D)	mm	718/380/680	718/380/680	718/380/680	
Net weight	kg	16	16	16	
Gross weight	kg	19	19	19	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

MODEL			AWSI-CBV012-N11	AWSI-CBV016-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	12.3	15.4
	Capacity	kW	3.6	4.5
	Power input	W	80	80
	Current	A	0.47	0.47
Heating	Capacity	kBtu/h	13.6	17.1
	Capacity	kW	4.0	5.0
	Power input	W	80	80
	Current	A	0.47	0.47
	Heating capacity at low temp.	kW	3.2	4.0
Operating current		A	0.47	0.47
Power consumption		kW	0.08	0.08
Indoor motor	Brand		Broad Ocean	Broad Ocean
	Model		Y5S613B231	Y5S613B231
	Type		AC	AC
	Insulation class		B	B
	IP class		IP20	IP20
	Power input	W	72	72
	Power output	W	40	40
	Capacitor	μF	2μF /450v	2μF /450v
	Speed (High/Middle/Low)	rpm	760/650/520	760/650/520
Indoor fan	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		1	1
Indoor coil	a. Number of rows		2	2
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3	21*13.3
	c. Fin spacing	mm	1.35	1.35
	d. Fin type (code)		Hydrophilic aluminum	
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	
	f. Coil length×height×width	mm	1260×26.6×210	1260×26.6×210
	g. Number of circuits		4	4

MODEL			AWSI-CBV012-N11	AWSI-CBV016-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72
	Control box IP class		IP20	IP20
Construction	Sheet metal thickness		0.8	0.8
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		Standard 700mm	Standard 700mm
	Branch outlet option		No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	12.7	12.7
	Drain hose	mm	32	32
Panel	Model		CBV PANEL 60X60	CBV PANEL 60X60
	Dimension	mm	700*700*60	700*700*60
	Packing	mm	740*740*115	740*740*115
	Net weight	kg	2.8	2.8
	Gross weight	kg	4.5	4.5
Fresh air dimension	mm	Φ100	Φ100	
Sound pressure level (H/M/L)	dB (A)	32/30/29	33/30/29	
Sound power level (H/M/L)	dB (A)	46/44/43	47/44/43	
Standard static pressure	Pa	0	0	
Indoor air flow (H/M/L)	m ³ /h	700/590/480	700/590/480	
Dimension (W*H*D)	mm	570*260*570	570*260*570	
Packing (W*H*D)	mm	718/380/680	718/380/680	
Net weight	kg	19	19	
Gross weight	kg	22	22	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C)				
Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C)				
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

MODEL			AWSI-CCV018-N11	AWSI-CCV024-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	19.1	24.2
	Capacity	kW	5.6	7.1
	Power input	W	145	145
	Current	A	0.67	0.67
Heating	Capacity	kBtu/h	21.5	27.3
	Capacity	kW	6.3	8
	Power input	W	145	145
	Current	A	0.67	0.67
	Heating capacity at low temp.	kW	5	6
Operating current		A	0.67	0.51
Power consumption		kW	0.09	0.1
Indoor motor	Brand		Broad ocean	Broad ocean
	Model		Y5S612C81	Y5S612C81
	Type		AC	AC
	Insulation class		B	B
	IP class		IP20	IP20
	Power input	W	142	142
	Power output	W	50	50
	Capacitor	μF	3μF /450v	3μF /450v
	Speed (High/Middle/Low)	rpm	710/620/520	710/620/520
Indoor fan	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		1	1
Indoor coil	a. Number of rows		2	2
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3	21*13.3
	c. Fin spacing	mm	1.45	1.45
	d. Fin type (code)		Hydrophilic aluminum	
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	
	f. Coil length×height×width	mm	1935×26.6×168	1935×26.6×168
	g. Number of circuits		8	8

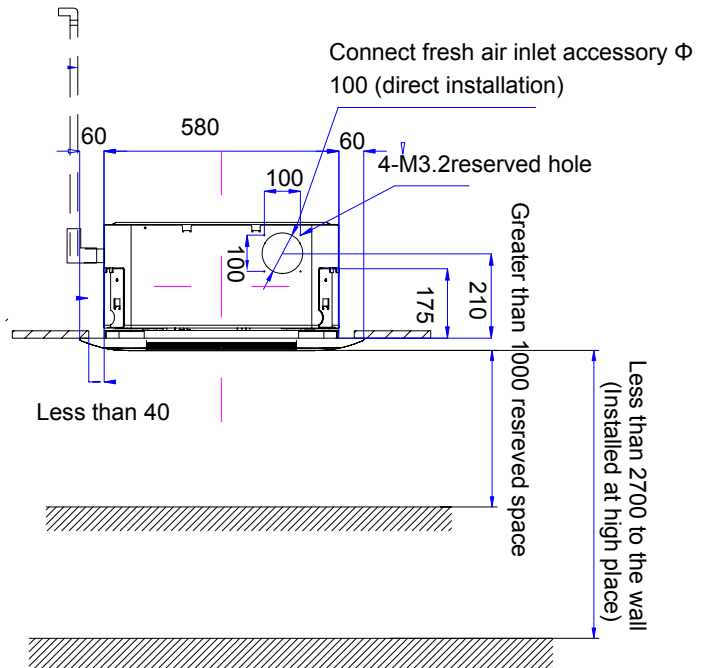
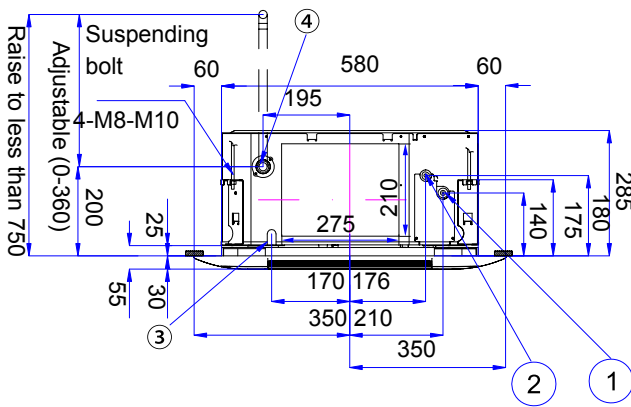
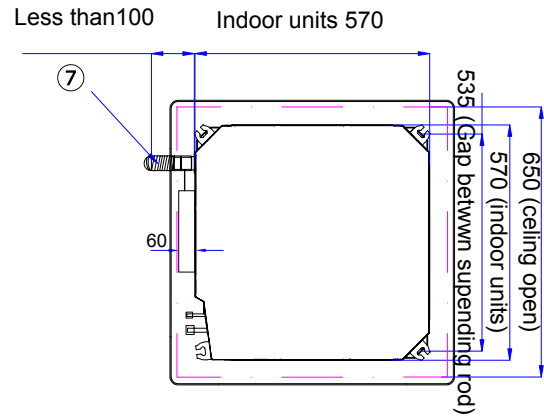
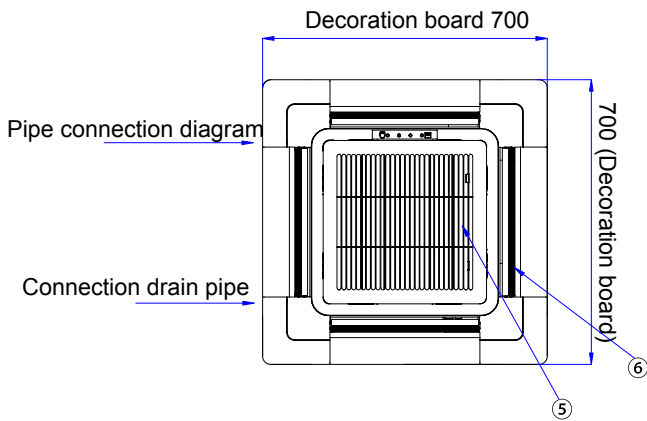
MODEL			AWSI-CCV018-N11	AWSI-CCV024-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72
	Control box IP class		IP20	IP20
Construction	Sheet metal thickness		0.8	0.8
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		Standard 700mm	Standard 700mm
	Branch outlet option		No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	9.52
	Gas pipe	mm	12.7	15.88
	Drain hose	mm	32	32
Panel	Model		CCV PANEL 90X90	CCV PANEL 90X90
	Dimension	mm	950*950*60	950*950*60
	Packing	mm	992*992*115	992*992*115
	Net weight	kg	6	6
	Gross weight	kg	7.5	7.5
Fresh air dimension	mm	/	/	
Sound pressure level (H/M/L)	dB (A)		34/32/30	35/34/31
Sound power level (H/M/L)	dB (A)		48/46/44	49/48/45
Standard static pressure	Pa		0	0
Indoor air flow (H/M/L)	m ³ /h		1200/1010/820	1200/1010/820
Dimension (W*H*D)	mm		840*240*840	840*240*840
Packing (W*H*D)	mm		930/390/930	930/390/930
Net weight	kg		26	26
Gross weight	kg		31	31
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

MODEL			AWSI- CCV030-N11	AWSI- CCV038-N11	AWSI- CCV048-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	Btu/h	30.7	38.2	47.8
	Capacity	kW	9	11.2	14
	Power input	W	150	150	150
	Current	A	0.76	0.76	0.76
Heating	Capacity	Btu/h	34.1	42.7	54.6
	Capacity	kW	10	12.5	16
	Power input	W	150	150	150
	Current	A	0.76	0.76	0.76
	Heating capacity at low temp.	kW	8.0	10	12.5
Operating current		A	0.76	0.76	0.76
Power consumption		kW	0.15	0.15	0.15
Indoor motor	Brand		Broad Ocean	Broad Ocean	Broad Ocean
	Model		Y6S643C01	Y6S643C01	Y6S643C01
	Type		AC	AC	AC
	Insulation class		B	B	B
	IP class		IP20	IP20	IP20
	Power input	W	148	148	148
	Power output	W	90	90	90
	Capacitor	μF	8μF /450v	8μF /450v	8μF /450v
	Speed (High/Middle/Low)	rpm	675/610/530	675/610/530	675/610/530
Indoor fan	Brand		/	/	/
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		1	1	1
Indoor coil	a. Number of rows		2	2	2
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3	21*13.3	21*13.3
	c. Fin spacing	mm	1.45	1.45	1.45
	d. Fin type (code)		Hydrophilic aluminum		
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube		
	f. Coil length×height×width	mm	1935×26.2×252	1935×26.2×252	1935×26.2×252
	g. Number of circuits		11	11	11

MODEL			AWSI-CCV030-N11	AWSI-CCV038-N11	AWSI-CCV048-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72	72
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		0.8	0.8	0.8
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		Standard 700mm	Standard 700mm	Standard 700mm
	Branch outlet option		No	No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8	0.8
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52	9.52
	Gas pipe	mm	15.88	15.88	15.88
	Drain hose	mm	32	32	32
Panel	Model		CCV PANEL 90X90	CCV PANEL 90X90	CCV PANEL 90X90
	Dimension	mm	950*950*60	950*950*60	950*950*60
	Packing	mm	992*992*115	992*992*115	992*992*115
	Net weight	kg	6	6	6
	Gross weight	kg	7.5	7.5	7.5
Fresh air dimension	mm	Φ70	Φ70	Φ70	
Sound pressure level (H/M/L)	dB (A)	37/35/31	37/35/31	42/39/35	
Sound power level (H/M/L)	dB (A)	51/49/45	51/49/45	56/53/49	
Standard static pressure	Pa	0	0	0	
Indoor air flow (H/M/L)	m ³ /h	1800/1610/1420	1800/1610/1420	1800/1610/1420	
Dimension (W*H*D)	mm	840*295*840	840*295*840	840*295*840	
Packing (W*H*D)	mm	930/390/930	930/390/930	930/390/930	
Net weight	kg	31	31	31	
Gross weight	kg	37	37	37	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

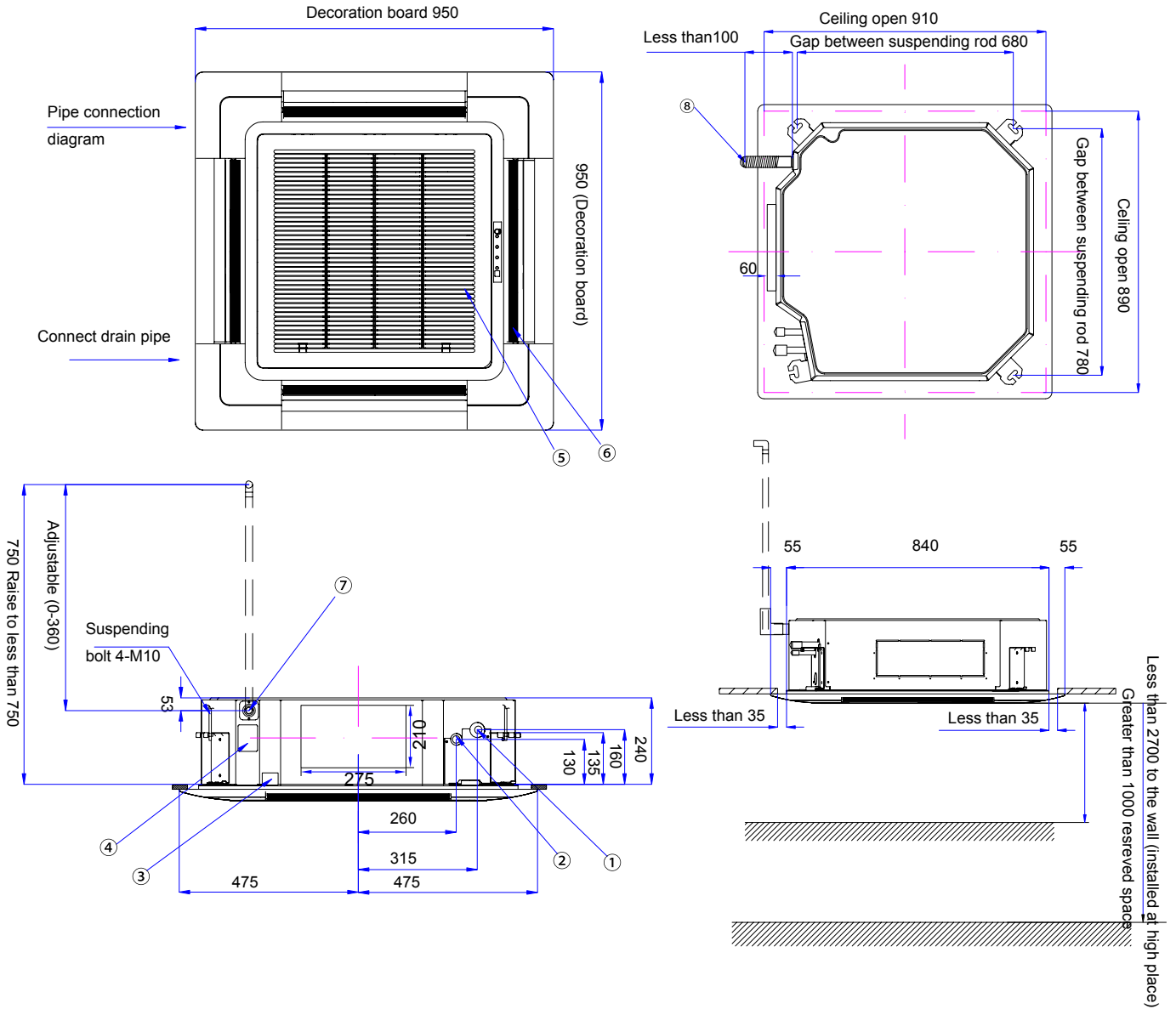
2.3 Dimension

AWSI-CBV005-N11 AWSI-CBV007-N11 AWSI-CBV009-N11 AWSI-CBV012-N11 AWSI-CBV016-N11



SN	Part name
1	Connection port of gas pipe
2	Connection of liquid pipe
3	Wiring connection port of motor /pumping motor
4	Connect drain pipe
5	Inlet grille
6	Outlet grille
7	Drain hose (accessory)

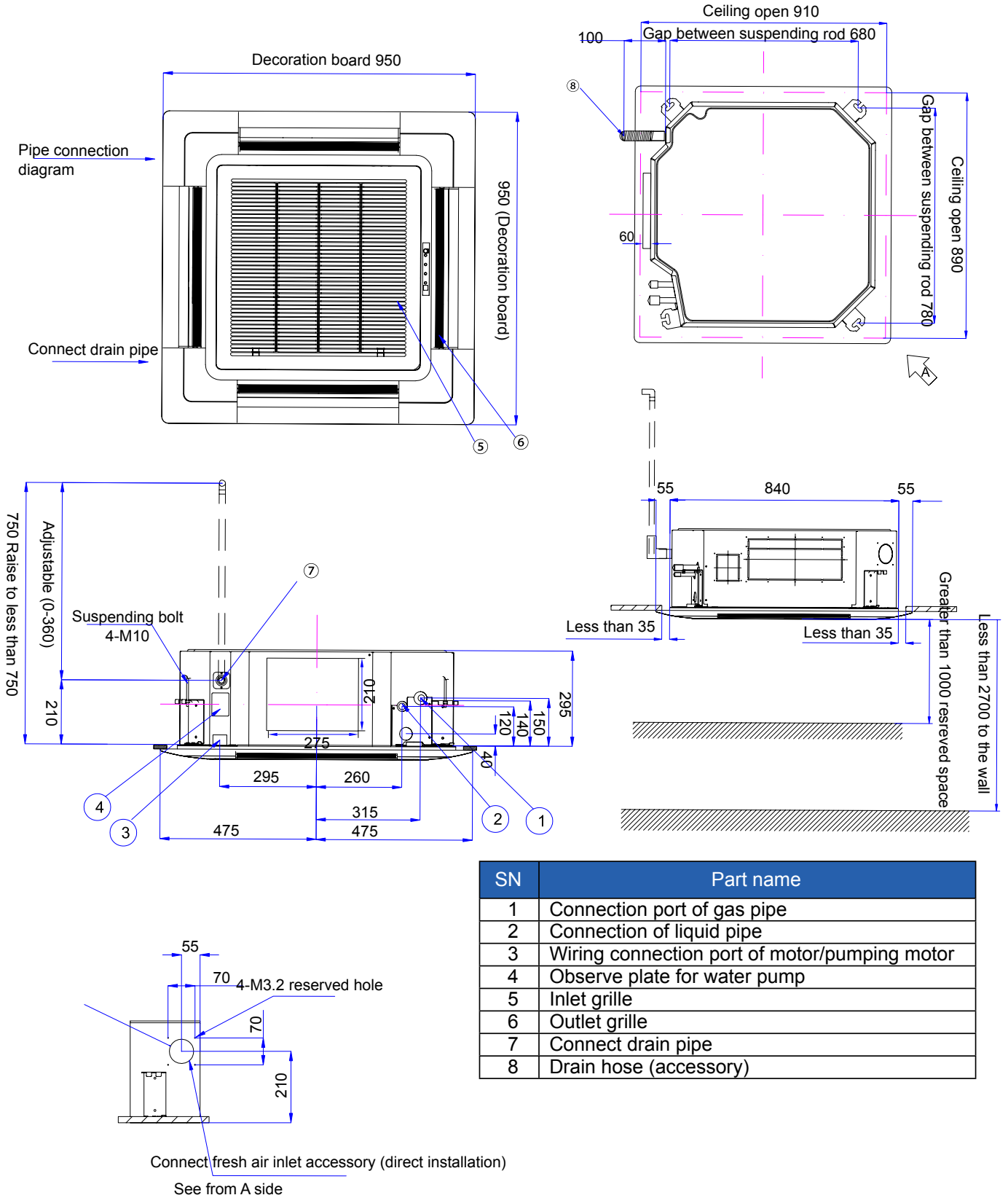
AWSI-CCV018-N11 AWSI-CCV024-N11



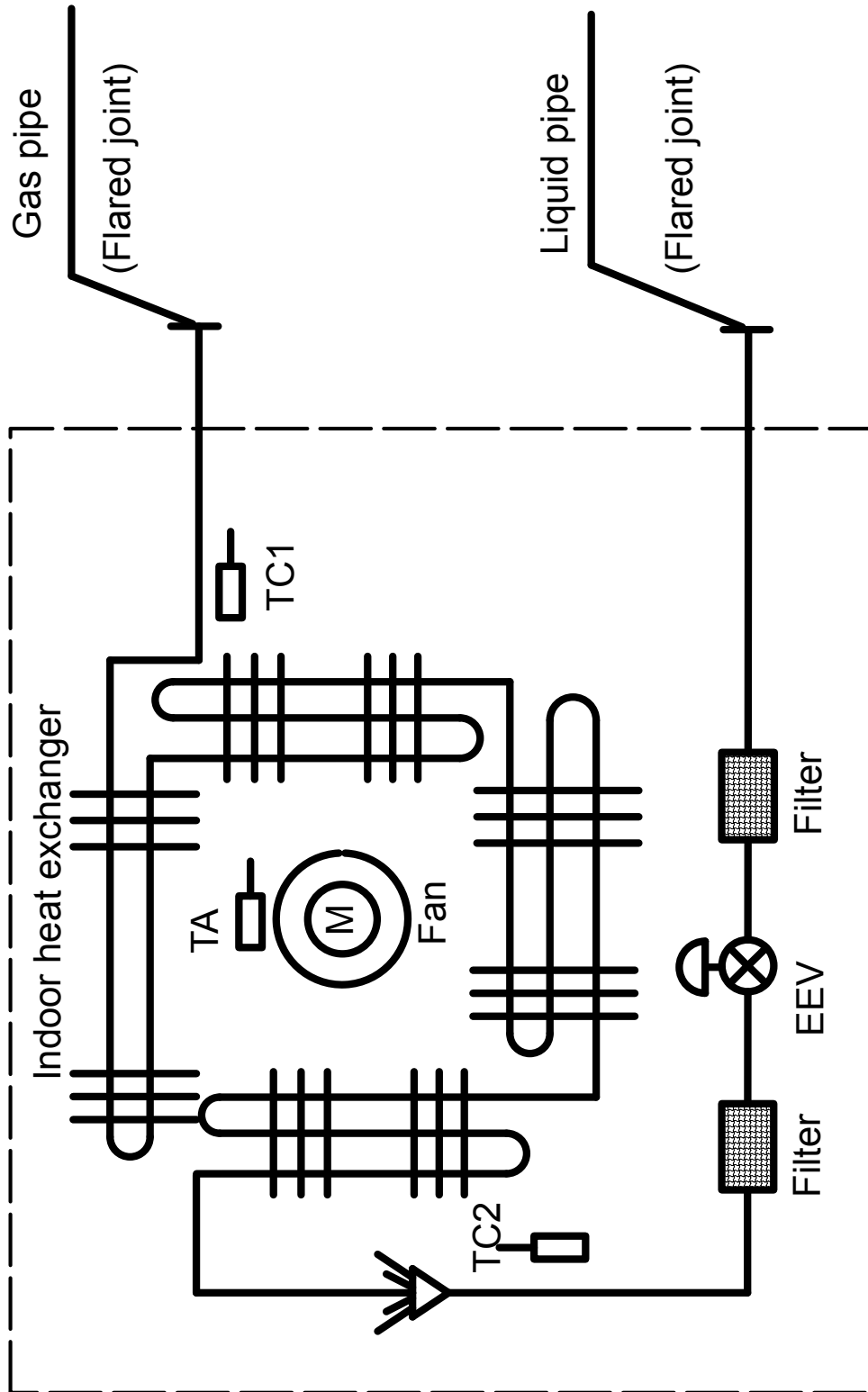
4-Way Cassette
Type Indoor Unit

SN	Part name
1	Connection port of gas pipe
2	Connection of liquid pipe
3	Wiring connection port of motor/pumping motor
4	Observe plate for water pump
5	Inlet grille
6	Outlet grille
7	Connect drain pipe
8	Drain hose (accessory)

AWSI-CCV030-N11 AWSI-CCV038-N11 AWSI-CCV048-N11

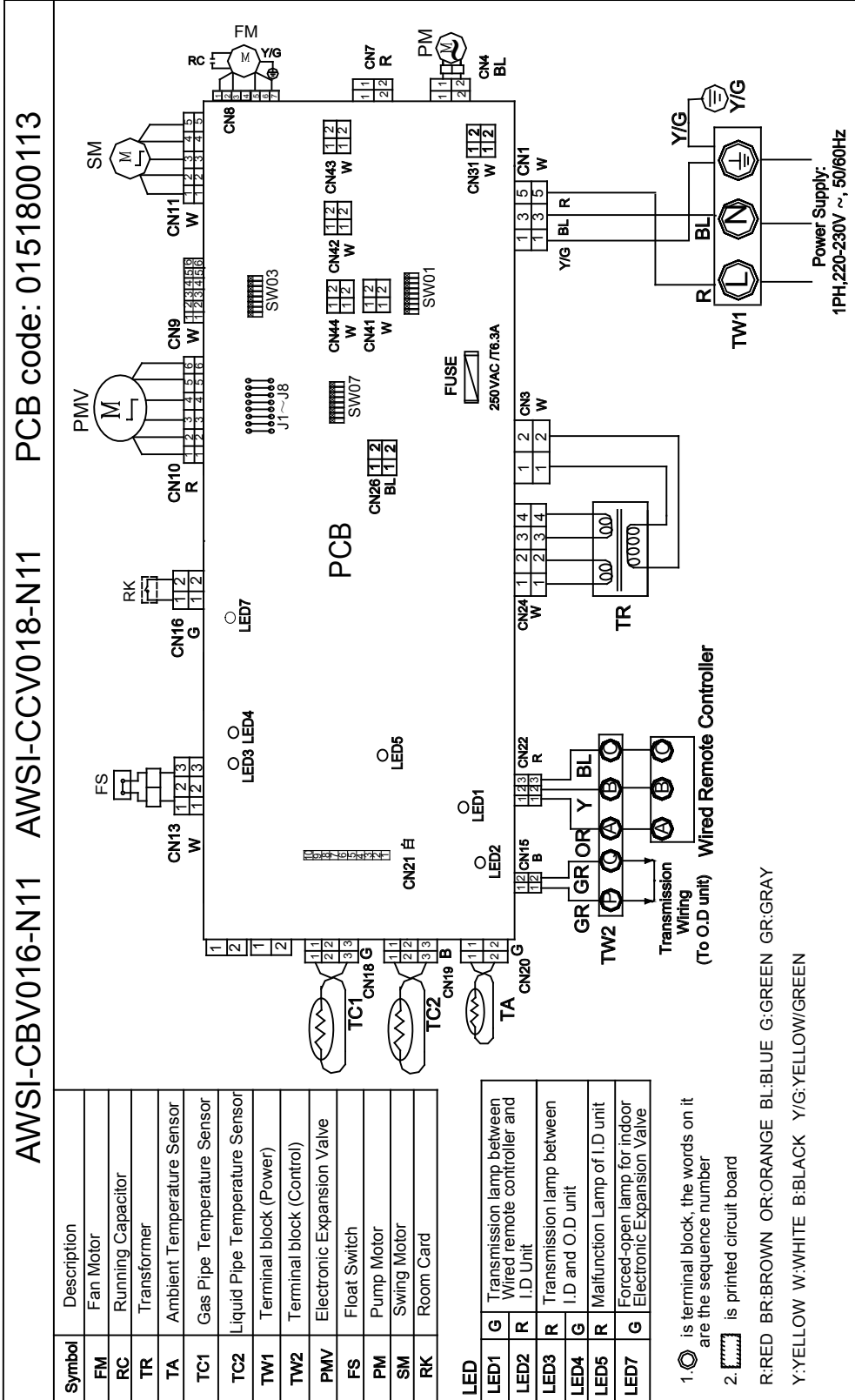


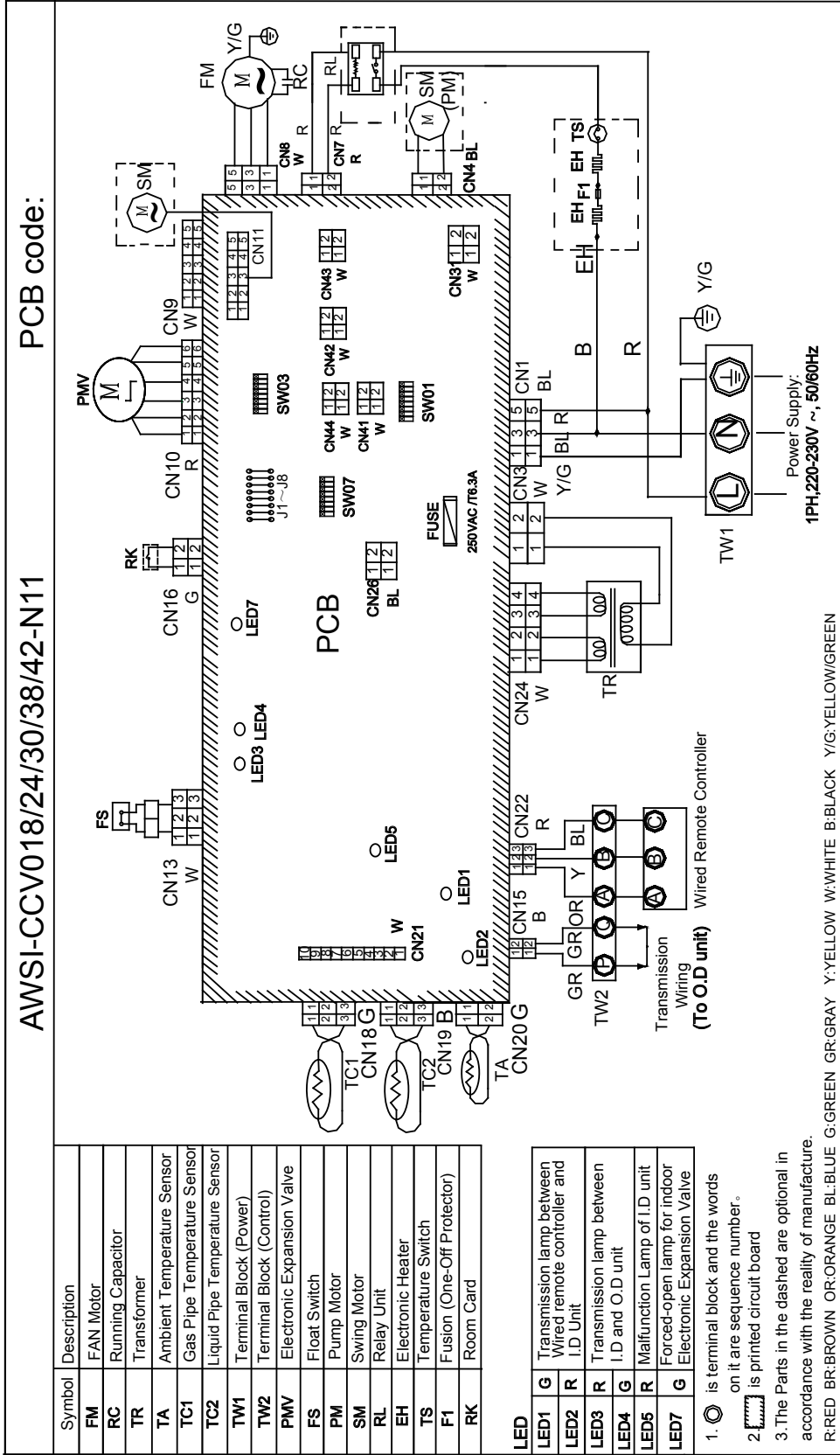
2.4 Piping diagram



4-Way Cassette
Type Indoor Unit

2.5 Wiring diagram





2.6 Electric characteristics

Units					Power supply		Indoor fan motor		Power input (w)	
Model	Phase	FQY	Voltage	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AWSI-CBV005-N11	1	50/60	220	198~242	0.5	1.6	40	0.4	80	80
AWSI-CBV007-N11	1	50/60	220	198~242	0.5	1.6	40	0.4	80	80
AWSI-CBV009-N11	1	50/60	220	198~242	0.5	1.6	40	0.4	80	80
AWSI-CBV012-N11	1	50/60	220	198~242	0.5	1.6	40	0.4	80	80
AWSI-CBV016-N11	1	50/60	220	198~242	0.5	1.6	40	0.4	80	80
AWSI-CCV018-N11	1	50/60	220	198~242	0.69	2.2	50	0.55	145	145
AWSI-CCV024-N11	1	50/60	220	198~242	0.69	2.2	50	0.55	145	145
AWSI-CCV030-N11	1	50/60	220	198~242	1.38	4.4	90	1.1	150	150
AWSI-CCV038-N11	1	50/60	220	198~242	1.38	4.4	90	1.1	150	150
AWSI-CCV048-N11	1	50/60	220	198~242	1.38	4.4	90	1.1	150	150

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker

Output: Fan motor rated output (w)

FLA: Full load amps (A)

Note:

1. Voltage range

The units are applicable for the electrical systems where voltage supplied to unit is in the range.

2. Maximum allowable voltage unbalance between phases is 2%.

3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$

4. Power supply uses the circuit breaker.

2.7 Air velocity and temperature distribution

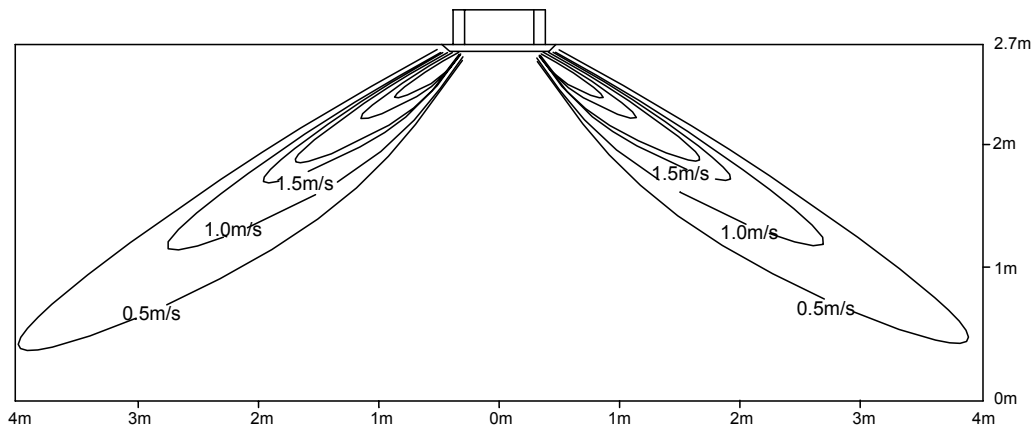
AWSI-CBV005-N11, AWSI-CBV007-N11, AWSI-CBV009-N11, AWSI-CBV012-N11, AWSI-CBV016-N11,

a. Cooling / Air velocity distribution

Cooling

Blow angle: 40

Air velocity distribution

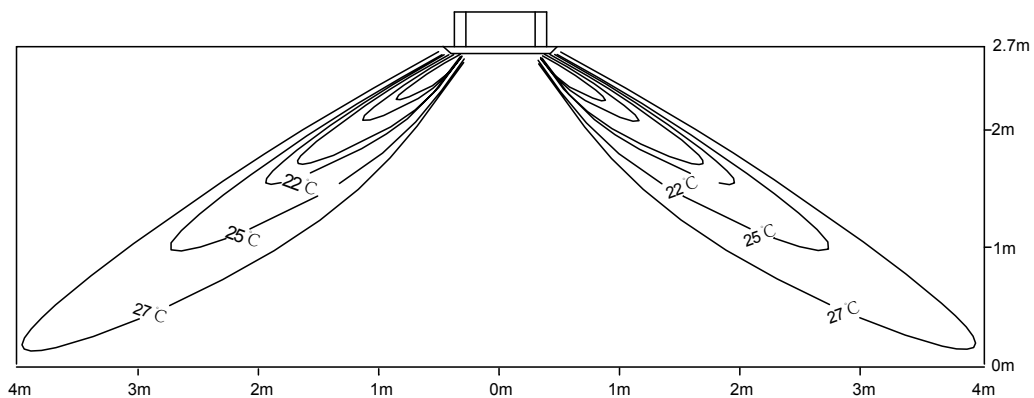


b. Cooling / Temperature distribution

Cooling

Blow angle: 40

Temperature distribution

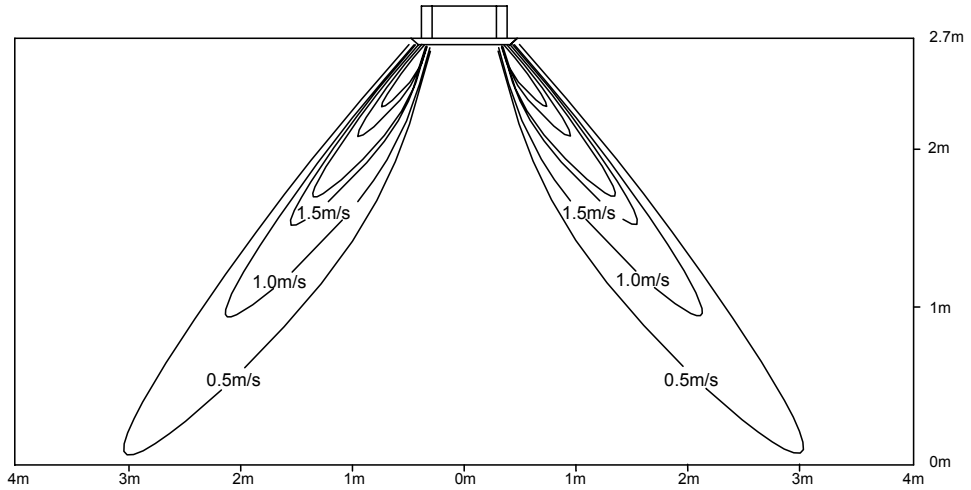


c. Heating / Air velocity distribution

Heating

Blow angle: 70

Air velocity distribution

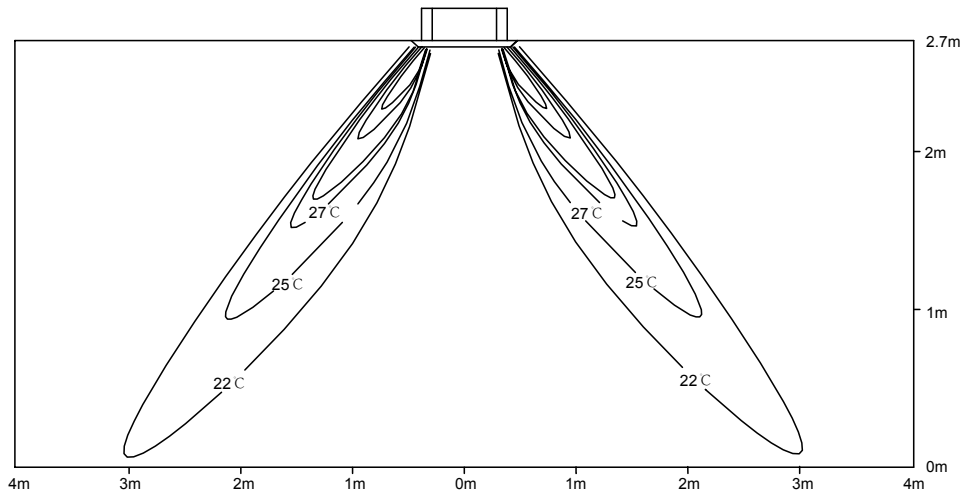


d. Heating / Temperature distribution

Heating

Blow angle: 70

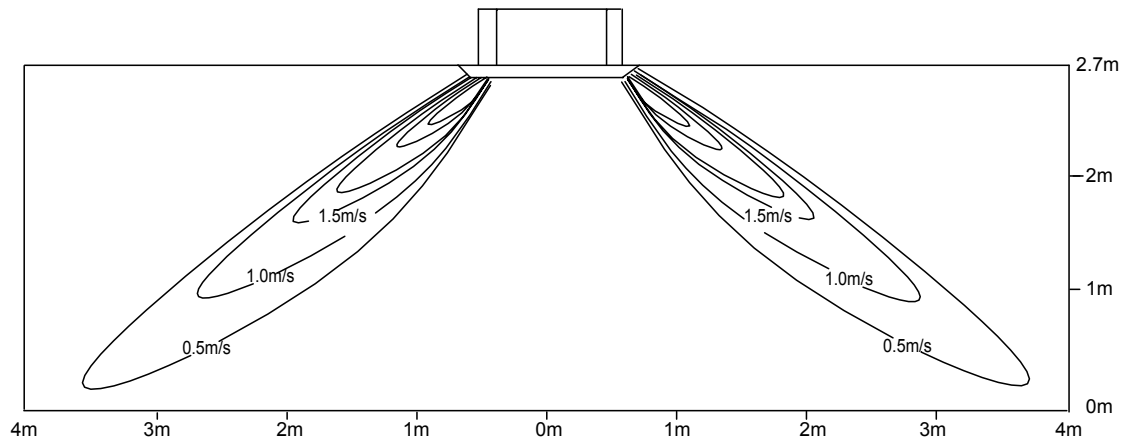
Temperature distribution



AWSI-CCV018/24/30/38/42-N11

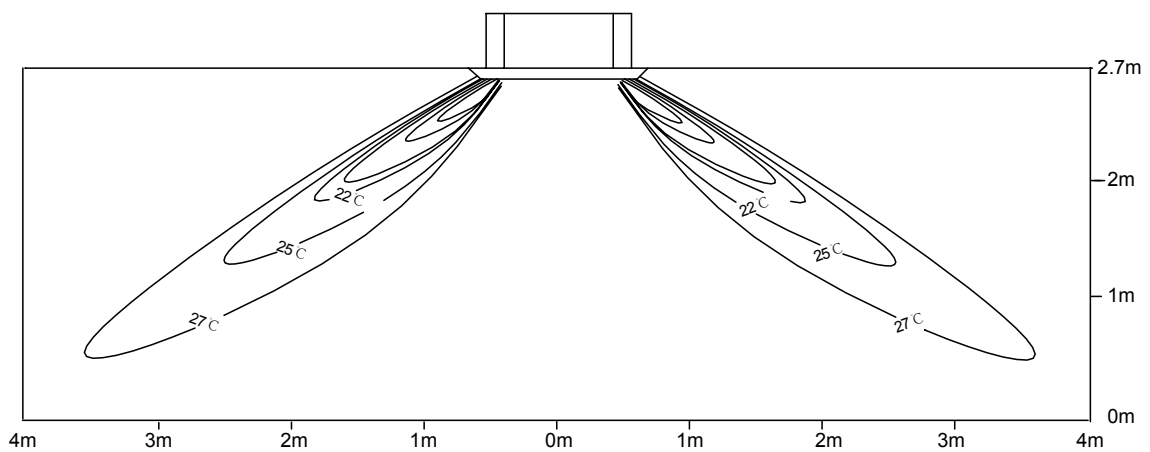
a. Cooling / Air velocity distribution

Cooling
 Blow angle: 40
 Air velocity distribution



b. Cooling / Temperature distribution

Cooling
 Blow angle: 40
 Temperature distribution



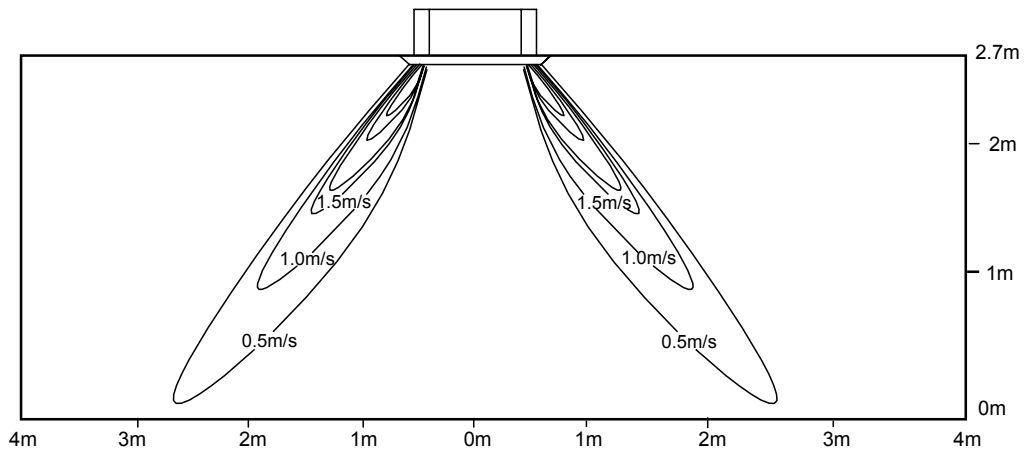
4-Way Cassette
 Type Indoor Unit

c. Heating / Air velocity distribution

Heating

Blow angle: 70

Air velocity distribution

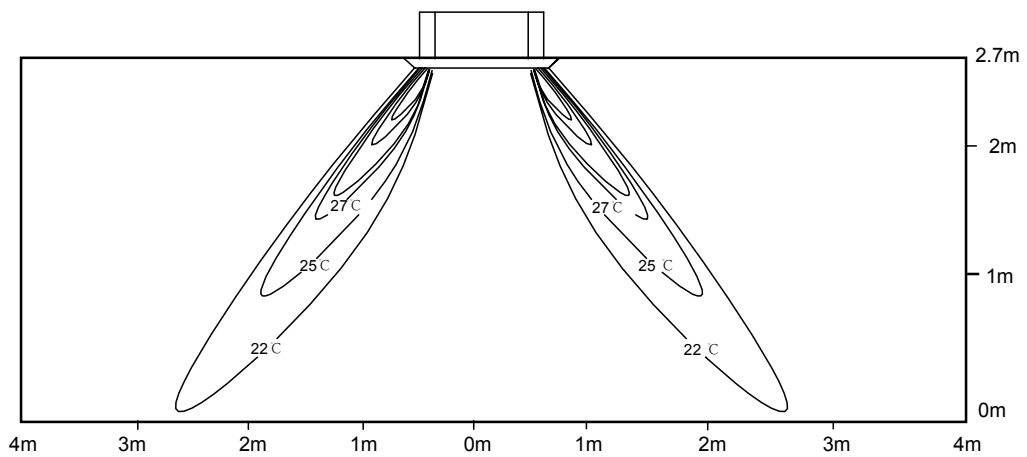


d. Heating / Temperature distribution

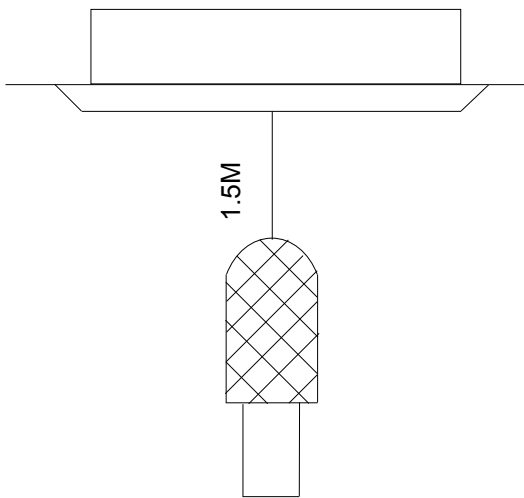
Heating

Blow angle: 70

Temperature distribution



2.8 Sound pressure level

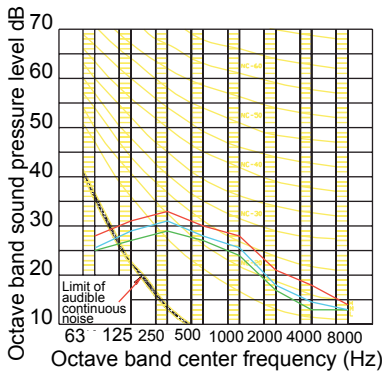


1) Testing illustrate:

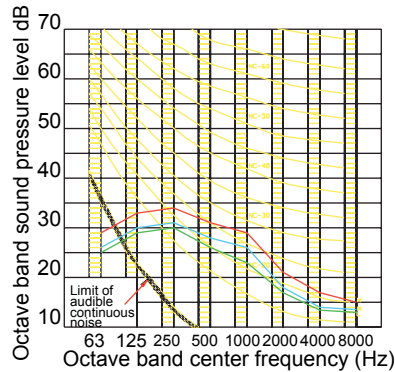
2) Testing condition:

- a: Unit running in the normal condition
- b: Test in the semi-anechoic chamber
- c: Noise level varies from the actual factors such as room structure, etc.

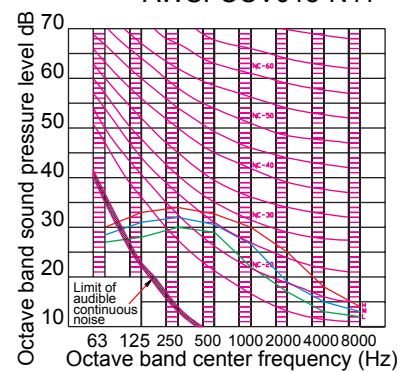
AWSI-CBV005-N11
AWSI-CBV012-N11



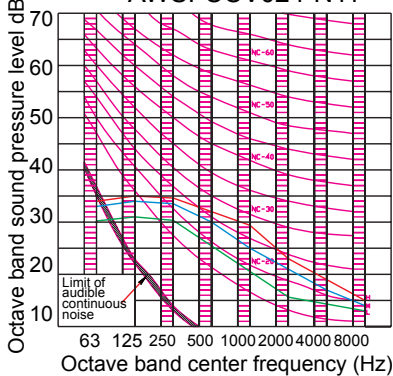
AWSI-CBV016-N11



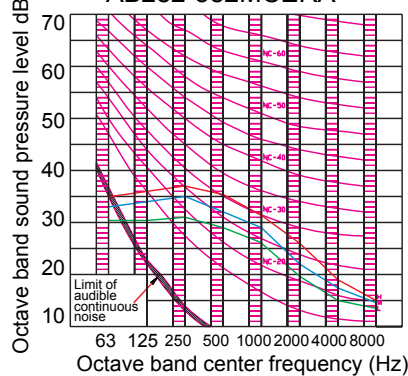
AWSI-CCV018-N11



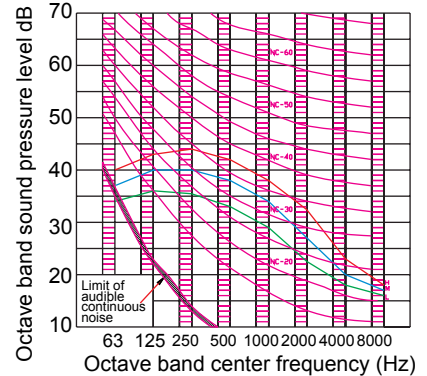
AWSI-CCV024-N11



AB282-382MCERA



AWSI-CCV048-N11



2.9 Installation

2.9.1 Installation procedures

The standard attached accessories of the units of this series refer to the packing list; prepare other accessories according to the requirements of the local installation point of our company.

Indoor units should be installed in places with the environment of even circulation of cool and warm blows. The following places should be avoided.

- Places with high salinity (beach), high sulfured gas (such as the thermal spring regions where copper tubes and soft soldering are easy to be eroded), much oil (including mechanical oil) and steam; places where organic substance solvent is used; where special spray is frequently used;
- Places where machines generate the high frequency electromagnetic wave (abnormal condition will appear in the control system);
- Places where there are high humidity exists near the door or windows (dew is easily formed).

⚠ WARNING

Protect the machine from gales or earthquake, make the installation according to the regulations. Improper installation will cause accidents due to the overturn of the air conditioner.

1. Select the following places to install indoor units.

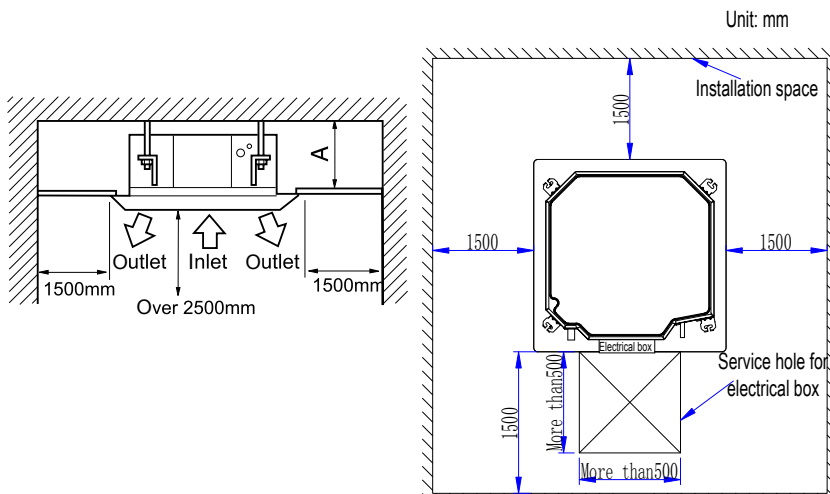
- (1) Where there is enough room for the machine above the ceiling;
- (2) Where the drainpipes can be well arranged;
- (3) Where the distance between the air outlet port of the machine and the floor is not more than 2.7m;
- (4) Where air inlet & outlet of the indoor units are not blocked;
- (5) Where it is hard enough to bear the weight of the unit;
- (6) Where there are no televisions, pianos and other valuables under the indoor units as to avoid condensate dropping down, causing damage.
- (7) Where it is over 1m away from the television and radio as to avoid the disturbance from television and radio.

Installation Space

Ensure the required space for installation and maintenance (refer to the following drawings).

The installation height should be kept within 2.7m.

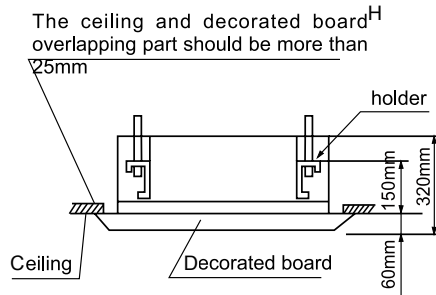
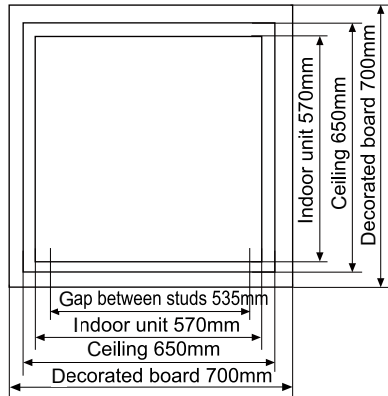
When the height of the ceiling exceeds 2.7m, the warm air is hard to blow to the ground.



Model	A (mm)
AWSI-CBV005-N11- AWSI-CBV012-N11	320
AWSI-CCV018-N11 AWSI-CCV024-N11	280
AWSI-CCV030-N11 AWSI-CCV042-N11	335

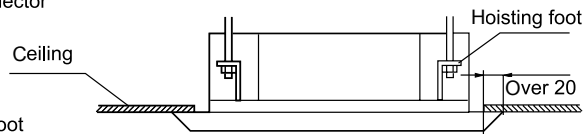
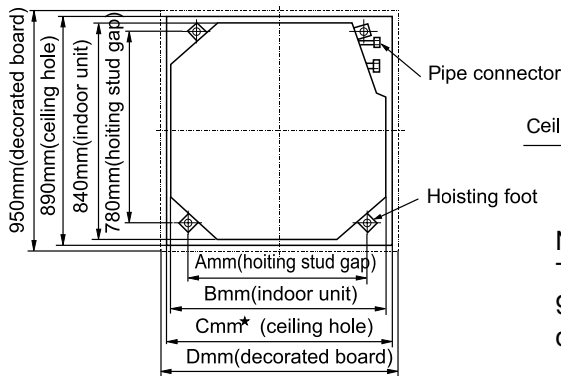
2. Location relationship among ceiling hole, unit and suspender

AWSI-CBV005-N11 AWSI-CBV007-N11
 AWSI-CBV009-N11 AWSI-CBV012-N11
 AWSI-CBV016-N11



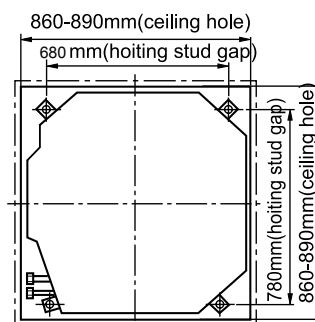
Model	A	B	C	D
AWSI-CCV018-N11	680	840	890	950
AWSI-CCV024-N11				

AWSI-CCV018-N11
 AWSI-CCV024-N11



NB:
 The size of ceiling hole with can be up to 910mm, but the overlapping part of ceiling and decorated board should be kept above 20mm.

AWSI-CCV030-N11
 AWSI-CCV038-N11
 AWSI-CCV042-N11
 AWSI-CCV048-N11



Note:

Before suspending the indoor unit, select the installation location according to the piping and wiring in the ceiling, and determine the lead direction of the piping. Prepare all pipes (refrigerator and drainage) and wiring (connection line for remote control and connection line of indoor units and outdoor units) connected to indoor units before suspending the indoor unit so as to make the connections right after the installation.

- In the situation with the ceiling, before suspending the unit, set refrigerant pipe, drainpipe, connection line in the room, lead wire of wired control to the locations of piping and wiring.
- Confirm the size of the indoor unit and fix it according to the requirements in the manual.

3. Ceiling hole & reinforcement

- Cut and take the ceiling according to the size of indoor unit.
- After cutting an appropriate hole, reinforce the cutting area on the foundation of indoor unit, and append the rim to the ceiling to secure its foundation. In order to prevent the ceiling from vibrating, it is vital to reinforce the ceiling foundation and ensure the original levelness of the ceiling.

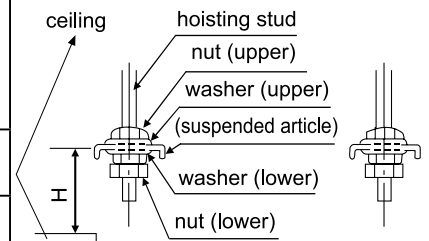
4. Suspender installation

- To support the weight of the unit, use barb bolts in the situation with the ceiling. In the situation with the new ceiling, use inlaid bolts, embedded bolts or other parts provided on site. Before proceeding the installation, adjust the gap between the bolts and the ceiling.
- Use four M10 suspenders (provided on site) (when the height of the suspender exceeds 0.9m, M10 studs should be used.). The gaps should be kept according to the overall drawing of the air conditioner. Make the installation according to regulations for various building structures as to ensure the safety. Use the level meter to perform the parallel installation.

Ceiling suspending

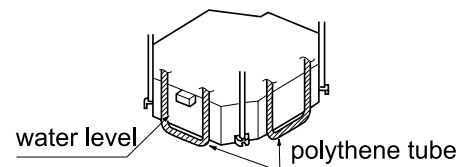
- Adjust the location of the nut at the lower part as to keep the gap between the washer at the lower part (provided on site) and the ceiling is Hmm.

Model	H (mm)
AWSI-CBV005-N11	150
AWSI-CBV007-N11	
AWSI-CBV009-N11	
AWSI-CBV012-N11	
AWSI-CBV016-N11	
AWSI-CCV018-N11	135
AWSI-CCV024-N11	
AWSI-CCV030-N11	150
AWSI-CCV038-N11	
AWSI-CCV042-N11	
AWSI-CCV048-N11	



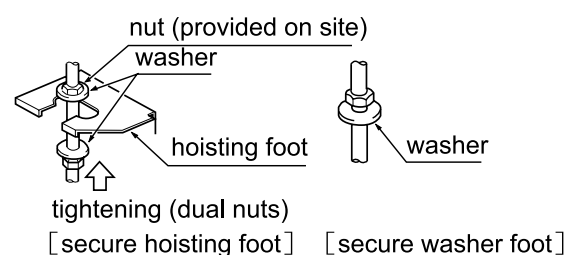
Situation with new ceiling

- Install the indoor unit temporarily:
Attach the hoisting foot to hoisting stud. Make sure that nuts and washers should be used at two ends of the foot to secure the foot.
- For the size of the ceiling hole, please refer to the schematic drawing at the previous page.<After finishing the installation of the ceiling>
- Adjust the unit to the proper installation location.
- Check if the unit is in the horizontal level:
- The indoor unit is equipped with a built-in drainage pump and a floater switch. Check if the 4 angles of the unit are in the horizontal level with the water level or the polythene tube with water, as shown in the figure, taking only one indoor unit as an example. If the unit inclines opposite to the direction of condensate flow, the floater switch might have faults, causing water dropping.
- Tighten the nut on the washer.

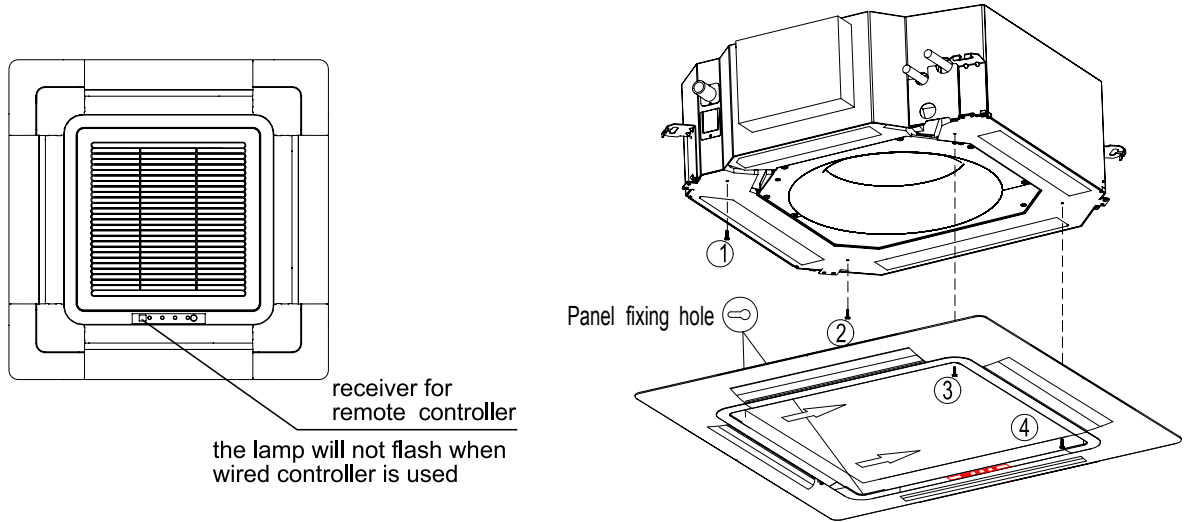


Situation with original ceiling

- Install the indoor unit temporarily: attach the hoisting foot to hoisting stud. Make sure that nuts and washers (provided on site) should be used at two ends of the foot to secure the foot.
- Adjust the height and location of the unit.
- Perform step 4 and 5 in situation with new ceiling.



Installing the panel board on the body of indoor unit:

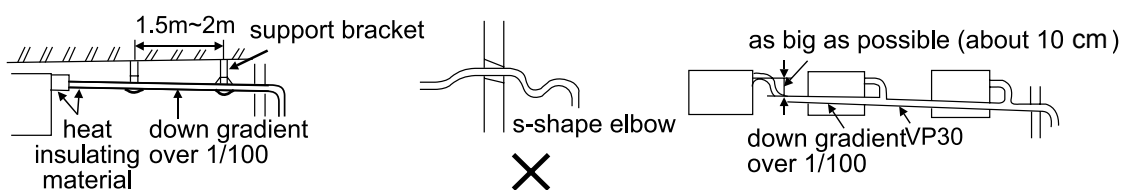


- Limits when mounting the panel: mount the panel as shown in the figure. Incorrect direction may cause air leakage, and meanwhile the swinging and receiving displays can't be connected.
- Fixing the screw 1 and 2 to the fixing holes which are in the indoor unit(don't tighten them); hanging the panel on screw 1 and 2; moving the panel according to the arrow direction to fixed it temporarily.
- Through the panel to fix the screw 3 and 4 to the fixing holes which are in the indoor unit and then tighten the 4 screws.
- Connect it to the motor line, communication line and power line, and check with the controller if the connections are correct. Mount air inlet grid and corner covers after making sure that the machine can operate normally.

Requirements:

Ceiling Hole & Reinforcement

- The drainpipe of the indoor unit should be heat-insulated.
- Heat insulation should be treated for the connection with the indoor unit. Improper heat insulation may cause condensing.
- The drainpipe with the down gradient of over 1/100 can't be in the S shape, or abnormal sound can be caused.
- The horizon length of the drainpipe should be kept with 20m. Under the condition of long pipes, supports can be provided every 1.5~2m as to avoid unevenness.
- The central piping should be connected according the following drawing.
- Take care not to apply external force on the connection of the drainpipes.



Pipe materials & heat insulation materials

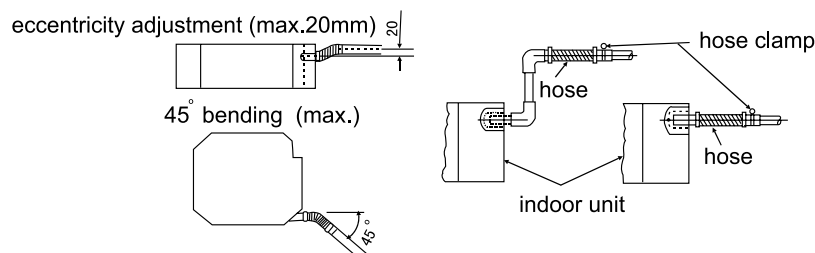
As to prevent condensation, heat insulating treatment should be performed. The heat insulating treatment for piping should be done respectively.

Piping Material	Hard PVC tube VP 31.5mm (inner bore)
Heat Insulating Material	Vesicant polythene thickness: over 7mm

Hose

The attached hoses can be used to adjust the eccentricity and angle of the hard PVC tube.

- Stretch the hose directly to make connections as to avoid distortion. The soft end of the hose should be positioned with a clamp.
- The hose should be used in the horizon direction.



Heat insulating treatment:

- Wrap the connection between the clamp and the root segment of the indoor unit without any gap with heat insulating materials as shown in the drawing.

Lifting drainpipe

The drainpipe can be lifted 360mm.

When the down gradient of the drainpipe can't be ensured, after upright lifting, the drainpipe is in the down slope.

Confirm drainage

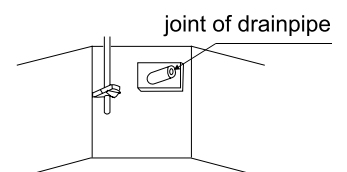
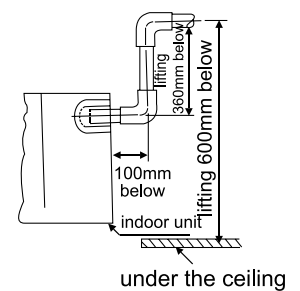
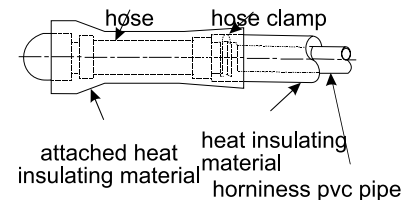
The drainage should be confirmed during the test run to make sure that there is leakage at the connection.

The confirmation of drainage should be also performed during the installation in the winter season.

Charge water from the outlet or the specified position and confirm the drainage.

Charge 600cc water with a hose from the outlet or the specified location on the machine. Add the water slowly. Don't add water to the motor of the drainage pump.

- After mounting the electrical system, do cooling operation and meanwhile add water and check.
- If the electrical installation hasn't been completed, pull out the terminal (2P) of the floater switch on the electrical cabinet. After confirming the drainage, connect the terminal of the floater switch and run the drainage pump for 5 minutes until it stops automatically.
- Confirm the sound of the motor:
Confirm the sound of the motor of the drainage pump and meanwhile check the drainage.



Pipe length & height difference

Please refer to the attached manual of outdoor units.

Tubing materials & specifications

Model		AWSI-CBV005-N11 AWSI-CBV007-N11 AWSI-CBV009-N11	AWSI-CBV012-N11 AWSI-CBV016-N11 AWSI-CCV018-N11	AWSI-CCV030-N11 AWSI-CCV038-N11 AWSI-CCV042-N11 AWSI-CCV048-N11
Tubing Size (mm)	Gas pipe	Φ9.52	Φ12.7	Φ15.88
	Liquid pipe	Φ6.35	Φ6.35	Φ9.52
Tubing Material		Phosphor deoxy bronze seamless pipe (TP2) for air conditioner		

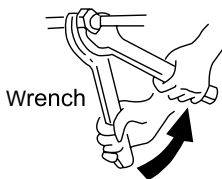
Refrigerant recharge amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount while compressor failure can be caused by filling too much or little refrigerant.

Connecting procedures of refrigerant tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table.



Outer diameter of tubing (mm)	Mounting torque (N.m)	Increase mounting torque (N.m)
Φ6.35	11.8 (1.2kgf.m)	13.7 (1.4kgf.m)
Φ9.52	24.5 (2.5kgf.m)	29.4 (3.0kgf.m)
Φ12.70	49.0 (5.0kgf.m)	53.9 (5.5kgf.m)
Φ15.88	78.4 (8.0kgf.m)	98.0 (10.0kgf.m)

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

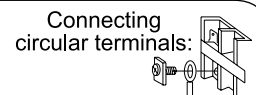
Open All Valves

Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one master unit.]

Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting



1. Connecting circular terminals:

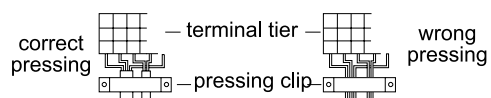
The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.

2. Connecting straight terminals:

The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.

3. Pressing connecting line:

After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



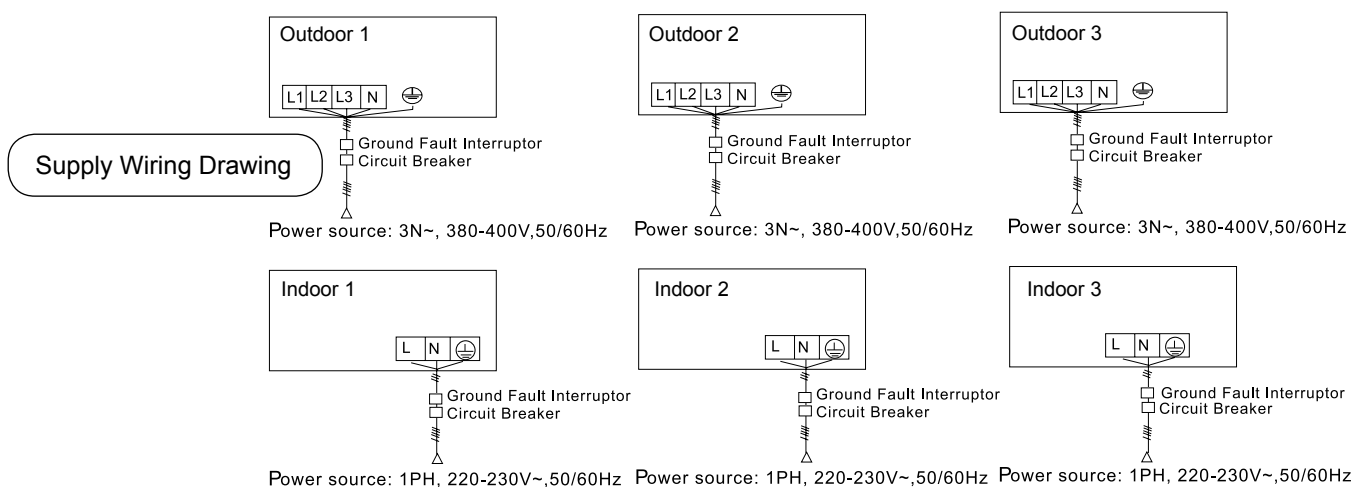
2.9.2 Electrical wiring

⚠ WARNING

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient.
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents.
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line.

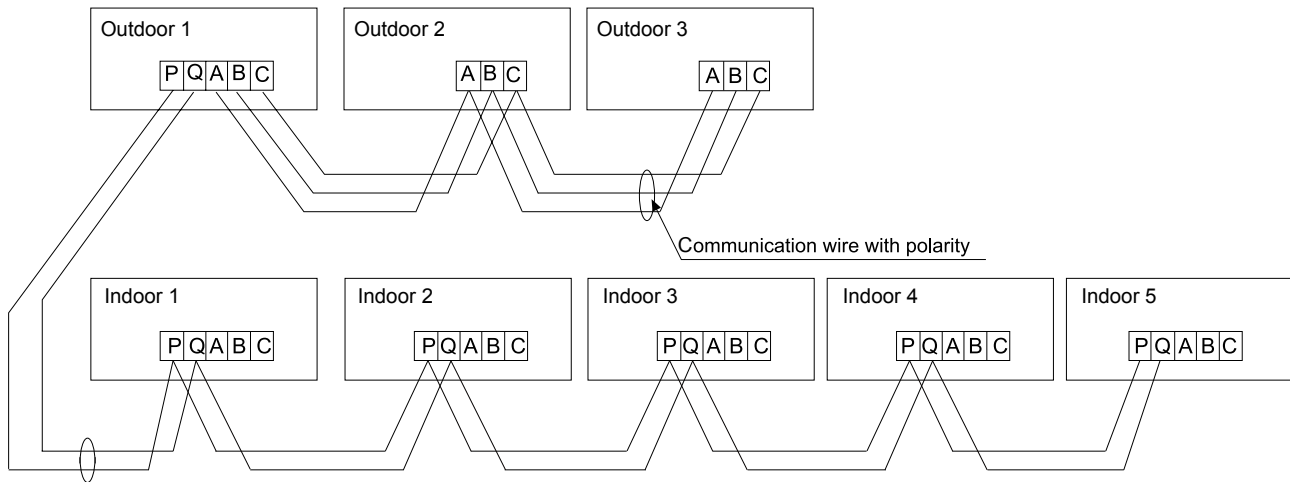
⚠ ATTENTION

- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while \oplus should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line and signal line are provided by users. Parameters for power lines are shown as below: $3 \times (1.0-1.5) \text{ mm}^2$; parameters for signal line: $2 \times (0.75-1.25) \text{ mm}^2$ (shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated.
- Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

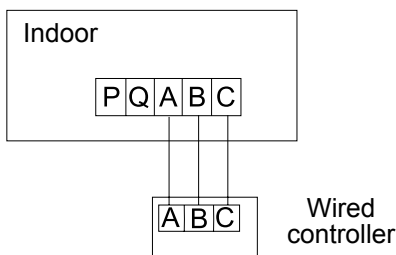
Signal Wiring Drawing



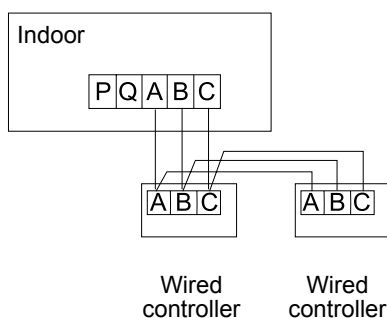
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

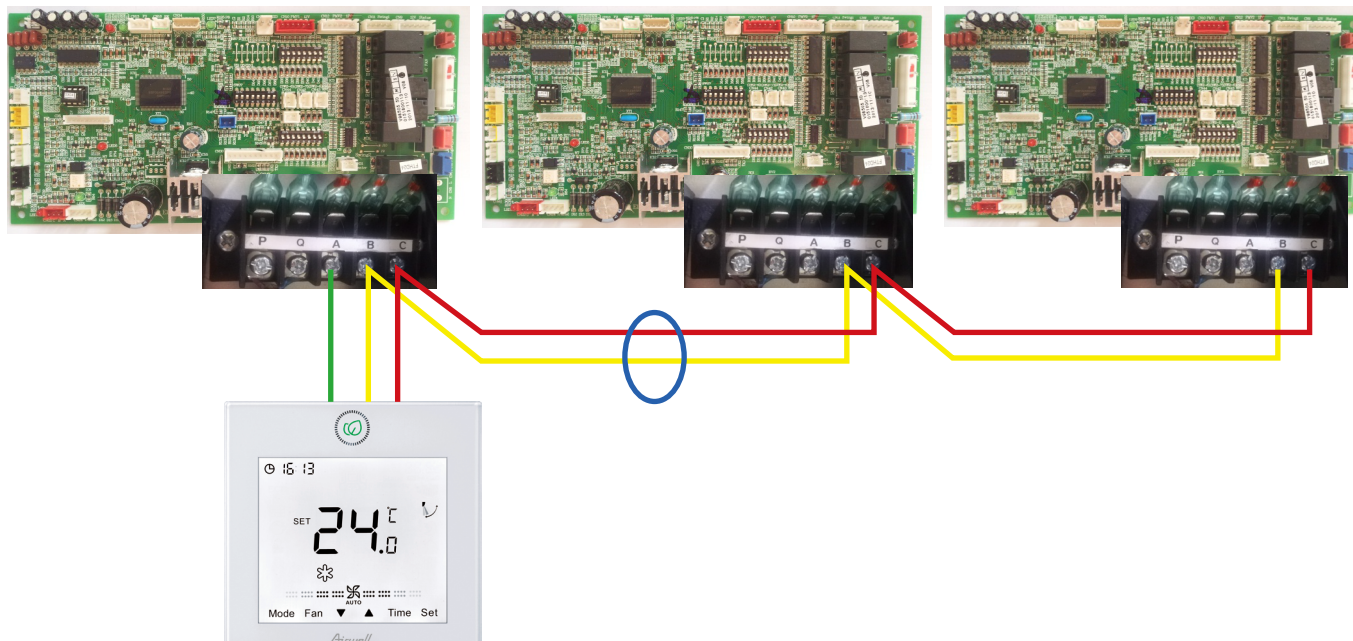


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800113 PCB



Note:

1. The wired controller connects with the ABC terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity

Note:

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Total current of indoor units (A)	Items	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
						Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
<7		2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line	
≥7 and <11		4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16		6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22		8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27		10	40	32	32 A, 30 mA, 0.1S or below		

- ※ The electrical power line and signal lines must be fastened tightly.
- ※ Every indoor unit must have the ground connection.
- ※ The power line should be enlarged if it exceeds the permissible length.
- ※ Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- ※ It is not permissible if the whole length of signal line exceeds 1000m.

Signal wiring of wired controller

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

2.9.3 Test run

Before test run

- Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1MΩ. It can't be operated if it is below 1MΩ.
- Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.
- Check if the arrangements of the drainpipe and connection line are correct.
- The drainpipe shall be placed at the lower part while the connection line placed at the upper part.
- Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials.
- The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.
- Checkup of Installation

- Check if the mains voltage is matching
- Check if there is air leakage at the piping joints
- Check if the connections of mains power and indoor & outdoor units are correct
- Check if the serial numbers of terminals are matching

- Check if the installation place meets the requirement
- Check if there is too much noise
- Check if the connecting line is fastened
- Check if the connectors for tubing are heat insulated
- Check if the water is drained to the outside
- Check if the indoor units are positioned

Ways of test run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.

When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

- Set the wired controller to cooling/heating mode, press "ON/OFF" button for 5 seconds to enter into the compulsive cooling/heating mode. Repress "ON/OFF" button to quit the compulsive running and stop the operation of the air conditioner.

3. Round-way Smart Air Flow Cassette Type Indoor Unit

3.1 Features



AWSI-CFV007-N11
AWSI-CFV009-N11
AWSI-CFV012-N11
AWSI-CFV016-N11
AWSI-CFV018-N11
AWSI-CFV024-N11
AWSI-CFV030-N11
AWSI-CFV038-N11
AWSI-CFV048-N11
AWSI-CFV060-N11

360° C Smart Air Flow
Cassette Type Indoor Unit

- Unique round-way air outlet, no blind spot
- Innovative 4 independent air flow control
- 6 adjustable louver positions, 1296 air flow combinations
- Move eye intelligent system, intelligence all around (optional)



3.2 Specification

Model			AWSI-CFV007-N11	AWSI-CFV009-N11	AWSI-CFV012-N11
Power supply		V-Ph-Hz	1/220~230/50/60	1/220~230/50/60	1/220~230/50/60
Cooling	Capacity	kBtu/h	7.5	9.5	12.3
	Capacity	kW	2.2	2.8	3.6
	Power input	W	30	30	30
	Current	A	0.15	0.15	0.15
Heating	Capacity	kBtu/h	8.5	10.9	13.6
	Capacity	kW	2.5	3.2	4
	Power input	W	30	30	30
	Current	A	0.15	0.15	0.15
	Heating capacity at low temp.	kW	/	/	/
Operating current		A	0.15	0.15	0.15
Indoor motor	Brand		Broad ocean	Broad ocean	Broad ocean
	Model		ZWK465B500011	ZWK465B500011	ZWK465B500011
	Type		DC	DC	DC
	Insulation class		E	E	E
	IP class		IP40	IP40	IP40
	Power input	W	30	30	30
	Power output	W	22	22	22
	Capacitor	μF	/	/	/
	Speed (High/Middle/Low)	rpm	300-600	300-600	300-600
Indoor fan	Brand		/	/	/
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		1	1	1
Indoor coil	Number of rows		2	2	2
	Tube pitch (a) x row pitch (b)	mm	21*13.3	21*13.3	21*13.3
	Fin spacing	mm	1.45	1.45	1.45
	Fin type (code)		Hydrophilic aluminum		
	Tube outside dia. and type	mm	Φ7	Φ7	Φ7
	Coil length x height x width	mm	2132*147*26.6	2132*147*26.6	2132*147*26.6
	Number of circuits		6	6	6

Model			AWSI-CFV007-N11	AWSI-CFV009-N11	AWSI-CFV012-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	100	100	100
	Control box IP class		IP40	IP40	IP40
Construction	Sheet metal thickness		0.8	0.8	0.8
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		Standard 1200mm	Standard 1200mm	Standard 1200mm
	Branch outlet option		No	No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8	0.8
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35	6.35
	Gas pipe	mm	9.52	9.52	12.7
	Drain hose	mm	Φ25	Φ25	Φ25
Panel	Model		Panel for CFV	Panel for CFV	Panel for CFV
	Dimension	mm	950/950/50	950/950/50	950/950/50
	Packing	mm	1013/1025/123	1013/1025/123	1013/1025/123
	Net weight	kg	6.5	6.5	6.5
	Gross weight	kg	9	9	9
Fresh air dimension	mm	/	/	/	
Sound pressure level (H/M/L)	dB(A)	30/27/25	30/27/25	30/27/25	
Sound power level (H/M/L)	dB(A)	44/41/39	44/41/39	44/41/39	
Standard static pressure	Pa	0	0	0	
Indoor air flow (H/M/L)	m ³ /h	1000/810/620	1000/810/620	1000/810/620	
Dimension (W*H*D)	mm	840/840/183	840/840/183	840/840/183	
Packing (W*H*D)	mm	983/983/268	983/983/268	983/983/268	
Net weight	kg	25	25	25	
Gross weight	kg	28	28	28	
Norminal condition: indoor temperature (cooling): 27°C DB/19°C WB, indoor temperature (heating): 20°C DB Outdoor temperature (cooling): 35°C DB/24°C WB, outdoor temperature (heating): 7°C DB/6°C WB. The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

Model			AWSI-CFV016-N11	AWSI-CFV018-N11	AWSI-CFV024-N11
Power supply		V-Ph-Hz	1/220~230/50/60	1/220~230/50/60	1/220~230/50/60
Cooling	Capacity	kBtu/h	15.3	19.1	24.2
	Capacity	kW	4.5	5.6	7.1
	Power input	W	30	30	50
	Current	A	0.15	0.15	0.25
Heating	Capacity	kBtu/h	17.1	21.5	27.3
	Capacity	kW	5	6.3	8
	Power input	W	30	30	50
	Current	A	0.15	0.15	0.25
	Heating capacity at low temp.	kW	/	/	/
Operating current		A	0.15	0.15	0.25
Indoor motor	Brand		Broad ocean	Broad ocean	Broad ocean
	Model		ZWK465B500011	ZWK465B500011	ZWK465A000007
	Type		DC	DC	DC
	Insulation class		E	E	E
	IP class		IP40	IP40	IP40
	Power input	W	30	30	50
	Power output	W	22	22	36
	Capacitor	μF	/	/	/
	Speed (High/Middle/Low)	rpm	300-600	300-600	300-750
Indoor fan	Brand		/	/	/
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		1	1	1
Indoor coil	Number of rows		2	2	2
	Tube pitch (a) x row pitch (b)	mm	21*13.3	21*13.3	21*13.3
	Fin spacing	mm	1.45	1.45	1.45
	Fin type (code)		Hydrophilic aluminum		
	Tube outside dia. and type	mm	Φ7	Φ7	Φ7
	Coil length x height x width	mm	2132*147*26.6	2132*147*26.6	2132*168*26.6
	Number of circuits		6	6	8

Model			AWSI-CFV016-N11	AWSI-CFV018-N11	AWSI-CFV024-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	100	100	100
	Control box IP class		IP40	IP40	IP40
Construction	Sheet metal thickness		0.8	0.8	0.8
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		Standard 1200mm	Standard 1200mm	Standard 1200mm
	Branch outlet option		No	No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8	0.8
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35	9.52
	Gas pipe	mm	12.7	12.7	15.88
	Drain hose	mm	Φ25	Φ25	Φ25
Panel	Model		Panel for CFV	Panel for CFV	Panel for CFV
	Dimension	mm	950/950/50	950/950/50	950/950/50
	Packing	mm	1013/1025/123	1013/1025/123	1013/1025/123
	Net weight	kg	6.5	6.5	6.5
	Gross weight	kg	9	9	9
Fresh air dimension	mm	/	/	/	
Sound pressure level (H/M/L)	dB(A)	32/29/27	33/30/29	35/34/31	
Sound power level (H/M/L)	dB(A)	46/43/41	47/44/43	49/48/45	
Standard static pressure	Pa	0	0	0	
Indoor air flow (H/M/L)	m ³ /h	1000/810/620	1000/810/620	1380/1190/1000	
Dimension (W*H*D)	mm	840/840/183	840/840/183	840/840/204	
Packing (W*H*D)	mm	983/983/268	983/983/268	983/983/290	
Net weight	kg	25	25	27	
Gross weight	kg	28	28	30	
Norminal condition: indoor temperature (cooling): 27°C DB/19°C WB, indoor temperature (heating): 20°C DB Outdoor temperature (cooling): 35°C DB/24°C WB, outdoor temperature (heating): 7°C DB/6°C WB. The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

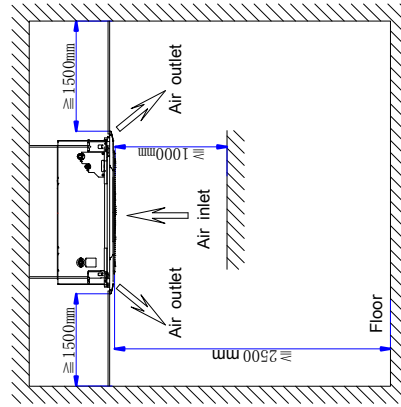
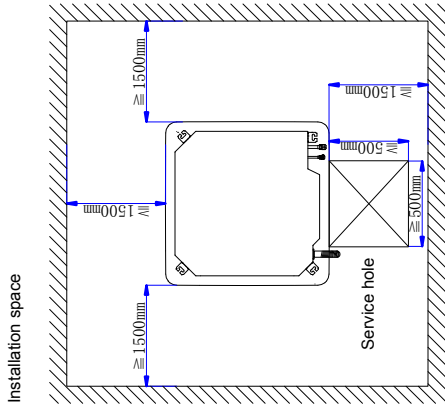
Model			AWSI-CFV030-N11	AWSI-CFV038-N11
Power supply		V-Ph-Hz	1/220~230/50/60	1/220~230/50/60
Cooling	Capacity	kBtu/h	30.7	38.2
	Capacity	kW	9	11.2
	Power input	W	90	90
	Current	A	0.45	0.45
Heating	Capacity	kBtu/h	34.1	42.6
	Capacity	kW	10	12.5
	Power input	W	90	90
	Current	A	0.45	0.45
	Heating capacity at low temp.	kW	/	/
Operating current		A	0.45	0.45
Indoor motor	Brand		Broad ocean	Broad ocean
	Model		ZWK511B51008	ZWK511B51008
	Type		DC	DC
	Insulation class		E	E
	IP class		IP40	IP40
	Power input	W	90	90
	Power output	W	63	63
	Capacitor	μF	/	/
	Speed (High/Middle/Low)	rpm	350-850	350-850
Indoor fan	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		1	1
Indoor coil	Number of rows		2	2
	Tube pitch (a) x row pitch (b)	mm	21*13.3	21*13.3
	Fin spacing	mm	1.45	1.45
	Fin type (code)			
	Tube outside dia. and type	mm	Φ7	Φ7
	Coil length x height x width	mm	2132*210*26.6	2132*210*26.6
	Number of circuits		10	10

Model			AWSI-CFV030-N11	AWSI-CFV038-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	100	100
	Control box IP class		IP40	IP40
Construction	Sheet metal thickness		0.8	0.8
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		Standard 1200mm	Standard 1200mm
	Branch outlet option		No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52
	Gas pipe	mm	15.88	15.88
	Drain hose	mm	Φ25	Φ25
Panel	Model		Panel for CFV	Panel for CFV
	Dimension	mm	950/950/50	950/950/50
	Packing	mm	1013/1025/123	1013/1025/123
	Net weight	kg	6.5	6.5
	Gross weight	kg	9	9
Fresh air dimension	mm	/	/	/
Sound pressure level (H/M/L)	dB(A)	37/35/31	37/35/31	37/35/31
Sound power level (H/M/L)	dB(A)	51/49/45	51/49/45	51/49/45
Standard static pressure	Pa	0	0	0
Indoor air flow (H/M/L)	m ³ /h	2050/1860/1670	2050/1860/1670	2050/1860/1670
Dimension (W*H*D)	mm	840/840/246	840/840/246	840/840/246
Packing (W*H*D)	mm	983/983/331	983/983/331	983/983/331
Net weight	kg	31	31	31
Gross weight	kg	36	36	36
Norminal condition: indoor temperature (cooling): 27°C DB/19°C WB, indoor temperature (heating): 20°C DB Outdoor temperature (cooling): 35°C DB/24°C WB, outdoor temperature (heating): 7°C DB/6°C WB. The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

Model			AWSI-CFV048-N11	AWSI-CFV060-N11
Power supply		V-Ph-Hz	1/220~230/50/60	1/220~230/50/60
Cooling	Capacity	kBtu/h	47.7	54.6
	Capacity	kW	14	16
	Power input	W	110	110
	Current	A	0.55	0.55
Heating	Capacity	kBtu/h	54.6	61.2
	Capacity	kW	16	18
	Power input	W	110	110
	Current	A	0.55	0.55
	Heating capacity at low temp.	kW	/	/
Operating current		A	0.55	0.55
Indoor motor	Brand		Broad ocean	Broad ocean
	Model		ZWK511B51008	ZWK511B51008
	Type		DC	DC
	Insulation class		E	E
	IP class		IP40	IP40
	Power input	W	110	110
	Power output	W	78	78
	Capacitor	μF	/	/
	Speed (High/Middle/Low)	rpm	350-850	400-850
Indoor fan	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		1	1
Indoor coil	Number of rows		2	2
	Tube pitch (a) x row pitch (b)	mm	21*13.3	21*13.3
	Fin spacing	mm	1.45	1.45
	Fin type (code)		Hydrophilic aluminum	
	Tube outside dia. and type	mm	Φ7	Φ7
	Coil length x height x width	mm	2132*252*26.6	2132*252*26.6
	Number of circuits		8	8

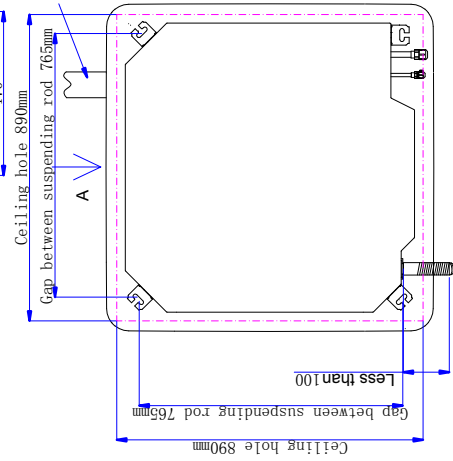
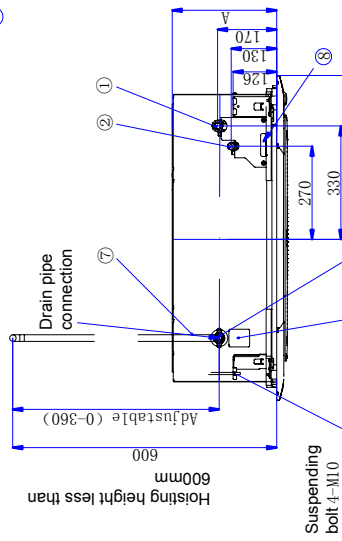
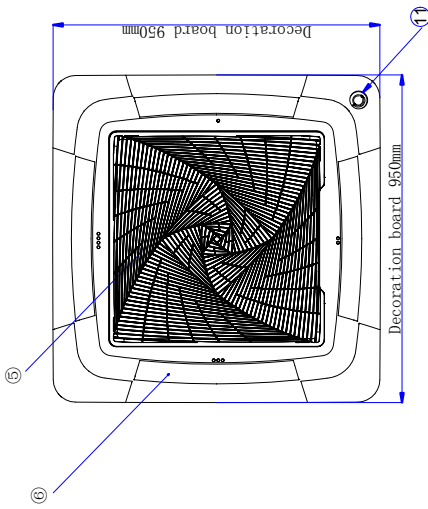
Model			AWSI-CFV048-N11	AWSI-CFV060-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	100	100
	Control box IP class		IP40	IP40
Construction	Sheet metal thickness		0.8	0.8
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		standard 1200mm	standard 1200mm
	Branch outlet option		no	no
Indoor wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52
	Gas pipe	mm	15.88	15.88
	Drain hose	mm	Φ25	Φ25
Panel	Model		Panel for CFV	Panel for CFV
	Dimension	mm	950/950/50	950/950/50
	Packing	mm	1013/1025/123	1013/1025/123
	Net weight	kg	6.5	6.5
	Gross weight	kg	9	9
Fresh air dimension	mm	/	/	/
Sound pressure level (H/M/L)	dB(A)	44/40/36	44/40/36	44/40/36
Sound power level (H/M/L)	dB(A)	58/54/50	58/54/50	58/54/50
Standard static pressure	Pa	0	0	0
Indoor air flow (H/M/L)	m ³ /h	2100/1910/1720	2100/1910/1720	2100/1910/1720
Dimension (W*H*D)	mm	840/840/288	840/840/288	840/840/288
Packing (W*H*D)	mm	983/983/373	983/983/373	983/983/373
Net weight	kg	33	33	33
Gross weight	kg	38	38	38
Norminal condition: indoor temperature (cooling): 27°C DB/19°C WB, indoor temperature (heating): 20°C DB Outdoor temperature (cooling): 35°C DB/24°C WB, outdoor temperature (heating): 7°C DB/6°C WB. The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

3.3 Dimension

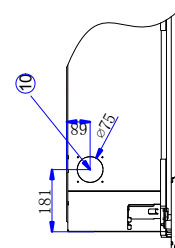
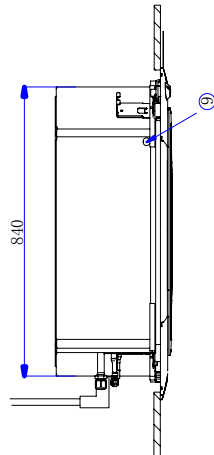


Model	A (mm)
07/09/12/16/18	183
24/28	204
30/38	246
48/60	288

※When the air outlet grille blocked, the min. reserved space is 200mm.

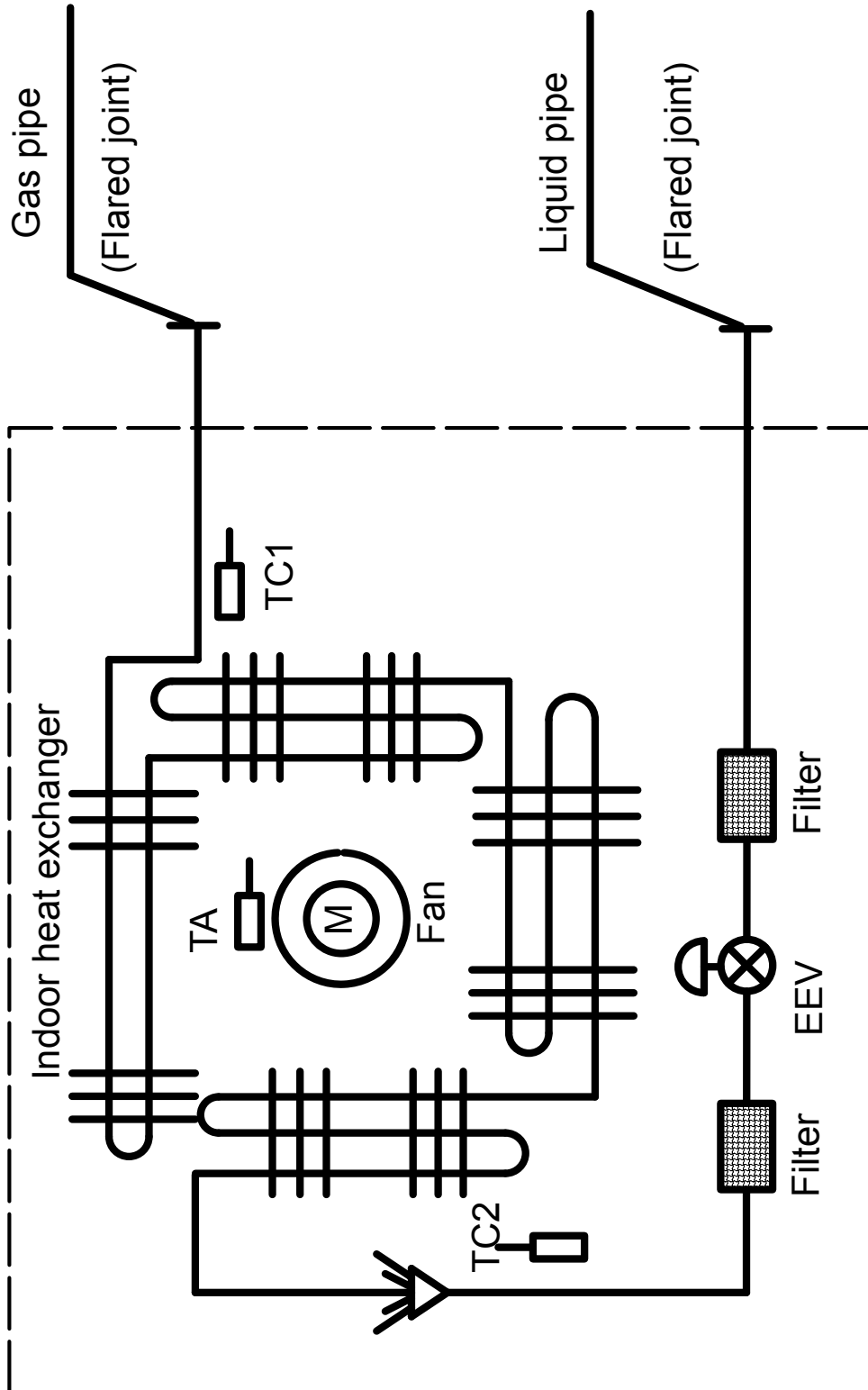


Code	Name
1	Gas pipe
2	Liquid pipe
3	Observe plate
4	Drain pipe
5	Air return grille
6	Air outlet
7	Drain soft pipe (accessory)
8	Power supply inlet
9	PQ line inlet
10	Fresh air inlet
11	Move eye (optional)

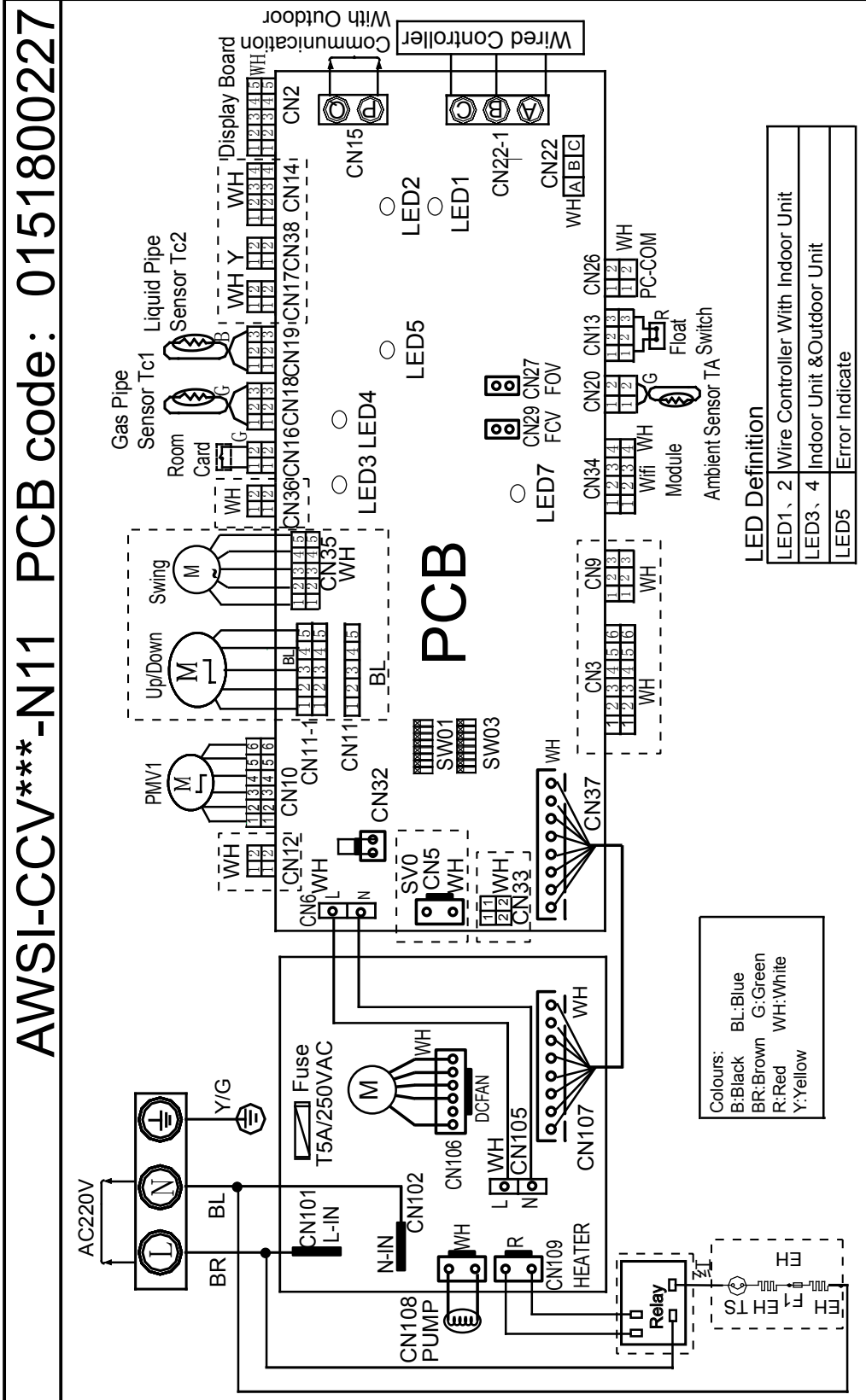


View A

3.4 Piping diagram



3.5 Wiring diagram



3.6 Electric characteristics

Model	Units				Power supply		Indoor fan motor		Power input (w)	
	Phase	FQY	Voltage	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AWSI-CFV007-N11	1	50/60	220	198~242	0.39	1.24	22	0.31	30	30
AWSI-CFV009-N11	1	50/60	220	198~242	0.39	1.24	22	0.31	30	30
AWSI-CFV012-N11	1	50/60	220	198~242	0.39	1.24	22	0.31	30	30
AWSI-CFV016-N11	1	50/60	220	198~242	0.39	1.24	22	0.31	30	30
AWSI-CFV018-N11	1	50/60	220	198~242	0.39	1.24	22	0.31	30	30
AWSI-CFV024-N11	1	50/60	220	198~242	0.39	1.24	36	0.31	50	50
AWSI-CFV030-N11	1	50/60	220	198~242	0.71	2.28	63	0.57	90	90
AWSI-CFV038-N11	1	50/60	220	198~242	0.71	2.28	63	0.57	90	90
AWSI-CFV048-N11	1	50/60	220	198~242	0.71	2.28	78	0.57	110	110
AWSI-CFV060-N11	1	50/60	220	198~242	0.71	2.28	78	0.57	110	110

 360° C Smart Air Flow
Cassette Type Indoor Unit

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker

Output: Fan motor rated output (w)

FLA: Full load amps (A)

Note:

1. Voltage range

The units are applicable for the electrical systems where voltage supplied to unit is in the range.

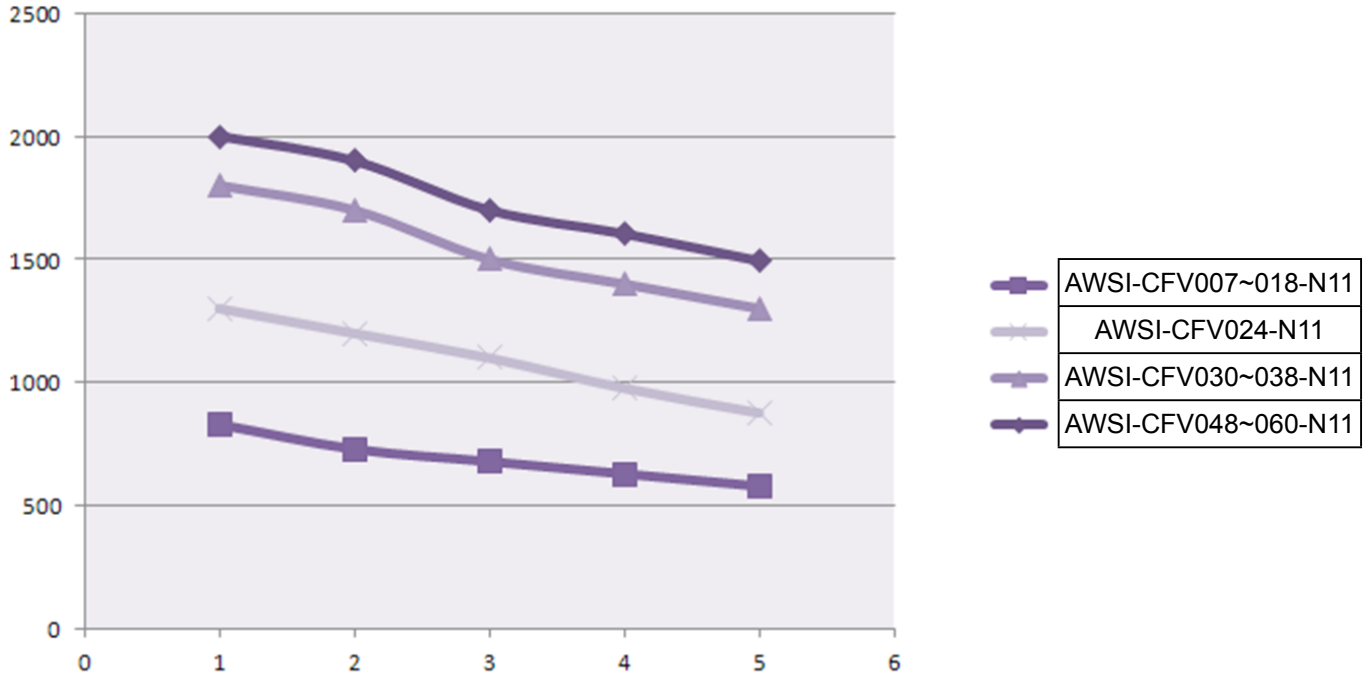
2. Maximum allowable voltage unbalance between phases is 2%.

3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$

4. Power supply uses the circuit breaker.

3.7 Air flow and fan speed curve

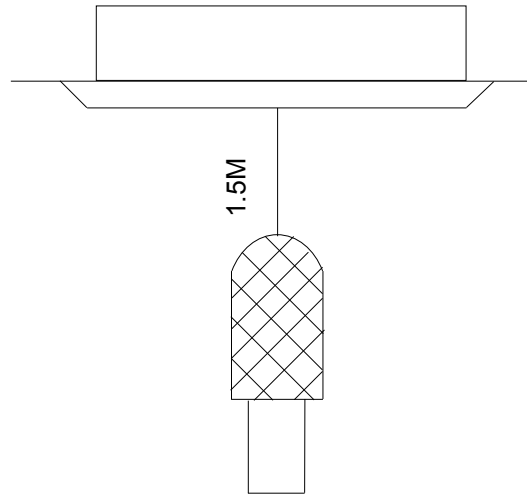
Air flow (m³/h)



1. Strong speed
2. High speed
3. Medium speed
4. Low speed
5. Quiet

3.8 Sound pressure level

1) Testing illustrate:

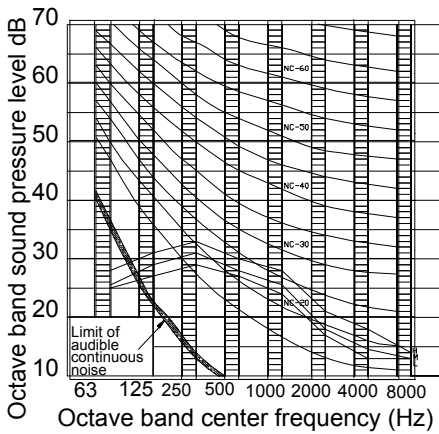


2) Testing condition:

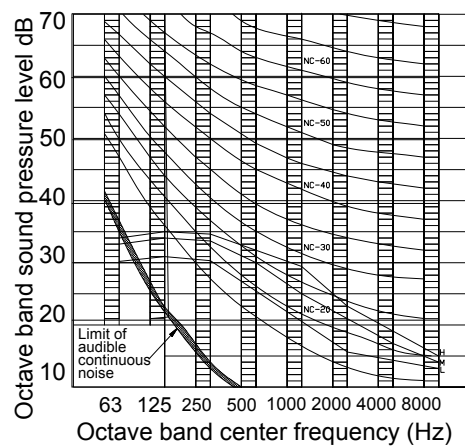
- a: Unit running in the normal condition
- b: Test in the semi-anechoic chamber
- c: Noise level varies from the actual factors such as room structure, etc.

360° C Smart Air Flow
Cassette Type Indoor Unit

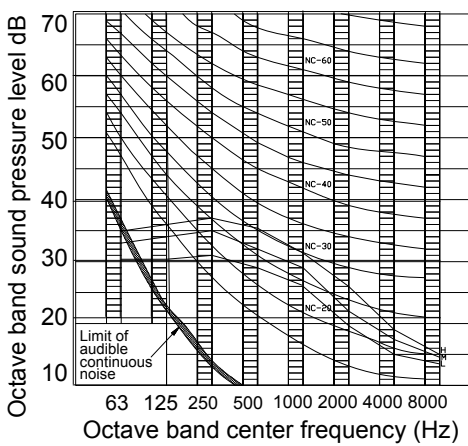
AWSI-CFV007~018-N11



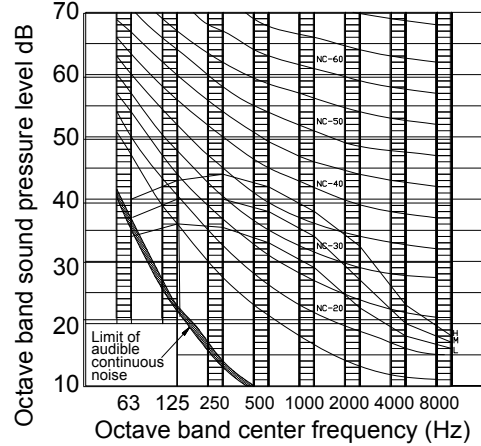
AWSI-CFV024-N11



AWSI-CFV030~038-N11



AWSI-CFV048~060-N11



3.9 Installation

3.9.1 Safety

- If the air conditioner is transferred to a new user, this manual shall be transferred to the user, together with the conditioner.
- Before installation, be sure to read Safety Considerations in this manual for proper installation.
- The safety considerations stated below is divided into "⚠WARNING" and "⚠ATTENTION". The matters on severe accidents caused from wrong installation, which is likely to lead to death or serious injury, are listed in "⚠WARNING". However, the matters listed in "⚠ATTENTION" are also likely cause the severe accidents. In general, both of them are the important items related to the security, which should be strictly abided by.
- After the installation, perform test run to make sure everything is in normal conditions, and then operate and maintain the air conditioner in accordance with the User Manual. The User Manual should be delivered to the user for proper keeping.

WARNING

- Please ask the special maintenance station for installation and repair. Water leakage, electric shocks or fire accidents might be caused from improper installation if you conduct the installation by your own.
- The installation should be conducted properly according to this manual. Water leakage, electric shocks or fire accidents might be caused from improper installation.
- Please make sure to install the air conditioner on the place where can bear the weight of the air conditioner. The air conditioner can't be installed on the grids such as the non-special metal burglar-proof net. The place with insufficient support strength might cause the dropdown of the machine, which may lead to personal injuries.
- The installation should be ensured against typhoons and earthquakes, etc. The installation uncomformable to the requirements will lead to accidents due to the turnover of the machine.
- Specific cables should be used for reliable connections of the wirings. Please fix the terminal connections reliably to avoid the outside force applied on the cables from being impressed on the cables. Improper connections and fixings might lead to such accidents as heating or fire accidents.
- Correct shapes of wirings should be kept while the embossed shape is not allowed. The wirings should be reliably connected to avoid the cover and the plate of the electrical cabinet lipping the wiring. Improper installation might cause such accidents as heating or fire accidents.
- While placing or reinstalling the air conditioner, except the specific refrigerant (R410A), don't let the air go into the refrigeration cycle system. The air in the refrigeration cycle system might lead to the cracking or personal injuries due to abnormal high pressure of the refrigeration cycle system.
- During installation, please use the accompanied spare parts or specific parts. If not, water leakage, electric shocks, fire accidents or refrigerant leakage might be caused.
- Don't drain the water from the drainpipe to the waterspout where may exist harmful gases such as sulfureted gas to avoid the harmful gases entering into the room.
- During installation, if refrigerant leakage occurs, ventilation measures should be taken, for the refrigerant gas might generate harmful gases upon contacting the flame.
- After installation, check if any refrigerant leakage exists. If the refrigerant gas leaks in the room, such things as air blowing heaters and stoves, etc. may generate harmful gases.
- Don't install the air conditioner at the places where the flammable gases may leak. In case the gas leakage occurs around the machine, such accidents as fire disasters may be caused.
- The drainpipe should be properly mounted according to this manual as to ensure the smooth drainage. In addition, heat preservation should be taken to avoid condensation. Improper drainpipe mounting might cause water leakage, which will get the articles at home wet.
- The refrigerant gas pipe and liquid pipe should be heat insulated to preserve heat. For inappropriate heat insulation, the water caused from the condensation will drop to get the article at home wet.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

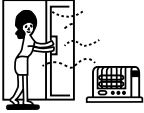
















- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- The appliances are not intended to be operated by means of an external timer or separate remote-control system.
- Keep the appliance and its cord out of reach of children less than 8 years.

⚠ CAUTION

- The air conditioner should be effectively grounded. Electric shocks may occur if the air conditioner is ungrounded or inappropriately grounded. The wire for earthing shouldn't be connected to the connections on the gas pipe, water pipe, lightning rod or telephone.
- The breaker for electricity leakage should be mounted. If not, accidents such as electric shocks may happen.
- The installed air conditioner should be checked for electricity leakage by being powered.
- If the ambient humidity bigger than 80%, when the water discharge hole be blocked or the filter becomes dirty, or airflow speed change, there maybe leads to condensing water drop down, and at the same time there maybe some drops of water spit out.

⚠ ATTENTION

Notices during operation

- | | |
|---|--|
| <ul style="list-style-type: none"> ■ It is not allowed to put any heating apparatus under the indoor units, for the heat may cause distortion of the units. ■ Pay attention to the aeration condition to avoid anoxic symptom.  ■ Flammable apparatus should not be placed in the place where the air conditioner wind could reach directly, or incomplete burning of the apparatus may be caused.  ■ Check the mount table of the air conditioner for damage for a long period of operation.  If placed on the damaged table, the unit may drop down causing damage.  ■ Plants and animals should not be put to the place where wind of the air conditioner blows directly, otherwise damage to them may be caused.  ■ It cannot be used for the preservation of food, living creature, precise instrument and artworks, etc, otherwise damage may occur.  ■ Use the fuse with proper capacity. Metal wires and copper wires, etc., may cause fire or other faults.  ■ Do not use water heater or like next to the indoor unit and the wired controller. Water/power leakage or short circuit may happen if the steam generating apparatus is working next to machine.  ■ Defrosting during heating
To improve the heating effect, the outdoor unit will perform defrosting automatically when frost appears on the outdoor unit during heating (approximately 2-10 min). During defrosting, the fan of the indoor unit runs at a low speed or stops while that of the outdoor unit stops running.  ■ Do not touch the switch with the wet hand to avoid power shock.  | <ul style="list-style-type: none"> ■ Power should be cut off when the air conditioner is left unused for a long period. Power will be consumed if the air conditioner is not powered off. The power switch of the outdoor unit switch should be powered on 12 hours in advance before operation to protect the unit after a long period of storage. ■ 3-minute protection
To protect the unit, compressor can be actuated with at least 3-minute delay after stopping. ■ Close the window to avoid outdoor air getting in. Curtains or window shutters can be put down to avoid the sunshine.  ■ Stop running and switch off the manual power switch when cleaning the unit.  ■ During the operation of the control unit, don't switch off the manual power switch and the controller can be used. Please do not press the liquid crystal zone of controller to prevent damage.  ■ Cleaning the unit with water may cause electric shock.  ■ Do not put flammable spray close to the air conditioner. Don't inject flammable spray towards the air conditioner, which may cause fire.  ■ Stopping fan rotation
The unit which stops operating will actuate the fan for a 2-8 min swing every 30-60 minutes for protecting the unit while other indoor unit are in the operating state.  ■ This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.  |
|---|--|

3.9.2 Maintenance

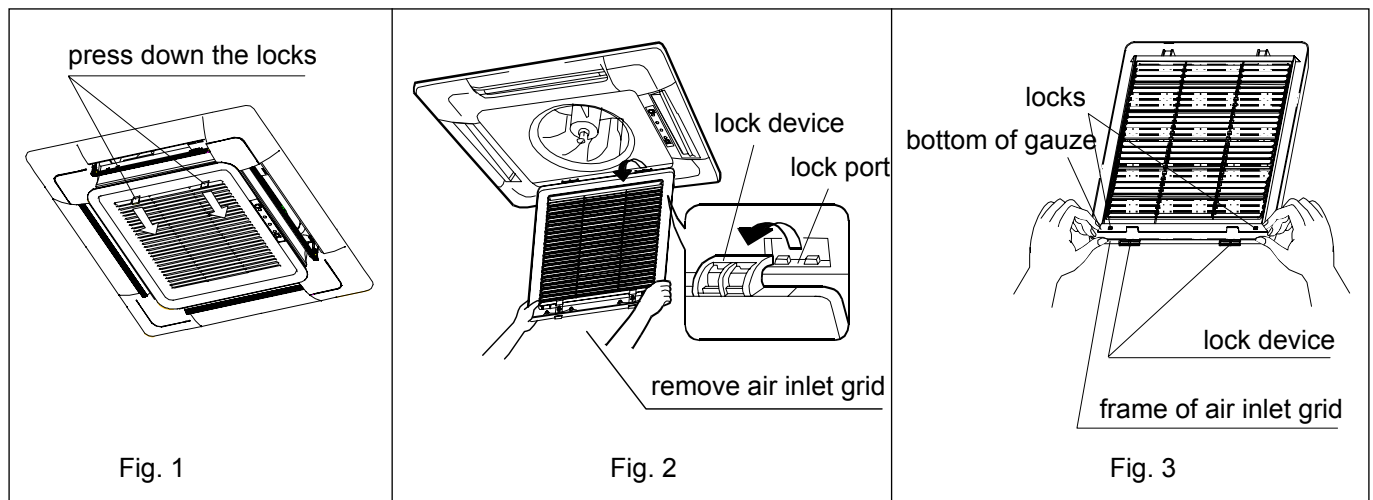
⚠ ATTENTION

- Repair can only be performed by professional personnel.
- Before touching the connection line, all power supplies should be switched off. Only after switching off the power supply can the operator clean the air conditioner as to avoid electric shock or injury.
- When cleaning the air cleaner, make sure to use a stable platform; don't flush the air conditioner with water, or the electric shock might be caused.

Daily Maintenance:

Clean the air cleaner & air inlet grid.

- Don't dismantle the air cleaner if not cleaning, or faults might be caused.
 - When the air conditioner operates in the environment with too much dust, clean the air conditioner more times (generally once every two weeks).
1. Remove the air inlet grid as shown in the figure: press down the two locks on the grid (as shown in Fig. 1) to move it close to the nearby grid, gently lift it 45 degree (as shown in Fig. 2), and then remove the air inlet grid.
 2. Dismantle the gauze: press the outer frame of the air inlet grid by the thumb, and draw the base angle of gauze by the forefinger and pull it out as to make the gauze disengage the locks, and dismantle the gauze (as shown in Fig. 3).



Cleaning Air Cleaner

■ Cleaning

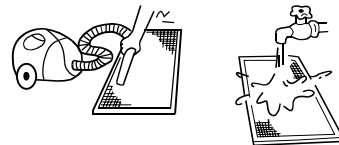
Clean the air cleaner with the dust collector or water to remove dusts.

For too much dust, use the fan or directly spray the special cookware detergent on the air inlet grid, and then clean it with water after 10 minutes.

(A) Remove dust with dust collector.

(B) For too much dust, use soft-hair brush and mild detergent to clean.

(C) Throw off water and then dry it at cool places.

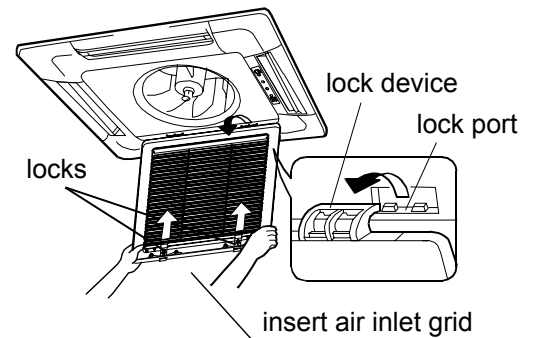


⚠ ATTENTION

- Don't clean it with hot water of over 50°C to avoid fading or distortion.
- Don't dry it on the fire, or the cleaner might cause fire.

Installing air cleaner and air inlet grid:

1. Mounting the gauze: opposite to the ways of dismantling the gauze (as shown in Fig. 3 above).
2. Mounting the air inlet grid: as shown in the right figure, nip the locks on the grid as directed by arrows, put the side with the lock device into the lock port, and then put the side with locks into the panel frame. Release the locks to position the grid after determining that the grid is abutting upon the bottom of the panel frame.



ATTENTION

Cleaning the air outlet port and the shell:

- Don't use gasoline, benzene, diluents, polishing powder or liquid insecticide to clean them.
- Do not clean them with hot water of above 50°C to avoid fading or distorting.
- Wipe them with soft dry cloth.
- Water or neutral dry cleanser is recommended if the dust cannot be removed.
- The Wind Deflector can be dismantled to clean (as below).

Cleaning Wind Deflector:

- Do not wipe the wind deflector with water forcibly to avoid the floss falling off.

Maintenance before and after Operating Season

Before Operating Season:


1. Please make the following checkup:
 - There is no blockage in inlet port and outlet port of outdoor and indoor units.
 - The ground line and the wiring are in the proper state.
If abnormal condition occurs, consult the after-service personnel.
2. Clean the air cleaner and the shell.
 - After cleaning, the air cleaner must be mounted.
3. Switch it on to the power.
 - After cleaning, the air cleaner must be mounted.

After Operating Season:

1. In sunny days, blowing operation can be performed for half a day to make the inside of machine dry.
2. Switch it off.
 - Electrical power should be cut down to economize electricity, or the machine will still consume power.
3. Clean the air cleaner and the shell.
 - Air cleaner and shell must be mounted after cleaning. For cleaning details, refer to Maintenance.

3.9.3 Fault checkup

Please check the following when consigning repair service:

	Symptoms	Reasons
All these are not problems	Water flow sound	Water flow sound can be heard when starting operation, during operation or immediately after stopping operation. When it starts to work for 2-3 minutes, the sound may become louder, which is the flowing sound of refrigerant or the draining sound of condensed water.
	Cracking sound	During operation, the air conditioner may make the cracking sound, which is caused from the temperature changes or the slight dilation of heat exchanger.
	Terrible smell in outlet air	The terrible smell, caused from walls, carpet, furniture, clothing, cigarette and cosmetics, attaches on the conditioner.
	Flashing operating indicator	When switching it on again after power failure, turn on the manual power switch and the operating indicator flashes.
	Awaiting indication	It displays the awaiting indication as it fails to perform refrigerating operation while other indoor units are in heating operation. When the operator set it to the refrigerating or heating mode and the operation is opposite to the setting, it displays the awaiting indication.
	Sound in shutdown indoor unit or white steam or cold air	To prevent oil and refrigerant from blocking the shutdown indoor units, refrigerant flows in the short time and make the sounds of refrigerant flowing. Otherwise, when other indoor units perform heating operation, white steam may occur; during refrigerating operation, cold air may appear.
	Clicking sound when switching the air condition on	When the conditioner is powered on, the sound is made due to the resetting of the expansion valve.
	Please make another check	Start or stop working automatically	Check if it is in the state of Timer - ON and Timer - OFF.
Failure to work 		Check if there is a power failure. Check if the manual power switch is turned off. Check if the supply fuse and breaker are disconnected. Check if the protective unit is working. Check if refrigerating and heating functions are selected simultaneously with the awaiting indication on line control.
Bad cooling & heating effects		Check if air intake port and air outlet port of outdoor units are blocked. Check if the door and windows are open. Check if the filtering screen of air cleaner is blocked with sludge or dust. Check if the setting of wind quantity is at low wind. Check if the setting of operation is at the Fan Operation state. Check if the temperature setting is proper.

Under the following circumstances, immediately stop the operation, disconnect the manual supply switch and contact the after-service personnel.

- When buttons are inflexible actuated;
- When fuse and breaker have been burnt over and over;
- When there are foreign objects and water in the refrigerator;
- When it cannot still be operated after removing the operation of protective unit;
- When other abnormal conditions occur.

3.9.4 Installation procedures

The standard attached accessories of the units of this series refer to the packing list; prepare other accessories according to the requirements of the local installation point of our company. Indoor units should be installed in places with the environment of even circulation of cool and warm blows. The following places should be avoided.

- Places with high salinity (beach), high sulfured gas (such as the thermal spring regions where copper tubes and soft soldering are easy to be eroded), much oil (including mechanical oil) and steam; places where organic substance solvent is used; where special spray is frequently used;
- Places where machines generate the high frequency electromagnetic wave (abnormal condition will appear in the control system);
- Places where there is high humidity exists near the door or windows (dew is easily formed).

⚠ WARNING

protect the machine from gales or earthquake, make the installation according to the regulations. Improper installation will cause accidents due to the overturn of the air conditioner.

1. Select the following places to install indoor units

- (1) Where there is enough room for the machine above the ceiling;
- (2) Where the drainpipes can be well arranged;
- (3) Where the distance between the air outlet port of the machine and the floor is not more than 2.7m;
- (4) Where air inlet & outlet of the indoor units are not blocked;
- (5) Where it is hard enough to bear the weight of the unit;
- (6) Where there is no television, piano and other valuables under the indoor units as to avoid condensate dropping down, causing damage.
- (7) Where it is over 1m away from the television and radio as to avoid the disturbance from television and radio.

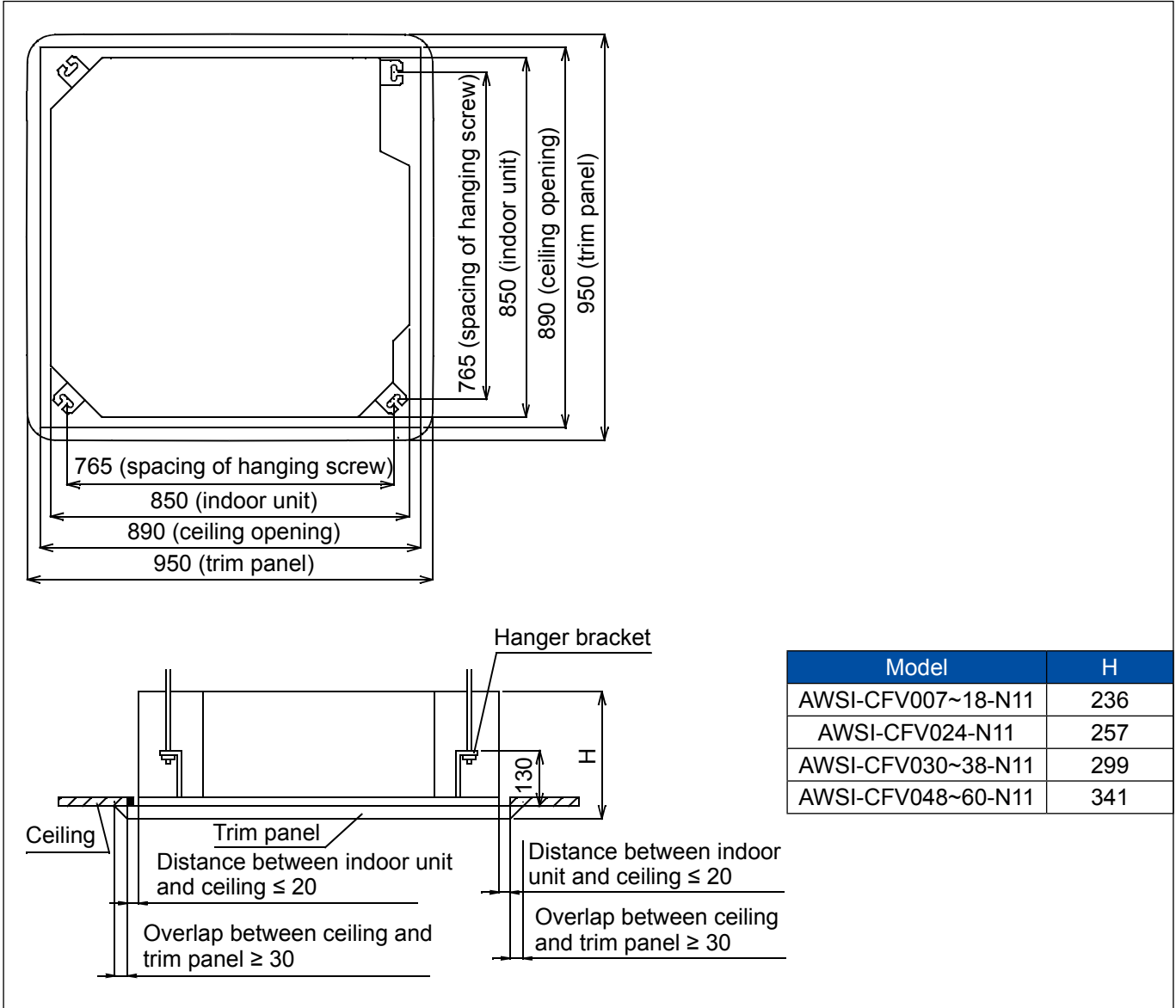
Installation Space

Ensure the required space for installation and maintenance (refer to the following drawings). The installation height should be kept within 2.7m. When the height of the ceiling exceeds 2.7m, the warm air is hard to blow to the ground.

Space required for installation (unit: mm)

Model	H
AWSI-CFV007~18-N11	206
AWSI-CFV024-N11	227
AWSI-CFV030~38-N11	269
AWSI-CFV048~60-N11	311

2. Location Relationship Among Ceiling Hole, Unit and Hoisting Studs



Note:

Before suspending the indoor unit, select the installation location according to the piping and wiring in the ceiling, and determine the lead direction of the piping. Prepare all pipes (refrigerator and drainage) and wiring (connection line for remote control and connection line of indoor units and outdoor units) connected to indoor units before suspending the indoor unit so as to make the connections right after the installation.

- In the situation with the ceiling, before suspending the unit, set refrigerant pipe, drainpipe, connection line in the room, lead wire of line control to the locations of piping and wiring.
- Confirm the size of the indoor unit and fix it according to the requirements in the manual.

3. Ceiling Hole & Reinforcement

- (1) Cut and withdraw the foundation of ceiling according to the size of indoor unit.
- (2) After cutting an appropriate hole, reinforce the cutting area on the foundation of indoor unit, and append the rim to the ceiling to secure its foundation. In order to prevent the ceiling from vibrating, it is vital to reinforce the ceiling foundation and ensure the original levelness of the ceiling.

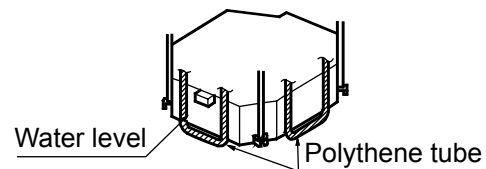
4. Hoisting Stud Installation

- To support the weight of the unit, use barb bolts in the situation with the ceiling. In the situation with the new ceiling, use inlaid bolts, embedded bolts or other parts provided on site. Before proceeding the installation, adjust the gap between the bolts and the ceiling.
- Use four M10 hoisting studs (provided on site) (when the height of the hoisting stud exceeds 0.9m, M10 studs should be used.). The gaps should be kept according to the overall drawing of the air conditioner. Make the installation according to regulations for various building structures as to ensure the safety. Use the level meter to perform the parallel installation.

Ceiling Suspending

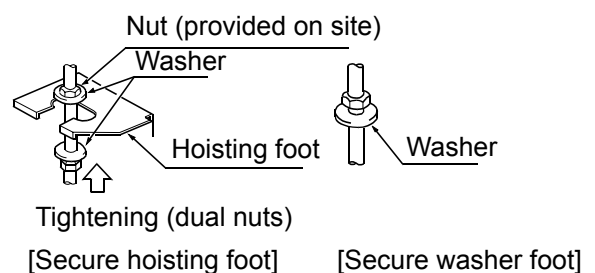
Situation with New Ceiling

- (1) Install the indoor unit temporarily:
Attach the hoisting foot to hoisting stud. Make sure that nuts and washers should be used at two ends of the foot to secure the foot.
- (2) For the size of the ceiling hole, please refer to the schematic drawing at the previous page.
<After finishing the installation of the ceiling>
- (3) Adjust the unit to the proper installation location.
- (4) Check if the unit is in the horizontal level:
The indoor unit is equipped with a built-in drainage pump and a floater switch. Check if the 4 angles of the unit are in the horizontal level with the water level or the polythene tube with water, as shown in the figure, taking only one indoor unit as an example. If the unit inclines opposite to the direction of condensate flow, the floater switch might have faults, causing water dropping.
- (5) Tighten the nut on the washer.



Situation with Original Ceiling

- (1) Install the indoor unit temporarily: attach the hoisting foot to hoisting stud. Make sure that nuts and washers (provided on site) should be used at two ends of the foot to secure the foot.
- (2) Adjust the height and location of the unit.
- (3) Perform Step 4 and 5 in Situation with New Ceiling.



Preparation of Decorated Board

- Don't put the decorated board downward to the floor. Putting it against the wall or on the extrusive objects is not allowed.
- Don't touch the wind deflector or apply force on it, or the wind deflector will have faults.

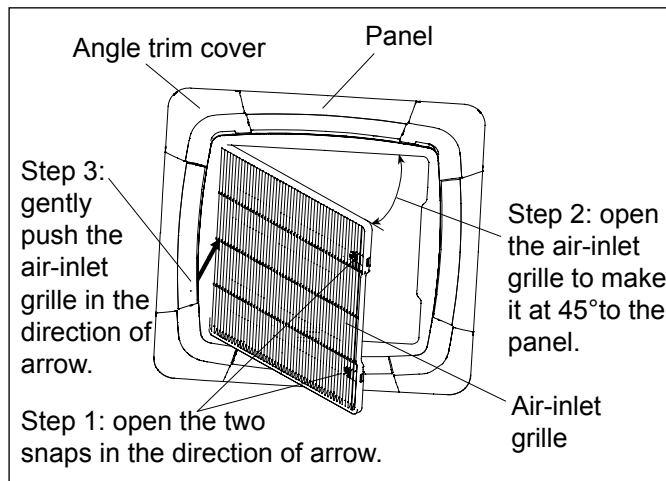
Installation

(1) Confirming the position of unit hanger

Please confirm the installation position of the hanger for indoor unit is about 130mm above the ceiling. For details, please refer to the Instructions for Installation and Maintenance of indoor unit.

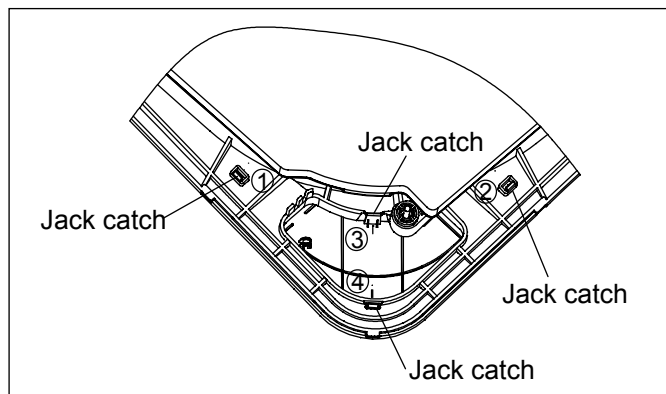
(2) Removing the air-inlet grille

Open the air-inlet grille to make it at an angle of 45° to the trim panel. As shown in the following figure, please remove the air-inlet grille as per the operation requirements.



(3) Installing the panel

1) Please remove the four (4) angle trim panels. Removal method: Flip the jack catches of the angle trim panel in the order of ①②③④, as shown in the following figure. The flipping direction is indicated by the arrows. Then the angle trim panel can be removed.

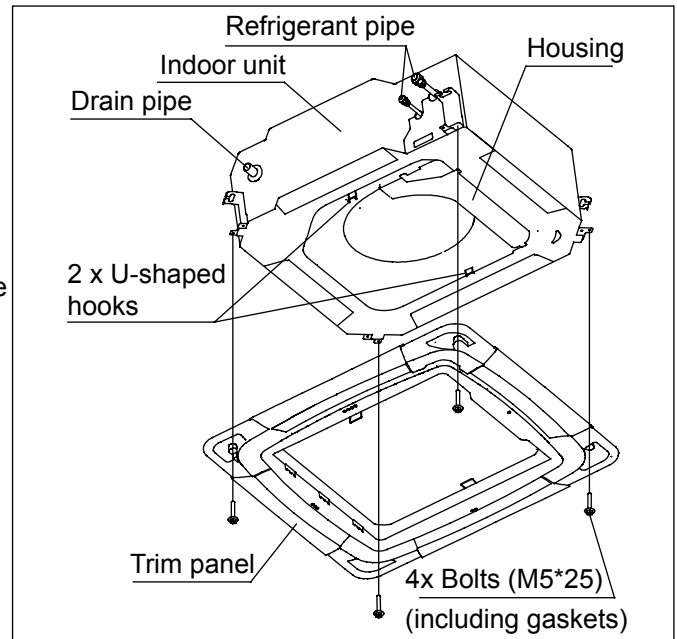


2) Pull out the two (2) U-shaped hooks on the indoor unit from below.

3) Adjust the panel direction to make the angle side engraved with "Pipe side" consistent with the refrigerant pipe of the indoor unit, and make the angle side engraved with "Drain side" consistent with the drain side of the indoor unit. Then hang the 2 hooks in the inner side of the panel on the 2 U-shaped hooks of the indoor unit.

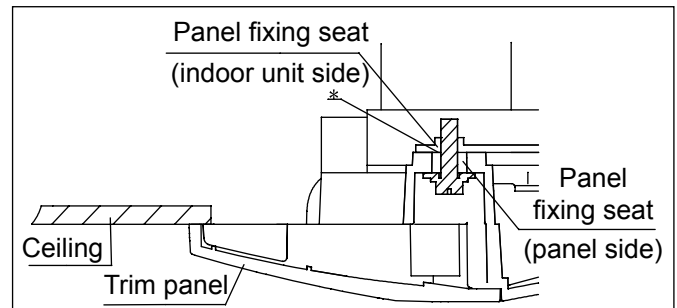
4) Finally fix the panel on the indoor unit with the bolts (M5*25) and gaskets delivered with the unit.

Caution: gaskets must be used for fixing, or else the panel would be easy to fall off.



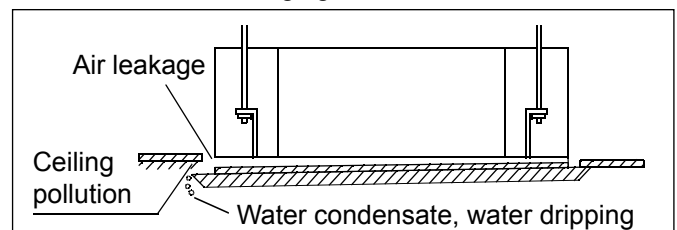
5) When tightening the four (4) bolts, please make sure there is no clearance between the panel fixing seat on the side of the indoor unit and the panel fixing seat on the side of the panel. That is to say: the bolts shall be fully tightened (see * in the figure).

If there is a clearance, air leakage or water leakage is likely to occur.

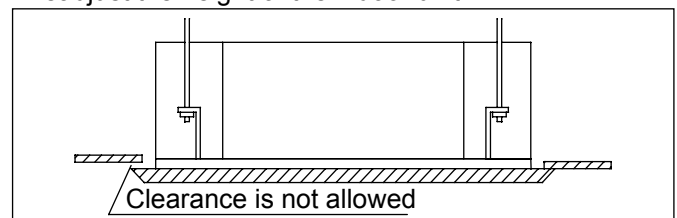


Caution:

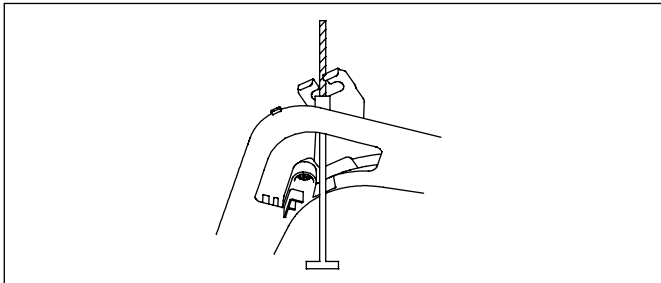
■ Improper tightening of bolts would lead to the faults shown in the following figure.



■ After tightening the bolts, if there is a clearance between the ceiling and the trim panel, please readjust the height of the indoor unit.

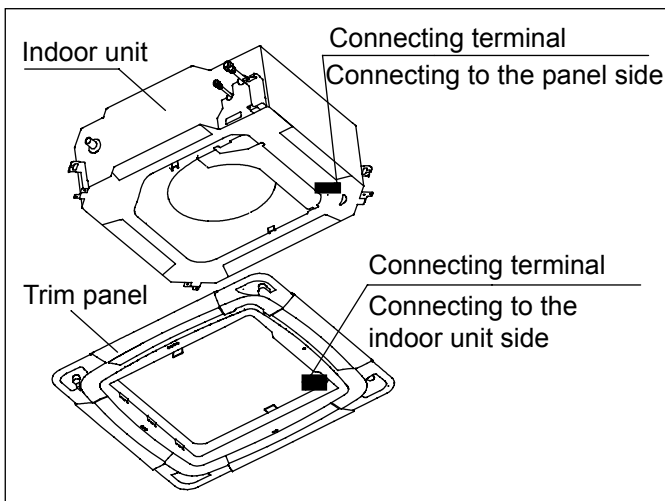


If the elevation level of the indoor unit and drain pipe are not affected, you can adjust the height of the indoor unit through the corner pore on the trim panel. Please keep the unit horizontal in the process of adjustment, or else water leakage is easy to occur.



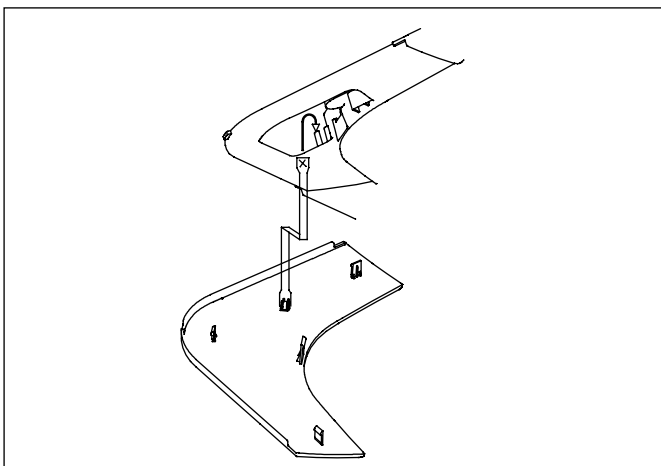
- Please do not swing the louver blade by hand, or else the blade mechanism would be damaged.

6) Connection of trim panel. Connect the black lead-out terminal of the panel to the black lead-out terminal of the indoor unit housing.



7) When the installation of panel is complete, please fix the four (4) angle trim panels.

- Hang and tighten the strap of the angle trim panel on the shackle of the trim panel, as shown in the figure.
- Fix the angle trim panel on the trim panel.



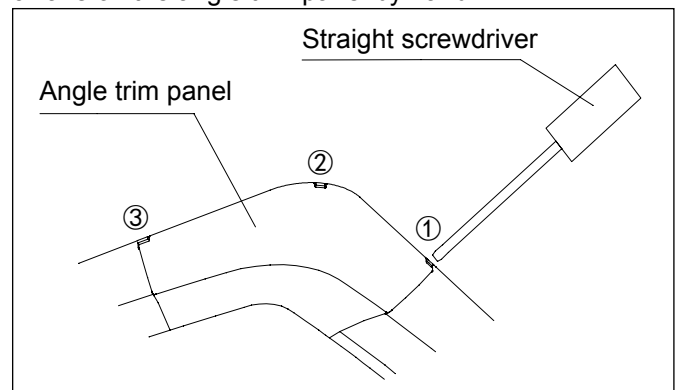
8) Installing the air-inlet grille.

Install the air-inlet grille with the steps opposite to that for removing.

For reference

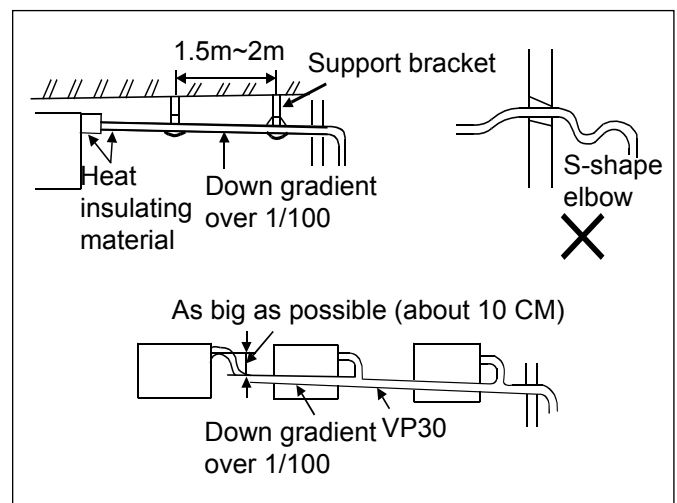
The method for removing angle trim panels when the installation of trim panel is complete:

- Insert a straight screwdriver in the notch ①. Gently turn the screwdriver downward, and slowly insert it in, and then move it up and down to make the angle fall off.
- Make the angle ② and ③ fall off in the same way.
- Take off the angle trim panel by hand.



Requirements:

- The drainpipe of the indoor unit should be heat-insulated.
- Heat insulation should be treated for the connection with the indoor unit. Improper heat insulation may cause condensing.
- The drainpipe with the down gradient of over 1/100 can't be in the S shape, or abnormal sound can be caused.
- The horizon length of the drainpipe should be kept with 20m. Under the condition of long pipes, supports can be provided every 1.5~2m as to avoid unevenness.
- The central piping should be connected according the following drawing.
- Take care not to apply external force on the connection of the drainpipes.



Piping Materials & Heat Insulating Materials

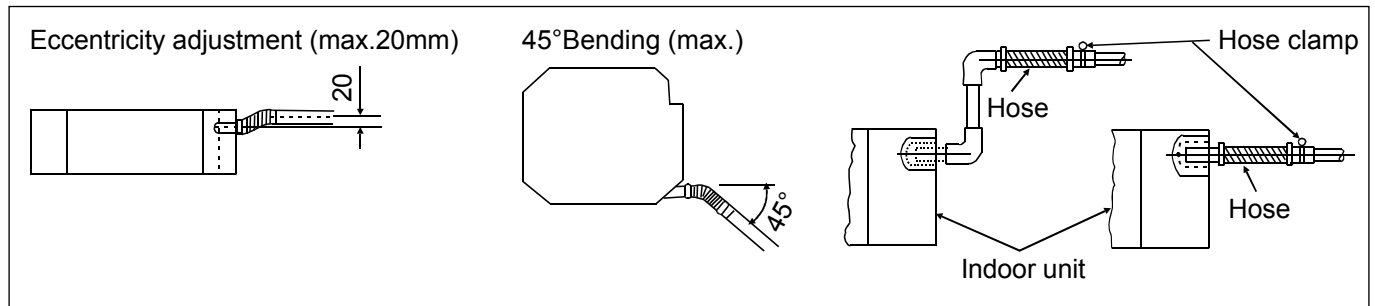
As to prevent condensation, heat insulating treatment should be performed. The heat insulating treatment for piping should be done respectively.

Piping material	Hard PVC tube VP31.5mm (inner bore)
Heat insulating material	Vesicant polythene thickness: over 7mm

Hose

The attached hoses can be used to adjust the eccentricity and angle of the hard PVC tube.

- Stretch the hose directly to make connections as to avoid distortion. The soft end of the hose should be positioned with a clamp.
- The hose should be used in the horizon direction.

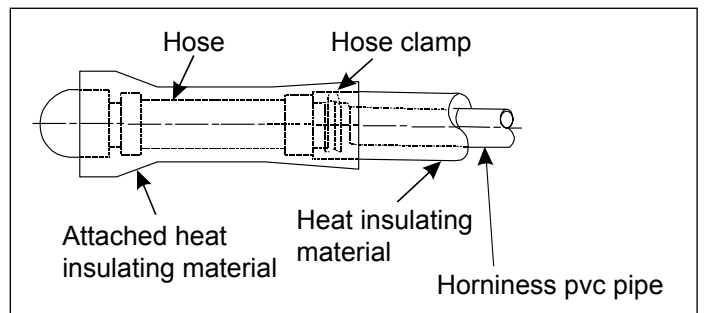


Heat Insulating Treatment:

- Wrap the connection between the clamp and the root segment of the indoor unit without any gap with heat insulating materials as shown in the drawing.

Lifting Drainpipe

The drainpipe can be lifted 360mm. When the down gradient of the drainpipe can't be ensured, after upright lifting, the drainpipe is in the down slope.



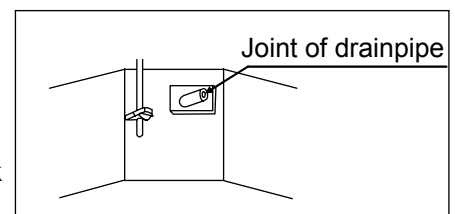
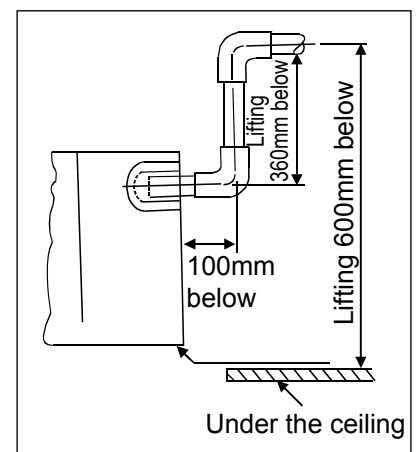
Confirming Drainage

The drainage should be confirmed during the test run to make sure that there is leakage at the connection.

The confirmation of drainage should be also performed during the installation in the winter season.

Fill water from the outlet or the specified position and confirm the drainage. Fill 600cc water with a hose from the outlet or the specified location on the machine. Add the water slowly. Don't add water to the motor of the drainage pump.

- After mounting the electrical system, do cooling operation and meanwhile add water and check.
- If the electrical installation hasn't been completed, pull out the terminal (2P) of the floater switch on the electrical cabinet. After confirming the drainage, connect the terminal of the floater switch and run the drainage pump for 5 minutes until it stops automatically.
- Confirm the sound of the motor: Confirm the sound of the motor of the drainage pump and meanwhile check the drainage.



Tubing Permissible Length & Height Difference

Please refer to the attached manual of outdoor units.

Tubing Materials & Specifications

Please refer to the attached manual of outdoor units.

Model		AWSI-CFV007~09-N11	AWSI-CFV012~18-N11	AWSI-CFV024~60-N11
Tubing size (mm)	Gas pipe	Ø9.52	Ø12.7	Ø15.88
	Liquid pipe	Ø6.35	Ø6.35	Ø9.52
Tubing material		Phosphor deoxy bronze seamless pipe (TP2) for air conditioner		

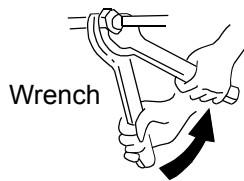
Refrigerant Filling Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount while compressor failure can be caused by filling too much or little refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table.



Outer Diameter of Tubing (mm)	Mounting Torque (N-m)	Increase mounting Torque (N-m)
Ø6.35	11.8 (1.2kgf-m)	13.7 (1.4kgf-m)
Ø9.52	24.5 (2.5kgf-m)	29.4 (3.0kgf-m)
Ø12.7	49.0 (5.0kgf-m)	53.9 (5.5kgf-m)
Ø15.88	78.4 (8.0kgf-m)	98.0 (10.0kgf-m)

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one main unit.]

Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting

1. Connecting circular terminals

The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.

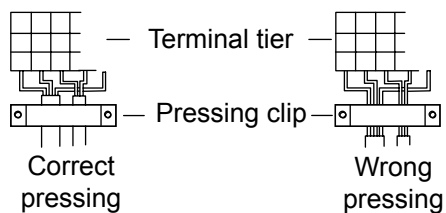


2. Connecting straight terminals

The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.

3. Pressing connecting line

After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



3.9.5 Electrical wiring

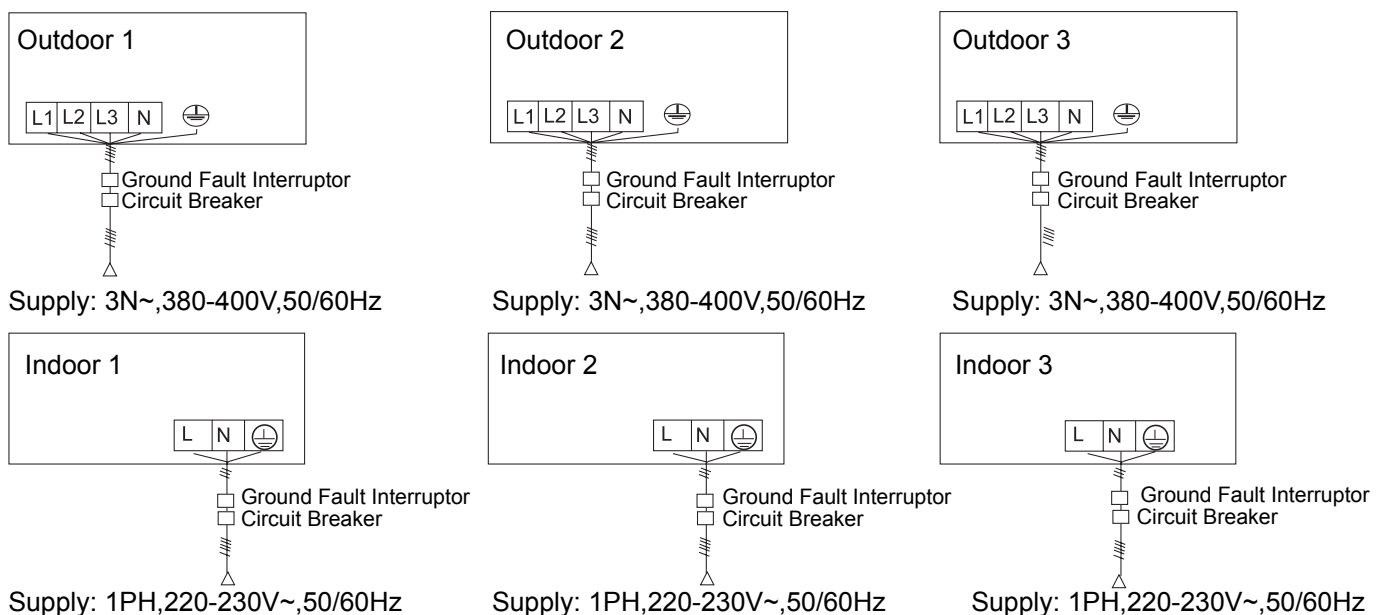
⚠ WARNING

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient.
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents.
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line.

⚠ ATTENTION

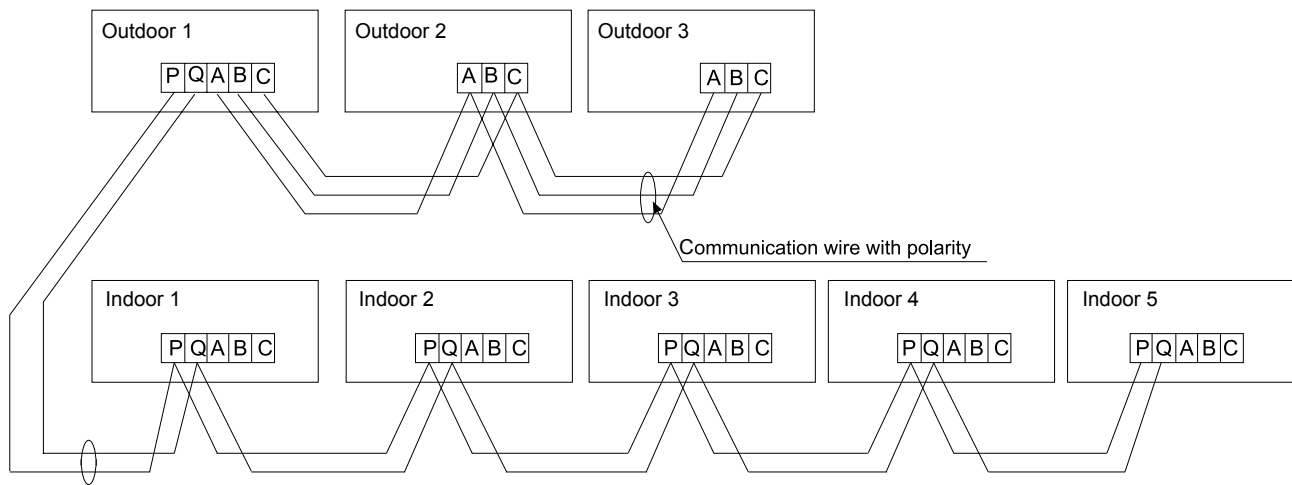
- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line, signal line are provided by users. Parameters for power lines are shown as below: $3 \times (1.0-1.5) \text{mm}^2$; parameters for signal line: $2 \times (0.75-1.25) \text{mm}^2$ (shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.

Supply Wiring Drawing



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

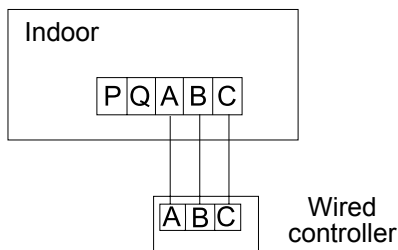
Signal Wiring Drawing



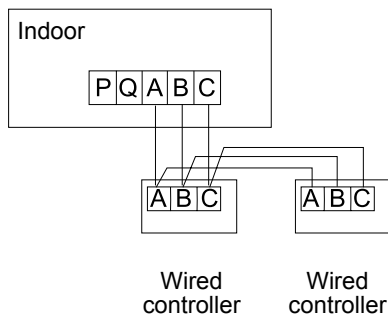
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

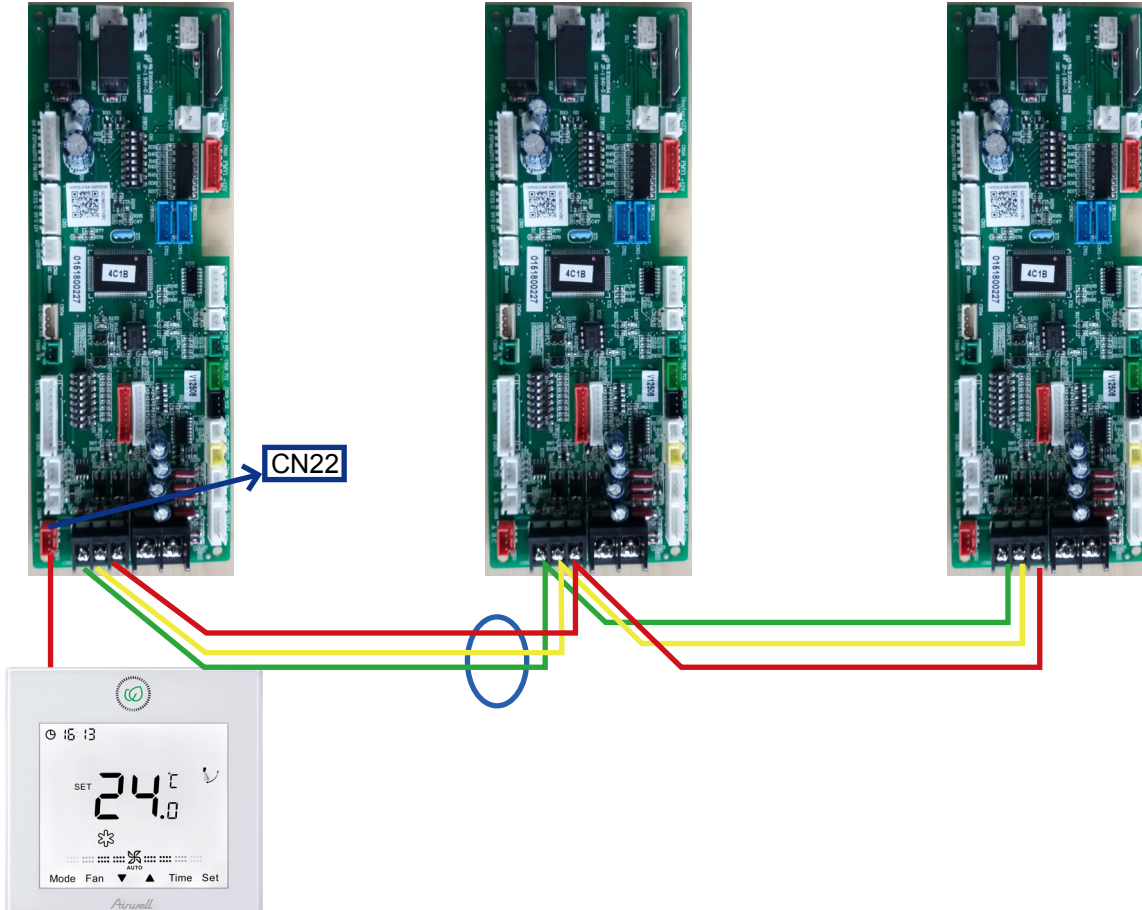


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800227 PCB



360°C Smart Air Flow
Cassette Type Indoor Unit

Note:

1. Plug the wired controller terminal to the CN22 terminal of master unit which wired address is 0, the slave unit also connects ABC terminal.
2. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Items Total current of indoor units (A)	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
					Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
<7	2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line	
≥7 and <11	4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16	6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22	8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27	10	40	32	32 A, 30 mA, 0.1S or below		

- The electrical power line and signal lines must be fastened tightly.
- Every indoor unit must have the ground connection.
- The power line should be enlarged if it exceeds the permissible length.
- Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- It is not permissible if the whole length of signal line exceeds 1000m.

Signal wiring of wired controller

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

3.9.6 Test run

Before Test Run

- Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1MΩ. It can't be operated if it is below 1MΩ.
- Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.

Check if the arrangements of the drainpipe and connection line are correct.

The drainpipe shall be placed at the lower part while the connection line placed at the upper part. Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials. The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.

Checkup of Installation

- | | |
|---|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> check if the mains voltage is matching <input type="checkbox"/> check if there is air leakage at the piping joints <input type="checkbox"/> check if the connections of mains power and indoor & outdoor units are correct <input type="checkbox"/> check if the serial numbers of terminals are matching | <ul style="list-style-type: none"> <input type="checkbox"/> check if the installation place meets the requirement <input type="checkbox"/> check if there is too much noise <input type="checkbox"/> check if the connecting line is fastened <input type="checkbox"/> check if the connectors for tubing are heat insulated <input type="checkbox"/> check if the water is drained to the outside <input type="checkbox"/> check if the indoor units are positioned |
|---|--|

Ways of Test Run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.

When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

- Set the wired controller to cooling/heating mode, press "ON/OFF" button for 5 seconds to enter into the compulsive cooling/heating mode. Repress "ON/OFF" button to quit the compulsive running and stop the operation of the air conditioner.

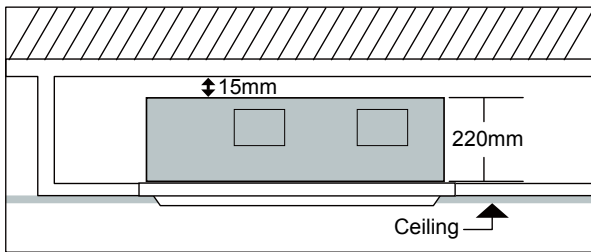
4. 2-Way Cassette Type Indoor Unit

4.1 Features

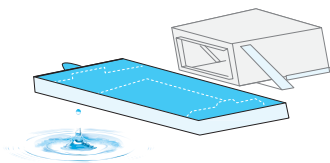


AWSI-CEV009-N11
AWSI-CEV012-N11
AWSI-CEV016-N11
AWSI-CEV018-N11

Compact design: only 220mm height



Built in high head drain pump



Ceiling antifouling design
Unique antifouling design

Two way air flow
Quite operation
5 models ranging from 2.2kW to 5.6kW

4.2 Specification

MODEL			AWSI-CEV009-N11	AWSI-CEV012-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	9.6	12.3
	Capacity	kW	2.8	3.6
	Power input	W	90	90
	Current	A	0.5	0.5
Heating	Capacity	kBtu/h	10.9	13.6
	Capacity	kW	3.2	4
	Power input	W	90	90
	Current	A	0.5	0.5
	Heating capacity at low temp.	kW	2.5	3.2
Operating current		A	0.43	0.43
Power consumption		kW	0.09	0.09
Indoor motor	Brand		Match-Well	Match-Well
	Model		YF120-30-6A2	YF120-30-6A2
	Type		AC	AC
	Insulation class		B	B
	IP class		IP20	IP20
	Power input	W	70	70
	Power output	W	35	35
	Capacitor	μF	3μF /450v	3μF /450v
	Speed (High/Middle/Low)	rpm	670/530/440	670/530/440
Indoor fan	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		1	1
Indoor coil	a. Number of rows		2	2
	b. Tube pitch (a)×row pitch (b)	mm	22×19.04	22×19.04
	c. Fin spacing	mm	1.85	1.85
	d. Fin type (code)			
	e. Tube outside dia. and type	mm	Φ9.52 plate	Φ9.52 plate
	f. Coil length×height×width	mm	1542.6×101.6×38.08	1542.6×101.6×38.08
	g. Number of circuits		1	1

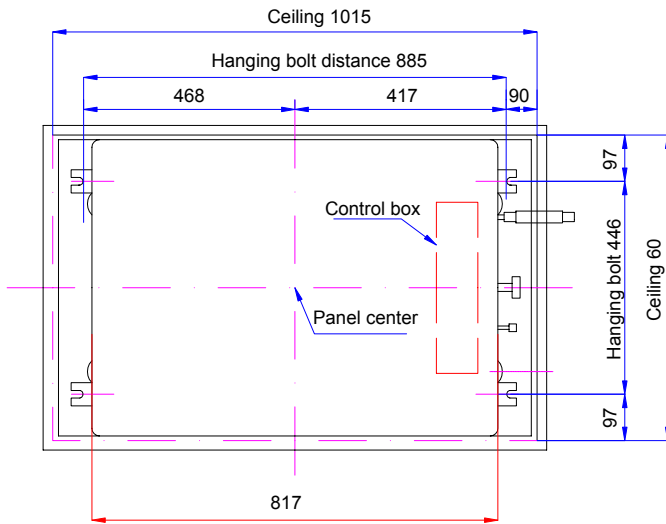
MODEL			AWSI-CEV009-N11	AWSI-CEV012-N11
Cabinet	Cabinet coating type		PS	PS
	Cabinet salt spray test duration	Hour	72	72
	Control box IP class		IP20	IP20
Construction	Sheet metal thickness		0.8	0.8
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		Standard 700mm	Standard 700mm
	Branch outlet option		No	No
Indoor wall	Material		PS	PS
	Thickness	mm	20	20
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	9.52	12.7
	Drain hose	mm	32	32
Panel	Model		Panel for CEV to s18	Panel for CEV to s18
	Dimension	mm	1055*68*680	1055*68*680
	Packing	mm	1110*161*720	1110*161*720
	Net weight	kg	7	7
	Gross weight	kg	8	8
Fresh air dimension	mm		100*70	100*70
Sound pressure level (H/M/L)	dB (A)		42/37/33	42/37/33
Sound power level (H/M/L)	dB (A)		55/50/46	55/50/46
Standard static pressure	Pa		0	0
Indoor air flow (H/M/L)	m ³ /h		840/700/550	840/700/550
Dimension (W*H*D)	mm		817*220*620	817*220*620
Packing (W*H*D)	mm		1015*278*695	1015*278*695
Net weight	kg		21	21
Gross weight	kg		23	23
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

MODEL			AWSI-CEV016-N11	AWSI-CEV018-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	15.4	19.1
	Capacity	kW	4.5	5.6
	Power input	W	110	110
	Current	A	0.62	0.62
Heating	Capacity	kBtu/h	17.1	21.5
	Capacity	kW	5	6.3
	Power input	W	110	110
	Current	A	0.62	0.62
	Heating capacity at low temp.	kW	4	5
Operating current		A	0.56	0.56
Power consumption		kW	0.11	0.11
Indoor motor	Brand		Match-Well	Match-Well
	Model		YF120-30-6A2	YF120-30-6A2
	Type		AC	AC
	Insulation class		B	B
	IP class		IP20	IP20
	Power input	W	70	70
	Power output	W	35	35
	Capacitor	μF	3μF /450v	3μF /450v
	Speed (High/Middle/Low)	rpm	670/530/440	670/530/440
Indoor fan	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		1	1
Indoor coil	a. Number of rows		2	2
	b. Tube pitch (a)×row pitch (b)	mm	21×13.2	21×13.2
	c. Fin spacing	mm	1.5	1.5
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ6.35 Inner groove tube	Φ6.35 Inner groove tube
	f. Coil length×height×width	mm	1581×105.6×39.6	1581×105.6×39.6
	g. Number of circuits		4	4

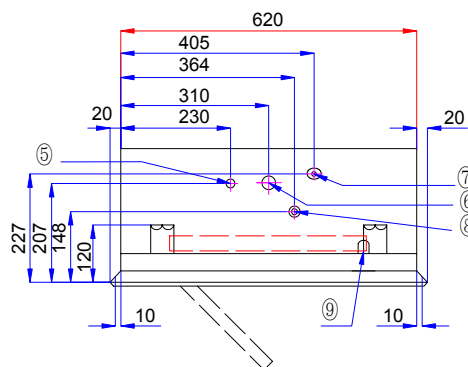
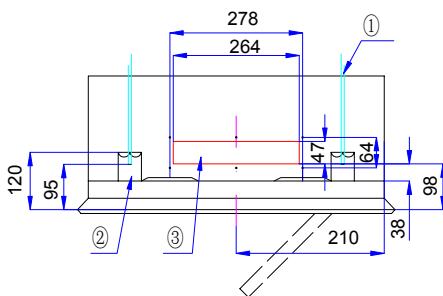
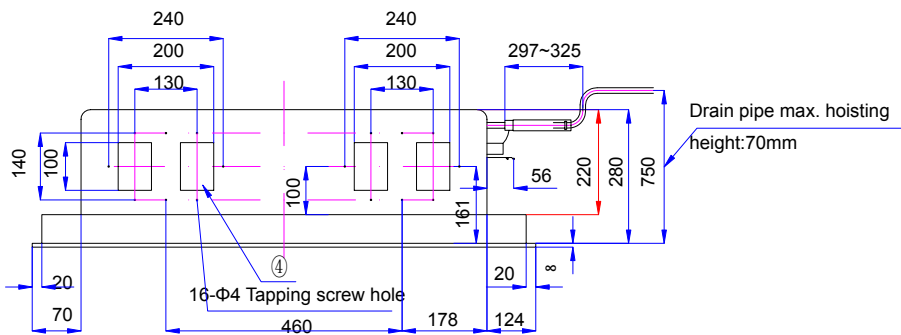
2-Way Cassette
Type Indoor Unit

MODEL			AWSI-CEV016-N11	AWSI-CEV018-N11
Cabinet	Cabinet coating type		PS	PS
	Cabinet salt spray test duration	Hour	72	72
	Control box IP class		IP20	IP20
Construction	Sheet metal thickness		0.8	0.8
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		Standard 700mm	Standard 700mm
	Branch outlet option		No	No
Indoor wall	Material		PS	PS
	Thickness	mm	20	20
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	12.7	12.7
	Drain hose	mm	32	32
Panel	Model		Panel for CEV to s18	Panel for CEV to s18
	Dimension	mm	1055*68*680	1055*68*680
	Packing	mm	1110*161*720	1110*161*720
	Net weight	kg	7	7
	Gross weight	kg	8	8
Fresh air dimension	mm		100*70	100*70
Sound pressure level (H/M/L)	dB (A)		44/39/34	44/39/34
Sound power level (H/M/L)	dB (A)		57/52/47	57/52/47
Standard static pressure	Pa		0	0
Indoor air flow (H/M/L)	m ³ /h		840/700/550	840/700/550
Dimension (W*H*D)	mm		817*220*620	817*220*620
Packing (W*H*D)	mm		1015*278*695	1015*278*695
Net weight	kg		21	21
Gross weight	kg		23	23
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

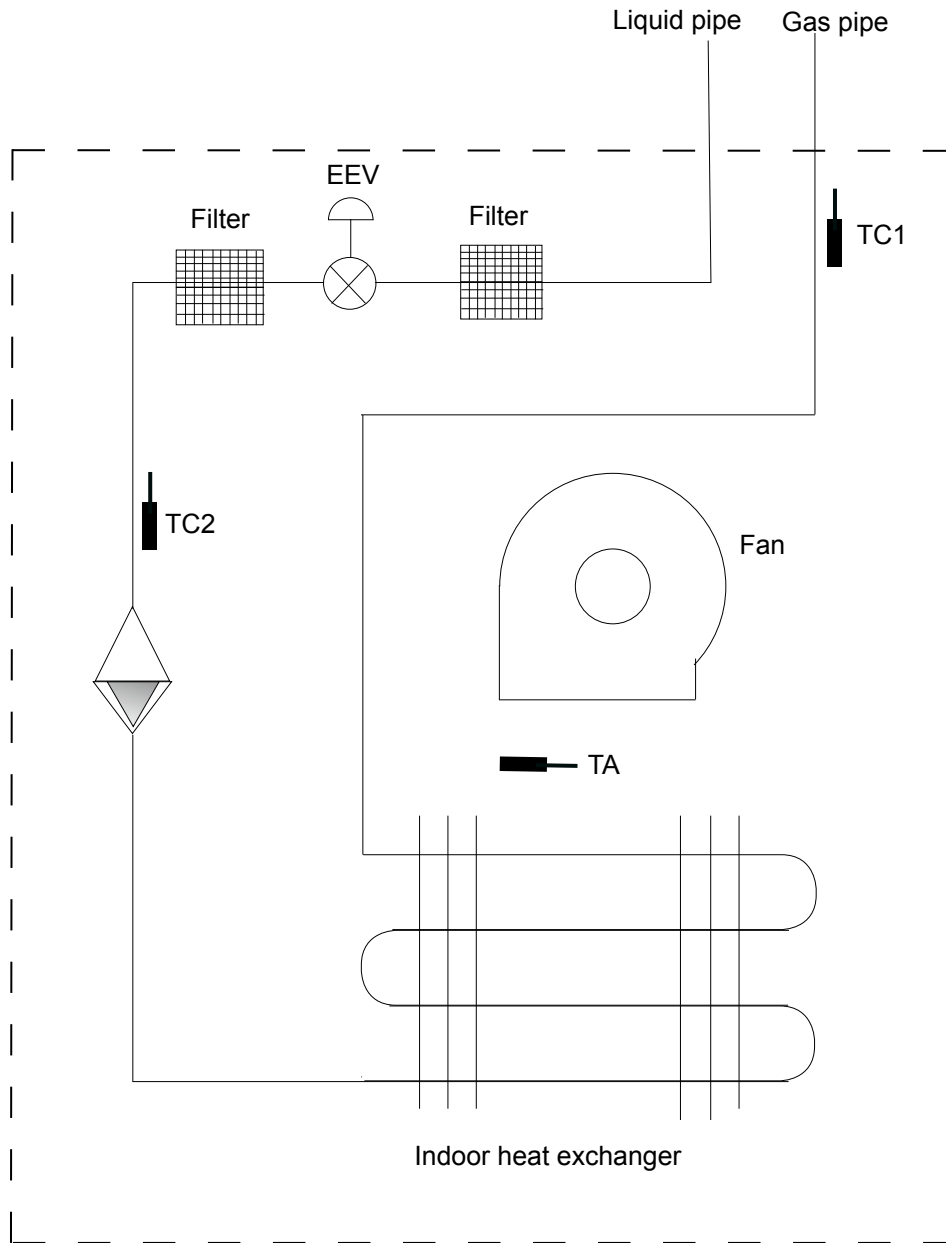
4.3 Dimension



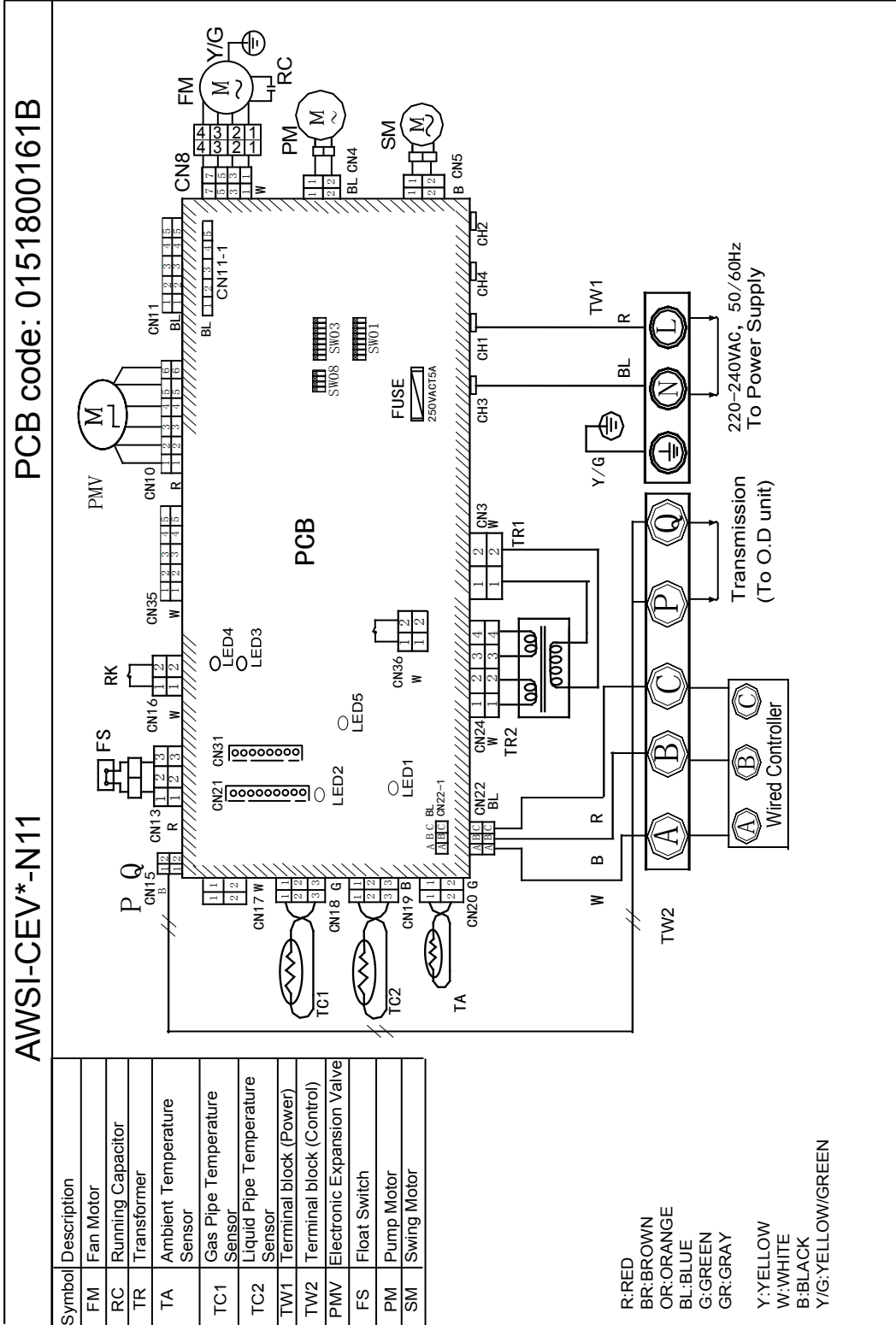
Code	Name
1	Hanging bolt
2	Pothook
3	Fresh air entrance
4	Exhaust outlet : 4
5	Liquid pipe connect hole
6	Gas pipe connect hole
7	Drain pipe connect hole
8	Natural drain
9	Power line entrance



4.4 Piping diagram



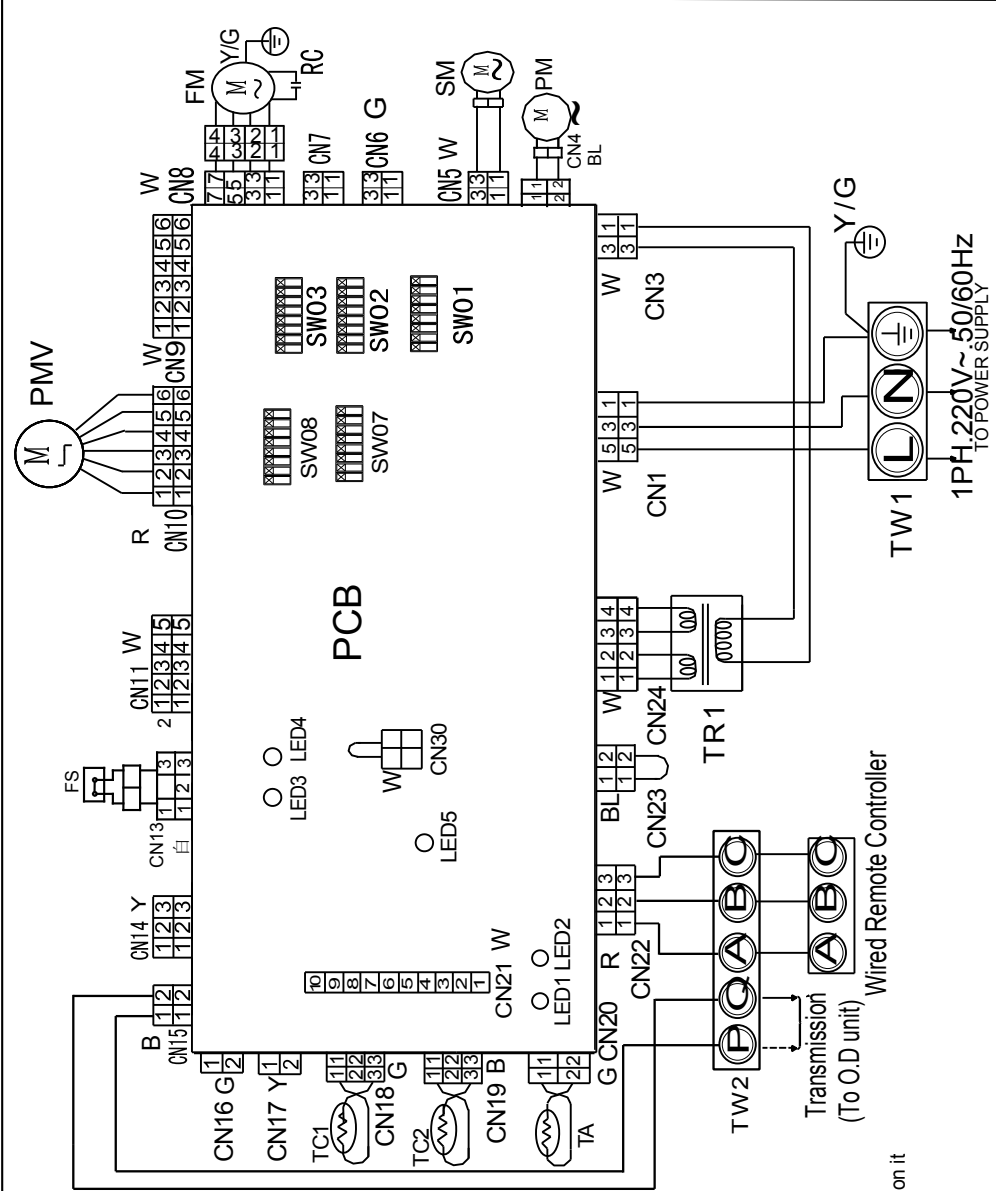
4.5 Wiring diagram



AWSI-CEV*-N11

PCB code: 0010451181A

Symbol	Description
FM	Fan Motor
RC	Running Capacitor
TR	Transformer
TA	Ambient Temperature Sensor
TC1	Gas Pipe Temperature Sensor
TC2	Liquid Pipe Temperature Sensor
TW1	Terminal block (Power)
TW2	Terminal block (Control)
PMV	Electronic Expansion Valve
FS	Float Switch
PM	Pump Motor
SM	Swing Motor
PG	Plastic Motor



- R:RED
- BR:BROWN
- OR:ORANGE
- BL:BLUE
- G:GREEN
- GR:GRAY
- Y:YELLOW
- W:WHITE
- B:BLACK
- Y/G:YELLOW/GREEN

1. is terminal block, the words on it are the sequence number
2. is printed circuit board

4.6 Electric characteristics

Unit					Power supply		Indoor fan motor		Power input (W)	
Model	Phase	Voltage	FQY	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AWSI-CEV009-N11	1	220	50/60	198~242	0.5	1.6	35	0.4	90	90
AWSI-CEV012-N11	1	220	50/60	198~242	0.5	1.6	35	0.4	90	90
AWSI-CEV016-N11	1	220	50/60	198~242	0.5	1.6	35	0.4	110	110
AWSI-CEV018-N11	1	220	50/60	198~242	0.5	1.6	35	0.4	110	110

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker

Output: Fan motor rated output (w)

FLA: Full load amps (A)

Note:

1. Voltage range

The units are applicable for the electrical systems where voltage supplied to unit is in the range.

2. Maximum allowable voltage unbalance between phases is 2%.

3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$

4. Power supply uses the circuit breaker.

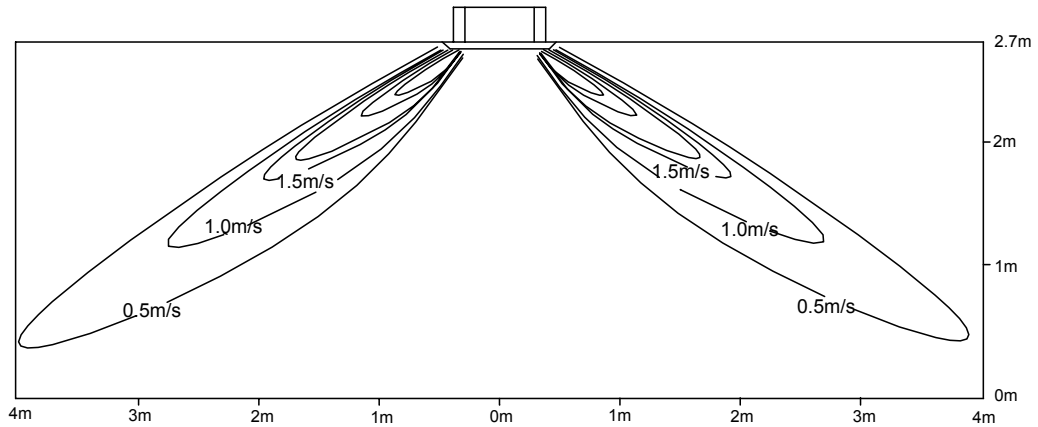
4.7 Air velocity and temperature distribution

a. Cooling / Air velocity distribution

Cooling

Blow angle: 40

Air Velocity distribution

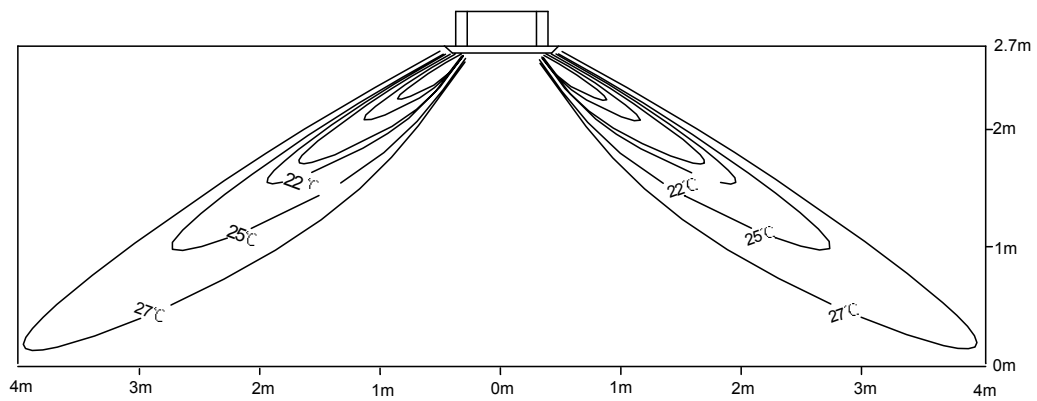


b. Cooling / Temperature distribution

Cooling

Blow angle: 40

Temperature distribution

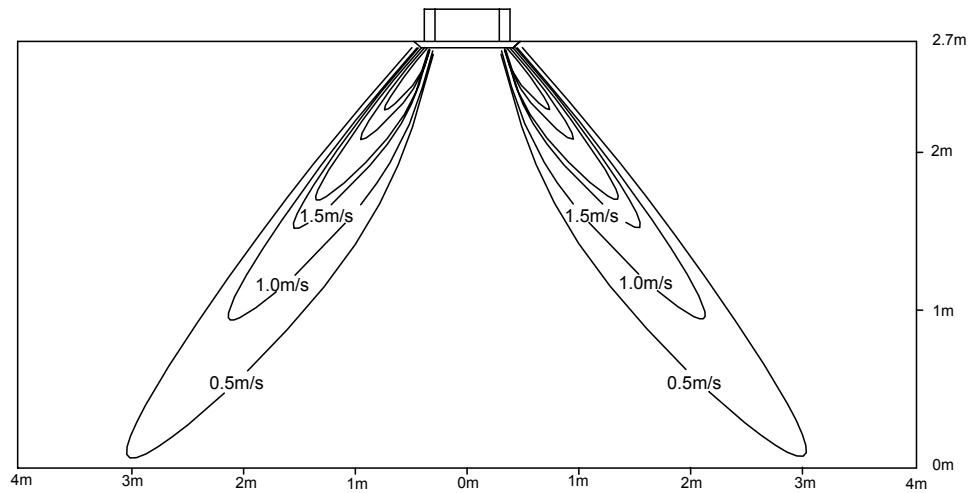


c. Heating / Air velocity distribution

Heating

Blow angle: 70

Air velocity distribution

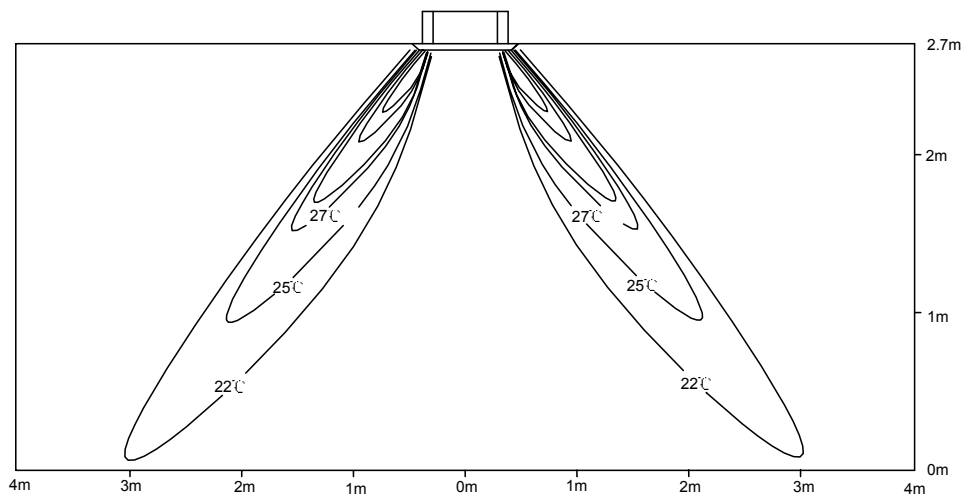


d. Heating / Temperature distribution

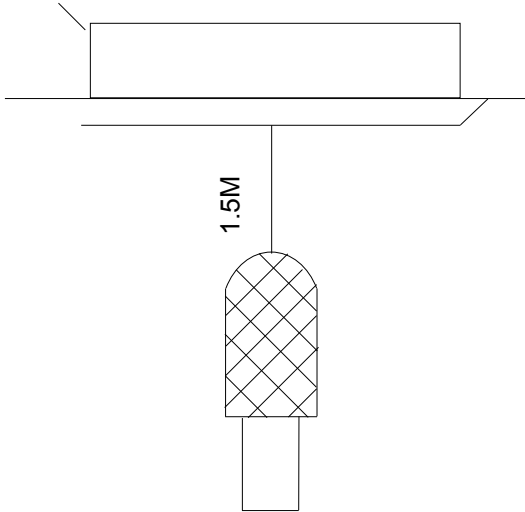
Heating

Blow angle: 70

Temperature distribution



4.8 Sound pressure level

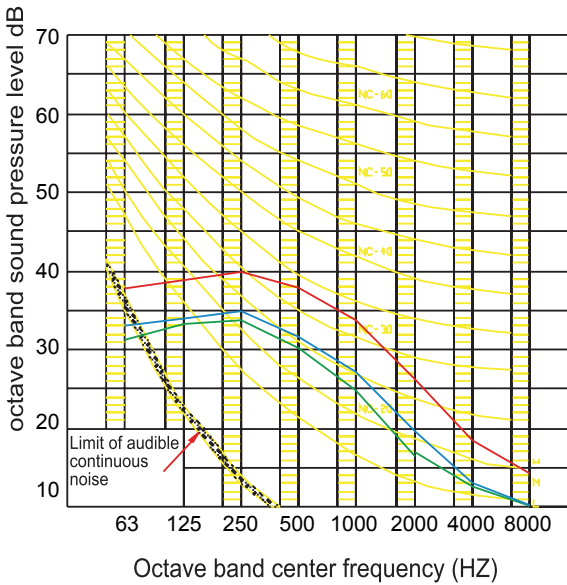


1) Testing illustrate:

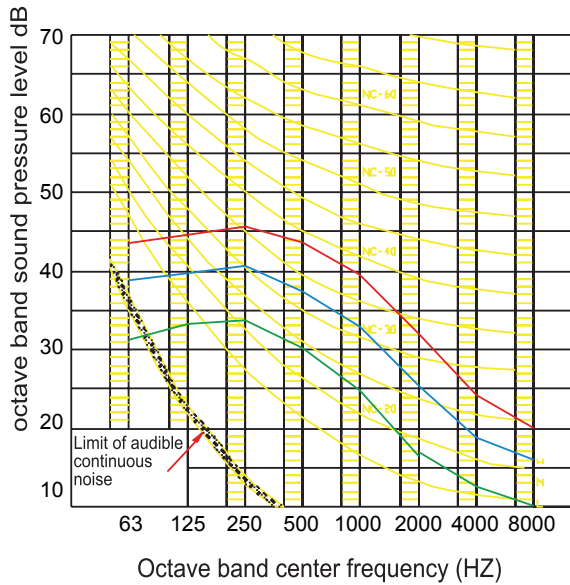
2) Testing condition:

- a: Unit running in the normal condition
- b: Test in the semi-anechoic chamber
- c: Noise level varies from the actual factors such as room structure, etc.

AWSI-CEV009-N11
AWSI-CEV012-N11



AWSI-CEV016-N11
AWSI-CEV018-N11



4.9 Installation

4.9.1 Installation procedures

Before installation

Make correct operation according to the manual when installation.

Please confirm the below information:

- If operation plan has been discussed
- Model, power supply specs
- Pipe, wire, and the other parts
- Accessories (inside the unit, take it out after opening the filter)

Selection of installation location for the indoor unit

Indoor units should be installed in places with the environment of even circulation of cool and warm blows. The following places should be avoided.

- Places with high salinity (beach), high sulfured gas (such as the thermal spring regions where copper tubes and soft soldering are easy to be eroded), much oil (including mechanical oil) and steam; places where organic substance solvent is used; where special spray is frequently used;
- Places where machines generate the high frequency electromagnetic wave (abnormal condition will appear in the control system);
- Places where there are high humidity exists near the door or windows (dew is easily formed).

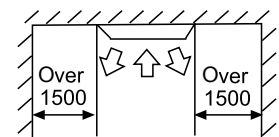
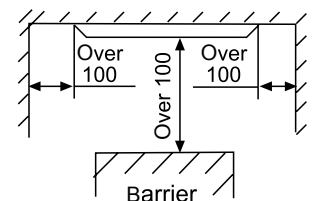
⚠ WARNING

Protect the machine from gales or earthquake, make the installation according to the regulations. Improper installation will cause accidents due to the overturn of the air conditioner.

Select the following places to install indoor unit

- (1) The places where cool or warm air can ventilate smoothly. If the place is higher than 3m, the warm air will manifold around the ceiling. A circulator is necessary for this case.
- (2) The places where the wires and pipes are easy to outdoor.
- (3) The places where the condensate water can be drained out smoothly and the drainage pipe can lean appropriately.
- (4) The places where there is no obstacle at air inlet or outlet. And the places which will not alarm or not be in short circuit.
- (5) The place where the sunshine will not shoot directly.
- (6) The places around which the frosting temperature is below 28°C and the relative humidity is below 80% (when the unit is installed at place with high temperature, pay main attention to frosting issues, for example the unit can be equipped with heat insulation).

Take it into account that if the place is strong enough to support the unit. If not, please strengthen it with reinforced plate and horizontal plate.

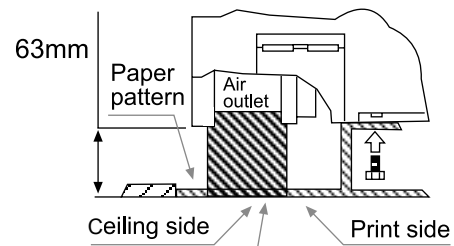
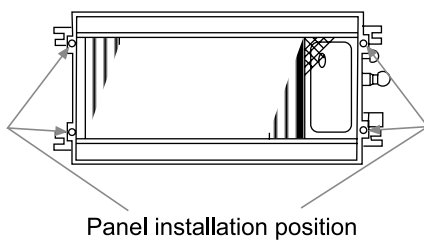


Suspension installation

Suspend the bolt with 4 M10 or W3/8. Fasten the bolt to make every bolt bear the load of 50kg. The suspension bolt should be about 95mm extending outward of ceiling.

When the ceiling exists already

1. Open a hole on the ceiling, and set the dimension appropriate for the installation.
2. Fasten the bolt (purchased locally) on the correct position.
3. After suspending indoor unit, install the template paper on the position of panel with 4 bolts, then adjust the height according to the below procedure. (The length from ceiling to unit bottom is AB072-182: 63mm)
4. Check if the unit is horizontal with a level. If not, the unit will leak water or float switch works badly.
5. Fix the unit after levelness adjustment.

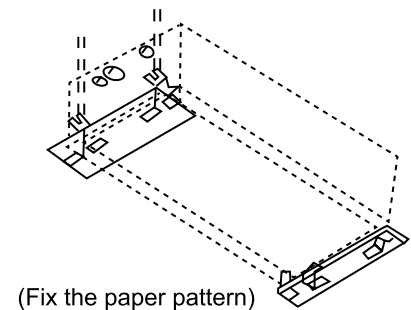


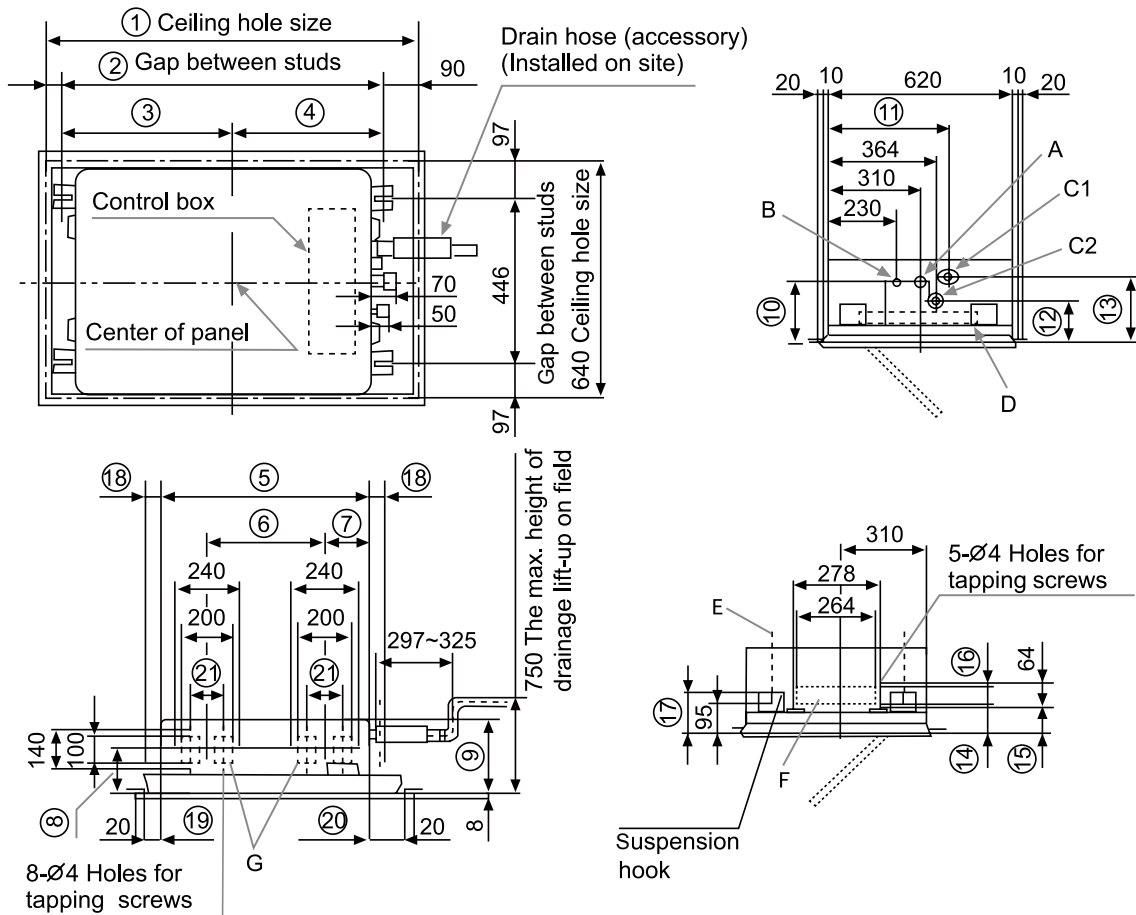
Adjust unit to make the bottom level with the ceiling

Install ceiling later

1. Install the unit block and template paper according to step 2-4.
2. Cut along external boundary line in the ceiling.
3. Fasten the unit after inspecting installation height and level.

A	Gas pipe connector	
B	Liquid pipe connector	
C1	Drainage pipe connector	VP25
C2	Natural drainage outlet	VP20
D	Power inlet	
E	Suspension bolts	M10 or M3/8
F	Fresh air inlet	
G	Air supply branch pipe connector	





Model	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
AWSI-CDV009~18-N11	1015	885	468	417	817	460	178	161	220	207	405

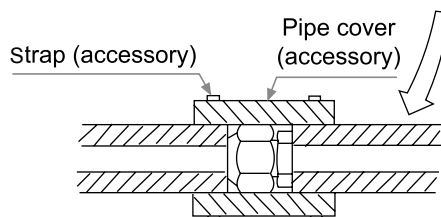
Model	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲	⑳	㉑
AWSI-CDV009~18-N11	148	227	98	91	47	120	56	74	124	130

Refrigerant pipe

Please refer to accompanied manual to know refrigerant pipe plumbing.

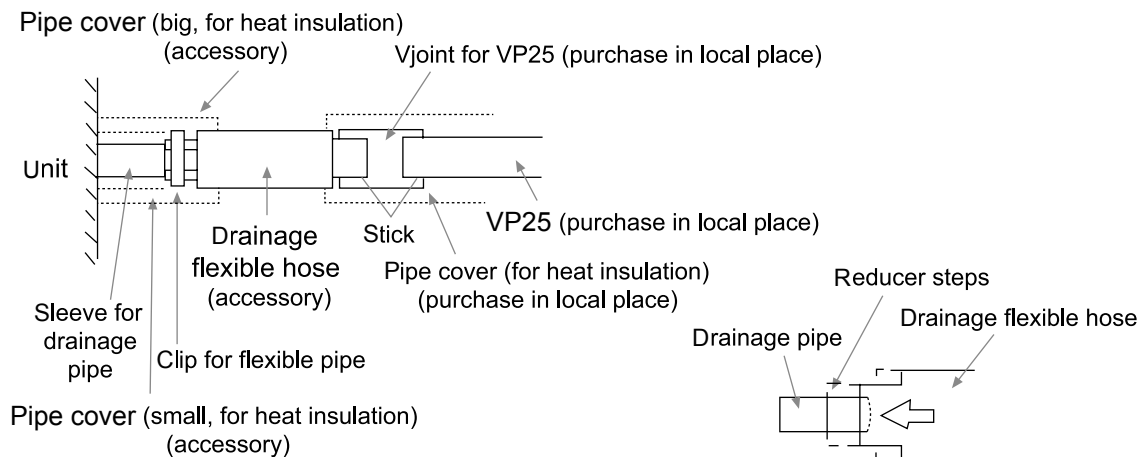
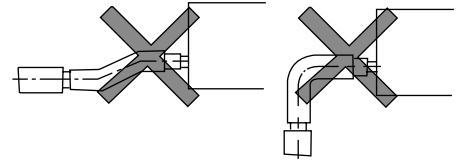
Gas side and liquid side should take measure of heat insulation.

Inspect if gas leaks, joints heat insulation materials have to be used to connect refrigerant piping extender mouth, then, use strap to tie two parts.

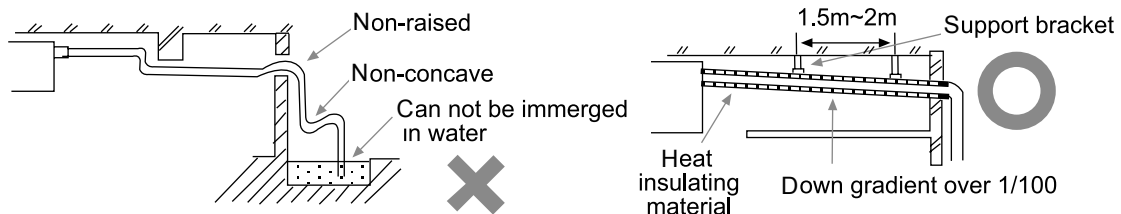


Drainage pipe

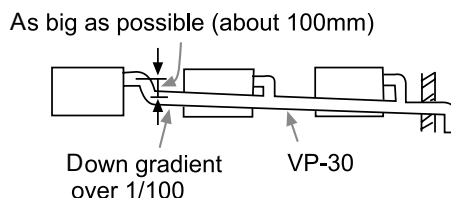
- Install attached flexible hose to adjust when installing panel. Bending or dragging intentionally will lead to leakage.
- Insert attached drainage flexible hose into fine mouth end of drainage, and then fix it with pipe clamp.
- Bind VP-25 joint (purchase in local place) to drainage flexible hose (Rigid PVC terminal) before suspending, then, bind VP-25 to this joint.
- Make sure binder does not flow into drainage pipe, otherwise, the pipe will be damaged after binder dries.



- Make drainage slope down (slope is 1/50-1/100), and any part of drainage upheaval or cave in.

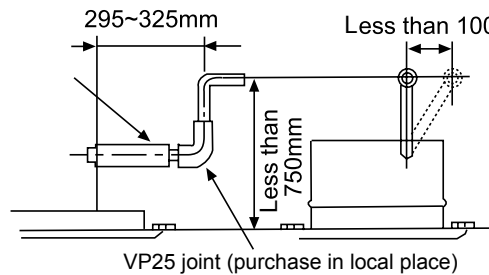


- Attention: make sure indoor unit side does not bear any pressure, and fix drainage near unit.
- Drainage can be normal rigid polyvinyl chloride pipe VP-25.
- When laying drainage pipe for multi units. As viewed in the picture, set main drainage 100mm under each indoor unit draining mouth, and the main pipe should be more than VP-30 thick plastic pipe.



- Take insulation measures to the following two parts of drainage pipe to avoid leakage.
Drain pipe fitting location:
After drainage test, install small tube shield onto drain pipe fitting and then use bigger tube shield to cover smaller one and part of drainage pipe. And then use bandage to tie them.
Rigid polyvinyl chloride pipe of indoor unit.
- Do not set air vent in the drain pipe.
- Exit height of drain pipe should be 750mm higher than ceiling, so if facing any barrier while laying drain pipe, you can use bending pipe or other attachments to avoid, and on this condition, if the drain pipe from unit to pipe is too long, the water flow will increase when air conditioner is off.

The following picture refers to particular location of match-fixing head of drain pipe.

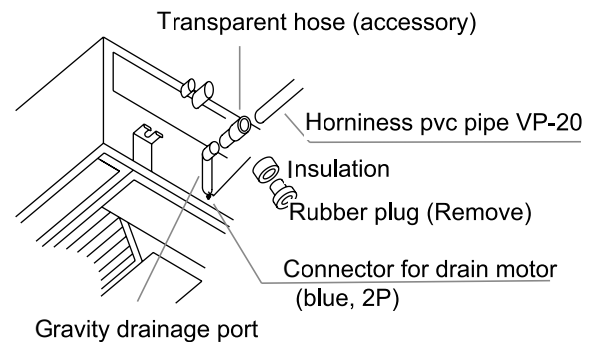


Other installation is the same as normal drain pipe working.

- Do not lay drain pipe at the place that can cause peculiar smell gas.
- Do not put drain pipe directly into sewer that can cause harmful gas.

In case of gravity drainage

- Remove the rubber plug and insulation from the gravity drainage port.
- Connect the drain hose (VP-20) using the gravity drainage connecting tube (option) and secure firmly with a clamp. (If the drain tube is directly connected with the gravity drainage port, the drain pan could not be removed.)
- Cut off drainage motor (blue 2P) (If the unit is used with this connector being connected, the drainage will go out through the standard drain connecting port, causing leaks.)

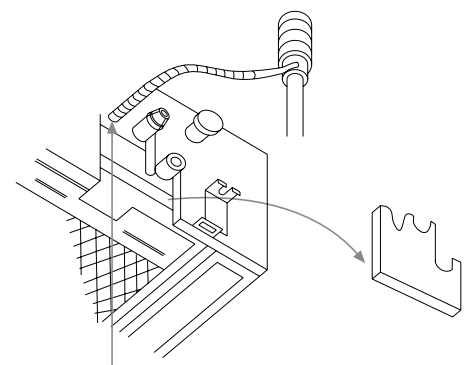
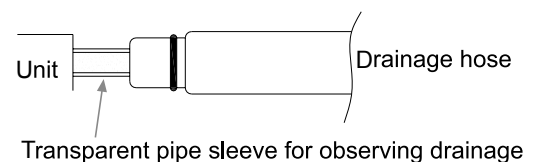


Drain test

- After installation of drain pipe, make sure that drain system work in good condition and no water leakage from joint and drain pan.
- Do drain test even if installation of heating season.
- For new building cases, make sure to complete the test before hanging the ceiling.

1. Pour water of about 1000cc into the drain pan in the indoor unit by pump so as not to get the electrical component wet.
2. At the drain socket (transparent), it is possible to check if the water is drained out properly. Confirm that the water is properly drained out while the drain motor is operating.
3. Unplug the drain plug on the indoor unit to remove remaining water after the test, and re-plug it.

Attention: Do not make water splash.



Insert the head of water supply pump into the hole beside the pump for about 50mm

Drain pump forceful running method

- Turn on indoor unit, drain pump will continuously run.
- Turn off after test is over. (If electrical work has not done, connect T style Y-shaped connector to form inlet, and then check if it leaks.)

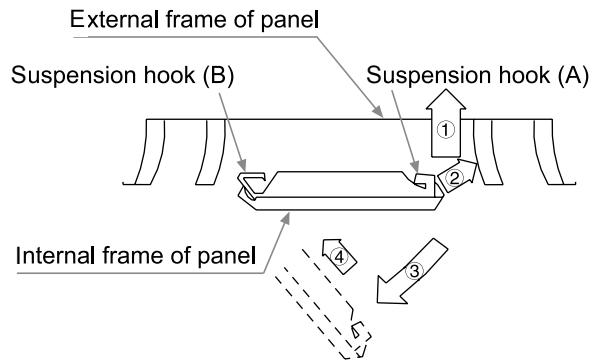
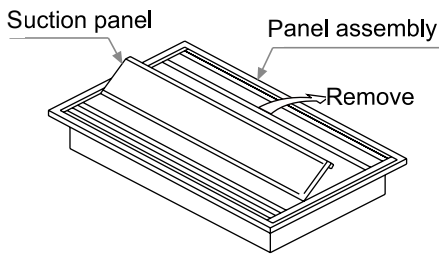
Installation of pane

Bolt used should be close to panel

Air supply outlet is easy to be damaged, please pay attention to it when working.

1. Use drawing block to confirm the height of unit and size of ceiling. Remove it before installing panel, as well as air return panel.

Method to dismantle the air return panel

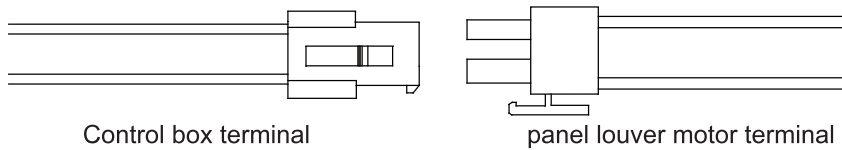


2. Screw 4 installation panels 5mm in unit panel.

3. Fix the panel.

4. Tighten the screws.

5. Link the joint of louver motor (white, 2P)(unit without louver automatically running function does not need this step.)



6. If you want to use the remote controller, you need to prepare an additional remote control receiver (REC01), the ten pin white connector is for remote controller connect the port CN21 on PCB

CN21



7. Use remote control to make sure the connection is OK and then cut off the power for 10 seconds. restart.

Tubing Permissible Length & Height Difference

Please refer to the attached manual of outdoor units.

Tubing Materials & Specifications

Model		AWSI-CEV009-N11	AWSI-CEV016-N11 AWSI-CEV018-N11
Tubing Size (mm)	Gas pipe	Φ9.52	Φ12.7
	Liquid pipe	Φ6.35	Φ6.35
Tubing Material	Phosphor deoxy bronze seamless pipe (TP2) for air conditioner		

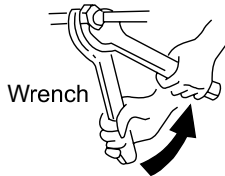
Refrigerant Filling Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount while compressor failure can be caused by filling too much or little refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table



Outer diameter of tubing (mm)	Mounting torque (N.m)	Increase mounting torque (N.m)
Φ6.35	11.8 (1.2kgf.m)	13.7 (1.4kgf.m)
Φ9.52	24.5 (2.5kgf.m)	29.4 (3.0kgf.m)
Φ12.7	49.0 (5.0kgf.m)	53.9 (5.5kgf.m)
Φ15.88	78.4 (8.0kgf.m)	98.0 (10.0kgf.m)

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one master unit.]

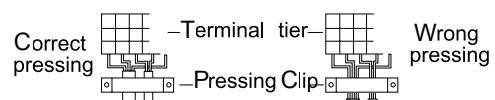
Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting



- Connecting circular terminals:**
The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.
- Connecting straight terminals:**
The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.
- Pressing connecting line:**
After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



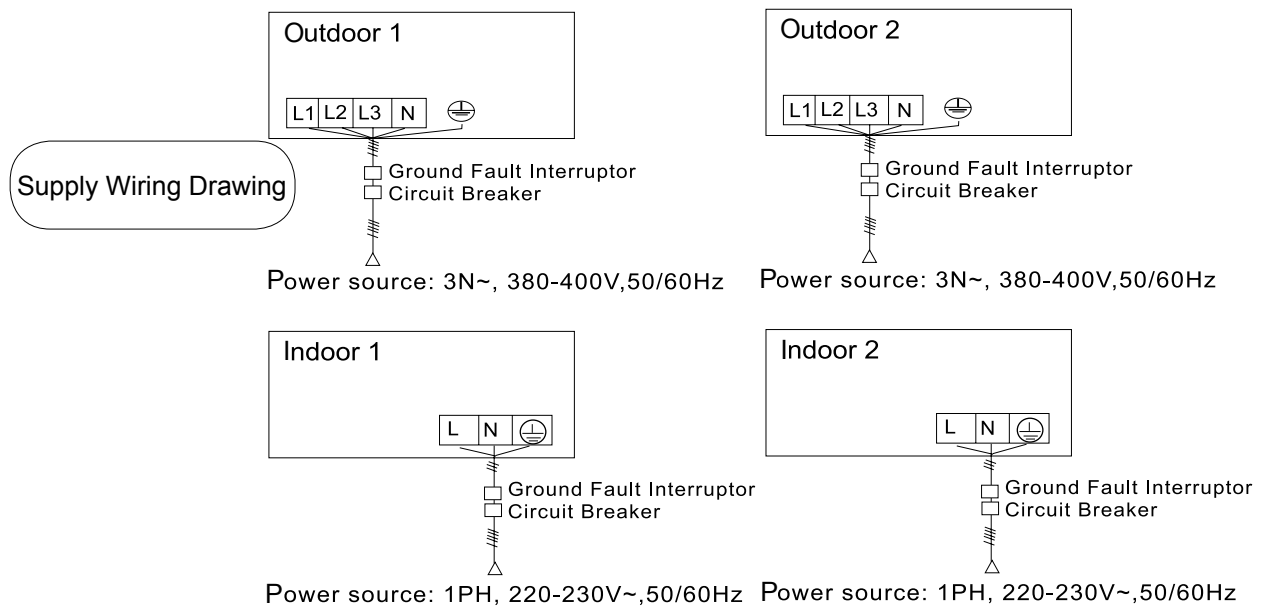
4.9.2 Electrical wiring

⚠ WARNING

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient.
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents.
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line.

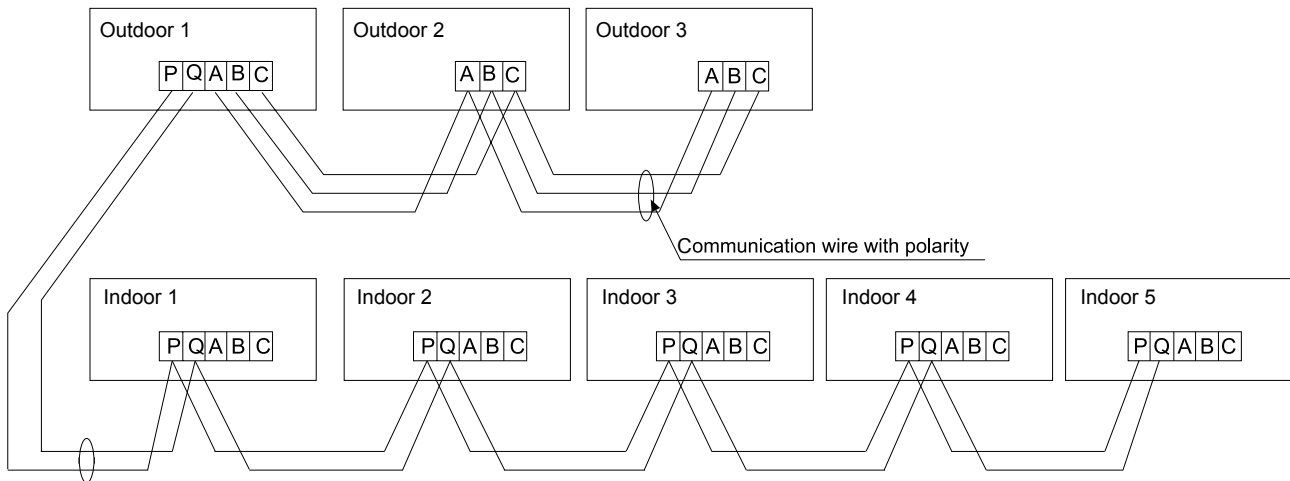
⚠ ATTENTION

- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while ⊕ should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line and signal line are provided by users. Parameters for power lines are shown as below: $3 \times 1.0-1.5 \text{ mm}^2$; parameters for signal line: $2 \times 0.75-1.25 \text{ mm}^2$ (shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

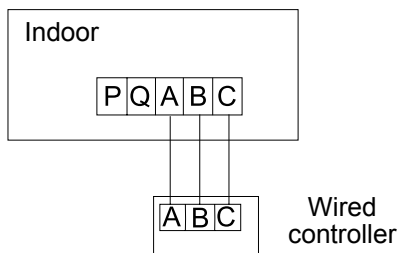
Signal Wiring Drawing



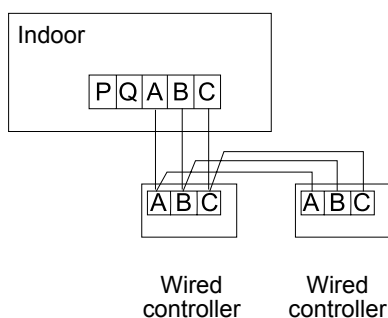
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

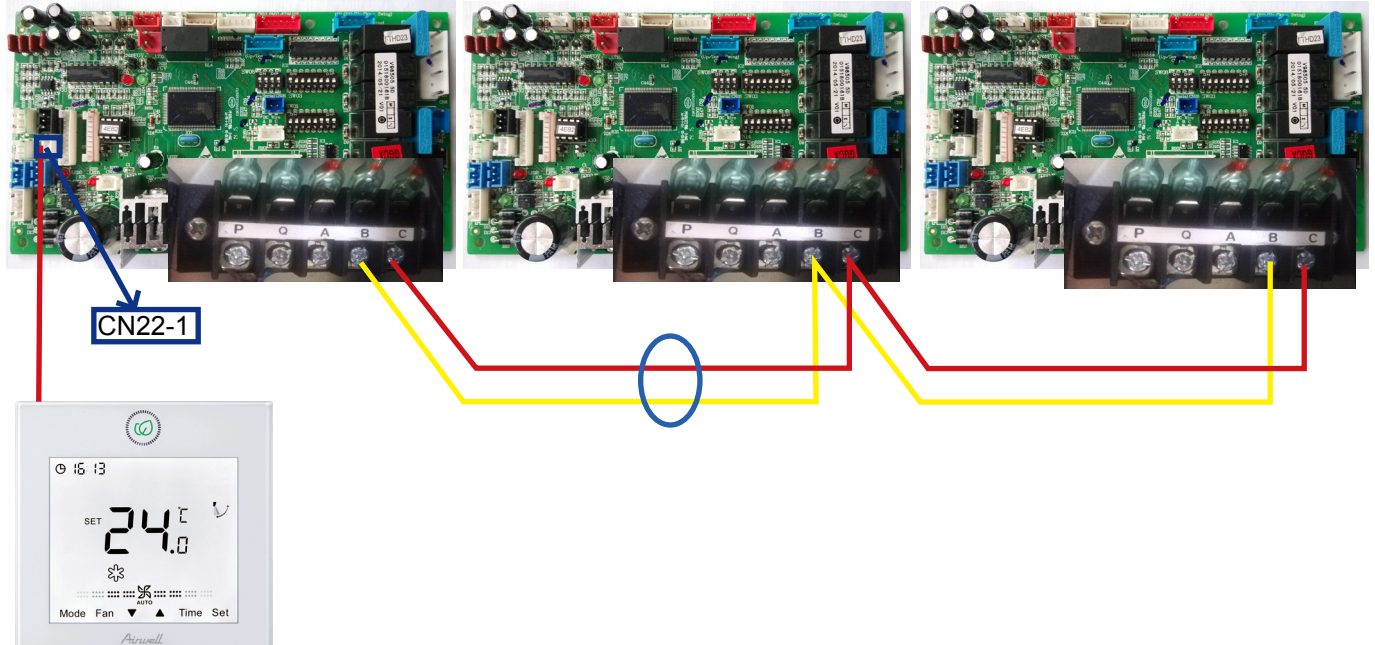


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800161B PCB



Note:

1. Plug the wired controller terminal to the CN22-1 terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

SW01-2~ SW01-4	Wired control address	OFF	OFF	OFF	0# master unit (default)
		OFF	OFF	<u>ON</u>	1# slave unit
		OFF	<u>ON</u>	OFF	2# slave unit
		OFF	<u>ON</u>	<u>ON</u>	3# slave unit
		<u>ON</u>	OFF	OFF	4# slave unit
		<u>ON</u>	OFF	<u>ON</u>	5# slave unit
		<u>ON</u>	<u>ON</u>	OFF	6# slave unit
		<u>ON</u>	<u>ON</u>	<u>ON</u>	7# slave unit

3. One controller can Max. control 8 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity

The combination of multiple indoor units can be controlled by wired controller or remote controller.

※ Switching mode of Wired control master unit/ Wired control slave unit/ remote control types can be used for switching over ※

Socket/dip switch	Setting mode	Wired control master unit	Wired control slave unit	Remote control
	SW01-[2][3][4]		All OFF	[0][0][1]	All OFF
CN21 socket		Null	Null	Connect to remote receiver
Terminal block (control)		A,B,C connect with wired controller	B,C connect with wired controller	A,B,C null

Note:

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Total current of indoor units (A)	Items	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
						Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
<7		2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line	
≥7 and <11		4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16		6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22		8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27		10	40	32	32 A, 30 mA, 0.1S or below		

- ※ The electrical power line and signal lines must be fastened tightly.
- ※ Every indoor unit must have the ground connection.
- ※ The power line should be enlarged if it exceeds the permissible length.
- ※ Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- ※ It is not permissible if the whole length of signal line exceeds 1000m.

Signal wiring of wired controller

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

4.9.3 Test run

Before Test Run

- Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1MΩ. It can't be operated if it is below 1MΩ.
- Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.
- Check if the arrangements of the drainpipe and connection line are correct.
- The drainpipe shall be placed at the lower part while the connection line placed at the upper part.
- Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials.
- The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.
- Checkup of Installation.

- | | |
|---|--|
| <input type="checkbox"/> Check if the mains voltage is matching | <input type="checkbox"/> Check if the installation place meets the requirement |
| <input type="checkbox"/> Check if there is air leakage at the piping joints | <input type="checkbox"/> Check if there is too much noise |
| <input type="checkbox"/> Check if the connections of mains power and indoor & outdoor units are correct | <input type="checkbox"/> Check if the connecting line is fastened |
| <input type="checkbox"/> Check if the serial numbers of terminals are matching | <input type="checkbox"/> Check if the connectors for tubing are heat insulated |
| <input type="checkbox"/> | <input type="checkbox"/> Check if the water is drained to the outside |
| | <input type="checkbox"/> Check if the indoor units are positioned |

Ways of Test Run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.

When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

- Set the wired controller to cooling/heating mode, press "ON/ OFF" button for 5 seconds to enter into the compulsive cooling/heating mode. Repress "ON/ OFF" button to quit the compulsive running and stop the operation of the air conditioner.

5. One Way Cassette Type Indoor Unit

5.1 Features



One way cassette
type indoor unit

- DC fan motor, higher efficiency
- Only 185mm thickness, allowing more flexible design
- Low sound level, high comfort
- Built-in high lift drain pump.
- No need of maintenance port, convenient and artistic

5.2 Specification

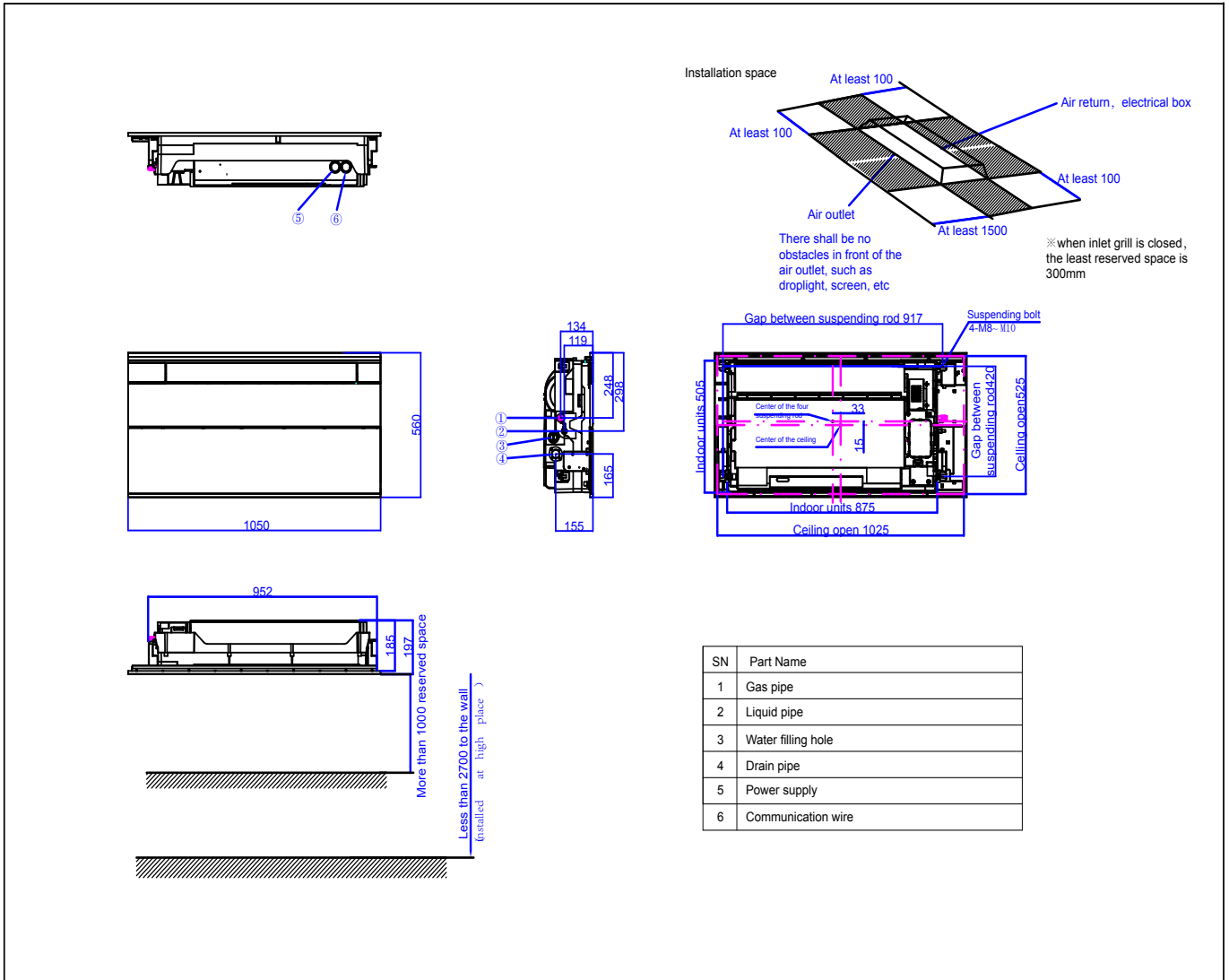
MODEL		AWSI-CDV007-N11	
Power supply		Ph-V-Hz	1/220-230/50/60
Cooling	Capacity	kBtu/h	7.5
	Capacity	kW	2.2
	Power input	W	21
	Current	A	0.1
Heating	Capacity	kBtu/h	8.5
	Capacity	kW	2.5
	Power input	W	21
	Current	A	0.1
	Heating capacity at low temp.	kW	2
Operating current		A	0.1
Indoor motor	Brand		Broad Ocean
	Model		ZWK465B500015
	Type		DC
	Insulation class		E
	IP class		IP20
	Power input	W	88
	Power output	W	70
	Capacitor	μF	/
	Speed (High/Middle/Low)	rpm	700/600/550
Indoor fan	Brand		Shunwei
	Type		Cross-flow
	Quantity		1
Indoor coil	a. Number of rows		2
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3
	c. Fin spacing	mm	1.4
	d. Fin type (code)		Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7
	f. Coil length×height×width	mm	675*168*13.3&675*84*13.3
	g. Number of circuits		3

MODEL			AWSI-CDV007-N11
Cabinet	Cabinet coating type		Galvanized
	Cabinet salt spray test duration	Hour	100
	Control box IP class		IP40
Construction	Sheet metal thickness		3
	Drain pan material		ABS
	Drain pan insulation		UL-V0
	Drain pump option		Standard 1200mm
	Branch outlet option		no
Indoor wall	Material		ABS
	Thickness	mm	3
	Double or single skin		Single
Air filter	Material		ABS
	Mesh		100
	Pressure drop	Pa	5
Piping dimension	Liquid pipe	mm	6.35
	Gas pipe	mm	9.52
	Drain hose	mm	Φ32
Panel	Model		Panel for CDV to s12
	Dimension	mm	1050/560/122
	Packing	mm	1133/623/197
	Net weight	kg	5.3
	Gross weight	kg	8.3
Fresh air dimension	mm		/
Sound pressure level (H/M/L)	dB (A)		32/29/24
Sound power level (H/M/L)	dB (A)		46/43/38
Standard static pressure	Pa		0
Indoor air flow (H/M/L)	m ³ /h		530/490/450
Dimension (W*H*D)	mm		875/505/185
Packing (W*H*D)	mm		1028/581/270
Net weight	kg		15.3
Gross weight	kg		17.9
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.			

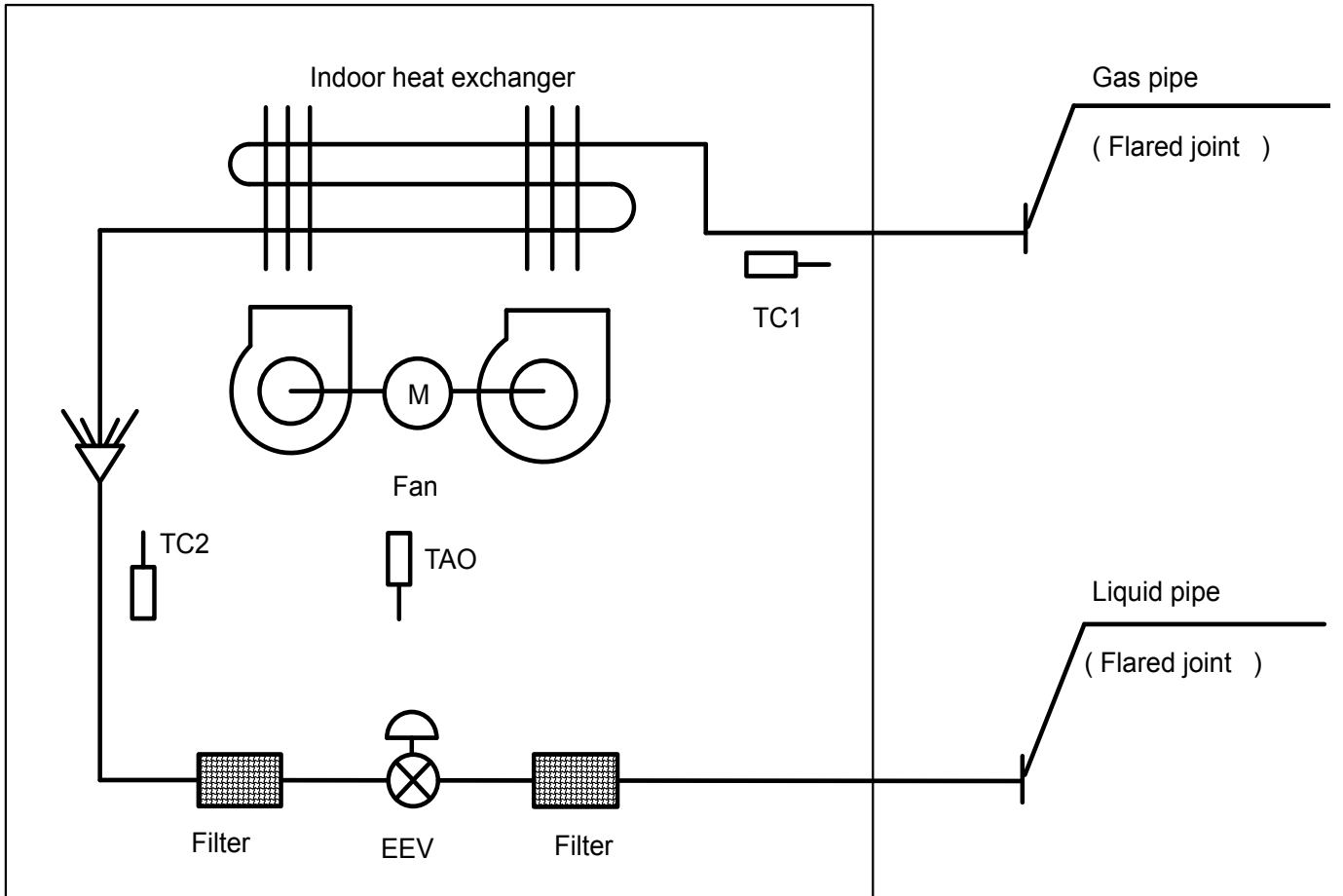
MODEL			AWSI-CDV009-N11	AWSI-CDV012-N11
Power supply		Ph-V-Hz	1/220-230/50/60	1/220-230/50/60
Cooling	Capacity	kBtu/h	9.6	12.3
	Capacity	kW	2.8	3.6
	Power input	W	21	23
	Current	A	0.1	0.11
Heating	Capacity	kBtu/h	10.9	13.6
	Capacity	kW	3.2	4
	Power input	W	21	23
	Current	A	0.1	0.11
	Heating capacity at low temp.	kW	2.5	3.2
Operating current		A	0.1	0.11
Indoor motor	Brand		Broad Ocean	Broad Ocean
	Model		ZWK465B500015	ZWK465B500015
	Type		DC	DC
	Insulation class		E	E
	IP class		IP20	IP20
	Power input	W	88	88
	Power output	W	70	70
	Capacitor	μF	/	/
	Speed (High/Middle/Low)	rpm	700/600/550	800/700/600
Indoor fan	Brand		Shunwei	Shunwei
	Type		Cross-flow	Cross-flow
	Quantity		1	1
Indoor coil	a. Number of rows		2	2
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3	21*13.3
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7	Φ7
	f. Coil length×height×width	mm	675*168*13.3&675*84*13.3	675*168*13.3&675*84*13.3
	g. Number of circuits		3	3

MODEL			AWSI-CDV009-N11	AWSI-CDV012-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	100	100
	Control box IP class		IP40	IP40
Construction	Sheet metal thickness		3	3
	Drain pan material		ABS	ABS
	Drain pan insulation		UL-V0	UL-V0
	Drain pump option		Standard 1200mm	Standard 1200mm
	Branch outlet option		no	no
Indoor wall	Material		ABS	ABS
	Thickness	mm	3	3
	Double or single skin		Single	Single
Air filter	Material		ABS	ABS
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	9.52	12.7
	Drain hose	mm	Φ32	Φ32
Panel	Model		Panel for CDV to s12	Panel for CDV to s12
	Dimension	mm	1050/560/122	1050/560/122
	Packing	mm	1133/623/197	1133/623/197
	Net weight	kg	5.3	5.3
	Gross weight	kg	8.3	8.3
Fresh air dimension	mm	/	/	
Sound pressure level (H/M/L)	dB (A)		32/29/24	34/30/25
Sound power level (H/M/L)	dB (A)		46/43/38	48/44/39
Standard static pressure	Pa		0	0
Indoor air flow (H/M/L)	m ³ /h		530/490/450	550/530/490
Dimension (W*H*D)	mm		875/505/185	875/505/185
Packing (W*H*D)	mm		1028/581/270	1028/581/270
Net weight	kg		15.3	15.3
Gross weight	kg		17.9	17.9
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

5.3 Dimension

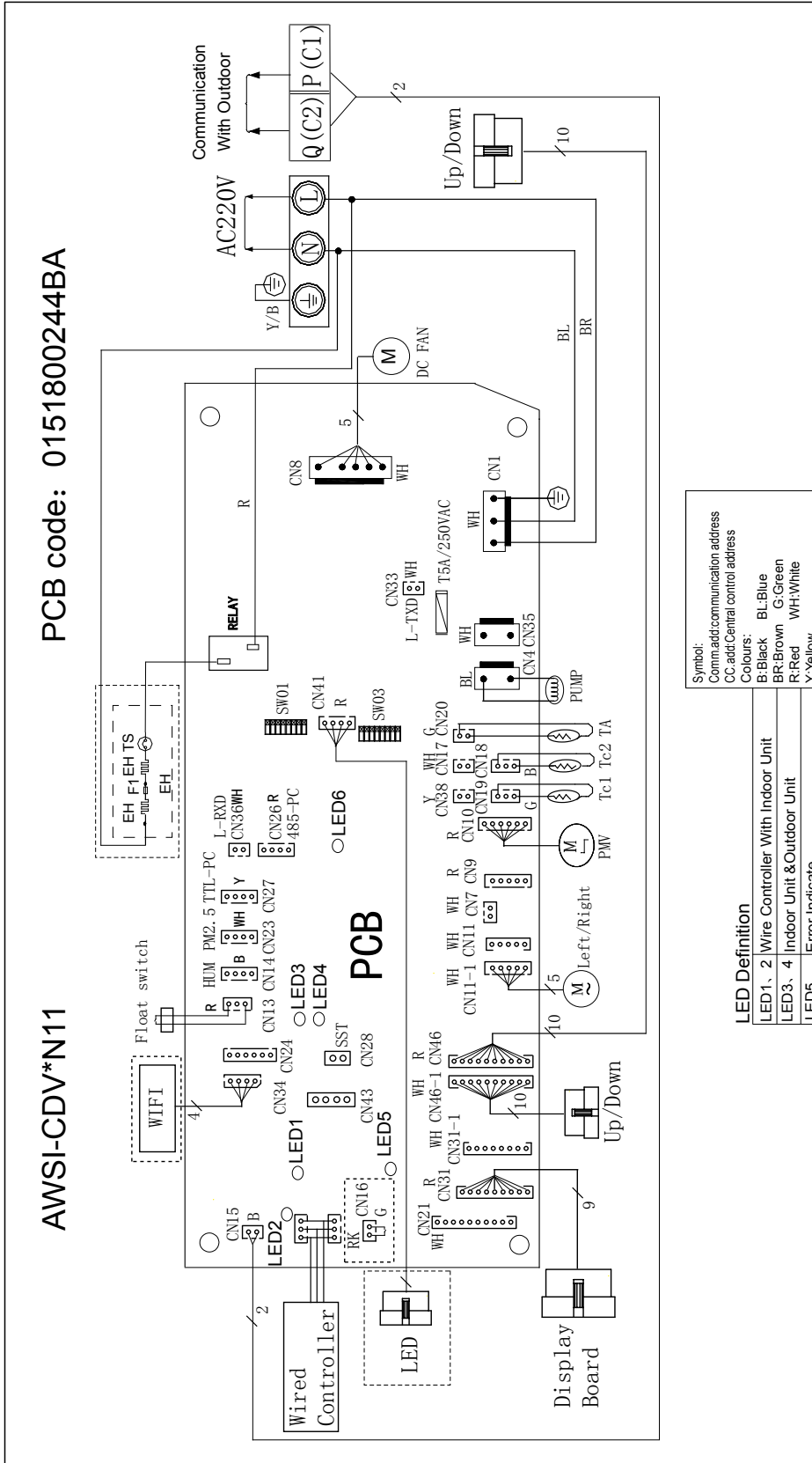


5.4 Piping diagram



One way cassette
type indoor unit

5.5 Wiring diagram



5.6 Electric characteristics

Model	Units				Power supply		Indoor fan motor		Power input (w)	
	Phase	FQY	Voltage	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AWSI-CDV007-N11	1	50/60	220	198~242	0.088	0.28	70	0.07	21	21
AWSI-CDV009-N11	1	50/60	220	198~242	0.088	0.28	70	0.07	21	21
AWSI-CDV012-N11	1	50/60	220	198~242	0.088	0.28	70	0.07	23	23

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker

Output: Fan motor rated output (w)

FLA: Full load amps (A)

Note:

1. Voltage range

The units are applicable for the electrical systems where voltage supplied to unit is in the range.

2. Maximum allowable voltage unbalance between phases is 2%.

3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$

4. Power supply uses the circuit breaker.

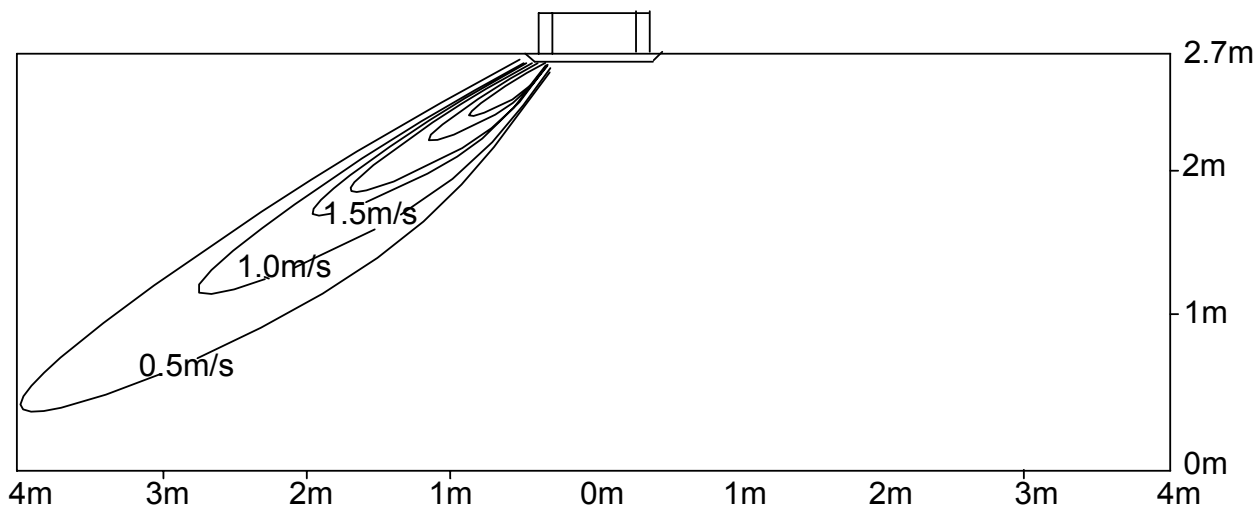
5.7 Air velocity and temperature distribution

a. Cooling / Air velocity distribution

Cooling

Blow angle: 40

Air velocity distribution

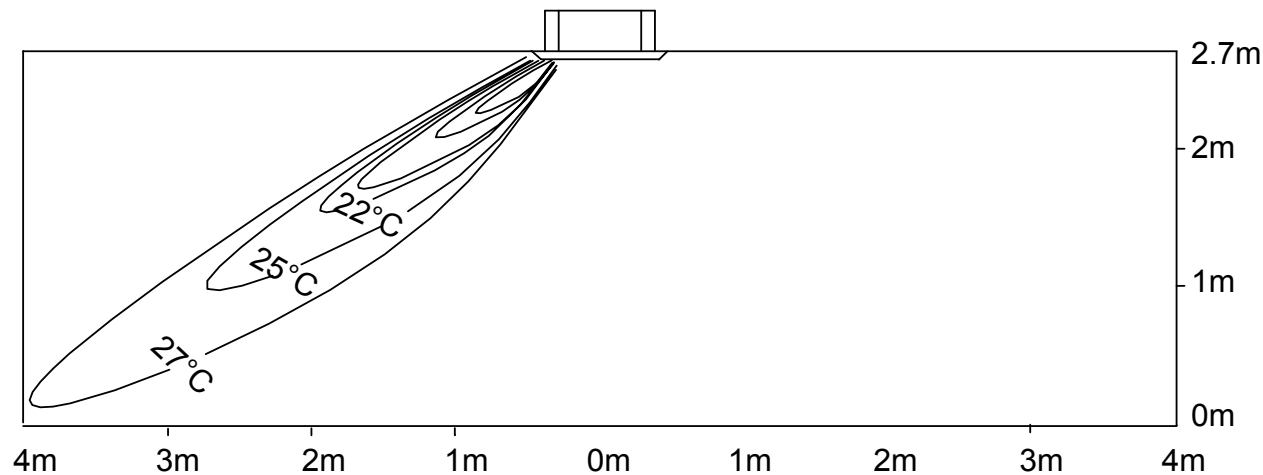


b. Cooling / Temperature distribution

Cooling

Blow angle: 40

Temperature distribution

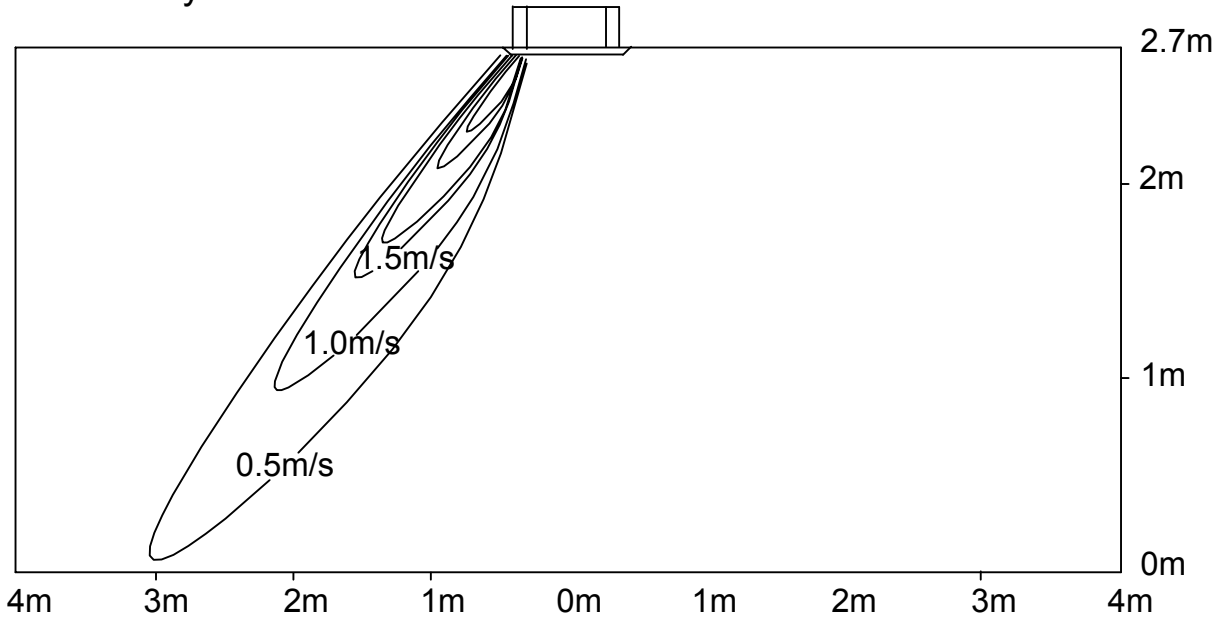


c. Heating / Air velocity distribution

Heating

Blow angle: 70

Air velocity distribution



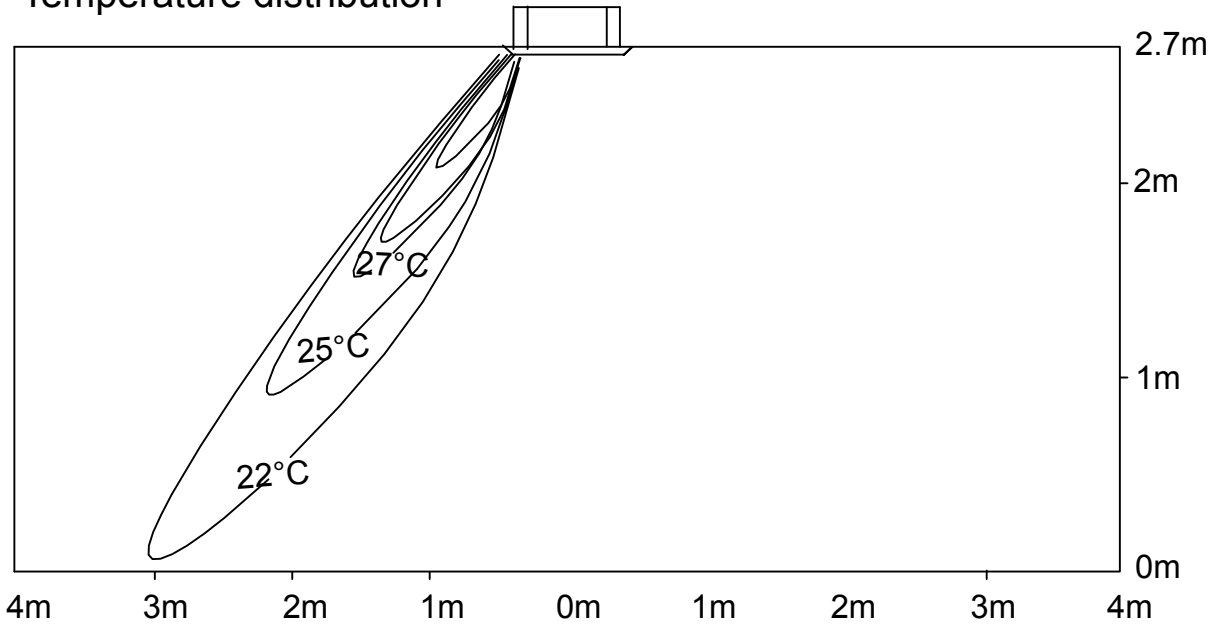
One way cassette
type indoor unit

d. Heating / Temperature distribution

Heating

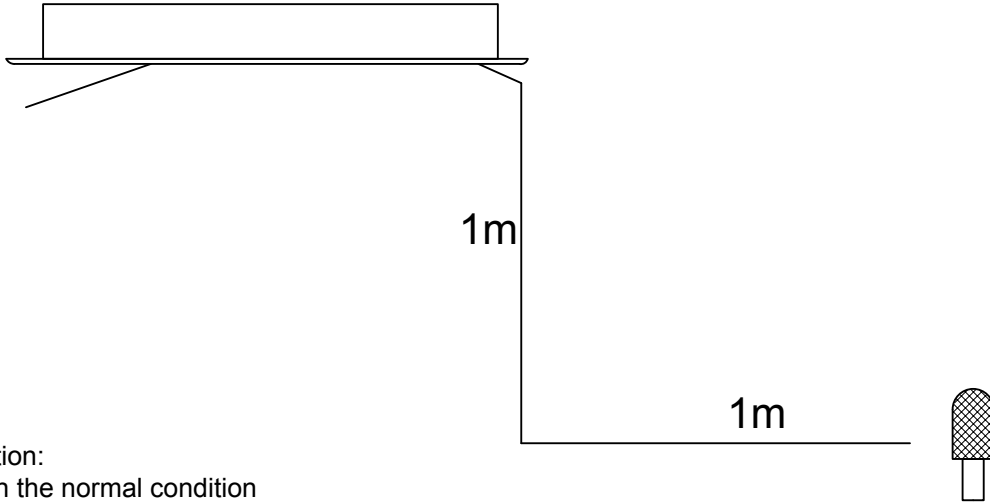
Blow angle: 70

Temperature distribution



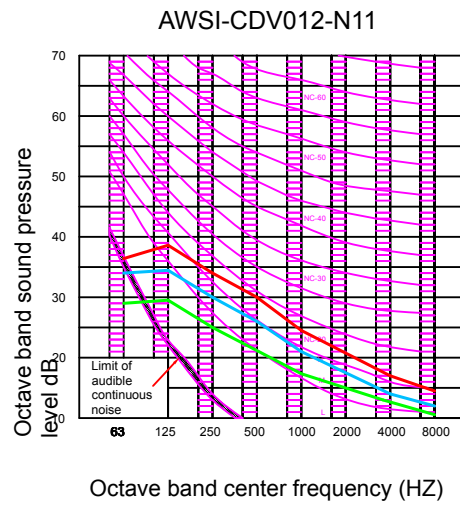
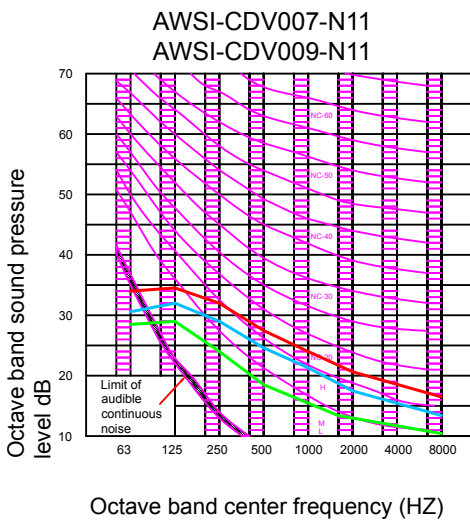
5.8 Sound pressure level

1) Testing illustrate:



2) Testing condition:

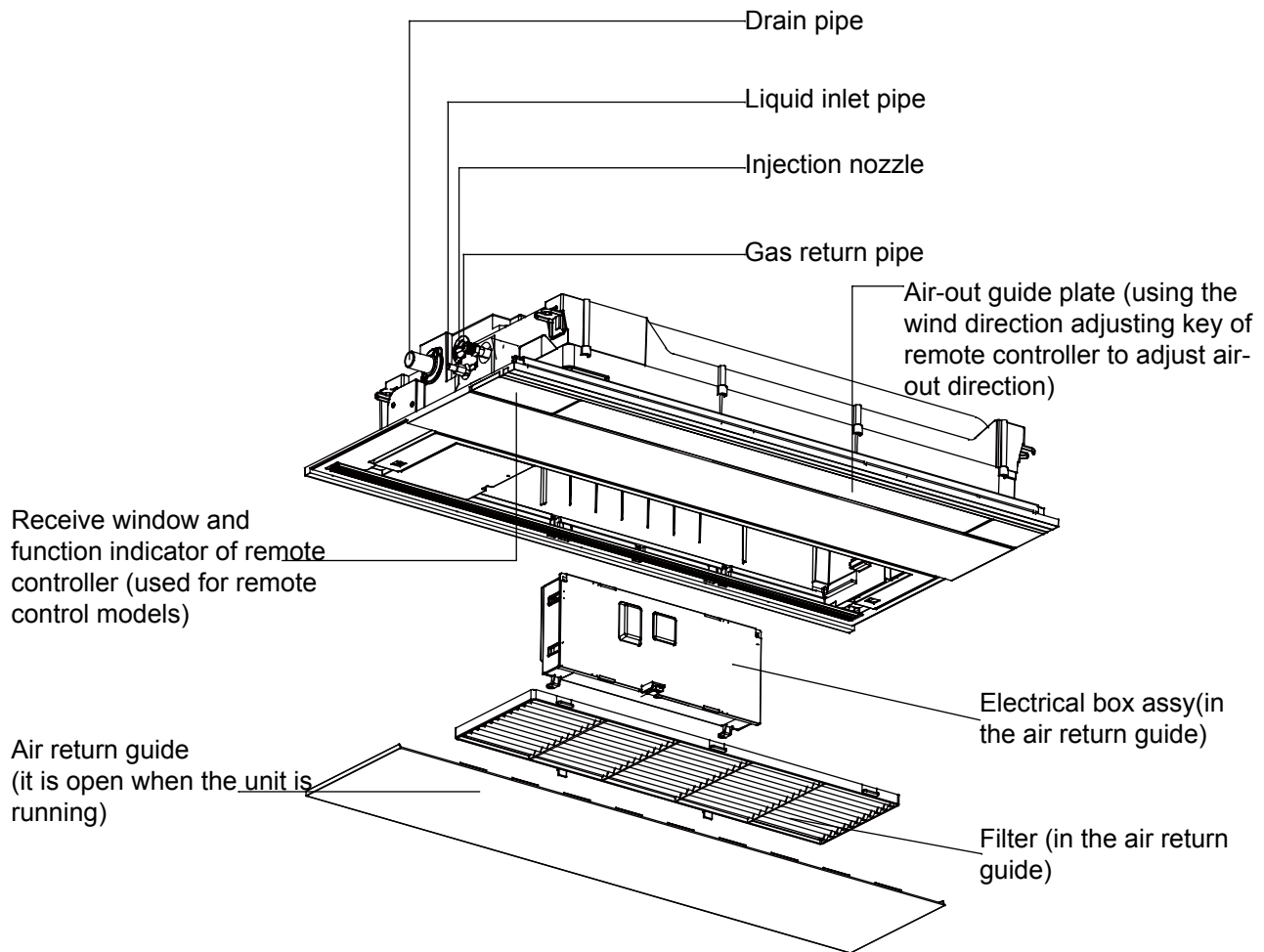
- a: Unit running in the normal condition
- b: Test in the semi-anechoic chamber
- c: Noise level varies from the actual factors, such as room structure, etc.



5.9 Installation

6.9.1 Parts and functions

Indoor unit



One way cassette type indoor unit

6.9.2 Safety




- If the air conditioner is transferred to a new user, this manual shall be transferred to the user, together with the conditioner.
- Before installation, be sure to read Safety Considerations in this manual for proper installation.
- The safety considerations stated below is divided into "⚠Warning" and "⚠ Attention". The matters on severe accidents caused from wrong installation, which is likely to lead to death or serious injury, are listed in "⚠ Warning". However, the matters listed in "⚠ Attention" are also likely cause the severe accidents. In general, both of them are the important items related to the security, which should be strictly abided by.
- After the installation, perform test run to make sure everything is in normal conditions, and then operate and maintain the air conditioner in accordance with the User Manual. The User Manual should be delivered to the user for proper keeping.
- Airwell is not responsible for any personnel damage or equipment damage caused by improper installation, improper commissioning, unnecessary maintenance and the wrong operation which violates the instructions in this manual or industry specifications and standards.


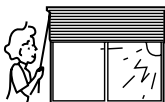


⚠WARNING

- Please ask the special maintenance station for installation and repair. Water leakage, electric shocks or fire accidents might be caused from improper installation if you conduct the installation by your own.
- The installation should be conducted properly according to this manual. Water leakage, electric shocks or fire accidents might be caused from improper installation.
- Please make sure to install the air conditioner on the place where can bear the weight of the air conditioner. The air conditioner can't be installed on the grids such as the non-special metal burglar-proof net. The place with insufficient support strength might cause the dropdown of the machine, which may lead to personal injuries.
- The installation should be ensured against typhoons and earthquakes, etc. The installation unconformable to the requirements will lead to accidents due to the turnover of the machine.
- Specific cables should be used for reliable connections of the wirings. Please fix the terminal connections reliably to avoid the outside force applied on the cables from being impressed on the cables. Improper connections and fixings might lead to such accidents as heating or fire accidents.
- Correct shapes of wirings should be kept while the embossed shape is not allowed. The wirings should be reliably connected to avoid the cover and the plate of the electrical cabinet lipping the wiring. Improper installation might cause such accidents as heating or fire accidents.
- While placing or reinstalling the air conditioner, except the specific refrigerant (R410A), don't let the air go into the refrigeration cycle system. The air in the refrigeration cycle system might lead to the cracking or personal injuries due to abnormal high pressure of the refrigeration cycle system.
- During installation, please use the accompanied spare parts or specific parts. If not, water leakage, electric shocks, fire accidents or refrigerant leakage might be caused.
- Don't drain the water from the drainpipe to the waterspout where may exist harmful gases such as sulfured gas to avoid the harmful gases entering into the room.
- During installation, if refrigerant leakage occurs, ventilation measures should be taken, for the refrigerant gas might generate harmful gases upon contacting the flame.
- After installation, check if any refrigerant leakage exists. If the refrigerant gas leaks in the room, such things as air blowing heaters and stoves, etc. may generate harmful gases.
- Don't install the air conditioner at the places where the flammable gases may leak. In case the gas leakage occurs around the machine, such accidents as fire disasters may be caused.
- When installed in a smaller room, the appropriate measures must be taken to prevent the refrigerant concentration from exceeding the limit. Please contact the sales agent to contact the corresponding measures.
- Be sure to use a separate circuit to supply power. All the electrical work must be executed by the professional electrician, meanwhile met local laws and regulations and the instructions.
- The current-carrying conductor should be tightened before grounding the wire.
- Please turn off the power before touching the electronic parts.
- Do not touch the switch with wet hands to prevent electric shock.
- Please connect the remote control cable and the connection cable to no noise.

⚠ CAUTION

- The drainpipe should be properly mounted according to this manual as to ensure the smooth drainage. In addition, heat preservation should be taken to avoid condensation. Improper drainpipe mounting might cause water leakage, which will get the articles at home wet.
- The refrigerant gas pipe and liquid pipe should be heat insulated to preserve heat. For inappropriate heat insulation, the water caused from the condensation will drop to get the article at home wet.
- The air conditioner should be effectively grounded. Electric shocks may occur if the air conditioner is ungrounded or inappropriately grounded. The wire for earthing shouldn't be connected to the connections on the gas pipe, water pipe, lightning rod or telephone.
- The breaker for electricity leakage should be mounted. If not, accidents such as electric shocks may happen.
- The installed air conditioner should be checked for electricity leakage by being powered.
- When install the remote controller, if the room has a fluorescent lamp (inverter controller or quick start mode), the signal transmission distance of the remote controller will be shortened. Please try to install the indoor unit away from the fluorescent lamp.
- If the ambient humidity bigger than 80%, when the water discharge hole be blocked or the filter becomes dirty, or airflow speed change, there maybe leads to condensing water drop down, and at the same time there maybe some drops of water spit out.

Notices during Operation	
■ If abnormal phenomena (such as the smell of fire), please cut off the power immediately and contact after-sales service personnel. In this case if you continue to use the air conditioning, it will be damaged and also may cause electric shock or fire accident.	
■ When remove, transfer or repair air conditioning, please contact with the after-sales service personnel. Improper maintenance may cause leakage, electric shock and fire hazard.	
■ Be sure to install a leakage circuit breaker and ground connection must be effective. The grounding wire can not be connected to the gas pipeline, water pipe, lightning rod or telephone ground line. Poor ground wire may cause electric shock.	
■ It cannot be used for the preservation of food, living creature, precise instrument and artworks, etc, otherwise damage may occur.	⊘
■ It is not allowed to put any heating apparatus under the indoor units, for the heat may cause distortion of the units.	 !
■ Flammable apparatus should not be placed in the place where the air conditioner wind could reach directly, or incomplete burning of the apparatus may be caused.	 ⊘
■ Do not touch the switch with the wet hand to avoid power shock.	⊘
■ Cleaning the unit with water may cause electric shock.	 ⊘
■ Do not use water heater or like next to the indoor unit and the wired controller. Water/power leakage or short circuit may happen if the steam generating apparatus is working next to machine.	⊘
■ Stop running and switch off the manual power switch when cleaning the unit.	⊘
■ Check the mount table of the air conditioner for damage for a long period of operation. If placed on the damaged table, the unit may drop down causing damage.	!
■ After the electrical installation, should be energized for leakage detection. When thunder, please power off and unplug the power plug. Lightning shock may cause malfunction.	
■ Do not install the air conditioner in where the flammable gas may leak, to avoid fire hazard caused by gas leakage.	

Notices during Operation	
<ul style="list-style-type: none"> ■ Do not put flammable spray close to the air conditioner. Don't inject flammable spray towards the air conditioner, which may cause fire. 	
<ul style="list-style-type: none"> ■ Close the window to avoid outdoor air getting in. Curtains or window shutters can be put down to avoid the sunshine. 	
<ul style="list-style-type: none"> ■ Avoid the cold air blowing the body straightly for long time; Avoid setting the indoor temperature too low. Otherwise it may cause uncomfortable feel and be harmful to health. 	
<ul style="list-style-type: none"> ■ Do not run air conditioning when using smoked insecticide in the room. Otherwise the chemical substance may remain on the product which might endanger the health of highly allergic people. 	
<ul style="list-style-type: none"> ■ Cleaning of the air filter regularly, if the filter is blocked, it will cause the cooling and heating effect poor, power consumption increased, unit malfunction and cooling operation will drip. 	
<ul style="list-style-type: none"> ■ Power should be cut off when the air conditioner is left unused for a long period. Power will be consumed if the air conditioner is not powered off. The power switch of the outdoor unit switch should be powered on 12 hours in advance before operation to protect the unit after a long period of storage. 	
<ul style="list-style-type: none"> ■ The room should be ventilated regularly. After the use of air conditioning in the room for a long time, be sure to ventilate, to prevent air circulation does not cause physical discomfort. 	
<ul style="list-style-type: none"> ■ During the operation of the control unit, don't switch off the manual power switch and the controller can be used. Please do not press the liquid crystal zone of controller to prevent damage. 	
<ul style="list-style-type: none"> ■ Valuables and goods that must be kept dry can not be placed under the indoor unit. When the humidity exceeds 80% or the drain outlet is blocked, the indoor unit may drip and damage the goods. 	
<ul style="list-style-type: none"> ■ Plants and animals should not be put to the place where wind of the air conditioner blows directly, otherwise damage to them may be caused. 	
<ul style="list-style-type: none"> ■ It cannot be used for the preservation of food, living creature, precise instrument and artworks, etc, otherwise damage may occur. 	
<ul style="list-style-type: none"> ■ The distance between TV, radio, audio and other equipment and indoor unit should be more than 1m. Otherwise it will interfere the image and cause noise. 	
<ul style="list-style-type: none"> ■ 3-5minute protection To protect the unit, compressor can be actuated with at least 3-5minute delay after stopping. 	
<ul style="list-style-type: none"> ■ Defrosting during heating To improve the heating effect, the outdoor unit will perform defrosting automatically when frost appears on the outdoor unit during heating (approximately 2-10min). During defrosting, the fan of the indoor unit runs at a low speed or stops while that of the outdoor unit stops running. 	
<ul style="list-style-type: none"> ■ Stopping fan rotation The unit which stops operating will actuate the fan for a 2-8 min swing every 30-60 minutes for protecting the unit while other indoor unit are in the operating state. 	

6.9.3 Maintenance

⚠ Attention

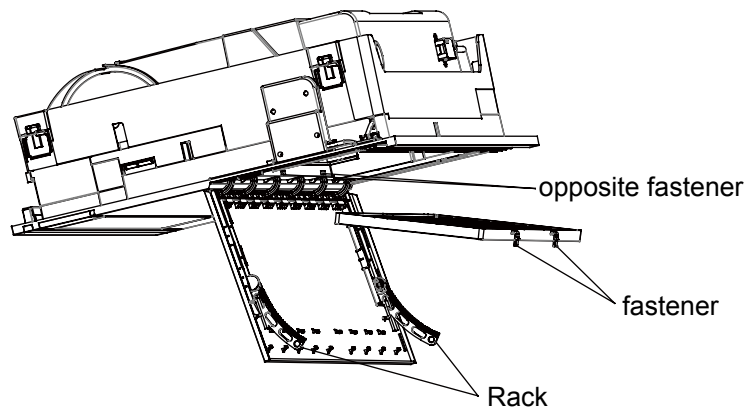
- Repair can only be performed by professional personnel.
- Before touching the connection line, all power supplies should be switched off. Only after switching off the power supply can the operator clean the air conditioner as to avoid electric shock or injury.
- When cleaning the air cleaner, make sure to use a stable platform; don't flush the air conditioner with water, or the electric shock might be caused.

Daily Maintenance:

Clean the air cleaner & Inlet guide plate

- Don't dismantle the air cleaner if not cleaning, or faults might be caused.
- When the air conditioner operates in the environment with too much dust, clean the air conditioner more times (generally once every two weeks).

As shown in the drawing, draw the wind guide on both sides of the rack, with the thumb to hold down the screen two buttons down gently pull the other side of the filter from the bayonet can be removed.



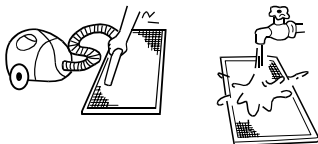
Clean the air cleaner

■ Cleaning

Clean the air cleaner with the dust collector or water to remove dusts.

For too much dust, use the fan or directly spray the special cookware detergent on the air inlet grid, and then clean it with water after 10 minutes.

(A) remove dust with dust collector.



(B) for too much dust, use soft-hair brush and mild detergent to clean.

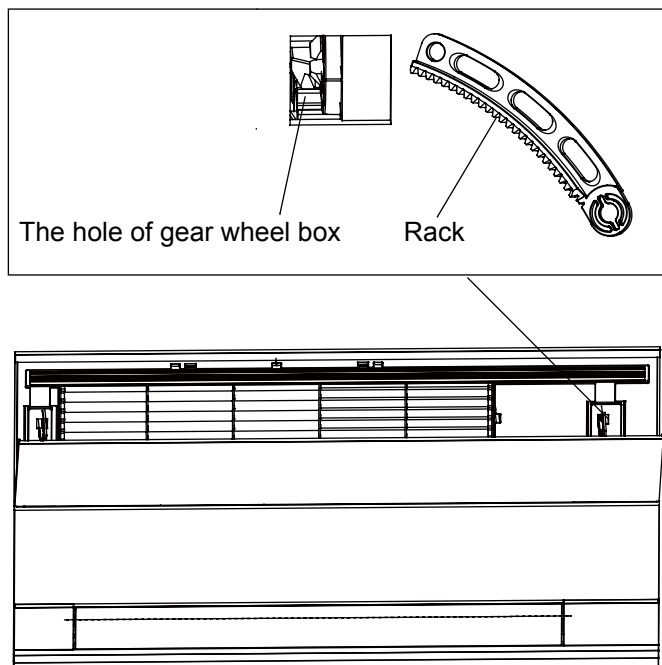
(C) throw off water and then dry it at cool places.

⚠ Attention

- Don't clean it with hot water of over 50°C to avoid fading or distortion.
- Don't dry it on the fire, or the cleaner might cause fire.

Install the air cleaner & Inlet guide plate

1. Install the air cleaner: The method is contrary to the method of removing the dust screen.
2. Install the Inlet guide plate: As shown below, the rack on the return air guide plate is inserted into the gear box.



Cleaning the air outlet port and the shell

⚠ Attention

- Don't use gasoline, benzene, diluents, polishing powder or liquid insecticide to clean them.
- Do not clean them with hot water of above 50°C to avoid fading or distorting.
- Wipe them with soft dry cloth.
- Water or neutral dry cleanser is recommended if the dust cannot be removed.
- The Wind Deflector can be dismantled to clean.

⚠ Attention

- Do not wipe the wind deflector with water forcibly to avoid the floss falling off.

Maintenance before and after Operating Season

Before Operating Season:


1. Please make the following checkup:
 - There is no blockage in inlet port and outlet port of outdoor and indoor units.
 - The ground line and the wiring are in the proper state.
 If abnormal condition occurs, consult the after-service personnel.
2. Clean the air cleaner and the shell.
 - After cleaning, the air cleaner must be mounted.
3. Switch it on to the power.
 - After cleaning, the air cleaner must be mounted.

After Operating Season:

1. In sunny days, blowing operation can be performed for half a day to make the inside of machine dry.
2. Switch it off.
 - Electrical power should be cut down to economize electricity, or the machine will still consume power.
3. Clean the air cleaner and the shell.
 - Air cleaner and shell must be mounted after cleaning. For cleaning details, refer to Maintenance.

6.9.4 Fault checkup

Please check the following when consigning repair service:

	Symptoms	Reasons
All these are not problems	Water flow sound	Water flow sound can be heard when starting operation, during operation or immediately after stopping operation. When it starts to work for 2-3 minutes, the sound may become louder, which is the flowing sound of refrigerant or the draining sound of condensed water.
	Cracking sound	During operation, the air conditioner may make the cracking sound, which is caused from the temperature changes or the slight dilation of heat exchanger.
	Terrible smell in outlet air	The terrible smell, caused from walls, carpet, furniture, clothing, cigarette and cosmetics, attaches on the conditioner.
	Flashing operating indicator	When switching it on again after power failure, turn on the manual power switch and the operating indicator flashes.
	Awaiting indication	It displays the awaiting indication as it fails to perform refrigerating operation while other indoor units are in heating operation. When the operator set it to the refrigerating or heating mode and the operation is opposite to the setting, it displays the awaiting indication.
	Sound in shutdown indoor unit or white steam or cold air	To prevent oil and refrigerant from blocking the shutdown indoor units, refrigerant flows in the short time and make the sounds of refrigerant flowing. Otherwise, when other indoor units performs heating operation, white steam may occur; during refrigerating operation, cold air may appear.
	Clicking sound when switching the air condition on	When the conditioner is powered on, the sound is made due to the resetting of the expansion valve.
	Please make another check.	Start or stop working automatically	Check if it is in the state of Timer-ON and Timer-OFF.
Failure to work 		Check if there is a power failure. Check if the manual power switch is turned off. Check if the supply fuse and breaker are disconnected. Check if the protective unit is working. Check if refrigerating and heating functions are selected simultaneously with the awaiting indication on line control.
Bad cooling & heating effects		Check if air intake port and air outlet port of outdoor units are blocked. Check if the door and windows are open. Check if the filtering screen of air cleaner is blocked with sludge or dust. Check if the setting of wind quantity is at low wind. Check if the setting of operation is at the Fan Operation state. Check if the temperature setting is proper.

One way cassette type indoor unit

Under the following circumstances, immediately stop the operation, disconnect the manual supply switch and contact the after-service personnel.

- When buttons are inflexible actuated;
- When fuse and breaker have been burnt over and over;
- When there are foreign objects and water in the refrigerator;
- When it cannot still be operated after removing the operation of protective unit;
- When other abnormal conditions occur.

6.9.5 Installation procedures

Before installation

- Do not throw away the included parts before installation.
- Determine the handling route from the unit to the installation location
- Before moving the unit to the installation position, do not remove the packaging, had to remove the packaging, with a soft material or protective plate with a rope to lift the unit, so as not to damage the unit or wipe scratches.
- After the unit is moved into the installation, please use the package to protect the unit from damage.

The standard attached accessories of the units of this series refer to the packing list; prepare other accessories according to the requirements of the local installation point of our company.

Indoor units should be installed in places with the environment of even circulation of cool and warm blows. The following places should be avoided.

- places with high salinity (beach), high sulfured gas (such as the thermal spring regions where copper tubes and soft soldering are easy to be eroded), much oil (including mechanical oil) and steam; places where organic substance solvent is used; where special spray is frequently used;
- places where machines generate the high frequency electromagnetic wave (abnormal condition will appear in the control system);
- places where there is high humidity exists near the door or windows (dew is easily formed).

Warning:

protect the machine from gales or earthquake, make the installation according to the regulations. Improper installation will cause accidents due to the overturn of the air conditioner.

1. Select the following places to install indoor units.

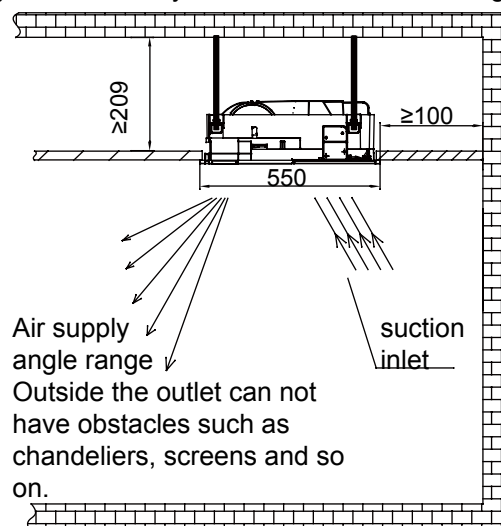
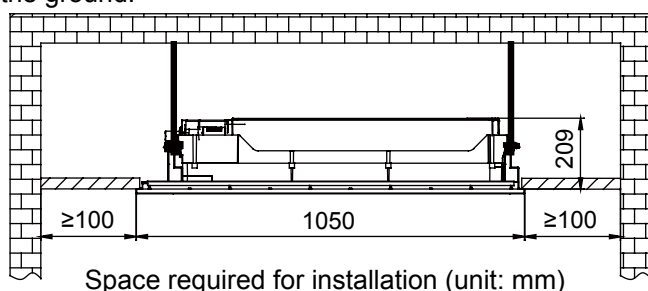
- (1) where there is enough room for the machine above the ceiling;
- (2) where the drainpipes can be well arranged;
- (3) where the distance between the air outlet port of the machine and the floor is not more than 2.7m;
- (4) where air inlet & outlet of the indoor units are not blocked;
- (5) where it is hard enough to bear the weight of the unit;
- (6) where there are no television, piano and other valuables under the indoor units as to avoid condensate dropping down, causing damage.
- (7) Where it is over 1m away from the television and radio as to avoid the disturbance from television and radio.
- (8) Select the indoor unit around (such as the ceiling of the installation of indoor units sandwich) dry bulb temperature below 30°C and relative humidity below 80% of the place. If the unit is running in a high humidity environment above the above conditions, there may be water drops. Please add 10 ~ 20mm insulation material (foamed polyethylene or equivalent) to the unit as well as piping and drain. When the insulation material exceeds 10mm, please press fit into the ceiling opening.
- (9) The indoor unit is not affected by external invasions. Return air is not recommended at the door, window, if there is no choice to keep closed, off the window, while saving energy can effectively reduce the air conditioning operation exception.

Installation Space

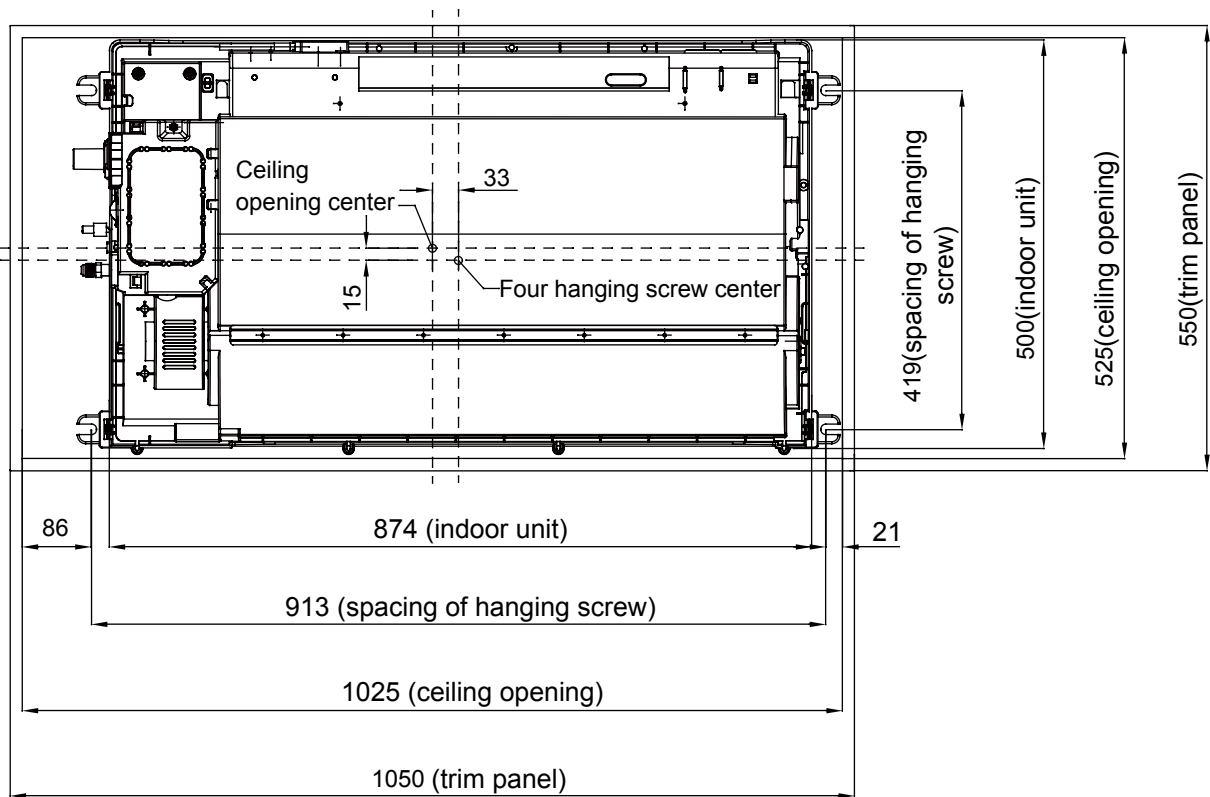
Ensure the required space for installation and maintenance (refer to the following drawings).

The installation height should be kept within 2.7m.

When the height of the ceiling exceeds 2.7m, the warm air is hard to blow to the ground.



2. Location Relationship among Ceiling Hole, Unit and Hoisting Studs



Note:

Before suspending the indoor unit, select the installation location according to the piping and wiring in the ceiling, and determine the lead direction of the piping. Prepare all pipes (refrigerator and drainage) and wiring (connection line for remote control and connection line of indoor units and outdoor units) connected to indoor units before suspending the indoor unit so as to make the connections right after the installation.

- In the situation with the ceiling, before suspending the unit, set refrigerant pipe, drainpipe, connection line in the room, lead wire of line control to the locations of piping and wiring.
- Confirm the size of the indoor unit and fix it according to the requirements in the manual.

3. Ceiling Hole & Reinforcement

- (1) Cut and withdraw the foundation of ceiling according to the size of indoor unit.
- (2) After cutting an appropriate hole, reinforce the cutting area on the foundation of indoor unit, and append the rim to the ceiling to secure its foundation. In order to prevent the ceiling from vibrating, it is vital to reinforce the ceiling foundation and ensure the original levelness of the ceiling.

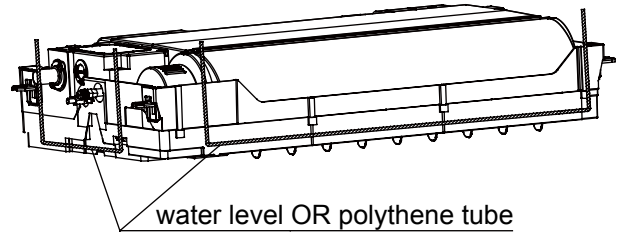
4. Hoisting Stud Installation

- To support the weight of the unit, use barb bolts in the situation with the ceiling. In the situation with the new ceiling, use inlaid bolts, embedded bolts or other parts provided on site. Before proceeding the installation, adjust the gap between the bolts and the ceiling.
- Use four M10 hoisting studs (provided on site) (when the height of the hoisting stud exceeds 0.9m, M10 studs should be used.). The gaps should be kept according to the overall drawing of the air conditioner. Make the installation according to regulations for various building structures as to ensure the safety. Use the level meter to perform the parallel installation.

Ceiling Suspending

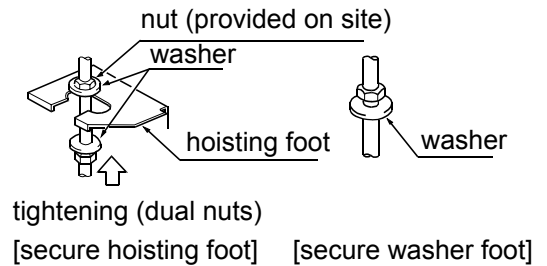
Situation with New Ceiling

- (1) Install the indoor unit temporarily:
attach the hoisting foot to hoisting stud. Make sure that nuts and washers should be used at two ends of the foot to secure the foot.
- (2) For the size of the ceiling hole, please refer to the schematic drawing at the previous page.
<After finishing the installation of the ceiling>
- (3) Adjust the unit to the proper installation location.
- (4) Check if the unit is in the horizontal level:
The indoor unit is equipped with a built-in drainage pump and a floater switch. Check if the 4 angles of the unit are in the horizontal level with the water level or the polythene tube with water, as shown in the figure, taking only one indoor unit as an example. If the unit inclines opposite to the direction of condensate flow, the floater switch might have faults, causing water dropping. (When lifting can be tilted to the drain, the long side of the horizontal height difference 0 ~ 10mm.)
- (5) Tighten the nut on the washer.
- (6) Remove the mounting cardboard.



Situation with Original Ceiling

- (1) Install the indoor unit temporarily: attach the hoisting foot to hoisting stud. Make sure that nuts and washers (provided on site) should be used at two ends of the foot to secure the foot.
- (2) Adjust the height and location of the unit.
- (3) Perform Step 4 and 5 in Situation with New Ceiling.



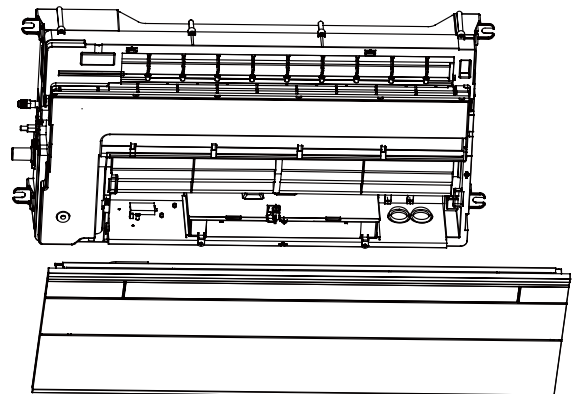
Preparation of Decorated Board

- Don't put the decorated board downward to the floor. Putting it against the wall or on the extrusive objects is not allowed.
- Don't touch the wind deflector or apply force on it, or the wind deflector will have faults.

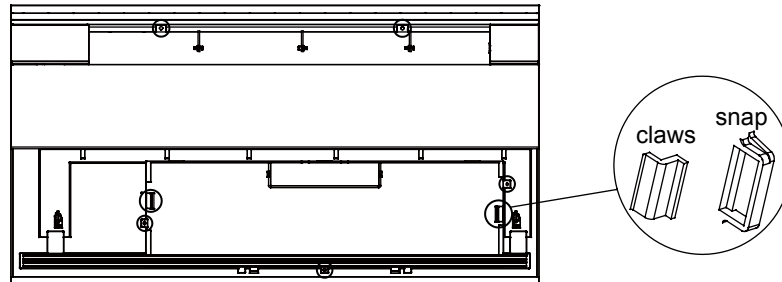
- (1) Check the level of the indoor unit with a flat or filled polyethylene pipe and check that the size of the ceiling hole is correct. Remove the horizontal gauges before installing the trim panels.
- (2) Fix the screws so that the height difference between the two sides of the indoor unit is less than 5mm.

The installation of the decorative panel in the indoor unit body

- Install the panel before the need to remove the return air guide, the method at the same time hold down the two ends of the button, slowly even pull the guide plate, remove the appropriate place to prevent damage.
- Install the panel in the direction of the illustration to ensure that the panel inlet and outlet are corresponding to the inlet and outlet of the machine.

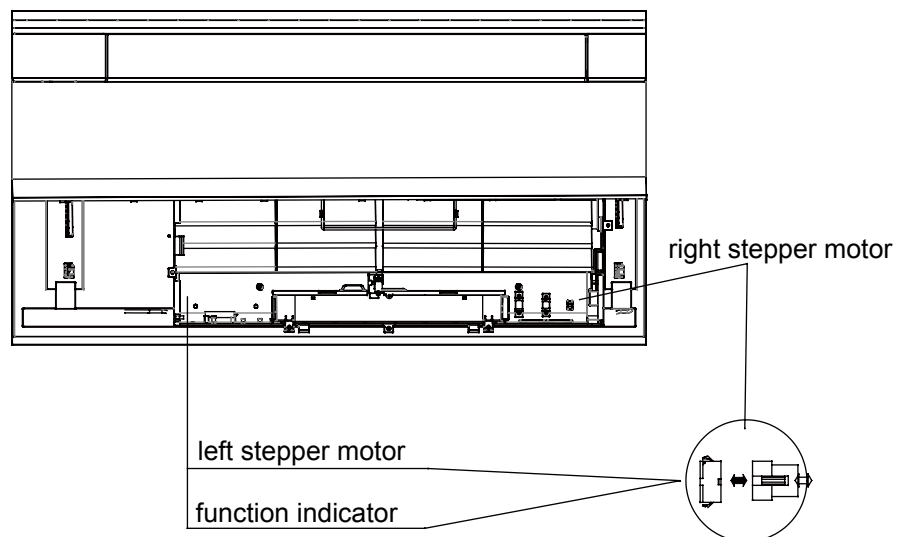


- Install the two claws into the snap and secure with the screws. (Screw hole position as shown, hidden parts have been hidden).



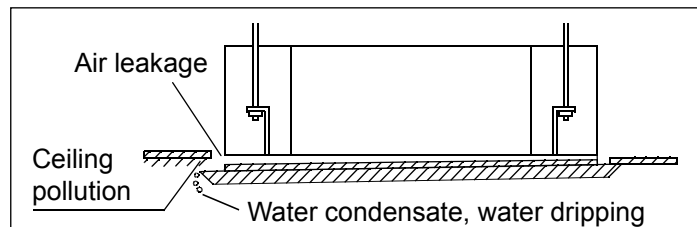
Decorative panels of the line

- Connect the connector on the right side of the trim panel to the stepped motor wire (10-pin)
- Connect the connector on the left side of the trim panel to the stepped motor wire (5-pin)
- Connect the connector of the lamp panel mounted on the trim panel (9-pin)
- Connect the communication cable, the power cord, and use the controller to check whether the connection is correct, make sure the machine can be installed after the normal operation of the filter, the return air guide back.

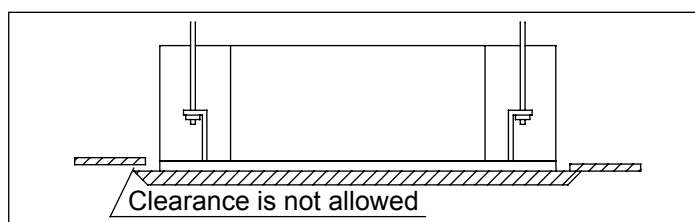


Caution:

- Improper tightening of bolts would lead to the faults shown in the following figure.



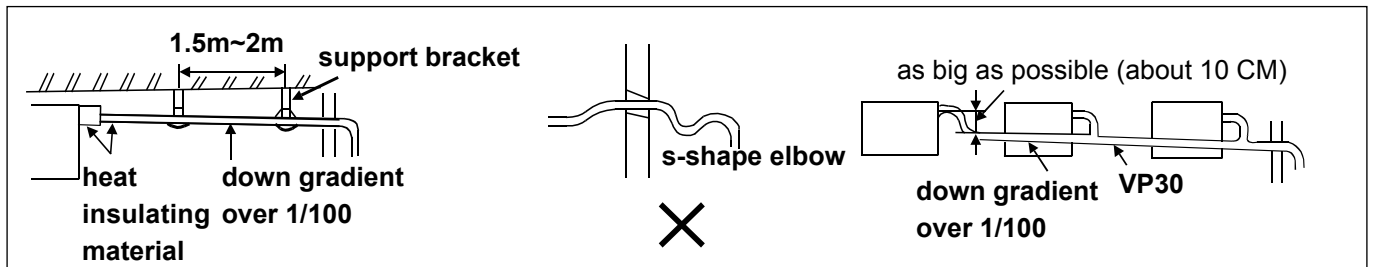
- After tightening the bolts, if there is a clearance between the ceiling and the trim panel, please readjust the height of the indoor unit.



Drainpipes

Requirements:

- The drainpipe of the indoor unit should be heat-insulated.
- Heat insulation should be treated for the connection with the indoor unit. Improper heat insulation may cause condensing.
- The drainpipe with the down gradient of over 1/100 can't be in the S shape, or abnormal sound can be caused.
- The horizon length of the drainpipe should be kept with 20m. Under the condition of long pipes, supports can be provided every 1.5~2m as to avoid unevenness.
- The central piping should be connected according the following drawing.
- Take care not to apply external force on the connection of the drainpipes.



Piping Materials & Heat Insulating Materials

As to prevent condensation, heat insulating treatment should be performed. The heat insulating treatment for piping should be done respectively.

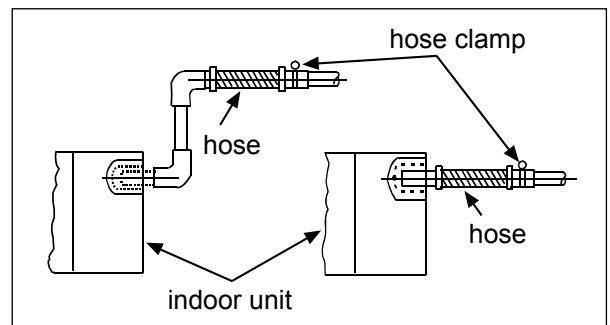
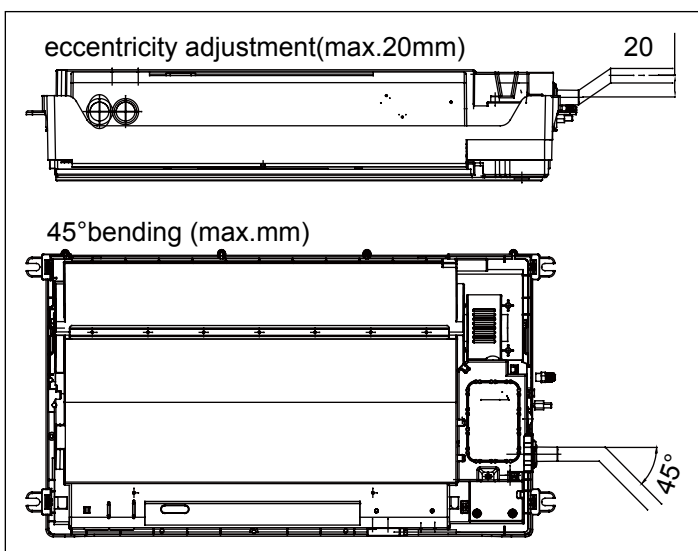
Piping Material	Hard PVC tube VP31.5mm (inner bore)
Heat Insulating Material	Vesicant polythene thickness: over 7mm

Hose

The attached hoses can be used to adjust the eccentricity and angle of the hard PVC tube.

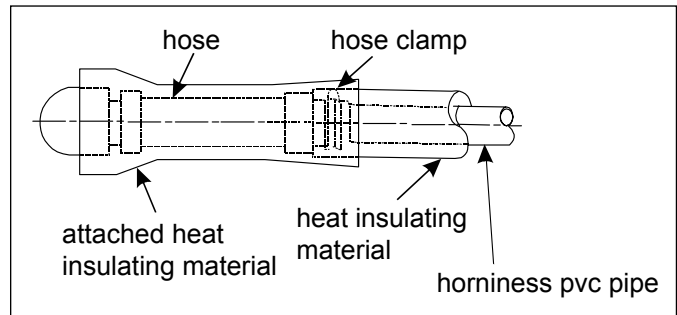
- Stretch the hose directly to make connections as to avoid distortion. The soft end of the hose should be positioned with a clamp.

- The hose should be used in the horizon direction.



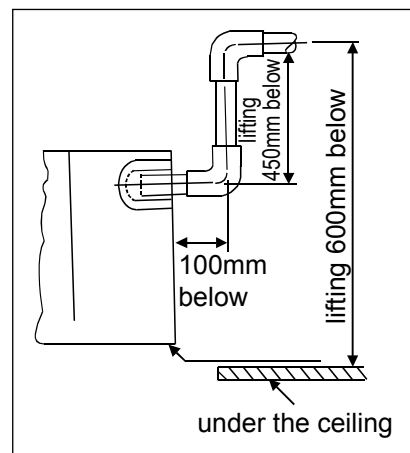
Heat Insulating Treatment:

- Wrap the connection between the clamp and the root segment of the indoor unit without any gap with heat insulating materials as shown in the drawing



Lifting Drainpipe

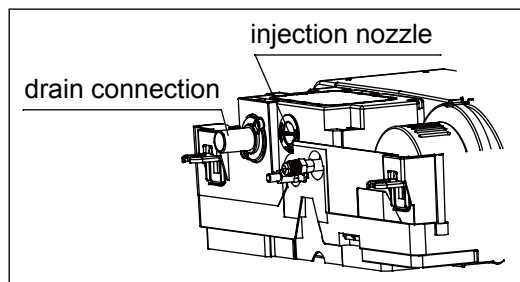
The drainpipe can be lifted 450mm. When the down gradient of the drainpipe can't be ensured, after upright lifting, the drainpipe is in the down slope.



Confirming Drainage

The drainage should be confirmed during the test run to make sure that there is leakage at the connection. The confirmation of drainage should be also performed during the installation in the winter season.

- After mounting the electrical system, do cooling operation and meanwhile add water and check. Fill 600cc water with a hose from the injection nozzle. Add the water slowly. Don't add water to the motor of the drainage pump.



- Confirm the sound of the motor:
Confirm the sound of the motor of the drainage pump and meanwhile check the drainage.

Tubing Permissible Length & Height Difference

Please refer to the attached manual of outdoor units.

Tubing Materials & Specifications

Please refer to the attached manual of outdoor units.

Model		AWSI-CDV007-N11 AWSI-CDV009-N11	AWSI-CDV012-N11
Tubing Size (mm)	Gas pipe	Ø9.52	Ø12.7
	Liquid pipe	Ø6.35	Ø6.35
Tubing Material	Phosphor deoxy bronze seamless pipe (TP2) for air conditioner		

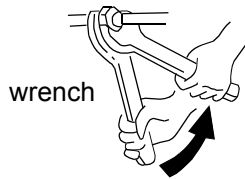
Refrigerant Filling Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount while compressor failure can be caused by filling too much or little refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table



Outer Diameter of Tubing (mm)	Mounting Torque (N-m)	Increase mounting Torque (N-m)
Ø6.35	11.8(1.2kgf-m)	13.7(1.4kgf-m)
Ø9.52	24.5(2.5kgf-m)	29.4(3.0kgf-m)
Ø12.7	49.0(5.0kgf-m)	53.9(5.5kgf-m)
Ø15.88	78.4(8.0kgf-m)	98.0(10.0kgf-m)

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

Open all the valves of outdoor units.

[NB: oil balancing stop valve must be shut up completely when connected one main unit.]

Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

6.9.6 Electrical wiring

⚠ WARNING

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient.
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents.
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightening rod and telephone line.

⚠ Attention

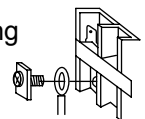
- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while PE should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. Signal line and power line spacing greater than 100mm.
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.
- The power cord must go through the wire hole from the outside into the machine, the wire holes need to be sealed with rubber ring to prevent the wear of the power line insulation sheath; the use of the process should pay attention to the protection of the power cord. Prevent sharp objects from damaging the insulation of the power cord. Damage to the power cord may cause fever, fire and other accidents.

Connecting

1. Connecting circular terminals:

The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.

Connecting circular terminals:

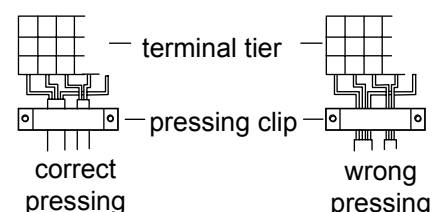


2. Connecting straight terminals:

The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.

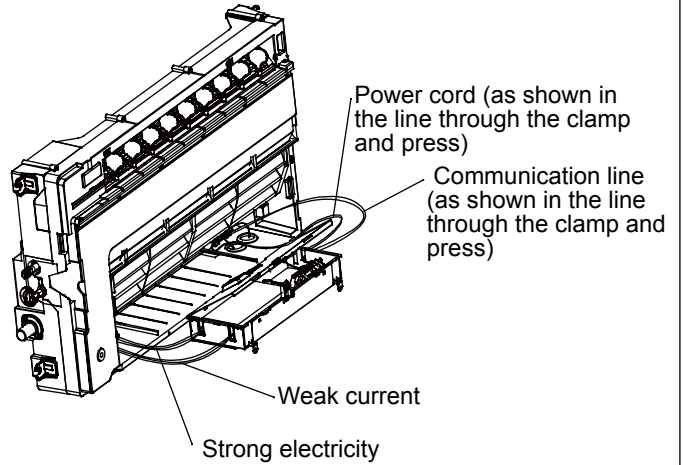
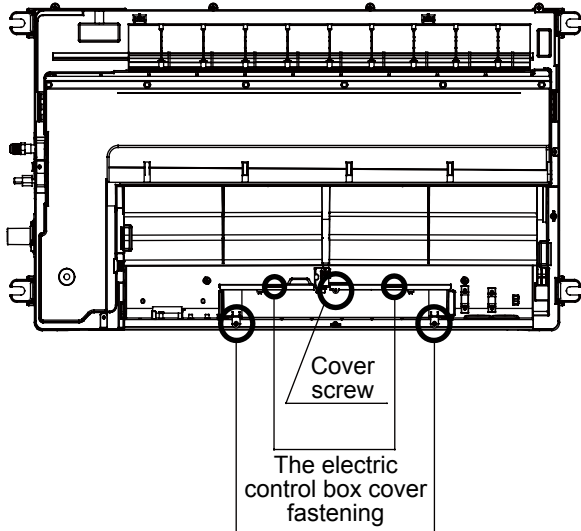
3. Pressing connecting line

After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



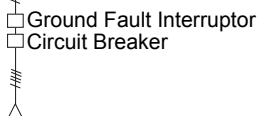
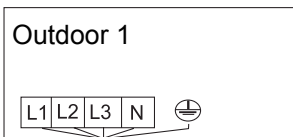
4. Electronic control box connection operation method

First, remove the screw of the fixed electric control box, pull out the electric control box, and then remove the electric control box cover fixing screw, take off the electric control box cover (both hands press and hold the button at the same time). Signal line through the machine through the hole, and then through the electronic control box hole into the box body, pay attention to the separation of strength. Connect the electric control box cover and push the electric control box back to the machine. Use screws to fix.

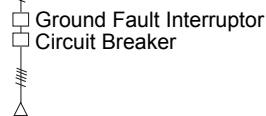
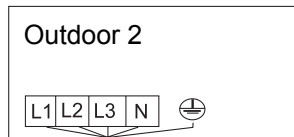


Two screws for fixing box

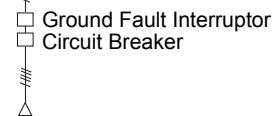
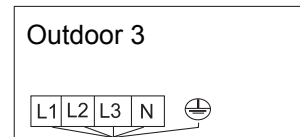
Supply Wiring Drawing



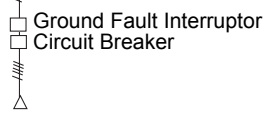
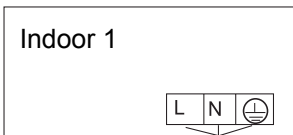
Supply: 3N~,380-400V,50/60Hz



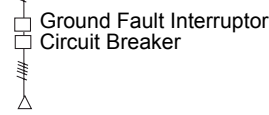
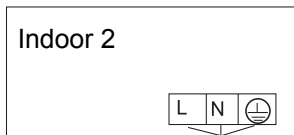
Supply: 3N~,380-400V,50/60Hz



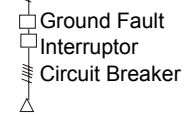
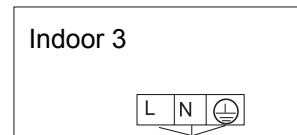
Supply: 3N~,380-400V,50/60Hz



Supply: 1PH,220-230V~,50/60Hz

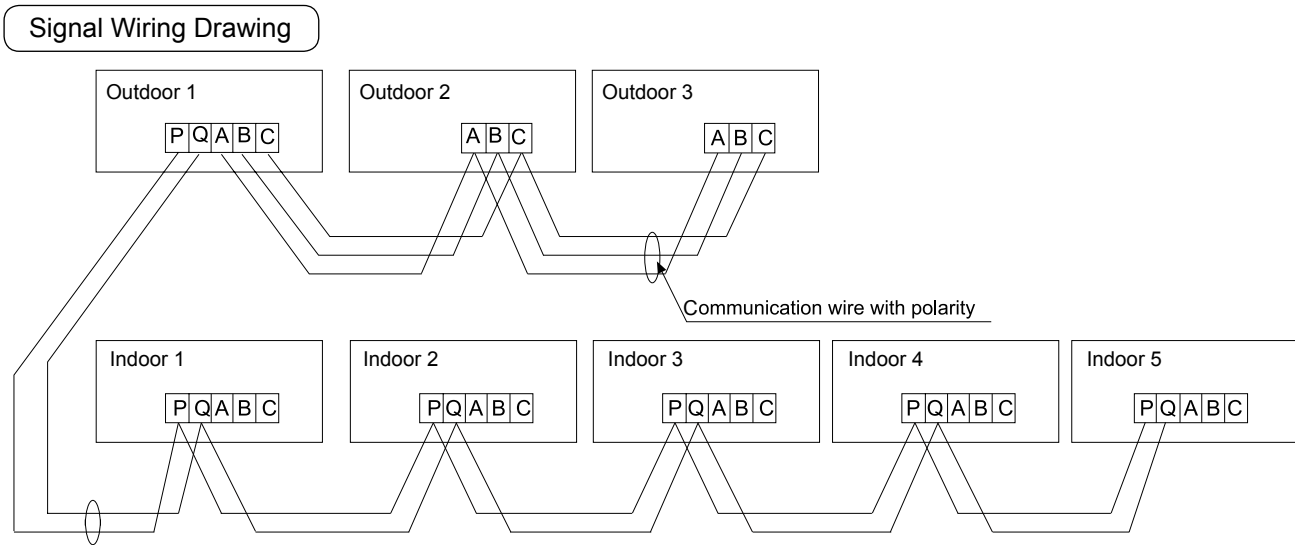


Supply: 1PH,220-230V~,50/60Hz



Supply: 1PH,220-230V~,50/60Hz

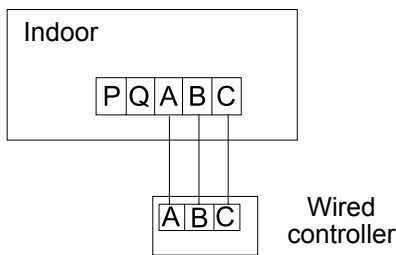
- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.



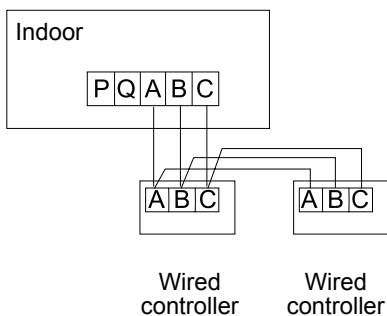
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

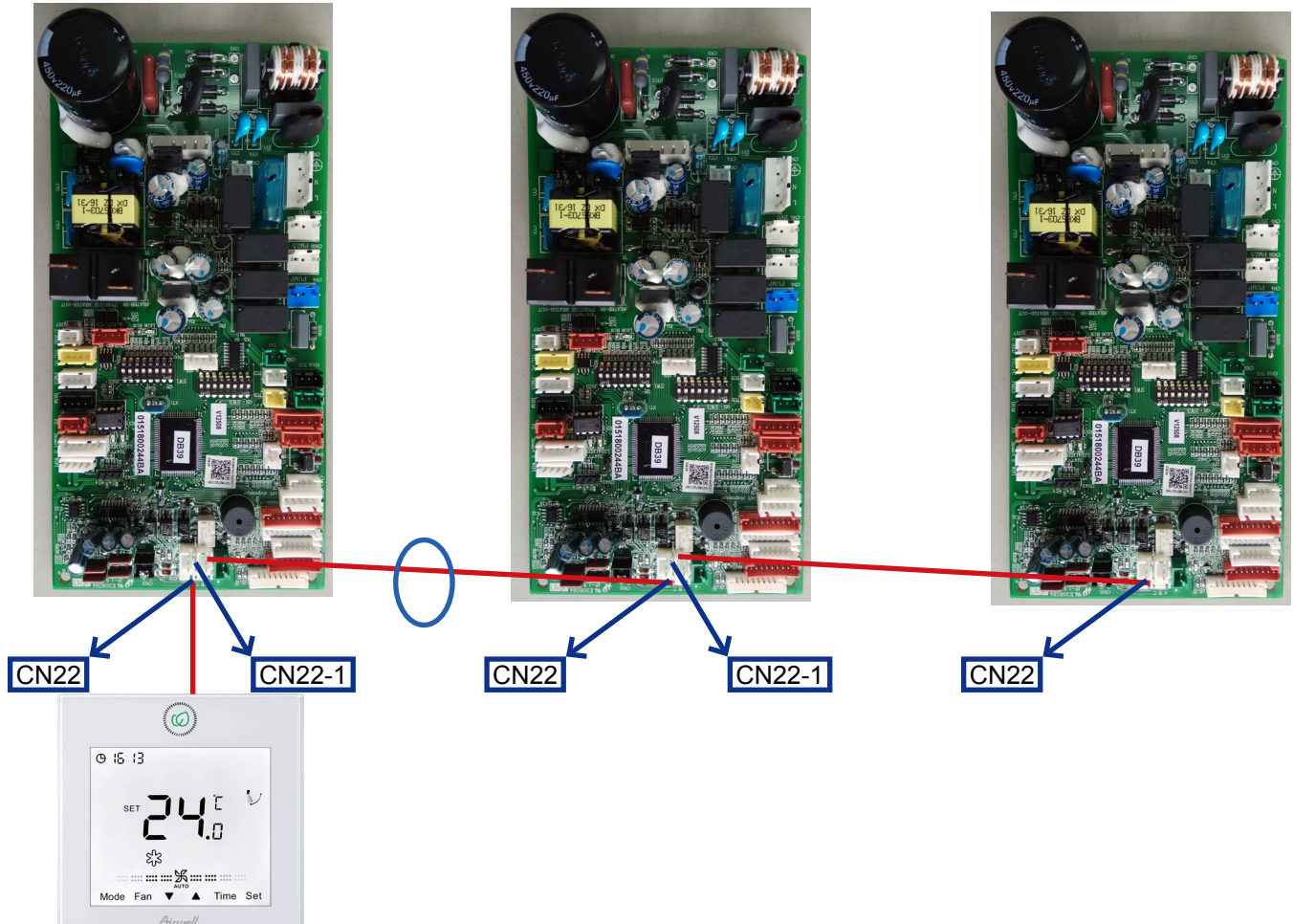


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800244BA PCB



Note:

1. Plug the wired controller terminal to the CN22 terminal of master unit which wired address is 0.
2. The CN22-1 terminal of the previous unit is connected to the CN22 terminal of the next unit
3. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

4. One controller can Max. control 16 indoor units.
5. Hand-in-hand connection method
6. The signal line is polarity

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Items Total current of indoor units (A)	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
					Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
<7	2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line	
≥7 and <11	4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16	6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22	8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27	10	40	32	32 A, 30 mA, 0.1S or below		

- The electrical power line and signal lines must be fastened tightly.
- Every indoor unit must have the ground connection.
- The power line should be enlarged if it exceeds the permissible length.
- Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- It is not permissible if the whole length of signal line exceeds 1000m.

Signal wiring of wired controller

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

6.9.7 Test Run

Before Test Run

- Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1MΩ. It can't be operated if it is below 1MΩ.
- Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.

Check if the arrangements of the drainpipe and connection line are correct.

The drainpipe shall be placed at the lower part while the connection line placed at the upper part. Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials. The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.

Checkup of Installation

- check if the mains voltage is matching
- check if there is air leakage at the piping joints
- check if the connections of mains power and indoor & outdoor units are correct
- check if the serial numbers of terminals are matching
- check if the installation place meets the requirement
- check if there is too much noise
- check if the connecting line is fastened
- check if the connectors for tubing are heat insulated
- check if the water is drained to the outside
- check if the indoor units are positioned

Ways of Test Run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.

When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

- Set the wired controller to cooling/heating mode, press "ON/OFF" button for 5 seconds to enter into the compulsive cooling/heating mode. Repress "ON/OFF" button to quit the compulsive running and stop the operation of the air conditioner.

6. Convertible Type Indoor Unit

6.1 Features



AWSI-FAV009-N11
 AWSI-FAV012-N11
 AWSI-FAV018-N11
 AWSI-FAV024-N11

AWSI-FAV028-N11
 AWSI-FAV030-N11
 AWSI-FAV038-N11
 AWSI-FAV048-N11

Ultra thin unit, only thick 199mm

The convertible unit adopts a double drain pan design. The unit body of AV09-24 is only thick 199mm. Slim, elegant and beautiful, supply more decoration to indoor.

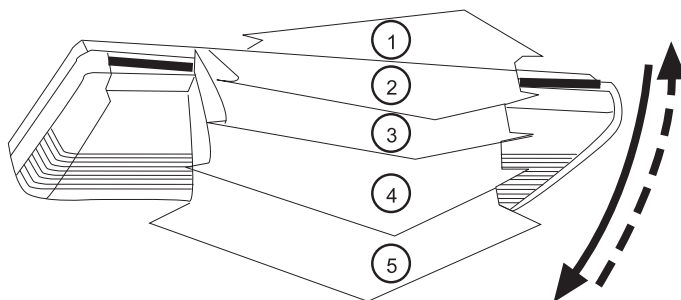
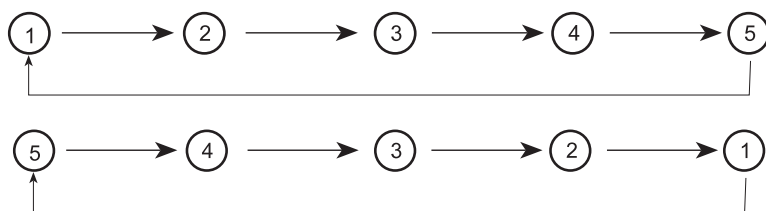
The convertible indoor unit can be used in the commercial building, the hotel, the hospital, or the house.

Wide angle airflow

100° wide angle louvers and 70° wide angle blades design to make a precise control of the airflow. It averagely distributes the comfortable air to every corner of the room.

Multiple air distribution direction

Every time press the SWING button, the flap will be at the following different position:



Long life and high efficiency air filter

Behind the front grille, you can find the Standard air filter in the unit. It is long life and high efficiency, which will absorb the dust in the air and make the unit supply much purer air.

6.2 Specification

MODEL			AWSI-FAV009-N11	AWSI-FAV012-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	9.6	12.3
	Capacity	kW	2.8	3.6
	Power input	W	100	100
	Current	A	0.3	0.3
Heating	Capacity	kBtu/h	10.9	13.6
	Capacity	kW	3.2	4
	Power input	W	100	100
	Current	A	0.3	0.3
	Heating capacity at low temp.	kW	2.5	3.2
Operating current		A	0.3	0.3
Power consumption		kW	0.1	0.1
Indoor motor	Brand		Broad ocean	Broad ocean
	Model		Y6S420A84	Y6S420A84
	Type		AC	AC
	Insulation class		B	B
	IP class		IP20	IP20
	Power input	W	94	94
	Power output	W	28	28
	Capacitor	μF	2μF /450v	2μF /450v
	Speed (High/Middle/Low)	rpm	1110/1005/745	1110/1005/745
Indoor fan	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		2	2
Indoor coil	a. Number of rows		2	3
	b. Tube pitch (a)×row pitch (b)	mm	21×13.3	25×21.65
	c. Fin spacing	mm	1.3	1.75
	d. Fin type (code)		Hydrophilic aluminum	
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ9.52 Inner groove tube
	f. Coil length×height×width	mm	797×252×6.6	747×250×66
	g. Number of circuits		3	3

MODEL			AWSI-FAV009-N11	AWSI-FAV012-N11
Cabinet	Cabinet coating type		Plastic	Plastic
	Cabinet salt spray test duration	Hour	/	/
	Control box IP class		IP20	IP20
Construction	Sheet metal thickness		/	/
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		No	No
	Branch outlet option		No	No
Indoor wall	Material		Plastic	Plastic
	Thickness	mm	/	/
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	9.52	12.7
	Drain hose	mm	20	20
Fresh air dimension	mm	/	/	
Sound pressure level (H/M/L)	dB (A)		38/35/33	38/35/33
Sound power level (H/M/L)	dB (A)		51/48/46	51/48/46
Standard static pressure	Pa		/	/
Indoor air flow (H/M/L)	m ³ /h		800/710/580	800/710/580
Dimension (W*H*D)	mm		990*199*655	990*199*655
Packing (W*H*D)	mm		1160*290*743	1160*290*743
Net weight	kg		28.3	28.3
Gross weight	kg		34.4	36.4
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

MODEL		AWSI-FAV018-N11	AWSI-FAV024-N11	AWSI-FAV028-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	19.1	24.2
	Capacity	kW	5.6	7.1
	Power input	W	100	100
	Current	A	0.3	0.3
Heating	Capacity	kBtu/h	21.5	27.3
	Capacity	kW	6.3	8
	Power input	W	100	100
	Current	A	0.3	0.3
	Heating capacity at low temp.	kW	5	6.3
Operating current		A	0.3	0.3
Power consumption		kW	0.1	0.1
Indoor motor	Brand		Broad ocean	Broad ocean
	Model		Y6S420A84	Y6S420A84
	Type		AC	AC
	Insulation class		B	B
	IP class		IP20	IP20
	Power input	W	94	94
	Power output	W	28	28
	Capacitor	μF	2μF /450v	2μF /450v
	Speed (High/Middle/Low)	rpm	1110/1005/745	1110/1005/745
Indoor fan	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		2	2
Indoor coil	a. Number of rows		3	3
	b. Tube pitch (a)×row pitch (b)	mm	25×21.65	25×21.65
	c. Fin spacing	mm	1.75	1.75
	d. Fin type (code)		Hydrophilic aluminum	
	e. Tube outside dia. and type	mm	Φ9.52 Inner groove tube	
	f. Coil length×height×width	mm	747×250×66	747×250×66
	g. Number of circuits		3	3

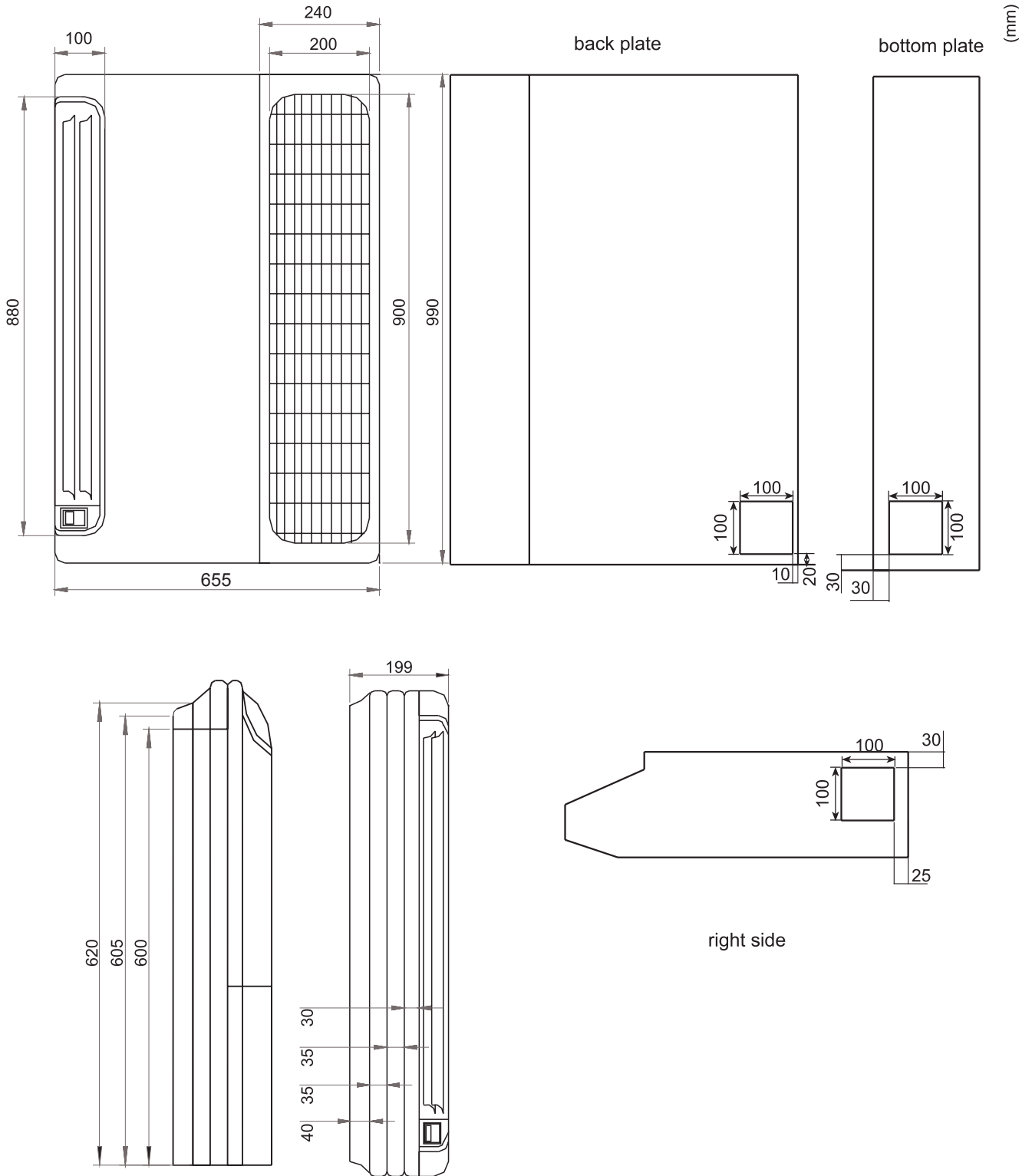
MODEL			AWSI-FAV018-N11	AWSI-FAV024-N11	AWSI-FAV028-N11
Cabinet	Cabinet coating type		Plastic	Plastic	Plastic
	Cabinet salt spray test duration	Hour	/	/	/
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		/	/	/
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		No	No	No
	Branch outlet option		No	No	No
Indoor wall	Material		Plastic	Plastic	Plastic
	Thickness	mm	/	/	/
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	6.35	9.52	9.52
	Gas pipe	mm	12.7	15.88	15.88
	Drain hose	mm	20	20	25
Fresh air dimension	mm	/	/	Φ200	
Sound pressure level (H/M/L)	dB (A)		40/37/35	40/37/35	43/40/38
Sound power level (H/M/L)	dB (A)		53/50/48	53/50/48	56/53/51
Standard static pressure	Pa		/	/	/
Indoor air flow (H/M/L)	m ³ /h		800/710/580	800/710/580	2040/1820/1610
Dimension (W*H*D)	mm		990*199*655	990*199*655	1580*240*700
Packing (W*H*D)	mm		1160*290*743	1160*290*743	1713*335*793
Net weight	kg		28.3	28.3	50
Gross weight	kg		36.4	36.4	57
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

MODEL			AWSI-FAV030-N11	AWSI-FAV038-N11	AWSI-FAV048-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	30.7	38.2	47.8
	Capacity	kW	9	11.2	14
	Power input	W	200	400	400
	Current	A	1.00	1.8	1.8
Heating	Capacity	kBtu/h	34.1	42.7	54.6
	Capacity	kW	10	12.5	16
	Power input	W	200	400	400
	Current	A	1.00	1.8	1.8
	Heating capacity at low temp.	kW	8	10	12.5
Operating current		A	1.8	1.8	1.8
Power consumption		kW	0.4	0.4	0.4
Indoor motor	Brand		Broad ocean	Broad ocean	Broad ocean
	Model		Y6S419C09L	YDK-150S42023-01	YDK-150S42023-01
	Type		AC	AC	AC
	Insulation class		B	B	B
	IP class		IP20	IP20	IP20
	Power input	W	188	263	263
	Power output	W	105	105	105
	Capacitor	μF	5μF /450v	5μF /450v	5μF /450v
	Speed (High/Middle/Low)	rpm	1120/1040/900/820	1395/1245/1090/980	1395/1245/1090/980
Indoor fan	Brand		/	/	/
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		4	4	4
Indoor coil	a. Number of rows		3	3	3
	b. Tube pitch (a)×row pitch (b)	mm	21×13.3	21×13.3	21×13.3
	c. Fin spacing	mm	1.3	1.3	1.3
	d. Fin type (code)		Hydrophilic aluminum		
	e. Tube outside dia. and type	mm	Φ7.0 Inner groove tube		
	f. Coil length×height×width	mm	1070×252×40	1350×250×40	1350×250×40
	g. Number of circuits		3	6	6

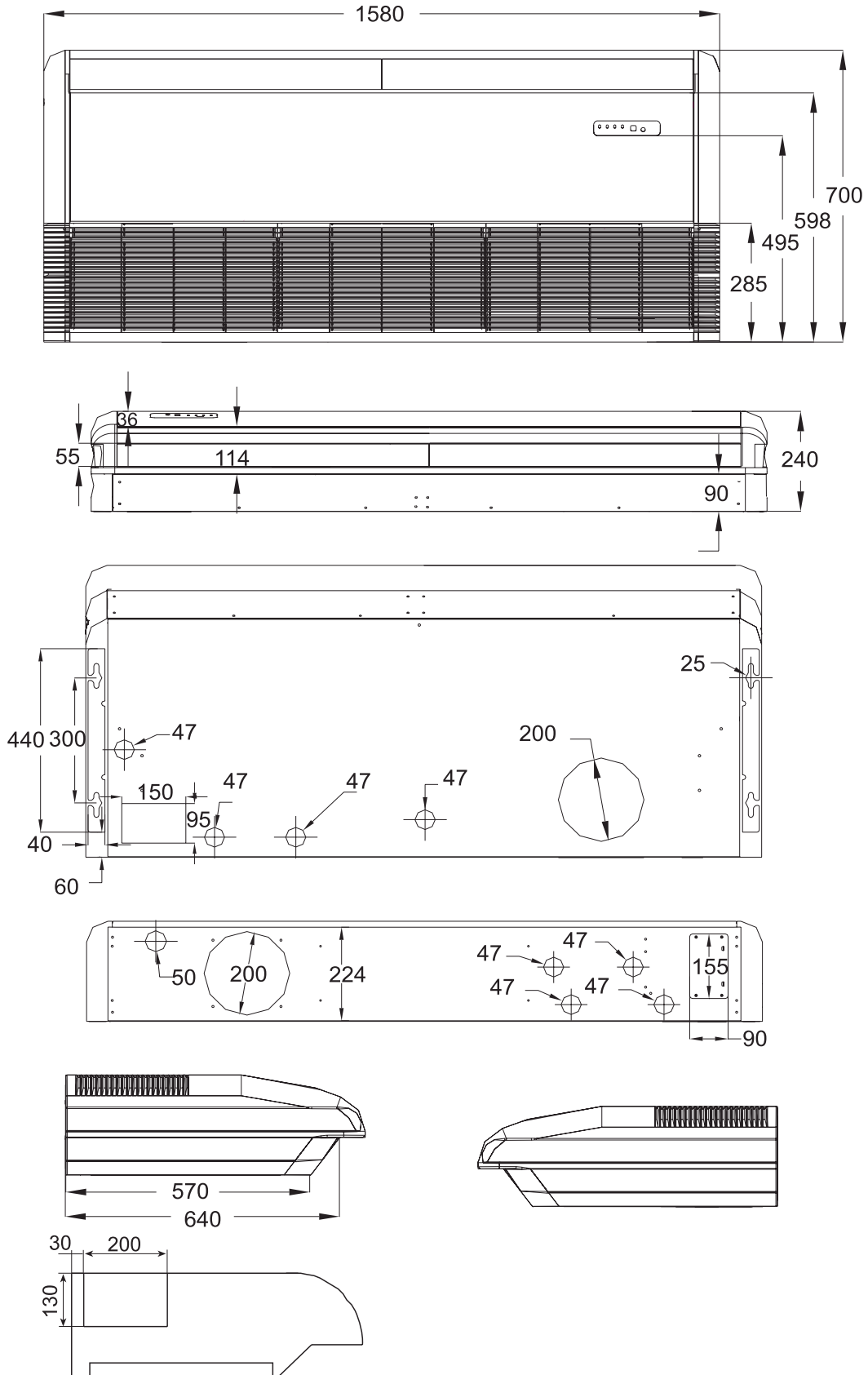
MODEL			AWSI-FAV030-N11	AWSI-FAV038-N11	AWSI-FAV048-N11
Cabinet	Cabinet coating type		Plastic	Plastic	Plastic
	Cabinet salt spray test duration	Hour	/	/	/
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		/	/	/
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		No	No	No
	Branch outlet option		No	No	No
Indoor wall	Material		Plastic	Plastic	Plastic
	Thickness	mm	/	/	/
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52	9.52
	Gas pipe	mm	15.88	15.88	15.88
	Drain hose	mm	25	25	25
Fresh air dimension	mm	Φ200	Φ200	Φ200	
Sound pressure level (H/M/L)	dB (A)	43/40/38	46/42/38	46/42/38	
Sound power level (H/M/L)	dB (A)	56/53/51	59/55/51	59/55/51	
Standard static pressure	Pa	/	/	/	
Indoor air flow (H/M/L)	m ³ /h	2040/1820/1610	2040/1820/1610	2040/1820/1610	
Dimension (W*H*D)	mm	1580*240*700	1580*240*700	1580*240*700	
Packing (W*H*D)	mm	1713*335*793	1713*335*793	1713*335*793	
Net weight	kg	50	54	54	
Gross weight	kg	57	61	61	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

6.3 Dimension

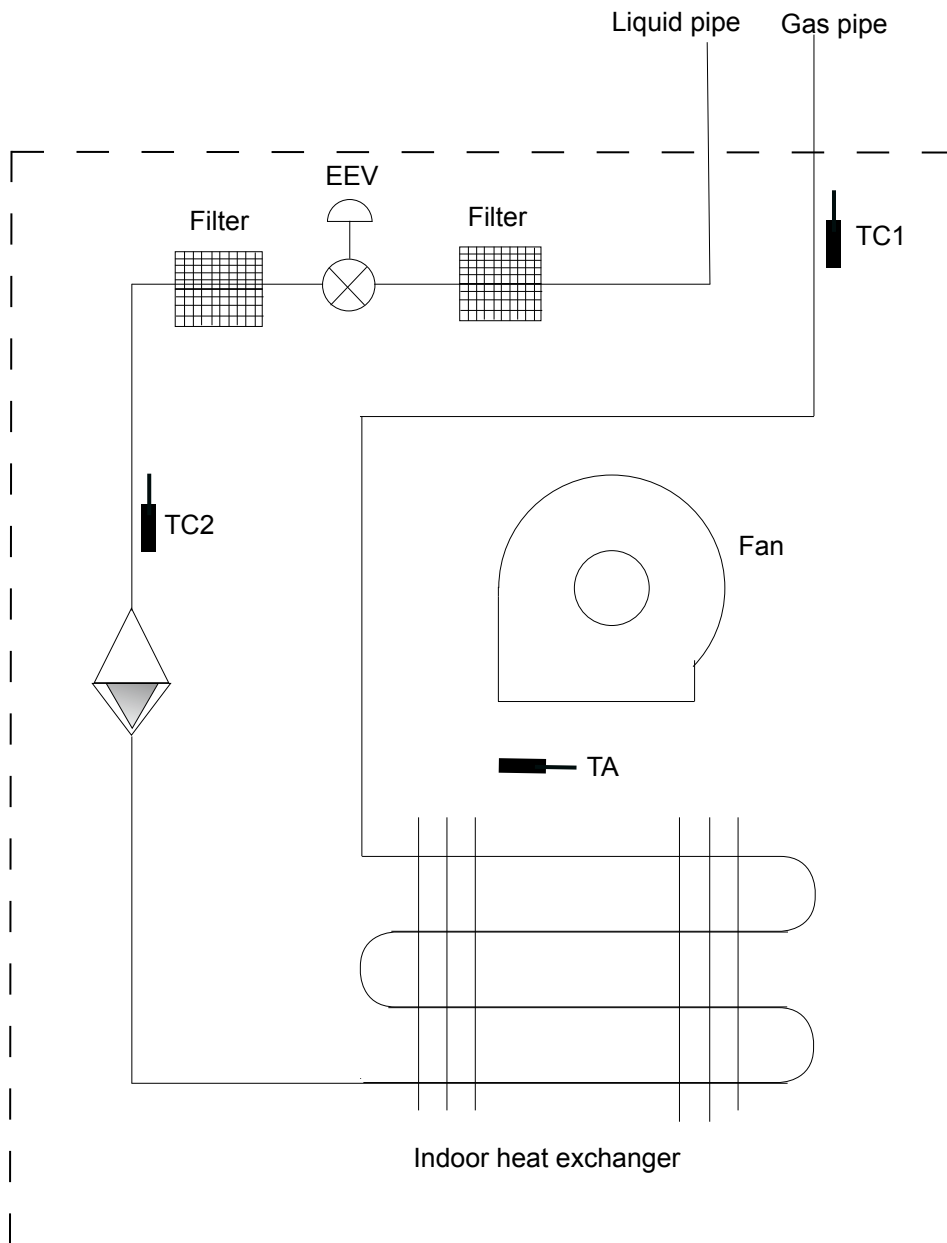
AWSI-FAV009-N11 AWSI-FAV012-N11 AWSI-FAV018-N11 AWSI-FAV024-N11



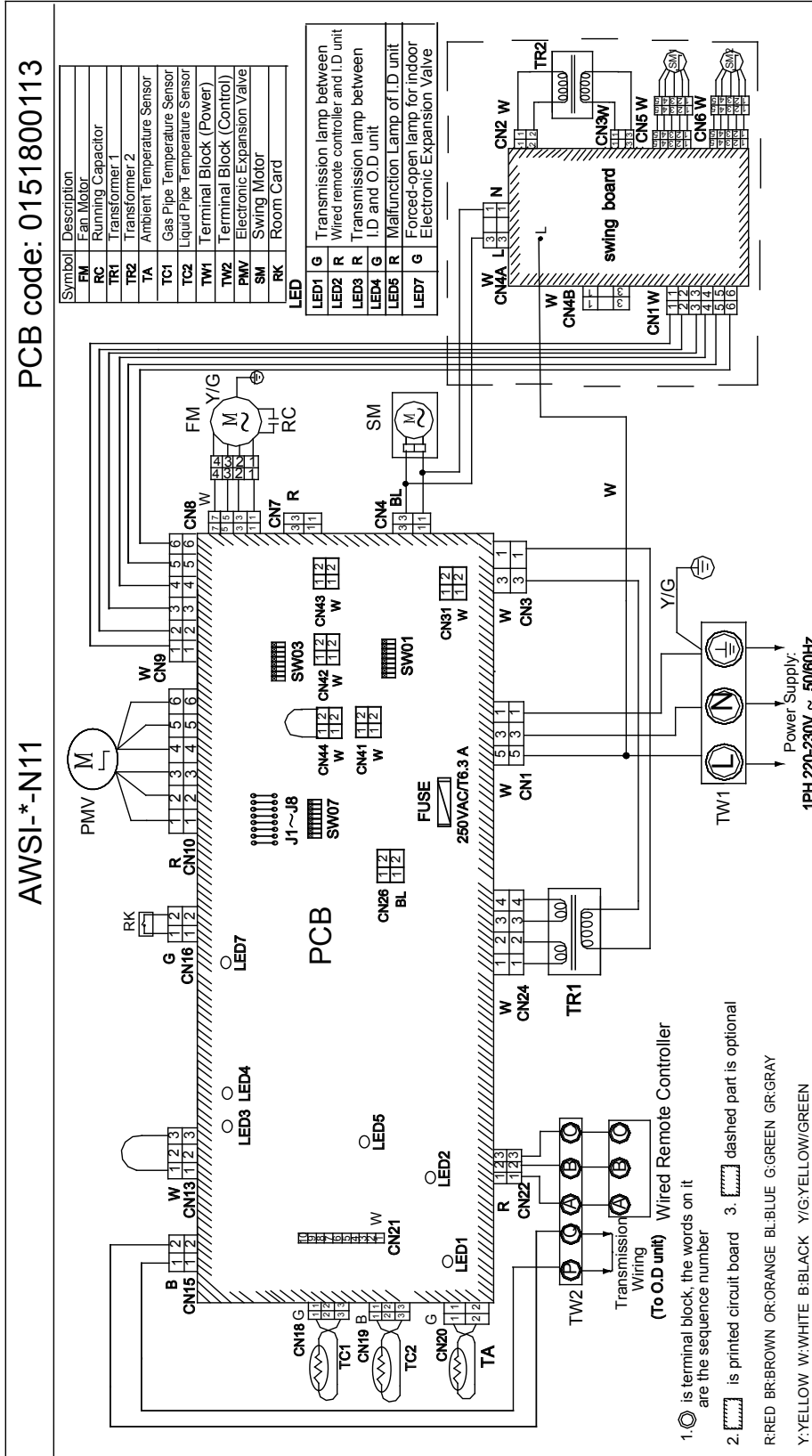
AWSI-FAV028-N11 AWSI-FAV030-N11 AWSI-FAV038-N11 AWSI-FAV048-N11



6.4 Piping diagram



6.5 Wiring diagram



6.6 Electric characteristics

Model	Units				Power supply		Indoor fan motor		Power input (W)	
	Phase	FQY	Voltage	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AWSI-FAV009-N11	1	50/60	220	198~242	0.64	2.04	28	0.51	100	100
AWSI-FAV012-N11	1	50/60	220	198~242	0.64	2.04	28	0.51	100	100
AWSI-FAV018-N11	1	50/60	220	198~242	0.64	2.04	28	0.51	100	100
AWSI-FAV024-N11	1	50/60	220	198~242	0.64	2.04	28	0.51	100	100
AWSI-FAV028-N11	1	50/60	220	198~242	2.51	8.04	105	2.01	200	200
AWSI-FAV030-N11	1	50/60	220	198~242	2.51	8.04	105	2.01	200	200
AWSI-FAV038-N11	1	50/60	220	198~242	2.51	8.04	105	2.01	400	400
AWSI-FAV048-N11	1	50/60	220	198~242	2.51	8.04	105	2.01	400	400

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker Output: Fan motor rated output (w) FLA: Full load amps (A)

Notes:

1. *Voltage range*

The units are applicable for the electrical systems where voltage supplied to unit is in the range.

2. *Maximum allowable voltage unbalance between phases is 2%.*

3. *$MCA=1.25*FLA$ $MFA\leq 4*FLA$.*

4. *Power supply uses the circuit breaker.*

6.7 Air velocity and temperature distribution

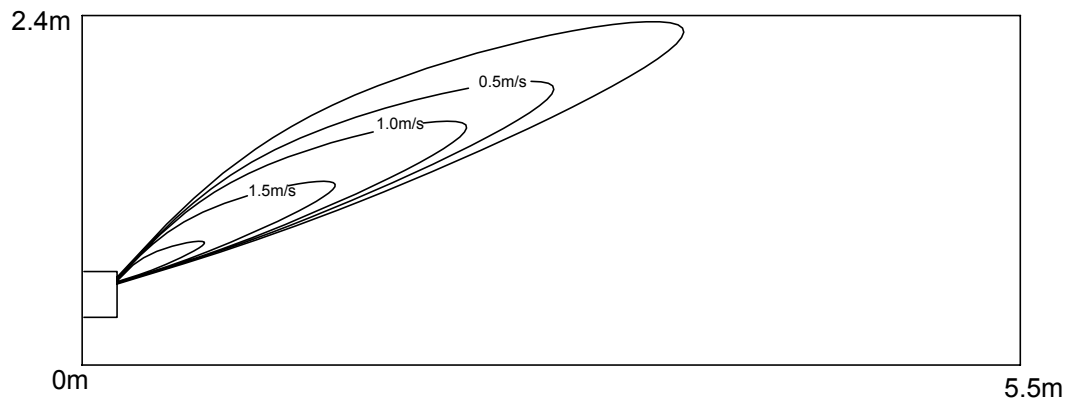
A) On the floor

a. Cooling / Air velocity distribution

Cooling

Blow angle: 25

Air velocity distribution

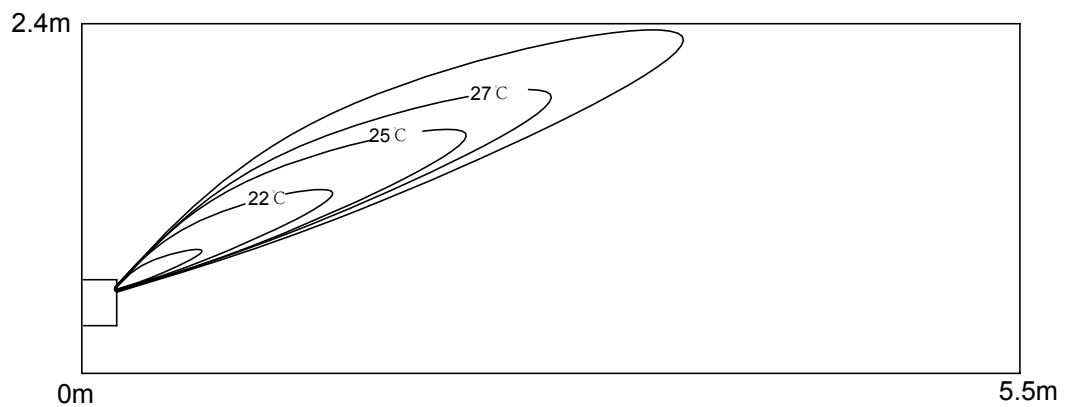


b. Cooling / Temperature distribution

Cooling

Blow angle: 25

Temperature distribution

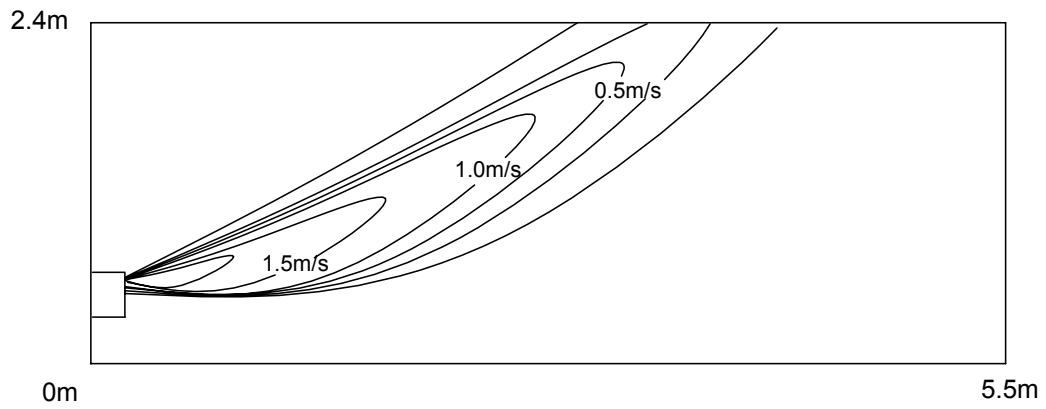


c. Heating / Air velocity distribution

Heating

Blow angle: 5

Air velocity distribution

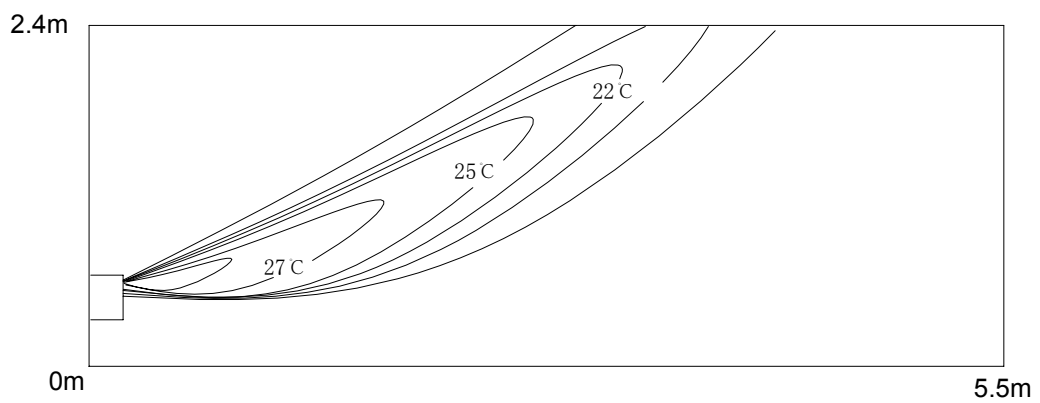


d. Heating / Temperature distribution

Heating

Blow angle: 5

Temperature distribution



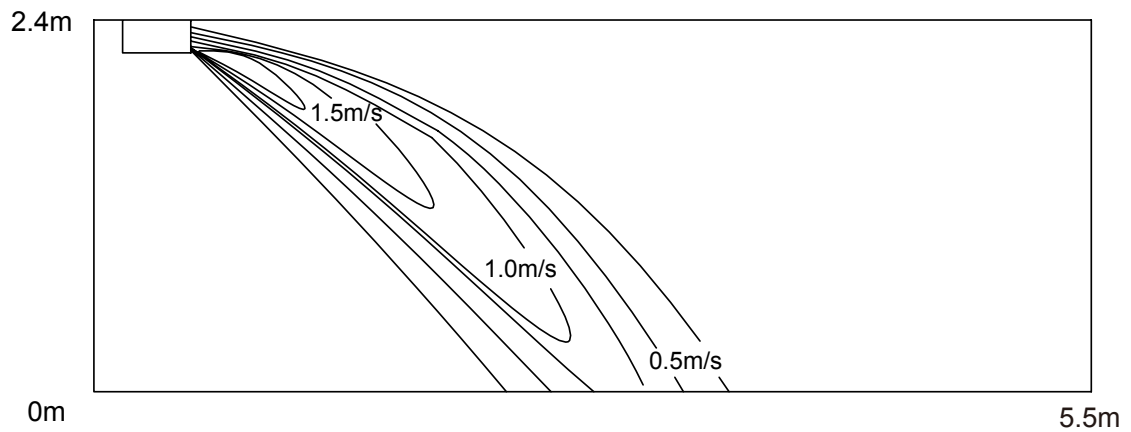
B) Ceiling

a. Cooling / Air velocity distribution

Cooling

Blow angle: 25

Air velocity distribution

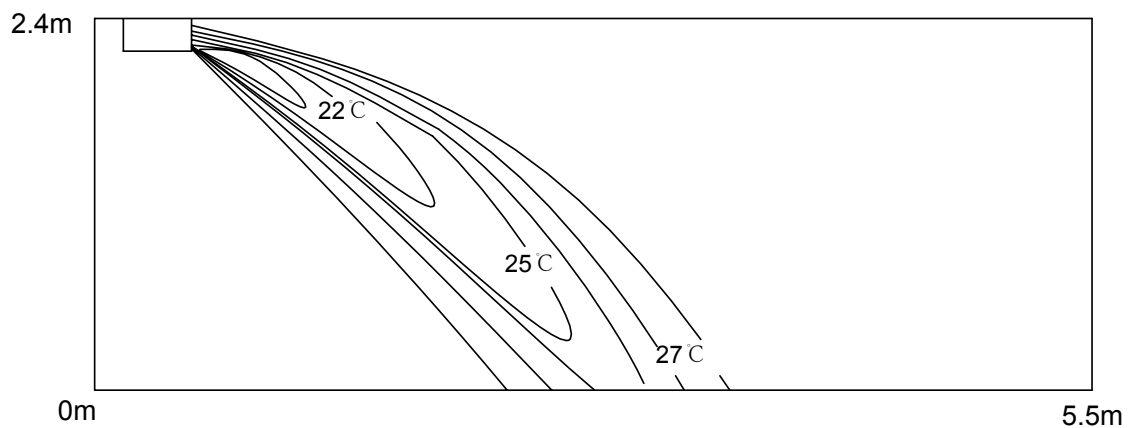


b. Cooling / Temperature distribution

Cooling

Blow angle: 25

Temperature distribution

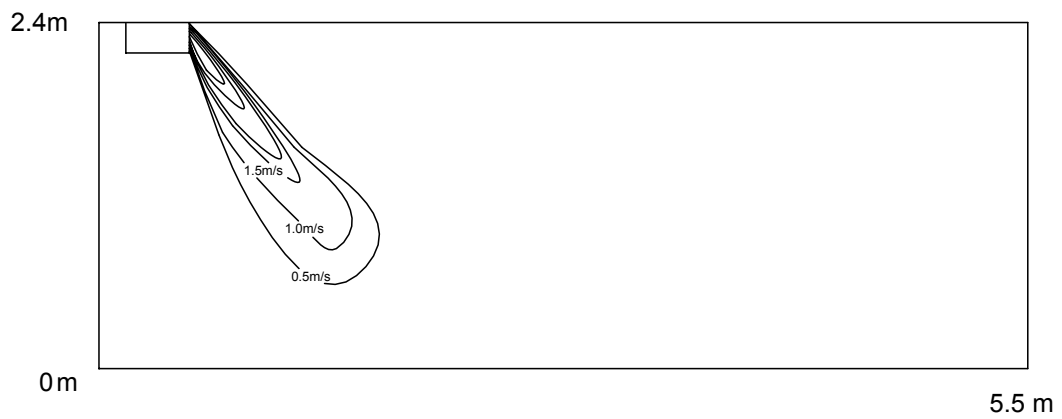


c. Heating / Air velocity distribution

Heating

Blow angle: 65

Air velocity distribution

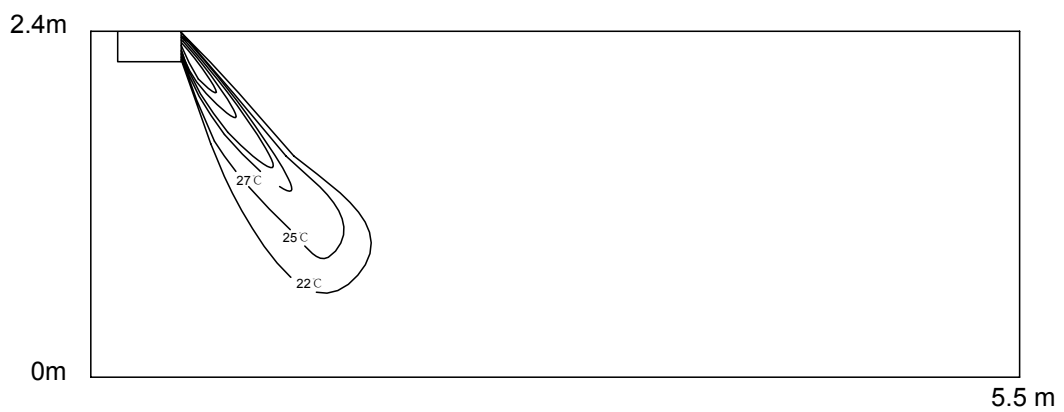


d. Heating / Temperature distribution

Heating

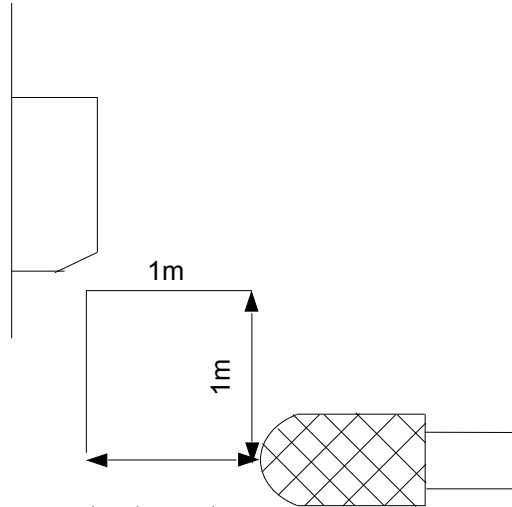
Blow angle: 65

Temperature distribution



6.8 Sound pressure level

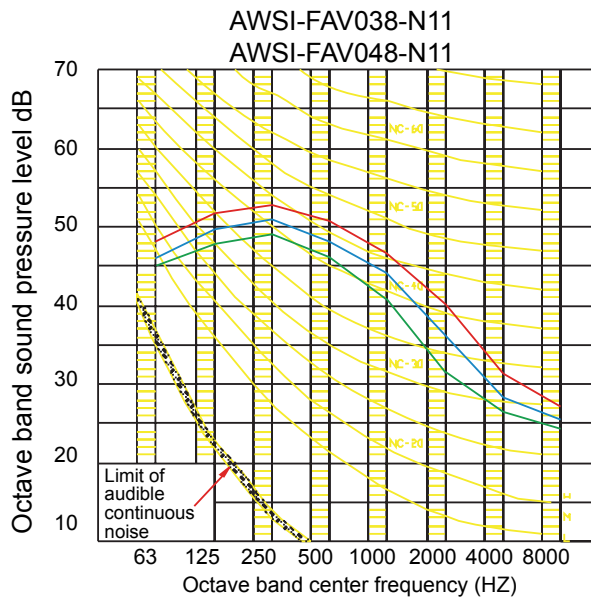
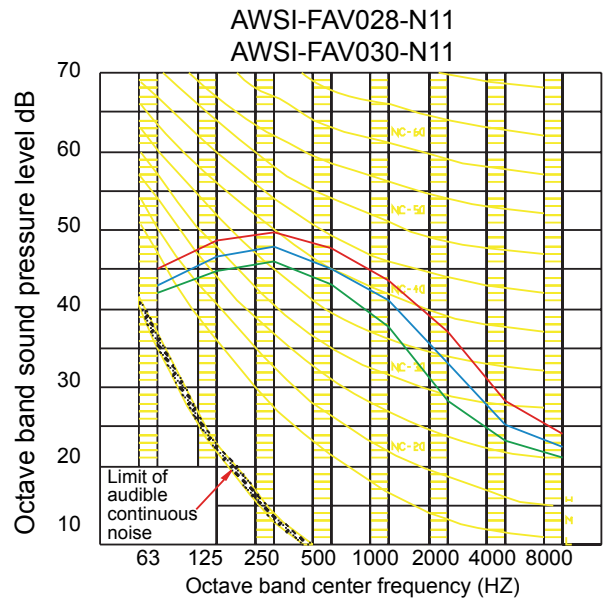
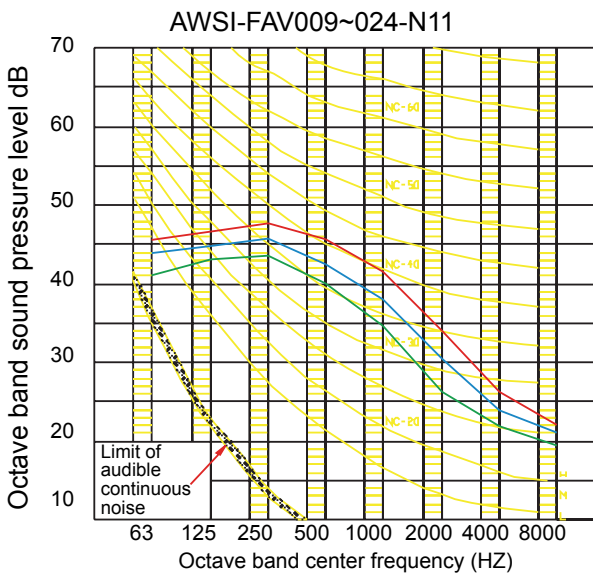
(1) Testing illustrate:



(2) Testing condition:

- a. Unit running in the nominal condition
- b. Test in the semi-anechoic chamber
- c. Noise level varies from the actual factors such as room structure, etc.

(3) Octave band level:



6.9 Installation

6.9.1 Installation procedures

Please contact Airwell local center if any problem or request.

Standard installation tools are recommended according to installation requirements.

For information about standard model series accessories, see packing list; other necessary parts to be installed shall be prepared by users as required by installation service network stations.

Decide places to install the indoor unit; places where even circulation of cool and warm air can be delivered shall be selected; and places below shall be avoided:

※ Places (in coastal areas) where salinity is high; where sulfurized gases are usual (areas where springs flourish and copper tube and braze easily get corroded); where oils (machinery oils) and steam are usual; where organic solvents are put to use; where machines radiating high frequency electromagnetic waves exist (which cause control system malfunctions); where contact with humid air near windows and doors is pervasive (making for easy condensation) and; where special sprayers are put to frequent use.

Installing Indoor Unit

1. The distance from air outlet to floor surface shall not exceed 2.7m.
2. Make sure that outlet airflow covers the whole room area; and arrange connecting tubes, wires and drain pipes to proper outdoor positions.
3. Make sure that ceiling structures are capable of bearing unit weight.
4. Connecting tubes, drain pipes and connecting wires can be put across walls to connect indoor unit and outdoor unit.
5. Connecting tubes and drain pipes between indoor and outdoor units shall be shorter for better.
6. Please refer to outdoor installation manual when refrigerant charging volume adjusting is necessary.
7. Joint flanges shall be prepared by users.
8. Valuables (e.g., TV sets, instruments, equipments, artworks, pianos, wireless devices) shall not be placed below the indoor unit lest condensed water drips upon the same.

Installing and Fixing

1. Drilling Wall Holes

Drill a wall hole (dia.70mm, see figure 1), slightly tilted downwards on the outside; fix guard ring to finalize before sealing the wall hole with gesso or putty.

2. Preparation before Installing Indoor Unit

Open inlet grille according to figure 2 and figure 3.

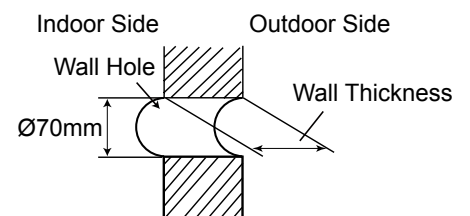


Figure 1 (Wall Hole in Section)

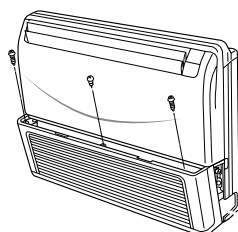


Figure 2 Model AWSI-FAV009~024-N11

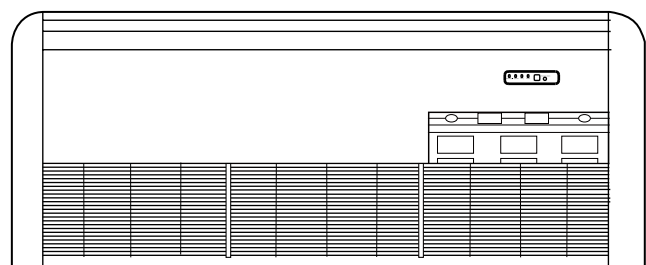


Figure 3 Model AWSI-FAV028~048-N11

3. Floor Type Installation

- ① Fix four rubber feet to the bottom of the unit with *4×16 bolts and Φ12 spacers (applicable to floor type units only).
- ② According to figure on the right, choose a certain direction to lead out drain pipe; drain holes are available on both right and left sides; practical conditions shall be considered. After deciding upon the directions to lead out pipelines, wires and drain pipes, drill wall holes according to required drilling processes.

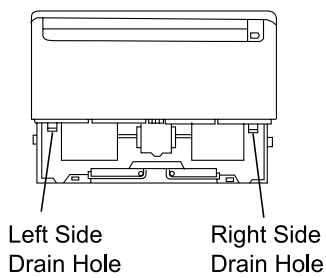
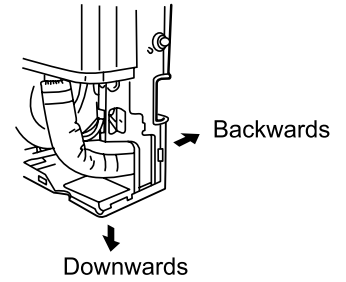


Figure 4 Model AWSI-FAV009~024-N11

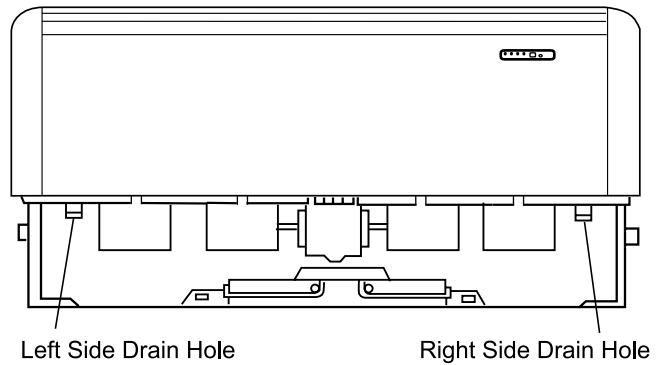
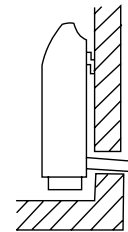
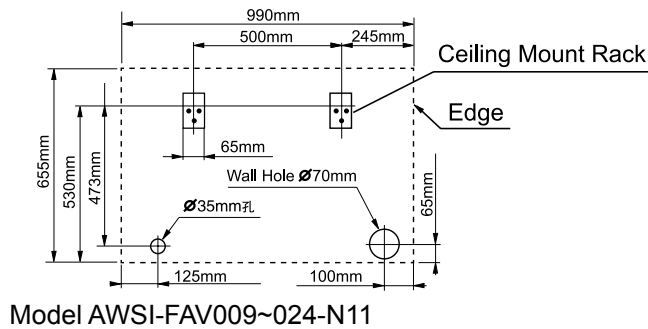


Figure 5 Model AWSI-FAV028~048-N11

- ③ Install wall mount rack according to figure below.

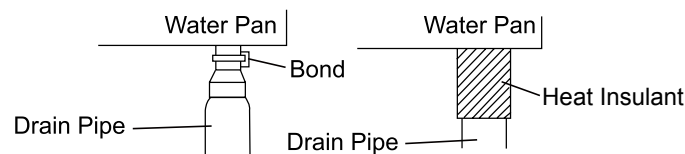


Model AWSI-FAV009~024-N11

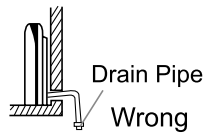
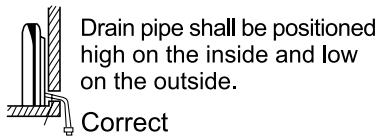
- ④ Installing Drain Pipe

In case of model 22-140, fix drain pipes to drain holes on left and right sides (as shown in figure 4 and figure 5). Install as follows (see figure below):

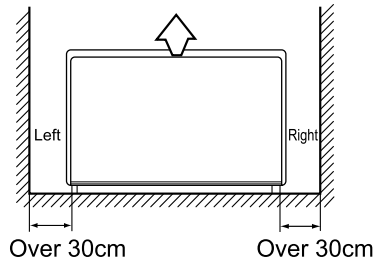
Plug drain pipe in water pan in the first place, as shown by figure, then, bind the two tight together and tie up junction area with heat insulant.



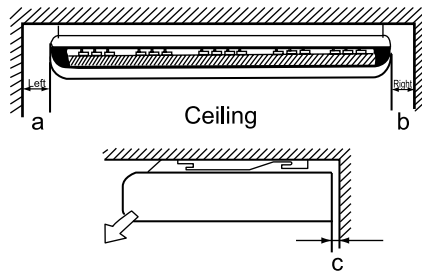
CAUTION: Drain pipe leading-out direction shown with figure below.



Attention to distance from the unit to the obstacles (as shown with figure).



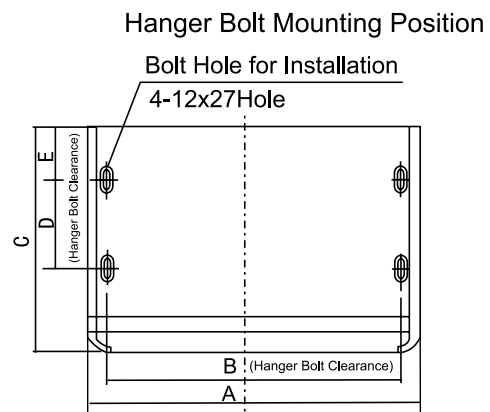
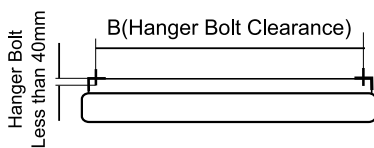
4. Ceiling Installation



Model	a	b	c
AWSI-FAV009~024-N11	Over 30cm	Over 30cm	Over 2cm
AWSI-FAV028~048-N11	Over 80cm	Over 150cm	Over 10cm

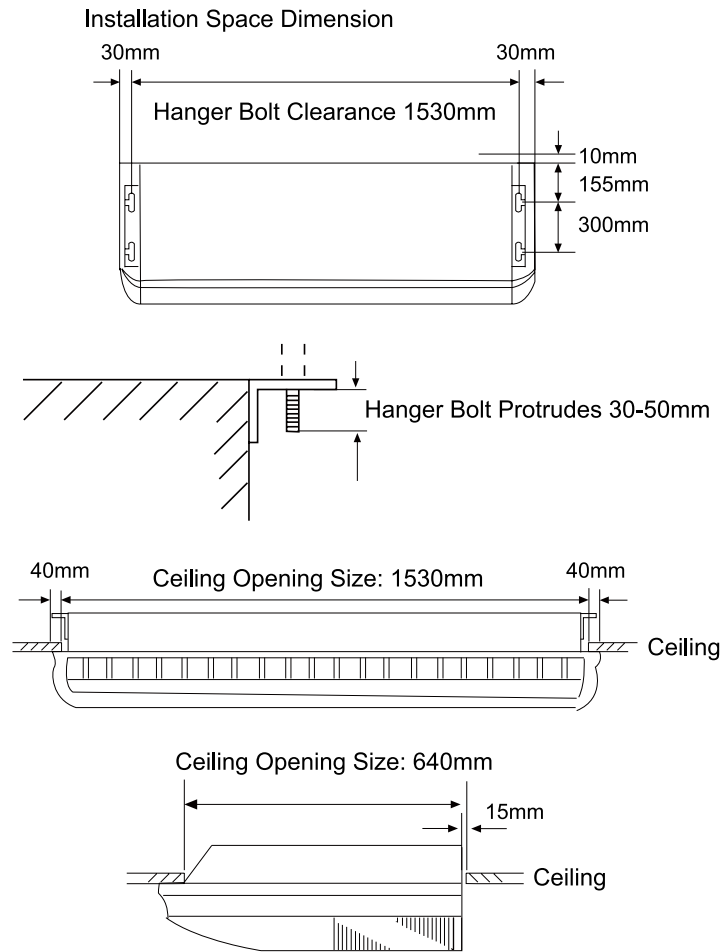
Ceiling Installation

① Use $\Phi 10$ hanger bolts, prepared on the site.
Please refer to figure on the right when installing.



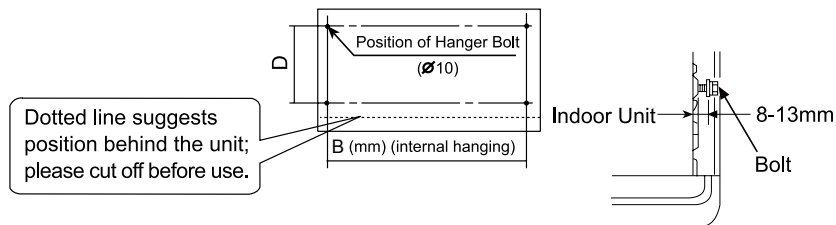
Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
AWSI-FAV009~024-N11	990	900	655	200	175

Model AW-FAV030/028-N11



② Installing Hang Bolt

Use M10 hanger bolt (prepared on the site) featuring 60mm hole depth, clearance fixed according to size proposed in the air conditioner external view; install according to different building structure specifications to guard against safety faults; and leveling instruments shall be available to ensure balanced installation.



③ Please use hexagon bolts when installing

④ Air Conditioner Installation Diagram

<p>① Hanger Chain Hook</p>	<p>Hanger Bolt Bolt Sleeve M10 Flat Spacer Double Nut Unit Mounting Rack Hexagon Bolt Ceiling ≤40mm</p> <p>Hanger bolt is 40mm below ceiling.</p>	<p>③ Installing Air Conditioner</p>	<p>Mounting Rack Bolt</p> <p>Insert hexagon bolt into slot.</p> <p>Screw tight hexagon bolt to fix air conditioner.</p>
<p>② Installing Status of Mounting Rack</p>	<p>(Ceiling) (Wall)</p> <p>Leveling is forbidden after air conditioner is installed; please make adjustment according to diagram indication.</p>	<p>④ Drain Pipe Leading-out Direction</p>	<p>CAUTION: Drain pipe shall be positioned high inside and low outside.</p> <p>According to requirements on the site, drain pipes shall be prepared by users on their own resources and make sure that these are connected to drain pipes previously available with the unit (make sure that measures are taken to guard against water leakage in junction areas); heat preservation shall be available with certain indoor drain pipes through using heat insulant to prevent condensation.</p>

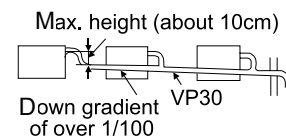
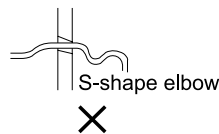
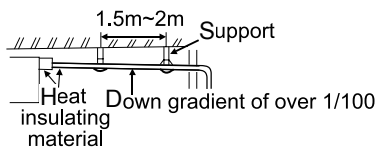
⑤ Installing Deco Plate and Inlet Grille (after pipeline laying and electric wiring are done).

⚠ ATTENTION

- For normal drainage, the water drainage piping should be connected according to the installation manual. Heat insulation should be performed to avoid condensation. Improper pipe connection may cause water going into the machine.

Requirements:

- Heat insulating treatment should be made for the water drainpipes of the indoor units.
- Heat preservation should be made for the connection with the indoor units. Improper heat preservation may cause condensing.
- The drainpipe should be designed with a down gradient of 1/100. The midway of the elbow shouldn't be made in S shape. Or abnormal noise may be caused.
- The lateral length of the drainpipe should be kept within 20m. Under the condition of long pipe, a support should be provided every 1.52~2m to avoid unevenness.
- The central piping can be connected according the following figure.
- Don't apply external force to the connection of drainpipes.



Piping Materials & Heat Insulating Materials

As to prevent condensation, heat insulating treatment should be performed. The heat insulating treatment for piping should be done respectively.

Piping Material	Hard PVC tube VP31.5mm (inner bore)
Heat Insulating Material	Vesicant polythene thickness: over 7mm

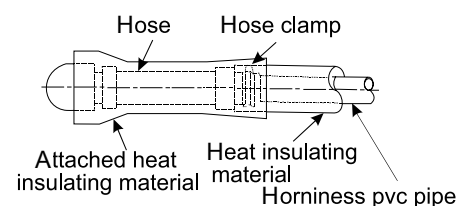
Hose

The drainage hose is made of $\Phi 19.05\text{mm}$ (3/4) PVC tube, which can adjust the eccentricity and the angle of the hard PVC tube.

- Stretch the hose directly to make connections as to avoid distortion. The soft end of the hose should be positioned with a clamp.
- The hose should be used in the horizon direction.
- Heat Insulation Treatment:
- Wrap the connection between the clamp and the root segment of the indoor unit without any gap with heat insulating materials as shown in the drawing. Don't apply external force to the connection of drainpipes.

Confirm drainage

During the test run, check the condition of water drainage and make sure that there is no leakage on the connection of piping, which should also be performed during the winter.



Pipe Length & Height Difference

Please refer to the attached manual of outdoor units.

Model		AWSI-FAV009-N11	AWSI-FAV012-N11 AWSI-FAV018-N11	AWSI-FAV024-N11 AWSI-FAV028~048-N11
Pipe Size (mm)	Gas pipe	Φ9.52	Φ12.7	Φ15.88
	Liquid pipe	Φ6.35	Φ6.35	Φ9.52
Pipe Material	Phosphor deoxy bronze seamless pipe (TP2) for air conditioner			

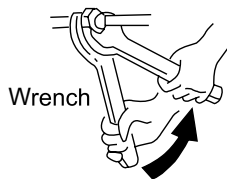
Refrigerant Recharge Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount while compressor failure can be caused by too much or less refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table



Outer diameter of tubing (mm)	Mounting torque (N.m)	Increase mounting torque (N.m)
Φ6.35	11.8 (1.2kgf.m)	13.7 (1.4kgf.m)
Φ9.52	24.5 (2.5kgf.m)	29.4 (3.0kgf.m)
Φ12.7	49.0 (5.0kgf.m)	53.9 (5.5kgf.m)
Φ15.88	78.4 (8.0kgf.m)	98.0 (10.0kgf.m)

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one master unit.]

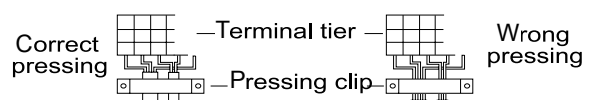
Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting



- Connecting circular terminals:**
The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.
- Connecting straight terminals:**
The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.
- Pressing connecting line:**
After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



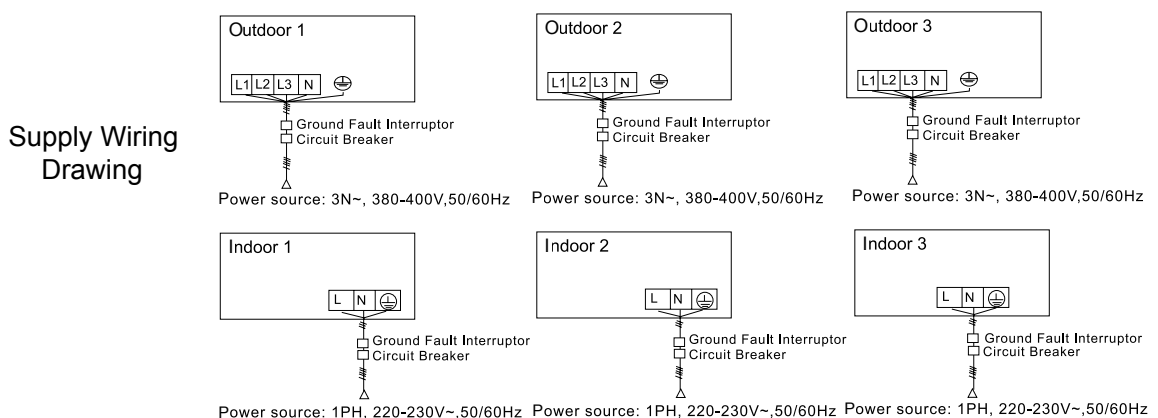
6.9.2 Electrical wiring

⚠ WARNING

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient.
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents.
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line.

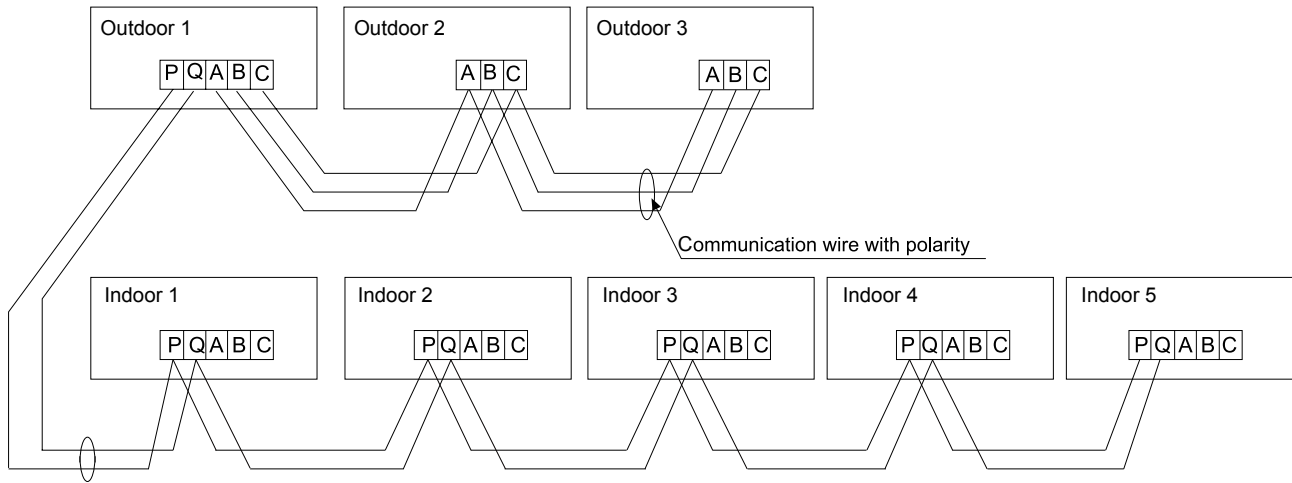
⚠ ATTENTION

- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while ⊕ should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line and signal line are provided by users. Parameters for power lines are shown as below: $3 \times 1.0-1.5 \text{ mm}^2$; parameters for signal line: $2 \times 0.75-1.25 \text{ mm}^2$ (shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

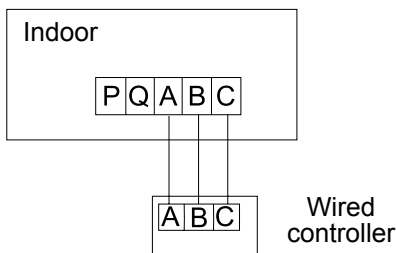
Signal Wiring Drawing



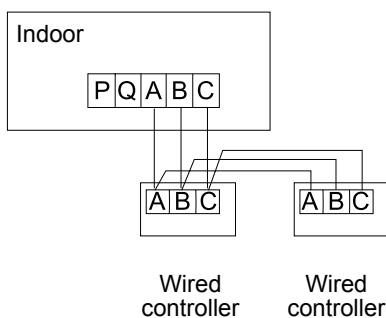
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

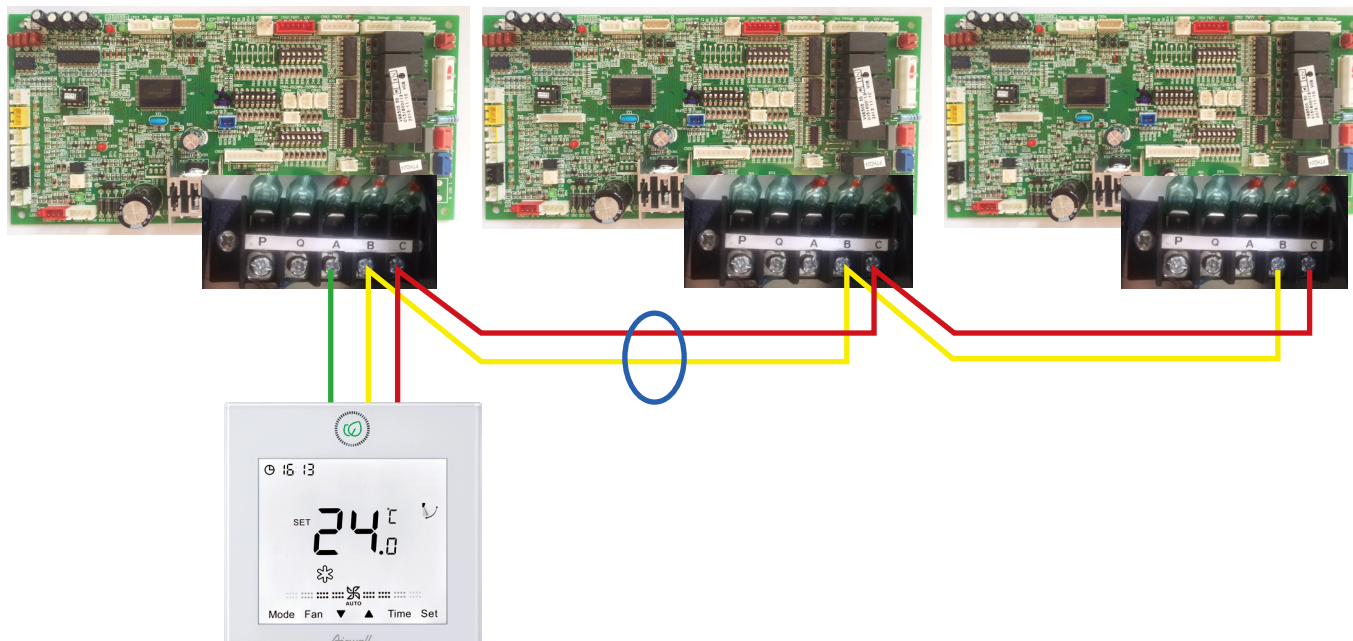


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800113 PCB



Note:

1. The wired controller connects with the ABC terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

		[1]	[2]	[3]	[4]	Wired control address
SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity

Indoor power supply wiring & signal wiring between indoor and outdoor & signal wiring between indoor.

Items Total current of indoor units (A)	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
					Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
<7	2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line	
≥7 and <11	4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16	6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22	8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27	10	40	32	32 A, 30 mA, 0.1S or below		

- ※ The electrical power line and signal lines must be fastened tightly.
- ※ Every indoor unit must have the ground connection.
- ※ The power line should be enlarged if it exceeds the permissible length.
- ※ Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- ※ It is not permissible if the whole length of signal line exceeds 1000m.

Signal wiring of wired controller

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

6.9.3 Test run

Before Test Run

- Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1MΩ. It can't be operated if it is below 1MΩ.
- Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.

Check if the arrangements of the drainpipe and connection line are correct.

The drainpipe shall be placed at the lower part while the connection line placed at the upper part. Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials. The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.

Checkup of installation

- Check if the mains voltage is matching
- Check if there is air leakage at the piping joints
- Check if the connections of mains power and indoor & outdoor units are correct
- Check if the serial numbers of terminals are matching
- Check if the installation place meets the requirement
- Check if there is too much noise
- Check if the connecting line is fastened
- Check if the connectors for tubing are heat insulated
- Check if the water is drained to the outside
- Check if the indoor units are positioned
-

Ways of Test Run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.

When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

- Set the wired controller to cooling/heating mode, press "ON/ OFF" button for 5 seconds to enter into the compulsive cooling/heating mode. Re-press "ON/ OFF" button to quit the compulsive running and stop the operation of the air conditioner.

7. Slim Duct Type Indoor Unit

7.1 Features



AWSI-DDV007-N11
AWSI-DDV009-N11
AWSI-DDV012-N11
AWSI-DDV016-N11

1. 185mm height ultra thin design and 420mm depth
2. Built in drain pump
3. Ultra low noise: realize 21dB (A) operation noise
4. Rear air return
5. Static pressure 0-30Pa
6. 7 models ranging from 1.5kW to 7.1KW

7.2 Specification

MODEL		AWSI-DDV007-N11	
Power supply		Ph-V-Hz	1,220~230,50/60
Cooling	Capacity	kBtu/h	7.5
	Capacity	kW	2.2
	Power input	W	56
	Current	A	0.26
Heating	Capacity	kBtu/h	8.5
	Capacity	kW	2.5
	Power input	W	56
	Current	A	0.26
	Heating capacity at low temp.	kW	2.0
Operating current		A	0.26
Power consumption		kW	0.056
Indoor motor	Brand		Broad Ocean/Welling
	Model		Y5S413B5116/YSK20-4I-2
	Type		AC
	Insulation class		B
	IP class		IP20
	Power Input	W	48
	Power output	W	25/23
	Capacitor	μF	1.5/3.0μF
	Speed (High/Middle/Low)	rpm	950/765/600
Indoor fan	Brand		/
	Type		centrifugal
	Quantity		2
Indoor coil	a. Number of rows		2
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3
	c. Fin spacing	mm	1.4
	d. Fin type (code)		
	e. Tube outside dia. and type	mm	
	f. Coil length×height×width	mm	640*210*26.6
	g. Number of circuits		3
Cabinet	Cabinet coating type		Galvanized
	Cabinet salt spray test duration	Hour	72
	Control box IP class		IP20

MODEL			AWSI-DDV007-N11
Construction	Sheet metal thickness		0.8
	Drain pan material		PS
	Drain pan insulation		20
	Drain pump option		Standard 600mm
	Branch outlet option		No
Indoor wall	Material		Hot zinc plate
	Thickness	mm	0.8
	Double or single skin		Single
Air filter	Material		PP
	Mesh		100
	Pressure drop	Pa	5
Piping dimension	Liquid pipe	mm	6.35
	Gas pipe	mm	9.52
	Drain hose	mm	25
Panel (optional)	Panel model	/	
	External dimensions(W/D/H)	mm	
	Shipping dimensions(W/D/H)	mm	
	Net / shipping weight	kg	
Fresh air dimension	mm		Φ80
Sound pressure level (H/M/L)	dB (A)		27/24/21
Sound power level (H/M/L)	dB (A)		41/38/35
Standard static pressure	Pa		0
Max. static pressure	Pa		30
Indoor air flow (H/M/L)	m ³ /h		480/420/360
Air outlet dimensions	mm		640*90
Air return dimensions	mm		760*152
Dimension (W*H*D)	mm		850*185*420
Packing (W*H*D)	mm		1045*270*540
Net weight	kg		17.5
Gross weight	kg		22.5
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.			

MODEL			AWSI-DDV009-N11	AWSI-DDV012-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	9.6	12.3
	Capacity	kW	2.8	3.6
	Power input	W	56	56
	Current	A	0.26	0.26
Heating	Capacity	kBtu/h	10.9	13.6
	Capacity	kW	3.2	4.0
	Power input	W	56	56
	Current	A	0.26	0.26
	Heating capacity at low temp.	kW	2.5	3.2
Operating current		A	0.26	0.26
Power consumption		kW	0.056	0.056
Indoor motor	Brand		Broad Ocean/Welling	Broad Ocean/Welling
	Model		Y5S413B5116/YSK20-4I-2	Y5S413B5116/YSK20-4I-2
	Type		AC	AC
	Insulation class		B	B
	IP class		IP20	IP20
	Power Input	W	48	48
	Power output	W	25/23	25/23
	Capacitor	μF	1.5/3.0μF	1.5/3.0μF
	Speed (High/Middle/Low)	rpm	950/765/600	950/765/600
Indoor fan	Brand		/	/
	Type		centrifugal	Centrifugal
	Quantity		2	2
Indoor coil	a. Number of rows		2	2
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3	21*13.3
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	
	f. Coil length×height×width	mm	640*210*26.6	640*210*26.6
	g. Number of circuits		3	3
Cabinet	Cabinet coating type		Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72
	Control box IP class		IP20	IP20

MODEL			AWSI-DDV009-N11	AWSI-DDV012-N11
Construction	Sheet metal thickness		0.8	0.8
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		Standard 600mm	Standard 600mm
	Branch outlet option		No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	9.52	12.7
	Drain hose	mm	25	25
Panel (optional)	Panel model	/	DDV PANEL 07-16	
	External dimensions(W/D/H)	mm	890/190/100 (outlet panel)	
			890/290.5/32.4 (inlet panel)	
	Shipping dimensions(W/D/H)	mm	938/335/220	
Net / shipping weight	kg	4/5		
Fresh air dimension	mm	Φ80	Φ80	
Sound pressure level (H/M/L)	dB (A)	27/24/21	30/28/25	
Sound power level (H/M/L)	dB (A)	41/38/35	44/42/39	
Standard static pressure	Pa	0	0	
Max. static pressure	Pa	30	30	
Indoor air flow (H/M/L)	m ³ /h	480/420/360	550/430/370	
Air outlet dimensions	mm	640*90	640*90	
Air return dimensions	mm	760*152	760*152	
Dimension (W*H*D)	mm	850*185*420	850*185*420	
Packing (W*H*D)	mm	1045*270*540	1045*270*540	
Net weight	kg	17.5	17.5	
Gross weight	kg	22.5	22.5	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

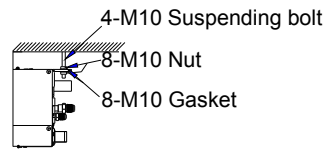
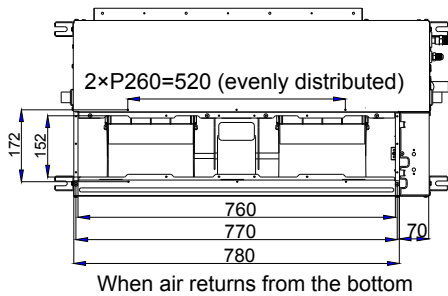
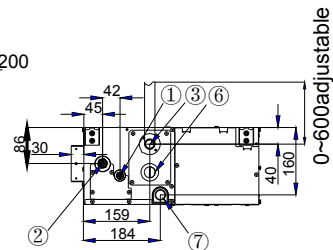
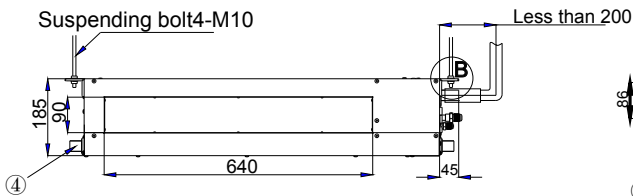
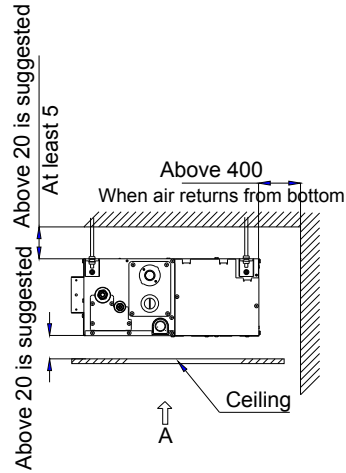
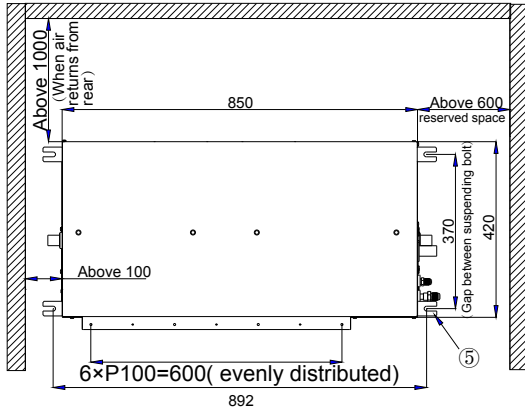
MODEL		AWSI-DDV016-N11	
Power supply		Ph-V-Hz	1,220~230,50/60
Cooling	Capacity	kBtu/h	15.4
	Capacity	kW	4.5
	Power input	W	65
	Current	A	0.3
Heating	Capacity	kBtu/h	17.1
	Capacity	kW	5.0
	Power input	W	65
	Current	A	0.3
	Heating capacity at low temp.	kW	4.0
Operating current		A	0.3
Power consumption		kW	0.065
Indoor motor	Brand		Broad ocean
	Model		Y5S413B8100
	Type		AC
	Insulation class		B
	IP class		IP20
	Power input	W	57
	Power output	W	51
	Capacitor	μF	3.5μF
	Speed (High/Middle/Low)	rpm	1220/1060/950
Indoor fan	Brand		/
	Type		Centrifugal
	Quantity		2
Indoor coil	a. Number of rows		3
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3
	c. Fin spacing	mm	1.4
	d. Fin type (code)		Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube
	f. Coil length×height×width	mm	640*210*39.9
	g. Number of circuits		4
Cabinet	Cabinet coating type		Galvanized
	Cabinet salt spray test duration	Hour	72
	Control box IP class		IP20

MODEL			AWSI-DDV016-N11
Construction	Sheet metal thickness		0.8
	Drain pan material		PS
	Drain pan insulation		20
	Drain pump option		Standard 600mm
	Branch outlet option		No
Indoor wall	Material		Hot zinc plate
	Thickness	mm	0.8
	Double or single skin		Single
Air filter	Material		PP
	Mesh		100
	Pressure drop	Pa	5
Piping dimension	Liquid pipe	mm	6.35
	Gas pipe	mm	12.7
	Drain hose	mm	25
Panel (optional)	Panel model	/	DDV PANEL 07-16
	External dimensions(W/D/H)	mm	890/190/100 (outlet panel)
			890/290.5/32.4 (inlet panel)
	Shipping dimensions(W/D/H)	mm	938/335/220
Net / shipping weight	kg	4/5	
Fresh air dimension		mm	Φ80
Sound pressure level (H/M/L)		dB (A)	33/30/27
Sound power level (H/M/L)		dB (A)	47/44/41
Standard static pressure		Pa	0
Max. static pressure		Pa	30
Indoor air flow (H/M/L)		m ³ /h	600/540/460
Air outlet dimensions		mm	640*90
Air return dimensions		mm	760*152
Dimension (W*H*D)		mm	850*185*420
Packing (W*H*D)		mm	1045*270*540
Net weight		kg	18.5
Gross weight		kg	23.5
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.			

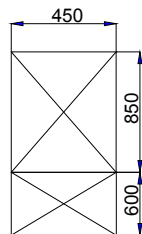
7.3 Dimension

AWSI-DDV007-N11 AWSI-DDV009-N11

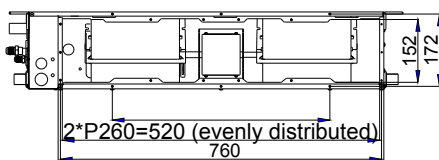
AWSI-DDV012-N11 AWSI-DDV016-N11



Zoom in section B

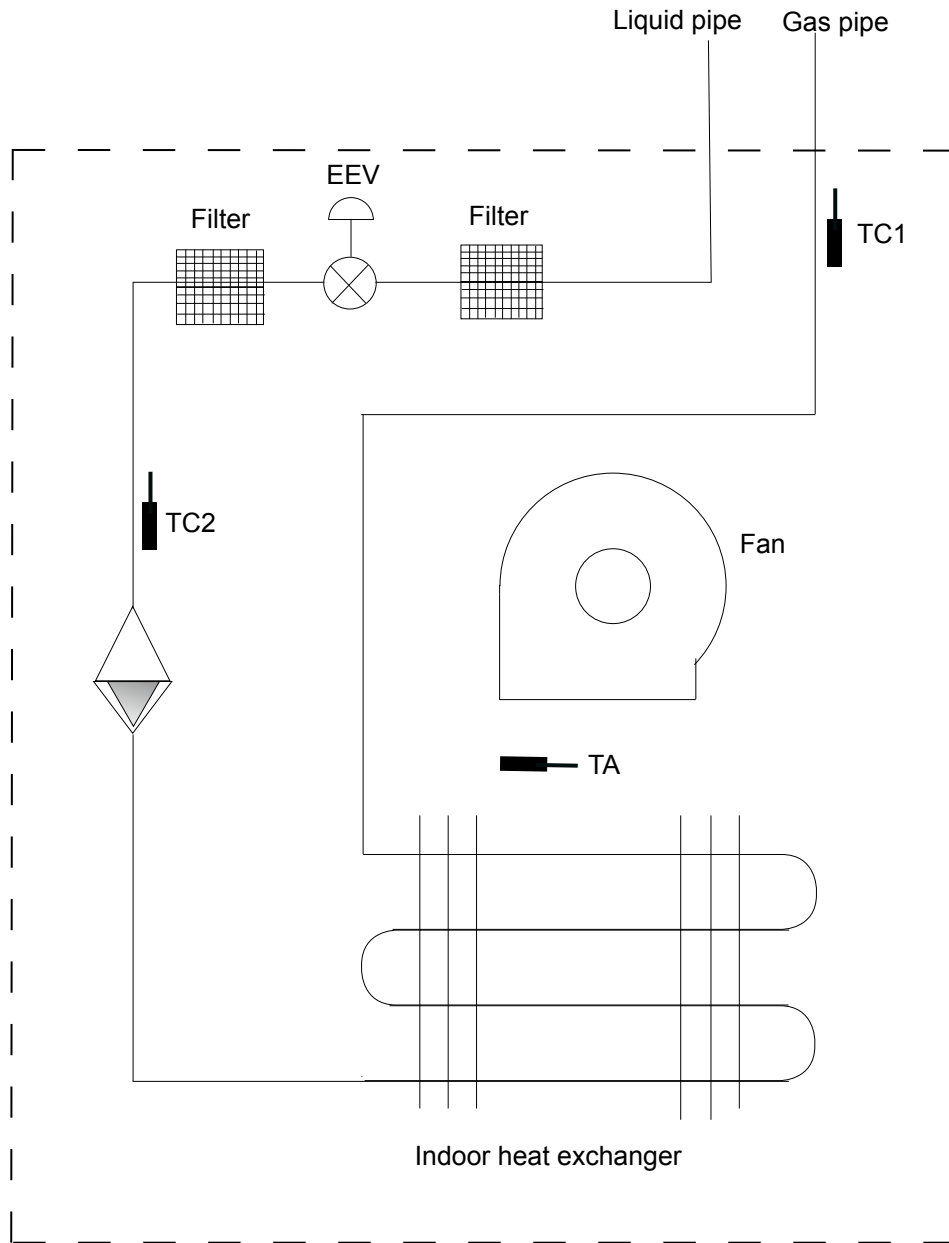


See from A side
Checking hole(hole in ceiling)



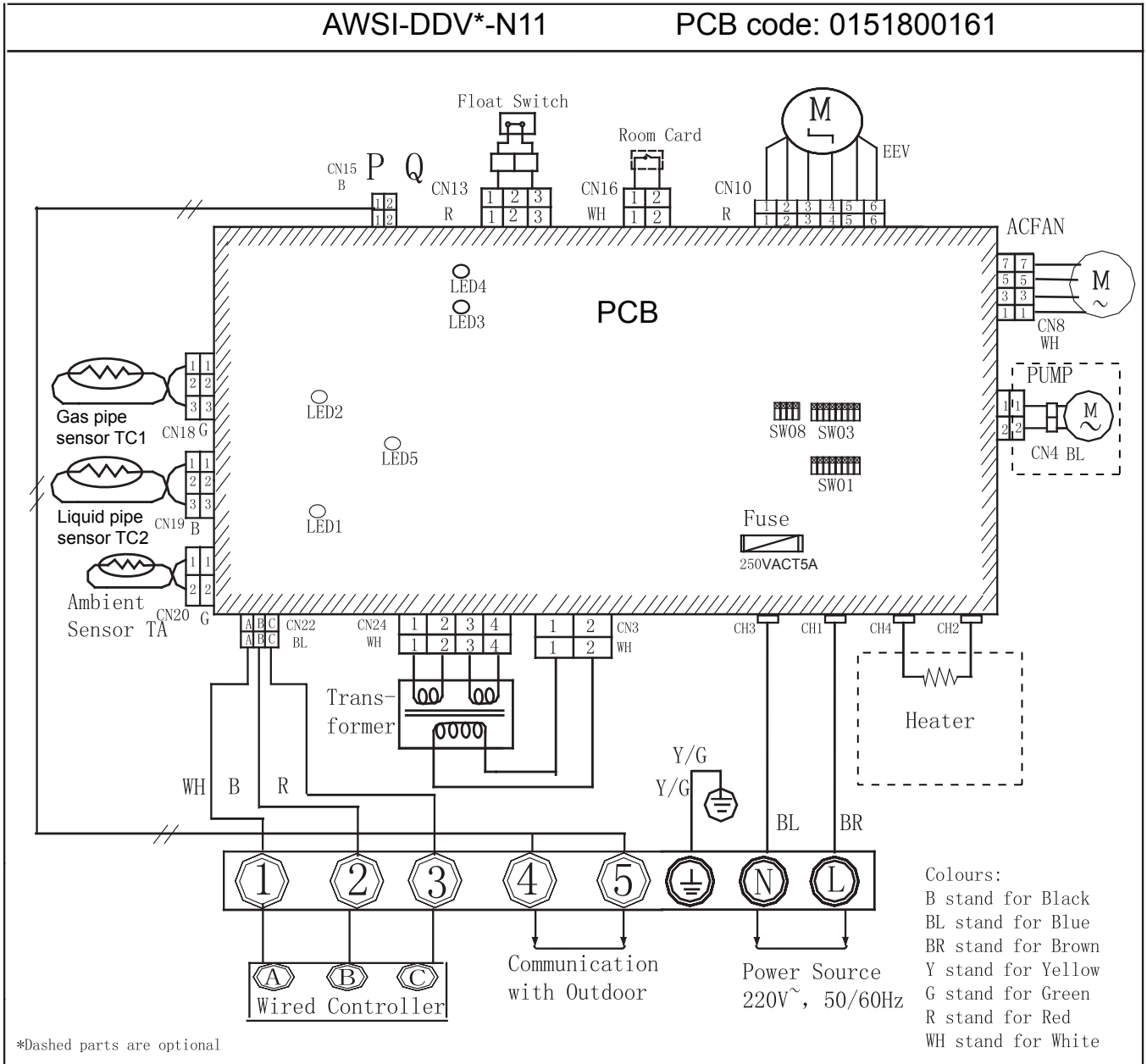
SN	Part Name
1	Liquid pipe connection
2	Gas pipe connection
3	Drain hose with pump
4	Drain hose(accessory)
5	Suspending point
6	Checking hole
7	Water drainage outlet

7.4 Piping diagram

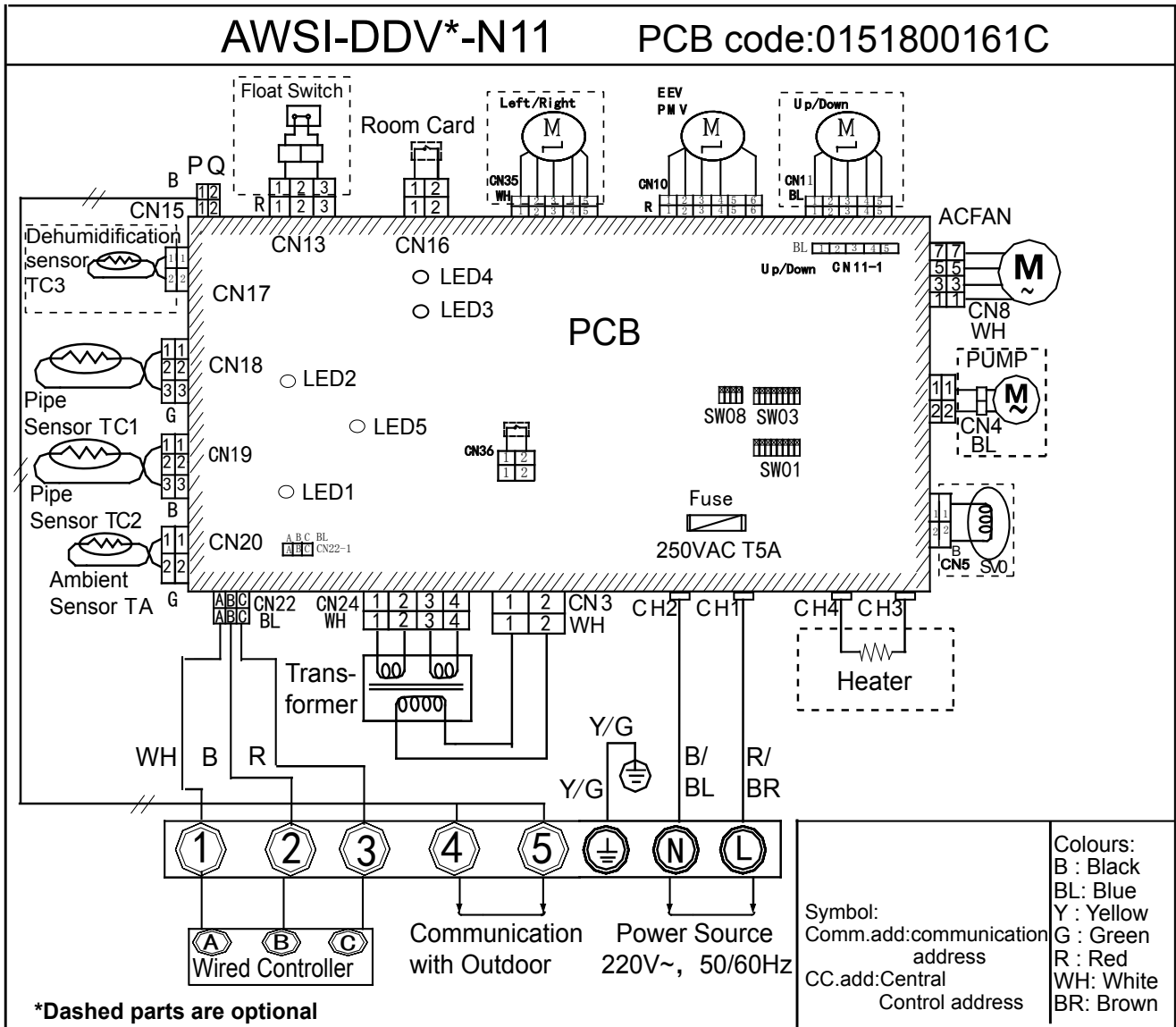


7.5 Wiring diagram

Old



New



7.6 Electric characteristics

Units					Power supply		Indoor fan motor		Power input (w)	
Model	Phase	FQY	Voltage	Volt range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AWSI-DDV007-N11	1	50/60	220	198-242	0.24	0.76	23	0.19	56	56
AWSI-DDV009-N11	1	50/60	220	198-242	0.24	0.76	23	0.19	56	56
AWSI-DDV012-N11	1	50/60	220	198-242	0.38	1.2	23	0.3	56	56
AWSI-DDV016-N11	1	50/60	220	198-242	0.59	1.88	51	0.47	65	65

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker Output: Fan motor rated output (w) FLA: Full load amps (A)

Note:

1. Voltage range

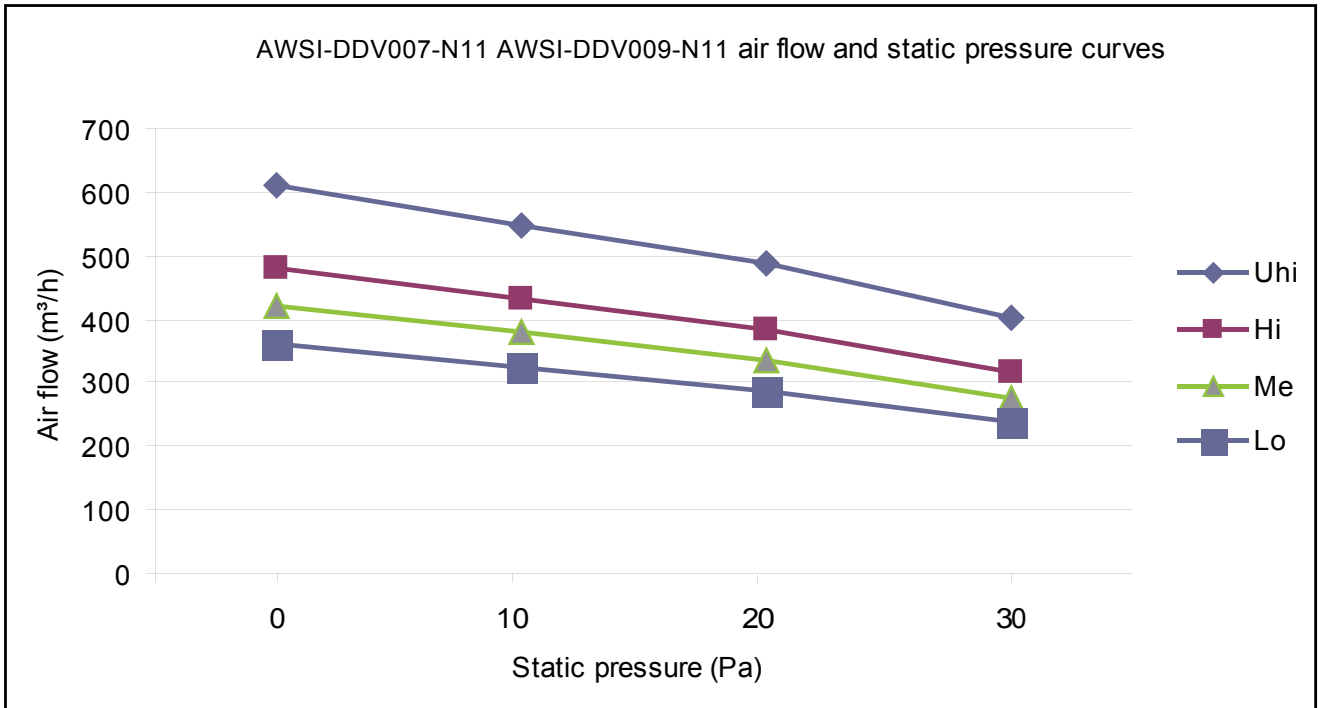
The units are applicable for the electrical systems where voltage supplied to unit is in the range.

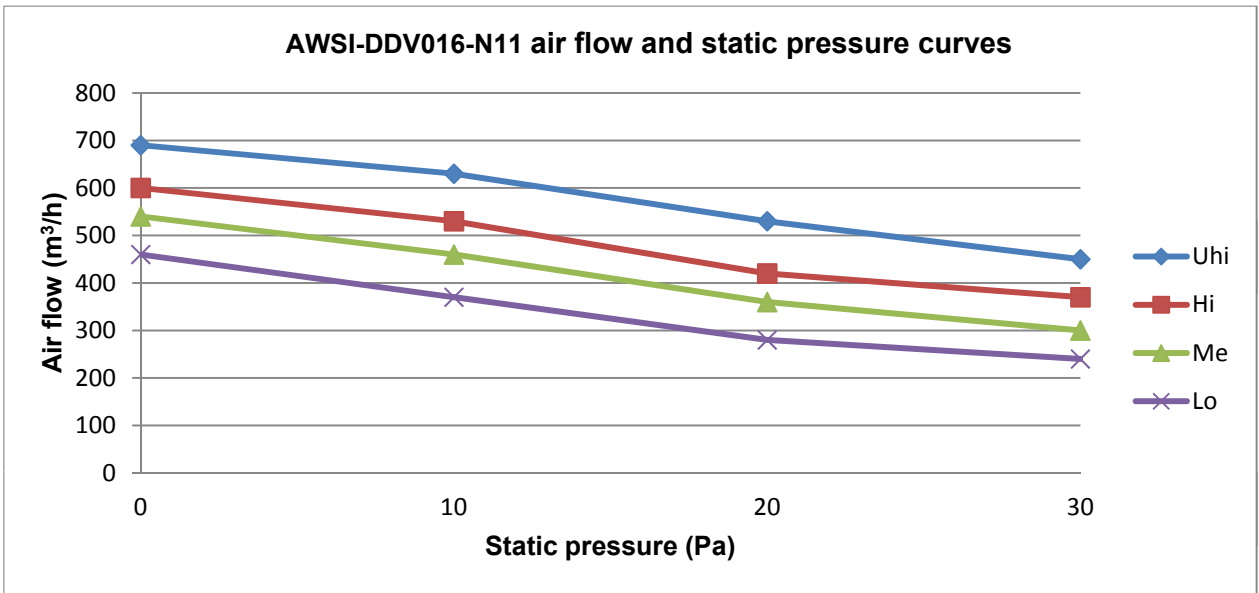
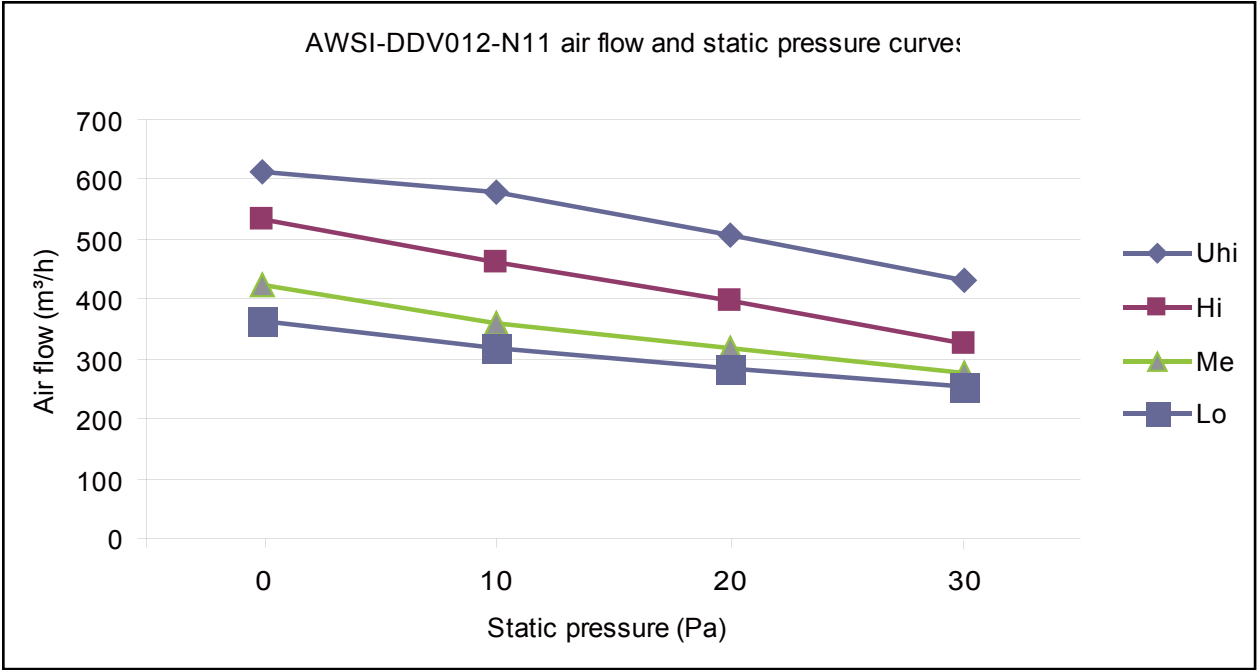
2. Maximum allowable voltage unbalance between phases is 2%.

3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$

4. Power supply uses the circuit breaker.

7.7 Air flow and static pressure curves

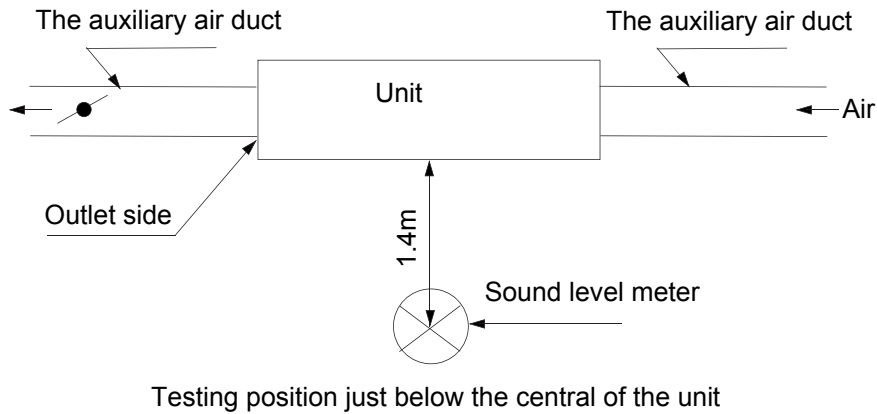




7.8 Sound pressure level

Slim duct type running noise

(1) Testing illustrate:

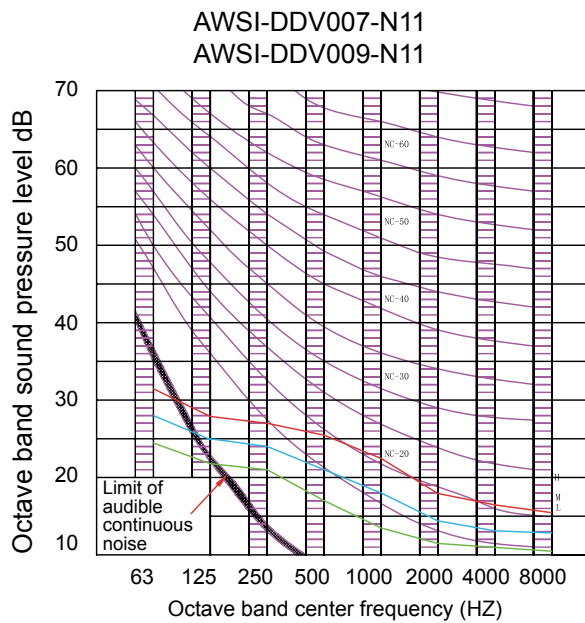


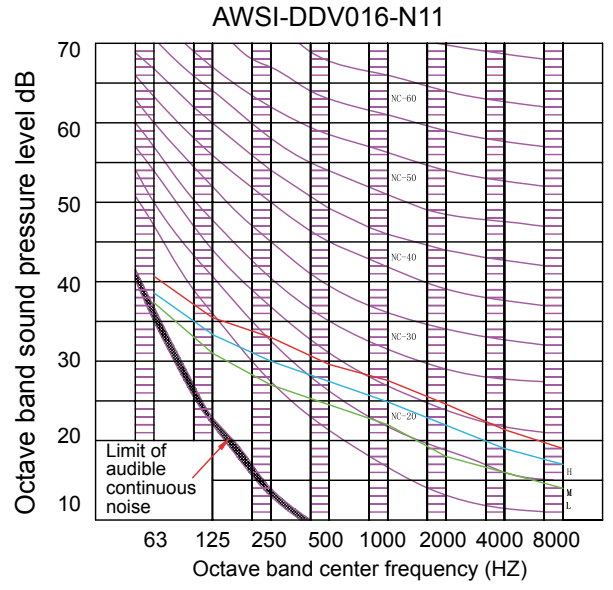
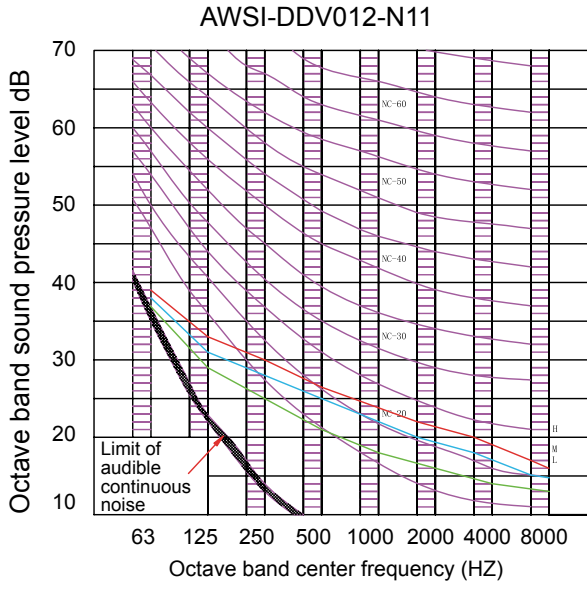
Note: The length of the auxiliary air duct is 2m

(2) Testing condition:

- a. Unit running in the standard condition
- b. Test in the semi-anechoic chamber
- c. Noise level varies from the actual factors such as room structure, etc.

(3) Octave band level:





7.9 Installation

7.9.1 Installation Procedures

If you have any problem on product, contact the local Airwell distribution center.

Please use the standard tools according to the installation requirements.

The standard attached accessories of the units of this series refer to the packing list; prepare other accessories according to the requirements of the local installation point of our company.

1. Choose the suitable installation location. Indoor units should be installed in places with the environment of even circulation of cool and warm blows. The following places should be avoided.

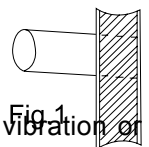
Places with high salinity (beach), high sulfured gas (such as the thermal spring regions where copper tubes and soft soldering are easy to be eroded), much oil (including mechanical oil) and steam; places where organic substance solvent is frequently used; places where machines generate the high frequency electromagnetic wave (abnormal condition will appear in the control system); places where there is high humidity exists near the door or windows (dew is easily formed); and places where the special sprayer is frequently used.

Indoor Units

- (1) The distance between wind outlet port and the ground should not be more than 2.7m.
- (2) Select appropriate places for installation where the outlet air can be spread to places all over the house and arrange proper locations for connecting pipes and lines as well as the drainpipe to the outdoor.
- (3) Ceiling construction must be hard enough to hold the weight of the unit.
- (4) Make sure that the connecting pipe, the drainpipe and connecting guide line can be put into walls to connect the outdoor units.
- (5) It is recommended to make the connecting pipe between the outdoor and indoor units and the drainpipe are as short as possible.
- (6) Please read the attached installation instruction of outdoor units for regulation of filling amount of refrigerant if necessary.
- (7) The connecting flange should be checked by users.
- (8) Those electrical appliances such as television, instruments, devices, artwork, piano, wireless equipment and other valuables should not be placed under the indoor unit as to prevent condensate from dropping into them and causing damage.

2. The following steps can be taken after selecting the installation place:

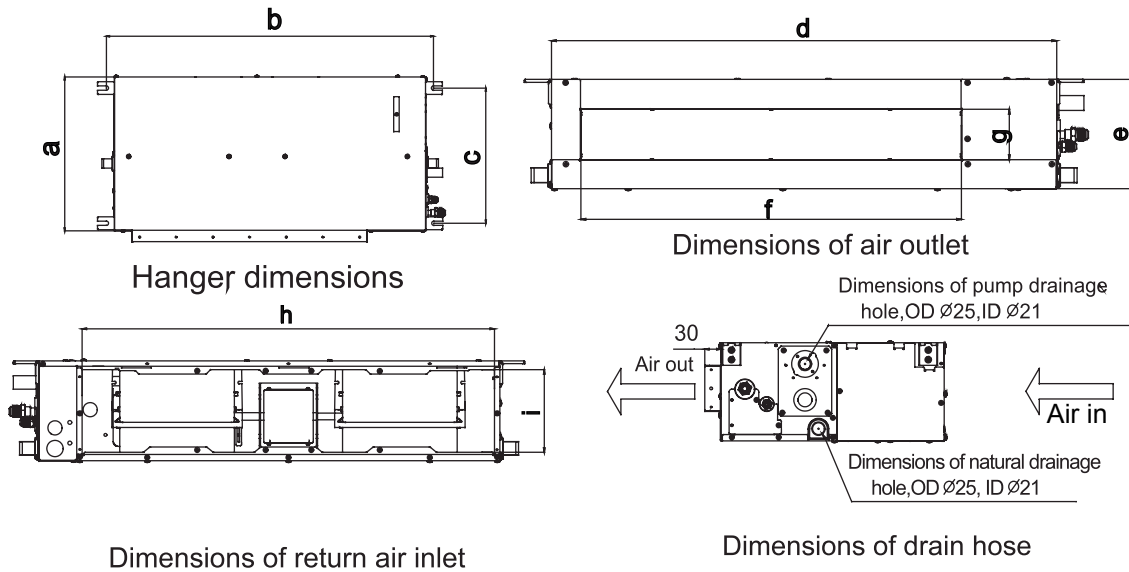
- (1) Cut a hole in the wall and insert connection pipe and connecting wires through a locally purchased PVC pipe. The hole should be inclined slightly downward with an inclination of at least 1/100 (see Figure 1).
- (2) Before cutting the hole, ensure no pipe or rebar is placed behind the cutting position. Avoid cutting a hole at the place of wires or connection pipes.
- (3) Hang the unit on a horizontal and firm roof. If the unit base is not stable, it may cause noise, vibration or leakage.
- (4) Support the unit firmly and change the shapes of connection pipe, connecting wires and drain pipe to make them easily get through the hole.



3. Dimension (unit: mm).

Model	a	b	c	d	e	f	g	h	i
AWSI-DDV007-N11	420	892	370	850	185	640	90	760	152
AWSI-DDV009-N11									
AWSI-DDV012-N11									
AWSI-DDV016-N11									

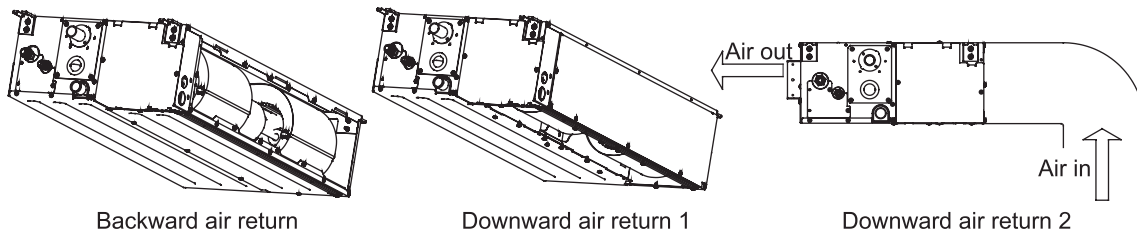
AWSI-DDV007-N11 AWSI-DDV009-N11 AWSI-DDV012-N11
 AWSI-DDV016-N11



Installation modes of Indoor unit

This series of air conditioners can be arranged in two air return modes:

1. Backward air return (factory default);
2. Downward air return (can be adjusted on site. See the following figures.)



Note:

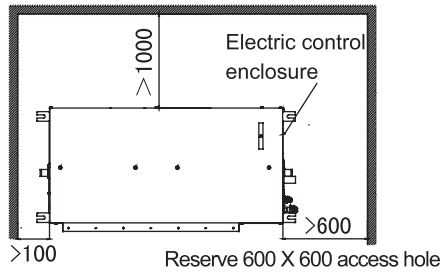
The downward air return mode would cause much more noise. It is recommended to install the air conditioner in downward return air mode 2 if enough space is available.

Installation space and method

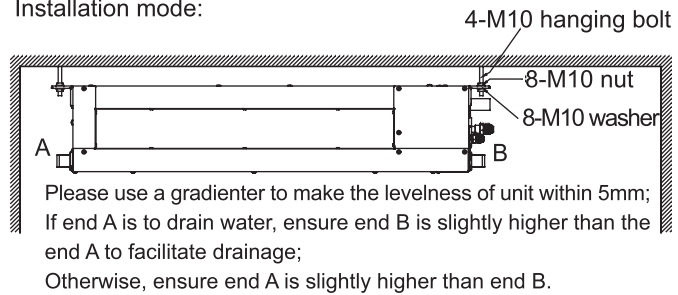
Body installation

1. Use M10 lifting bolts.
2. Ceiling removal: For different building structures, please consult with indoor decoration personnel about actual conditions.
 - a. Ceiling reinforcement: To ensure the ceiling is horizontal and will not shake, the ceiling base frame must be reinforced.
 - b. Cut off and remove the ceiling base frame.
 - c. Reinforce the end faces left when the ceiling is removed and further reinforce the base frame that fix both ends of the ceiling.
 - d. After the body installation is complete, it is time to install pipes and wires. Before installation, choose a suitable installation position and determine the outgoing direction of pipes. Especially in case that a ceiling exists, please pull refrigerant tubing, drain hose, indoor and outdoor connecting wires, control wires to their connection positions prior to hanging the machine.

Installation space:

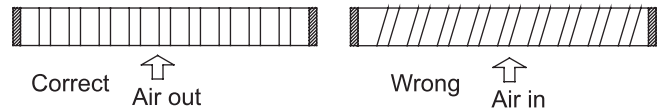


Installation mode:



Installation of air-inlet grille

The angle of air-inlet grille should be parallel with that of air inlet direction, otherwise it will cause more noise. As shown in the figure on the right.



Installation of Duct Pipe of Indoor Units:

1. Installation of the air blowing pipe:

With a square blast pipe, the bore shouldn't be less than the sizes of air outlet pipe.

2. Installation of the air return pipe: Connect one side of the air return pipes to the air return port of the indoor units with rivets, with the other side connected to air return shutter, as shown in Fig.1.

3. Heat Preservation of Blast Pipes: Heat preservation lays should be provided for air blowing & return pipes. Paste glue nails on the blast pipes and attach thermo wool, which covered by a layer of silver paper, fix it with glue nail cover, and then seal the joint with silver paper.

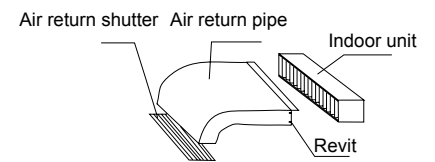


Fig.1
Connection of oil return pipe

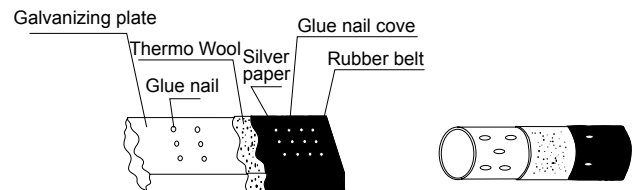


Fig.2

Selection of fan outlet (when a high-performance filter is used)

The fan has red and white terminals. Its air outlet is set to the standard before delivery. If a high-performance filter or other optional devices is used to increase static pressure, it is required to change the connection of connector on the side of control enclosure as shown in the following.

Standard Style(given in Factory)				High Wind Speed Style			
Control Box	Yellow	white	white	Yellow	white	red	Yellow
	Black			Orange			Black
	Blue			Black			Blue
	Red			Blue			Red
Fan Down-lead End				Fan Down-lead End			

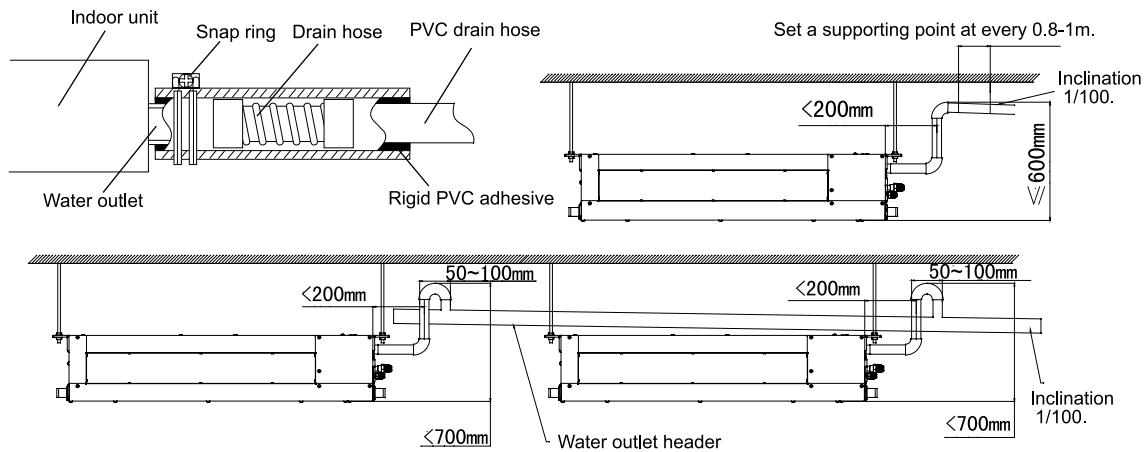
Static pressure range Unit: Pa

Standard static pressure	Maximal static pressure
0	30

Installation of drain hose

Connection of indoor drain hose

1. Please use accessory drain hose to connect indoor unit's water outlet and PVC pipe and use snap rings to tighten them, as shown in the following figure:
2. Please use rigid PVC adhesive for connection of other pipes and ensure there is no leakage.
3. Drain hose must be wrapped up with insulation sleeve and tightened with strap to prevent air leaked in producing condensate.
4. To prevent water flowing back into air conditioner when it stops running, drain hose shall decline to the drainage side with a declination of above 1/100. Drain hose expansion or water accumulation shall be prevented, or else it will cause abnormal noise.
5. When connecting the drain hose, do not pull on it so as to avoid the pipe connections getting loose or off. Drain hose should not be pulled out laterally for more than 20cm and should be supported every 0.8-1.0m to avoid bending.
6. The end of drain hose should be more than 50mm away from the ground or the bottom of drainage tank. It should not be put in water. To directly drain condensate into drainage ditch, the drain hose must be U-shaped to avoid stink spreading through the hose into room.

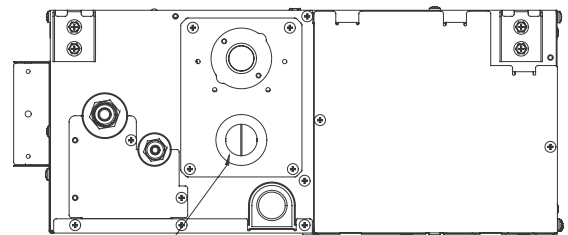


Multiple units use water outlet header to drain water into drainage ditch.

Drainage test

Before test, firstly ensure the drain hose is unblocked and all connections are tightly sealed and then perform the drainage test as follows:

1. Inject about 500ml water into the water pan through water injection hole;
2. Switch on the power and make air conditioner operate in refrigerating mode. Check whether the water outlet drains water normally and there are no leakages on connections. After the drainage test is complete, replace the water injection hole plug. For the position of water injection hole, see the figure on the right:



Open or close the water injection hole by rotating the hole plug

Pipe Length & Height Difference

Please refer to the attached manual of outdoor units.

Tubing Materials & Specifications

Special tools for R410A should be used for cutting and enlarging pipes.

Refrigerant Recharge Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount while compressor failure can be caused by filling too much or little refrigerant.

Model		AW-DDV009/007-N11	AWSI-DDV016/012-N11
Tubing Size (mm)	Gas pipe	Ø9.52	Ø12.7
	Liquid pipe	Ø6.35	Ø6.35
Tubing Material	Phosphor deoxy bronze seamless pipe (TP2) for air conditioner		

Connecting Procedures of Refrigerant Tubing

With the soft solder, the nitrogen-filling protection should be used.

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Vacuum pump with check valve should be used for vacuumizing to prevent pump oil flowing into the machine.

Open All Valves

Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when only connected one master unit.]

Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting



1. Connecting circular terminals:

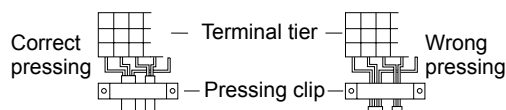
The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.

2. Connecting straight terminals:

The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.

3. Pressing connecting line

After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



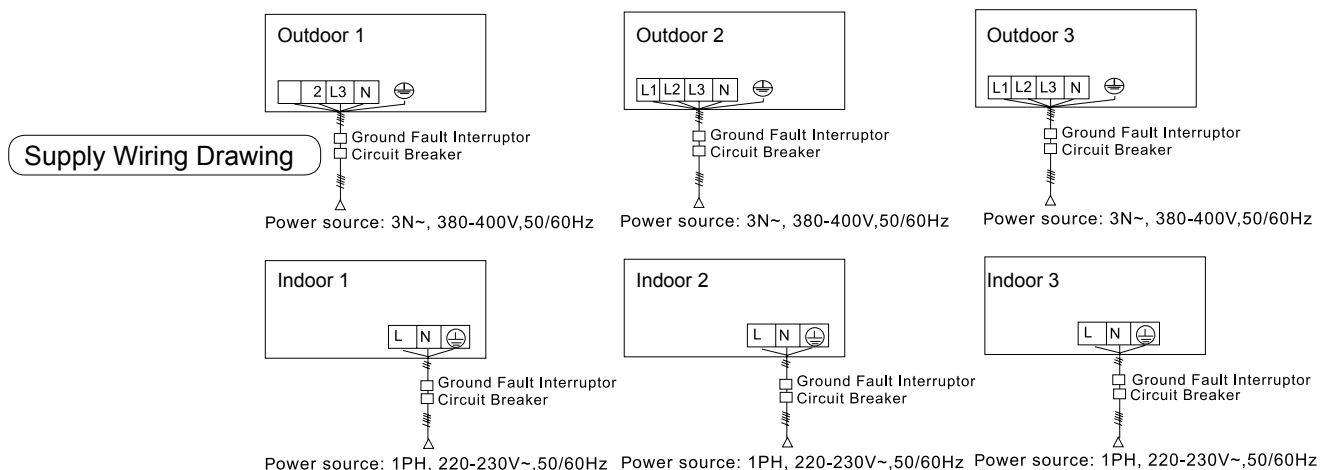
7.9.2 Electrical Wiring

⚠ WARNING

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient.
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents.
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line.

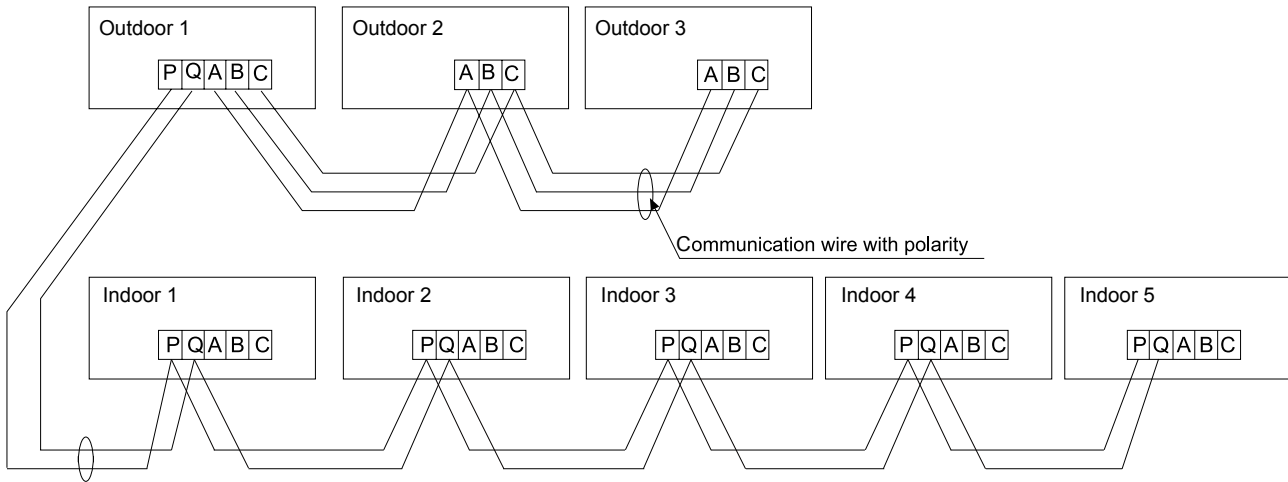
⚠ ATTENTION

- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while ⊕ should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line and signal line are provided by users. Parameters for power lines are shown as below: $3 \times 1.0-1.5$ mm²; parameters for signal line: $2 \times 0.75-1.25$ mm² (shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

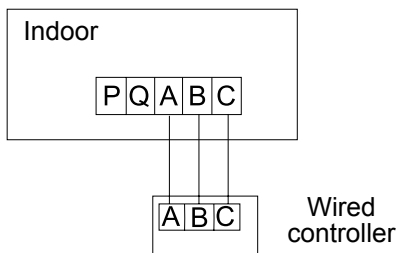
Signal Wiring Drawing



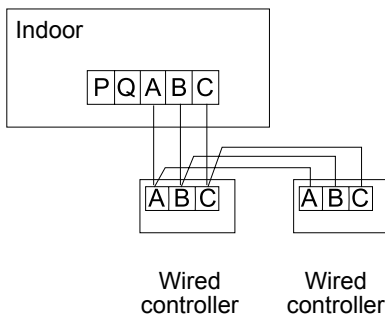
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

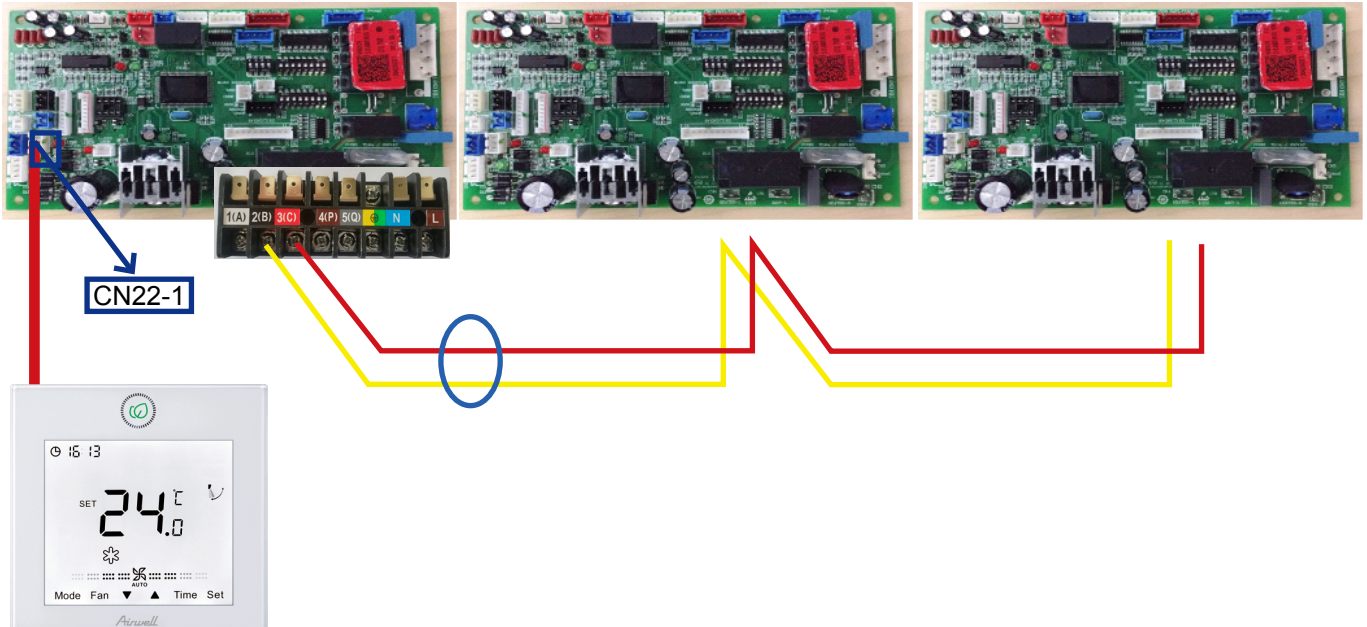


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800161C PCB



Note:

1. Plug the wired controller terminal to the CN22-1 terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity

The combination of multiple indoor units can be controlled by wired controller or remote controller.

※ Switching mode of Wired control master unit/ Wired control slave unit/ remote control types can be used for switching over ※

Socket/dip switch	Setting mode	Wired control master unit	Wired control slave unit	Remote control
SW01-[2][3][4]		All OFF	[0][0][1]	All OFF
CN21 socket		Null	Null	Connect to remote receiver
Terminal block (control)		A, B, C connect with wired controller	B, C connect with wired controller	A, B, C Null

Indoor power supply wiring & signal wiring between indoor and outdoor & signal wiring between indoors.

Items	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
					Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
<7	2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line	
≥7 and <11	4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16	6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22	8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27	10	40	32	32 A, 30 mA, 0.1S or below		

- The electrical power line and signal lines must be fastened tightly.
- Every indoor unit must have the ground connection.
- The power line should be enlarged if it exceeds the permissible length.
- Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- It is not permissible if the whole length of signal line exceeds 1000m.

Signal wiring of wired controller

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

※ The shielding lay of the signal line must be grounded at one end.

※ The total length of the signal line shall not be more than 250m.

7.9.3 Test run

Before Test Run

Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1MΩ. It can't be operated if it is below 1MΩ.

Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.

Check if the arrangements of the drainpipe and connection line are correct.

The drainpipe shall be placed at the lower part while the connection line placed at the upper part. Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials.

The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.

Checkup of Installation

- | | |
|---|--|
| <input type="checkbox"/> Check if the mains voltage is matching | <input type="checkbox"/> Check if the installation place meets the requirement |
| <input type="checkbox"/> Check if there is air leakage at the piping joints | <input type="checkbox"/> Check if there is too much noise |
| <input type="checkbox"/> Check if the connections of mains power and indoor & outdoor units are correct | <input type="checkbox"/> Check if the connecting line is fastened |
| <input type="checkbox"/> Check if the serial numbers of terminals are matching | <input type="checkbox"/> Check if the connectors for tubing are heat insulated |
| | <input type="checkbox"/> Check if the water is drained to the outside |
| | <input type="checkbox"/> Check if the indoor units are positioned |

Ways of Test Run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.

When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

- Set the wired controller to cooling/heating mode, press "ON/OFF" button for 5 seconds to enter into the compulsive cooling/heating mode. Reprress "ON/OFF" button to quit the compulsive running and stop the operation of the air conditioner.

8. Medium ESP Duct Type Indoor Unit

8.1 Features



AWSI-DBV018-N11
AWSI-DBV024-N11
AWSI-DBV028-N11



AWSI-DBV030-N11
AWSI-DBV038-N11
AWSI-DBV048-N11

Optional external static pressure

The duct unit has two kinds of static pressure: Standard static pressure 0~50Pa and optional static pressure 50~96Pa. Flexible air supply mode, much freer installation and meet the personal requests.

The unit is built in the ceiling, space saving

The duct unit is installed above the ceiling, just leaving the air outlet in the ceiling, which will not affect the indoor decor and supply less space of indoor.

Multi rooms sharing one indoor unit

The duct unit can be applicable for multi rooms, because the duct can be set as multiple air outlets according to the load.

Large head of water pump

The duct unit is equipped with water pump to drain the condensate water. The head of water pump can be up to 1.2m, which improves the water drainage quality greatly and can meet many installation conditions.

8.2 Specification

MODEL			AWSI- DBV018-N11	AWSI- DBV024-N11	AWSI- DBV028-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	19.1	24.2	27.3
	Capacity	kW	5.6	7.1	8.0
	Power input	W	100	100	100
	Current	A	0.51	0.51	0.51
Heating	Capacity	kBtu/h	21.5	27.3	30.7
	Capacity	kW	6.3	8.0	9.0
	Power input	W	100	100	100
	Current	A	0.51	0.51	0.51
	Heating capacity at low temp.	kW	5.0	6.3	7.1
Operating current		A	0.51	0.51	0.51
Power consumption		kW	100	100	100
Indoor motor	Brand		ZHONGSHAN BROAD-OC	ZHONGSHAN BROAD-OC	ZHONGSHAN BROAD-OC
	Model		Y6S443C84	Y6S443C84	Y6S443C84
	Type		AC	AC	AC
	Insulation class		B	B	B
	IP class		IP20	IP20	IP20
	Power input	W	88	88	88
	Power output	W	66	66	66
	Capacitor	μF	8 μF /450v	8 μF /450v	8 μF /450v
	Speed (SH/H/M/L)	rpm	1000/940/880/840	1000/940/880/840	1000/940/880/840
Indoor fan	Brand		/	/	/
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		3	3	3
Indoor coil	a. Number of rows		3	3	3
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3	21*13.3	21*13.3
	c. Fin spacing	mm	1.5	1.5	1.5
	d. Fin type (code)		Hydrophilic aluminum		
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube		
	f. Coil length×height×width	mm	813×252×39.9	813×252×39.9	813×252×39.9
	g. Number of circuits		3	3	3

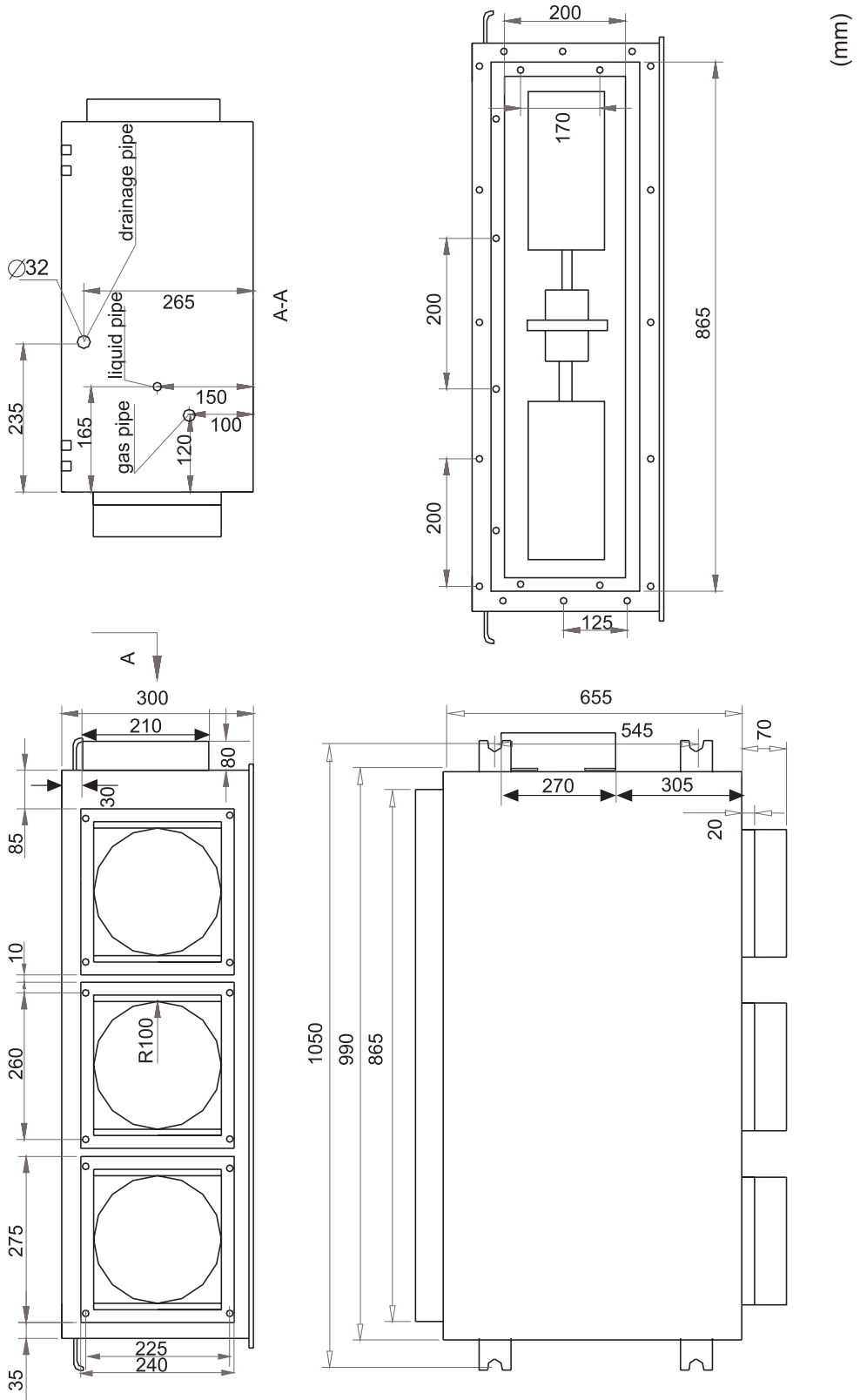
MODEL			AWSI-DBV018-N11	AWSI-DBV024-N11	AWSI-DBV028-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72	72
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		0.8	0.8	0.8
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		Standard 700mm	Standard 700mm	Standard 700mm
	Branch outlet option		No	No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8	0.8
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	6.35	9.52	9.52
	Gas pipe	mm	12.7	15.88	15.88
	Drain hose	mm	32	32	32
Fresh air dimension	mm	Φ150	Φ150	Φ150	
Sound pressure level (H/M/L)	dB (A)	36/34/31	36/34/31	39/37/35	
Sound power level (H/M/L)	dB (A)	49/47/44	49/47/44	52/50/48	
Standard static pressure	Pa	50	50	50	
Max. static pressure	Pa	96	96	96	
Indoor air flow (H/M/L)	m ³ /h	1200/1123/1072	1200/1123/1072	1200/1123/1072	
Air outlet dimensions	mm	200*3	200*3	200*3	
Air return dimensions	mm	865*200	865*200	865*200	
Dimension (W*H*D)	mm	990*300*655	990*300*655	990*300*655	
Packing (W*H*D)	mm	1165*340*733	1165*340*733	1165*340*733	
Net weight	kg	39	39	39	
Gross weight	kg	45	45	45	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

MODEL			AWSI- DBV030-N11	AWSI- DBV038-N11	AWSI- DBV048-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	30.7	38.2	47.8
	Capacity	kW	9.0	11.2	14.0
	Power input	W	200	200	200
	Current	A	1	1	1
Heating	Capacity	kBtu/h	34.1	42.7	54.6
	Capacity	kW	10.0	12.5	16.0
	Power input	W	200	200	200
	Current	A	1	1	1
	Heating capacity at low temp.	kW	8.0	10.0	12.5
Operating current		A	1	1	1
Power consumption		kW	200	200	200
Indoor motor	Brand		ZHONGSHAN BROAD-OC	ZHONGSHAN BROAD-OC	ZHONGSHAN BROAD-OC
	Model		Y6S443B85 / Y6S443C82	Y6S443B85 / Y6S443C82	Y6S443B85 / Y6S443C82
	Type		AC	AC	AC
	Insulation class		B	B	B
	IP class		IP20	IP20	IP20
	Power input	W	50/90	50/90	50/90
	Power output	W	45/60	45/60	45/60
	Capacitor	μF	3.5μF/450v 8 μF/450v		
Speed (SH/H/M/L)	rpm	1060/1000/930/880 925/850/780/730			
Indoor fan	Brand		/	/	/
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		3	3	3
Indoor coil	a. Number of rows		2	2	3
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3	21*13.3	21*13.3
	c. Fin spacing	mm	1.4	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum		
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube		
	f. Coil length×height×width	mm	1236×294×26.6	1236×294×26.6	1236×294×39.9
	g. Number of circuits		7	7	7

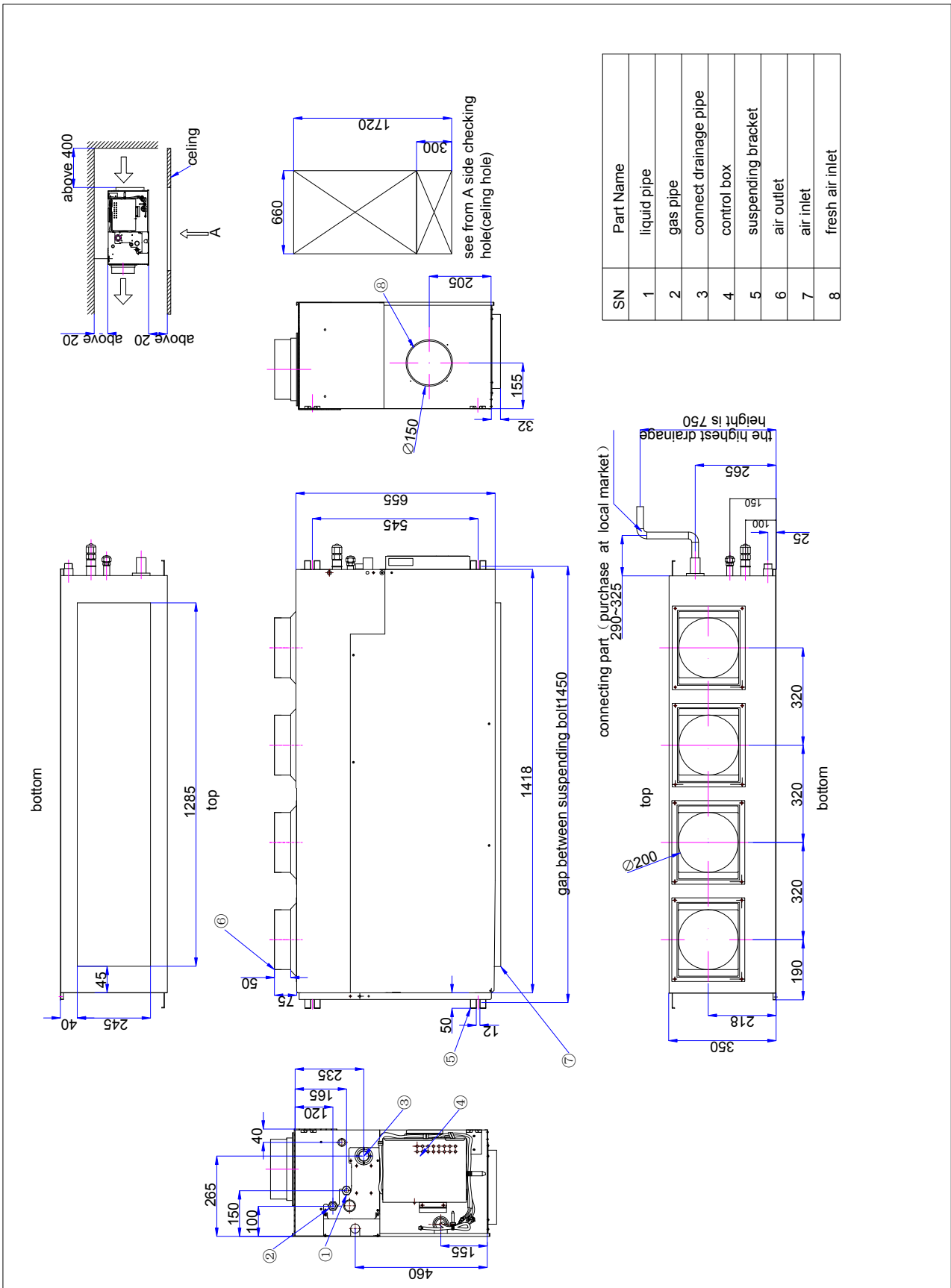
MODEL			AWSI-DBV030-N11	AWSI-DBV038-N11	AWSI-DBV048-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72	72
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		0.8	0.8	0.8
	Drain pan material		EPS	EPS	EPS
	Drain pan insulation		20	20	20
	Drain pump option		Standard 700mm	Standard 700mm	Standard 700mm
	Branch outlet option		No	No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8	0.8
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52	9.52
	Gas pipe	mm	15.88	15.88	15.88
	Drain hose	mm	32	32	32
Fresh air dimension	mm	Φ150	Φ150	Φ150	
Sound pressure level (H/M/L)	dB(A)	39/37/35	41/40/39	41/40/39	
Sound power level (H/M/L)	dB(A)	52/50/48	54/53/52	54/53/52	
Standard static pressure	Pa	50	50	50	
Max. static pressure	Pa	96	96	96	
Indoor air flow (H/M/L)	m ³ /h	1900/1726/1538	1900/1726/1538	2100/1908/1700	
Air outlet dimensions	mm	200*4	200*4	200*4	
Air return dimensions	mm	1285*245	1285*245	1285*245	
Dimension (W*H*D)	mm	1418*350*655	1418*350*655	1418*350*655	
Packing (W*H*D)	mm	1570*383*813	1570*383*813	1570*383*813	
Net weight	kg	53.2	53.2	54.6	
Gross weight	kg	60.3	60.3	61.7	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

8.3 Dimension

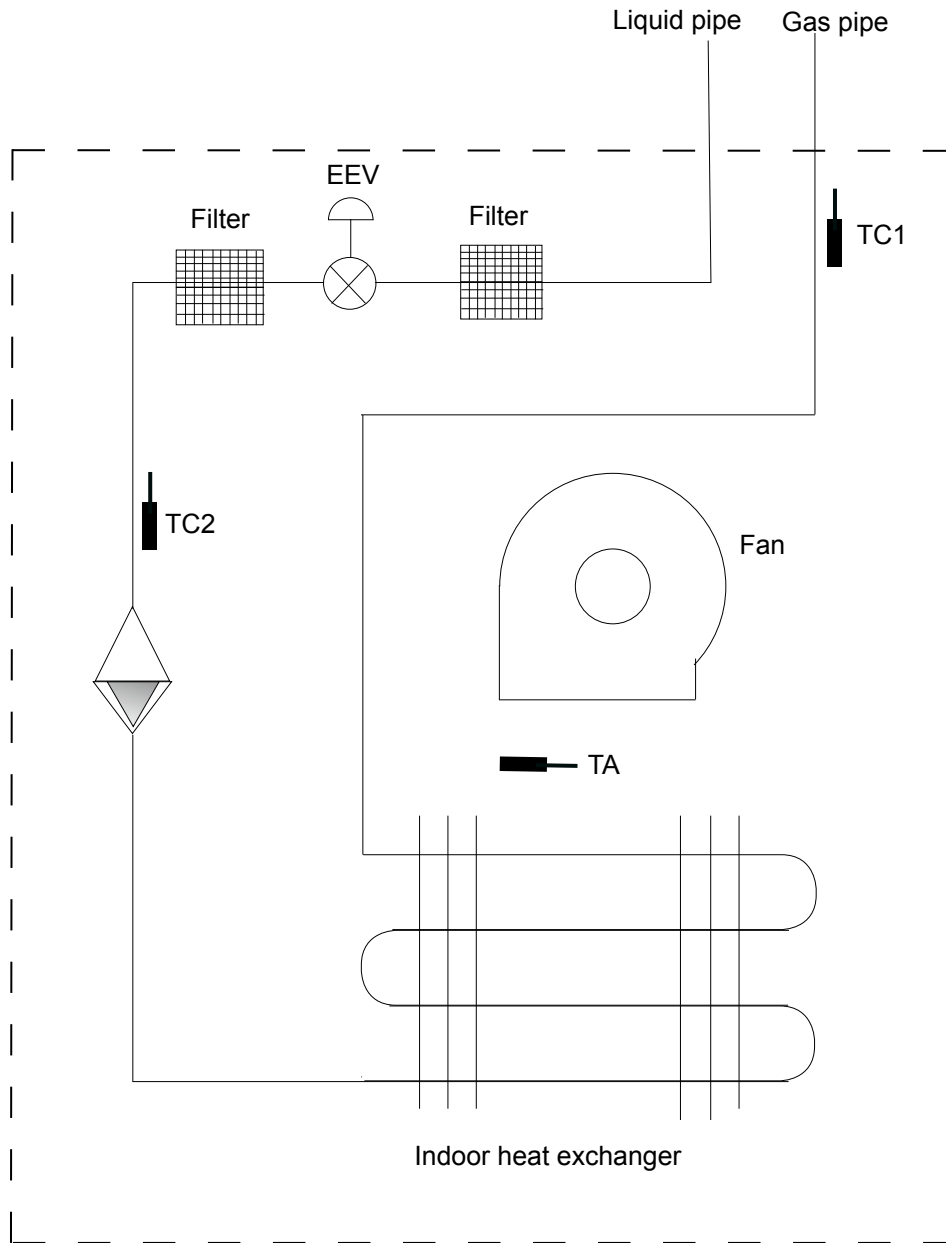
AWSI-DBV018-N11
 AWSI-DBV024-N11
 AWSI-DBV028-N11



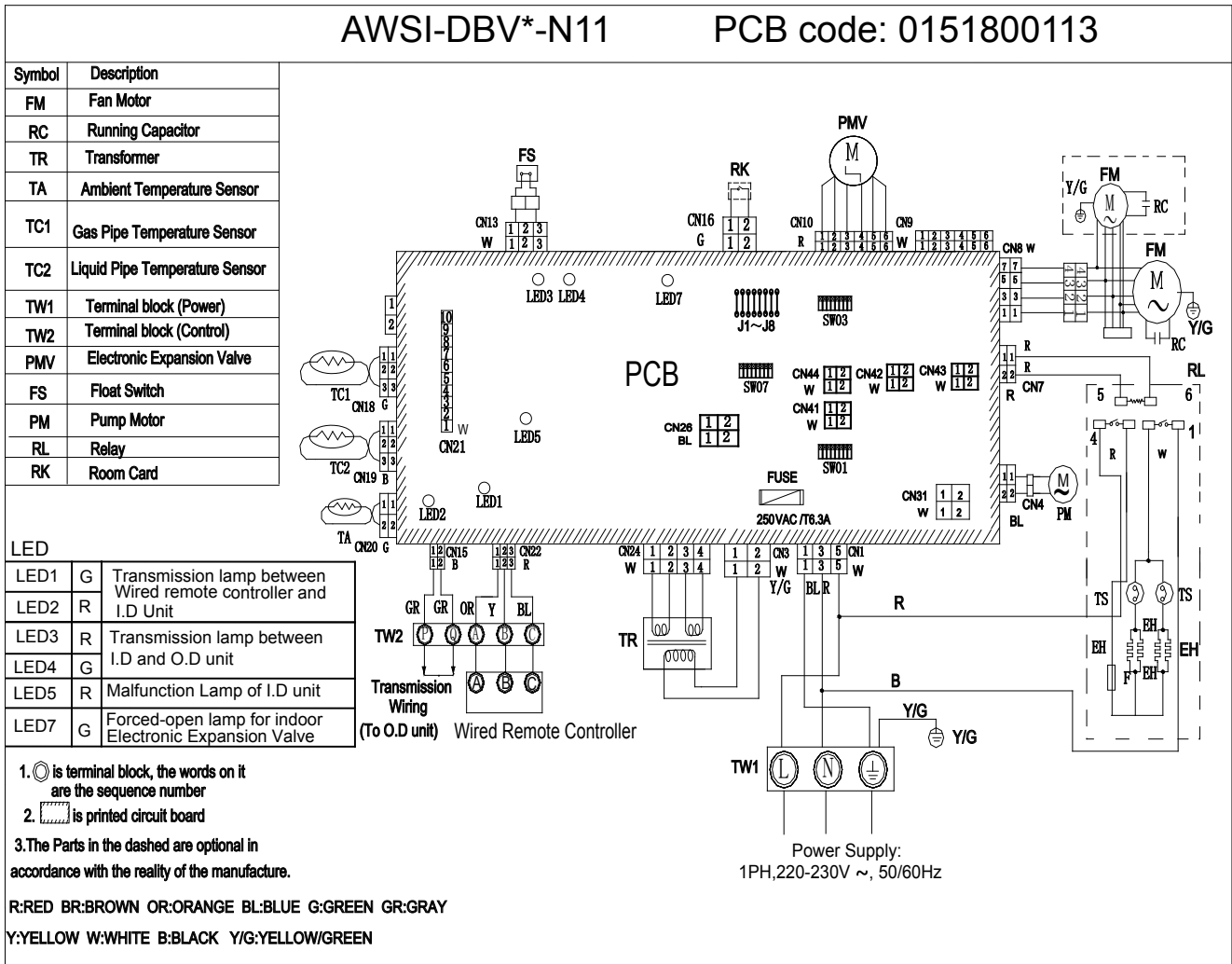
AWSI-DBV030-N11 AWSI-DBV038-N11 AWSI-DBV048-N11



8.4 Piping diagram



8.5 Wiring diagram



8.6 Electric characteristics

Units					Power supply		Indoor fan motor		Power input (w)	
Model	Phase	FQY	Voltage	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AWSI-DBV018-N11	1	50/60	220	198-242	1.19	3.8	150	0.95	100	100
AWSI-DBV024-N11	1	50/60	220	198-242	1.19	3.8	150	0.95	100	100
AWSI-DBV028-N11	1	50/60	220	198-242	1.19	3.8	150	0.95	100	100
AWSI-DBV030-N11	1	50/60	220	198-242	1.81	5.8	60/45	1.45	200	200
AWSI-DBV038-N11	1	50/60	220	198-242	1.81	5.8	60/45	1.45	200	200
AWSI-DBV048-N11	1	50/60	220	198-242	1.81	5.8	60/45	1.45	200	200

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker Output: Fan motor rated output (w) FLA: Full load amps (A)

Note:

1. Voltage range

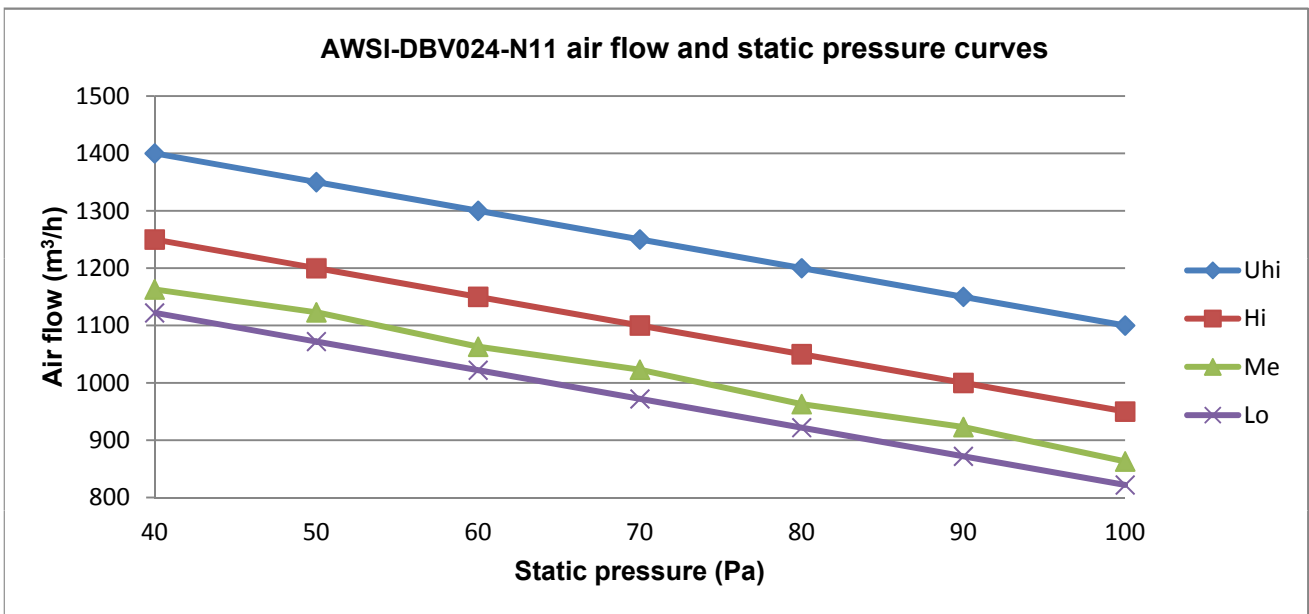
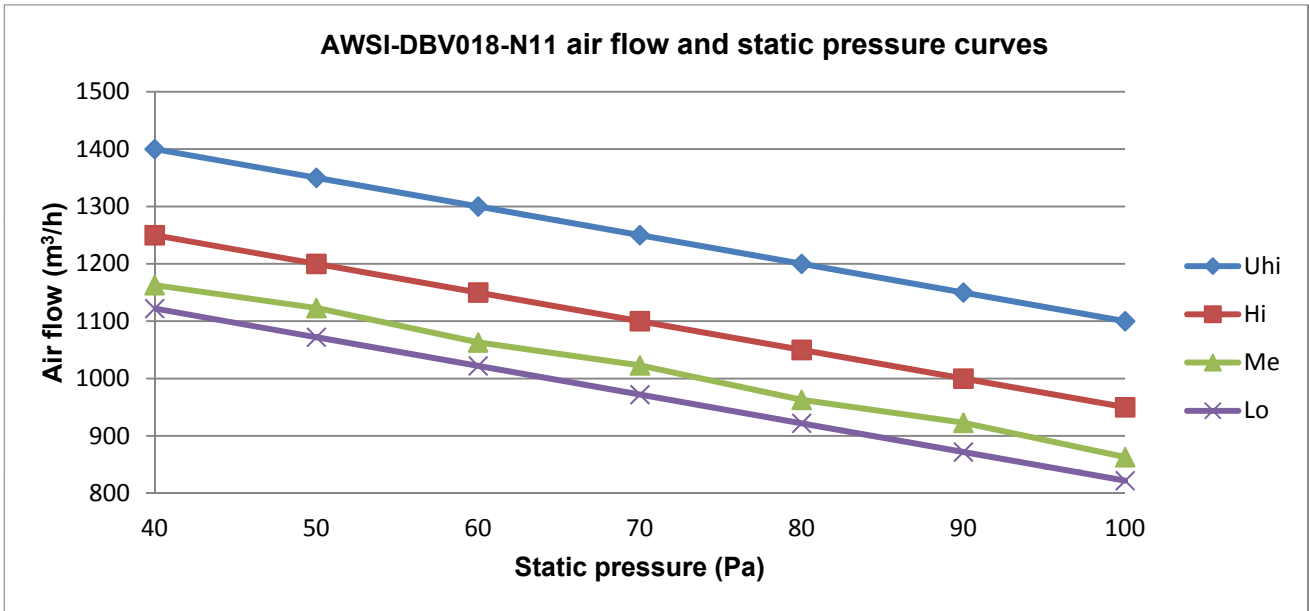
The units are applicable for the electrical systems where voltage supplied to unit is in the range.

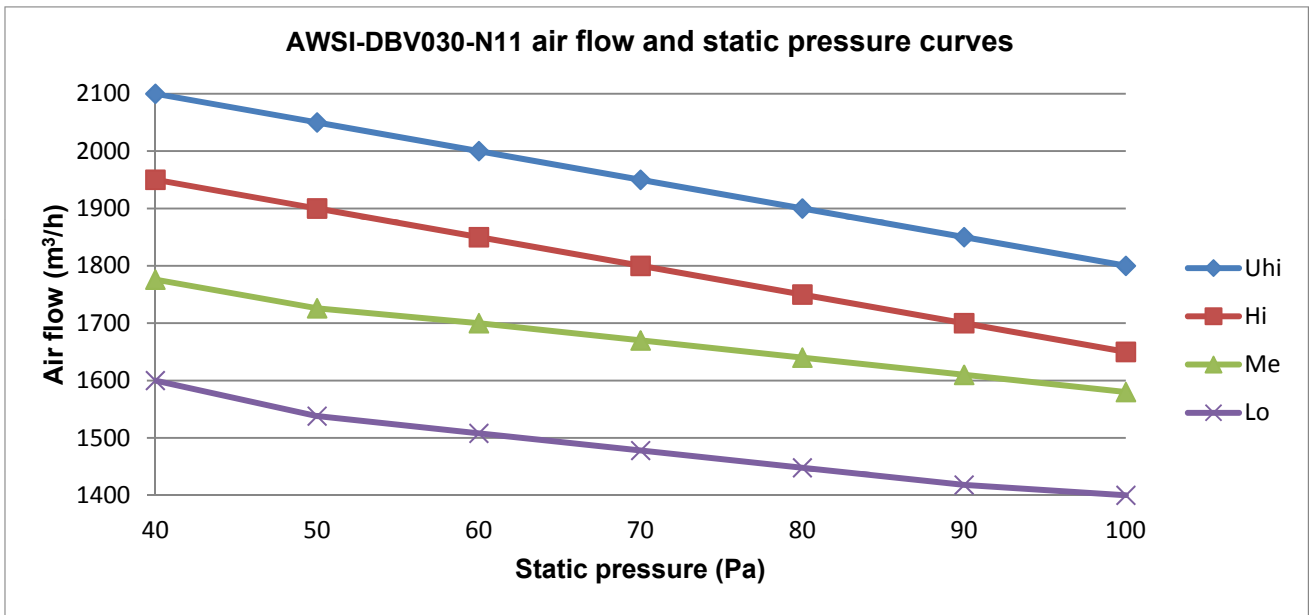
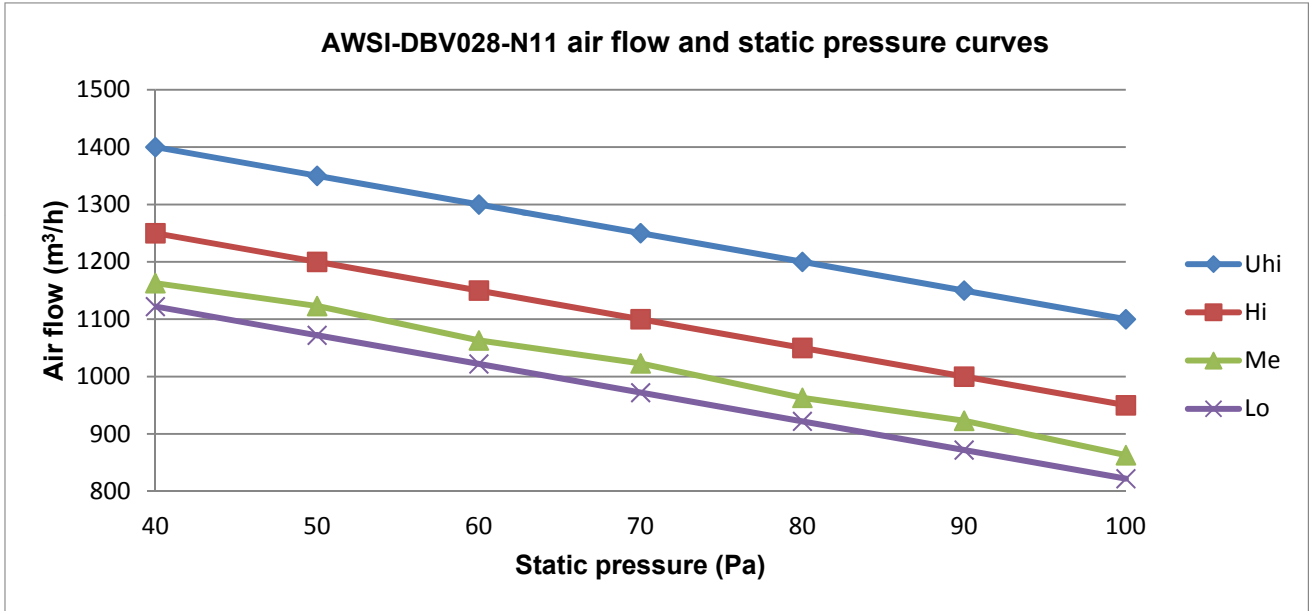
2. Maximum allowable voltage unbalance between phases is 2%.

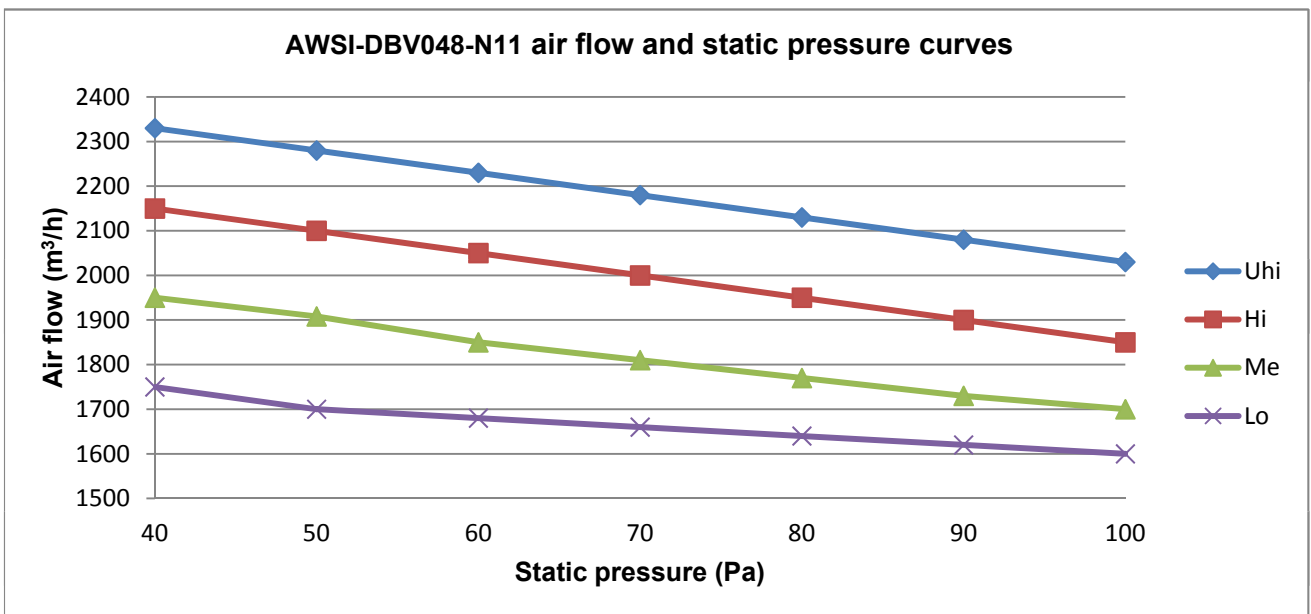
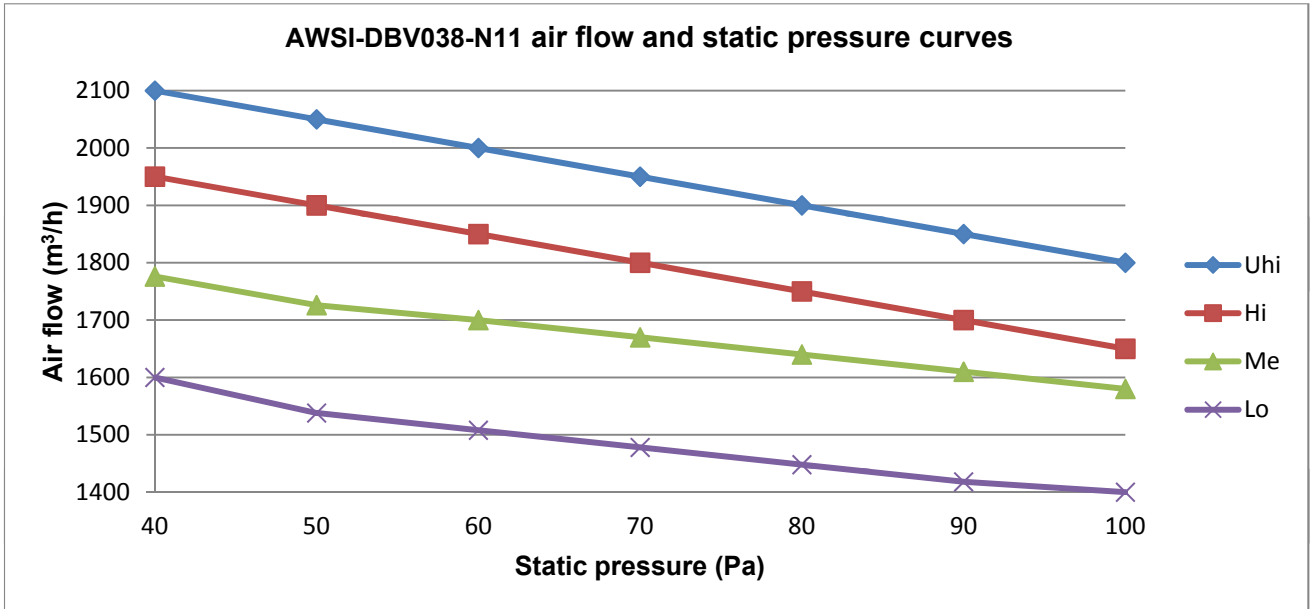
3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$

4. Power supply uses the circuit breaker.

8.7 Air flow and static pressure curves

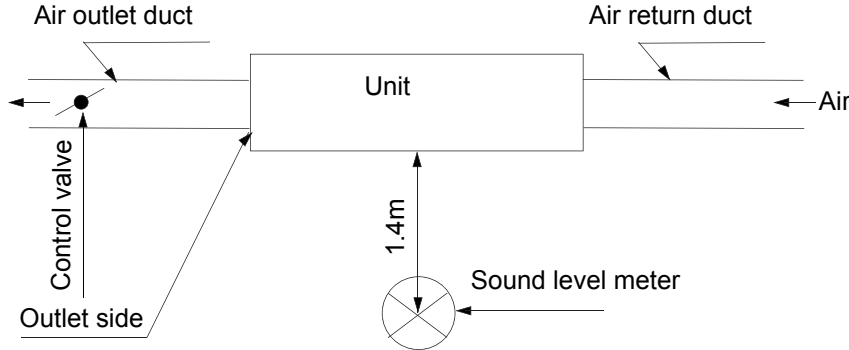






8.8 Sound pressure level

(1) Testing illustrate:

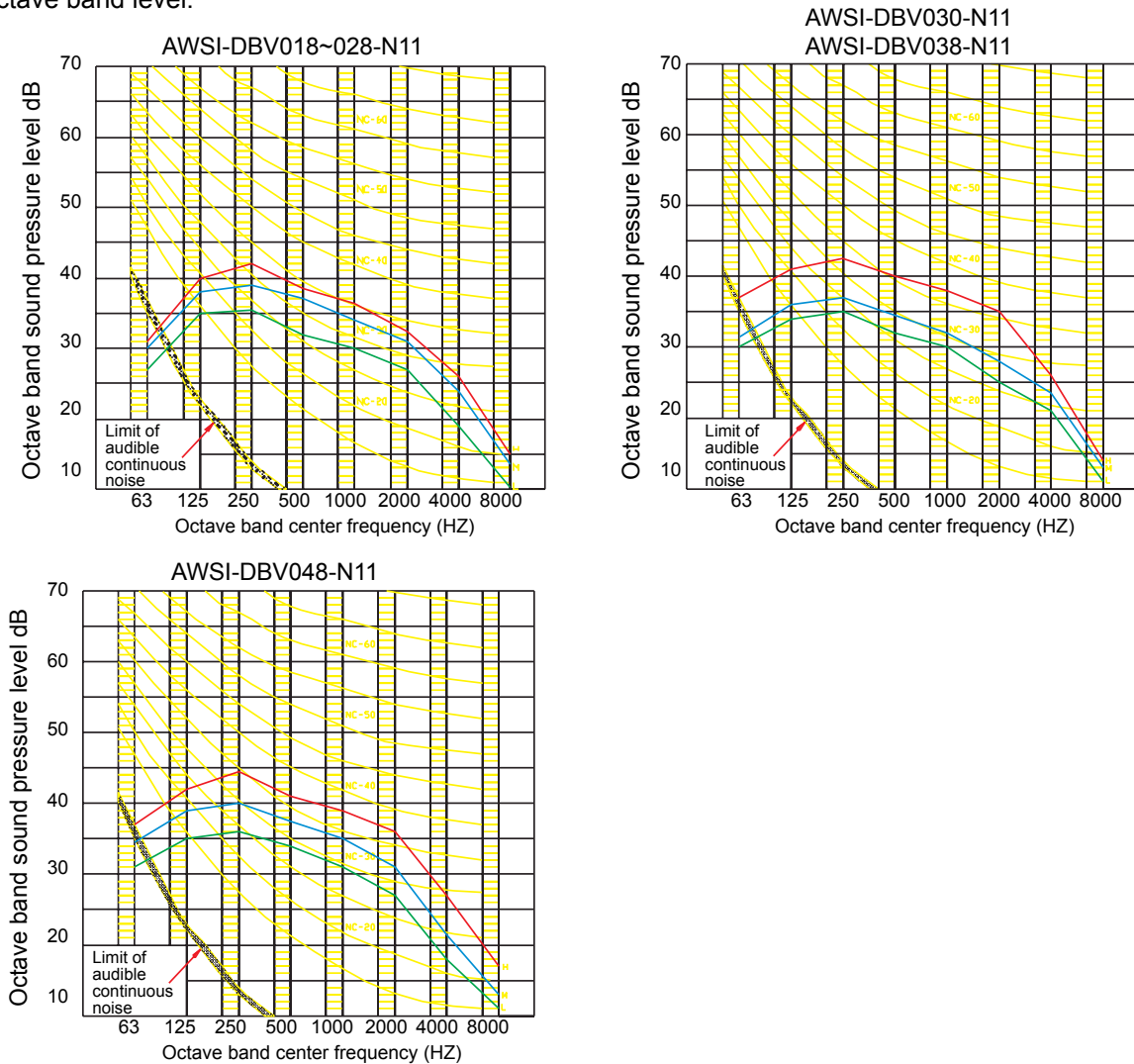


Testing position just below the central of the unit

(2) Testing condition:

- a. Unit running in the standard condition
- b. Test in the semi-anechoic chamber
- c. Noise level varies from the actual factors such as room structure, etc.

(3) Octave band level:



8.9 Installation

8.9.1 Installation Procedures

The standard attached accessories of the units of this series refer to the packing; prepare other accessories according to the requirements of the local installation point of our company.

1. Before installation [before finishing the installation, don't throw away the attached parts required for the installation]

- Determine the route to move the unit to the installation site;
- Don't tear the package open before moving the unit to the installation site. When unpacking is needed, a soft material or protector block with ropes can be used to lift the unit to avoid damaging or scraping of the unit.

2. Select the installation site

(1) The installation site should be selected according the following conditions, which should be approved by users.

- Where an ideal air distribution can be ensured;
- Where there is no blockage in the air passage;
- Where the condensed water can be drained out properly;
- Where the strength can bear the weight of the indoor unit;
- Where enough space can be ensured for maintenance. The outside air should be input from the outdoor directly from the blast pipe. If the blast pipe can't be jointed, the air can't be input from the suspended ceiling. range (refer to Installation of Outdoor Units)
- Where the distance of at least 1m between indoor units, outdoor units, mains supply, connecting wires and television or radio should be kept as to avoid the image disturbance and noises of the above electrical appliances. (Even if 1m can be ensured, noise might occur if there is strong electric wave.) Additionally, equipments, television or other valuables can't be put under the unit as to avoid the condensed water of the unit from dropping into the above articles, causing damaging.

(2) Height of ceiling:

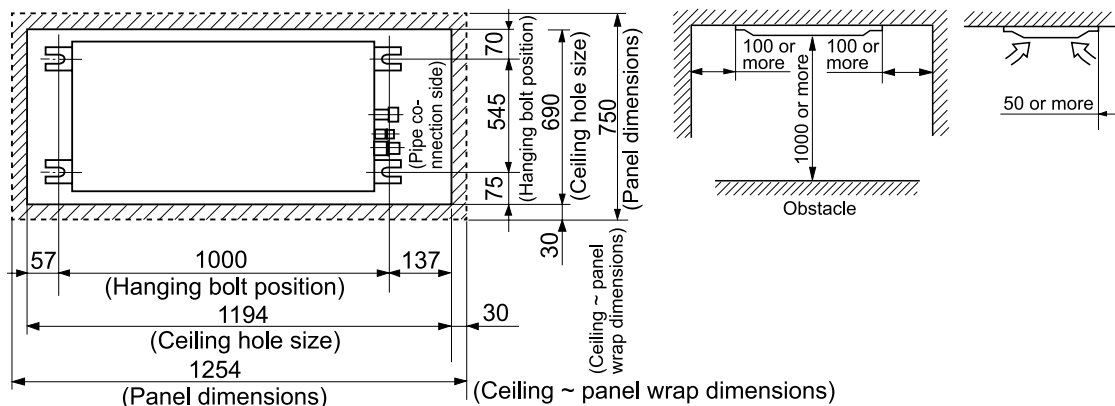
The ceiling should be located at the place, where the central position of air outlet port is less than 3m high above the ground.

(3) Suspender should be used during installation. Check if the location can bear the weight of the unit. Reinforce it before installation if necessary.

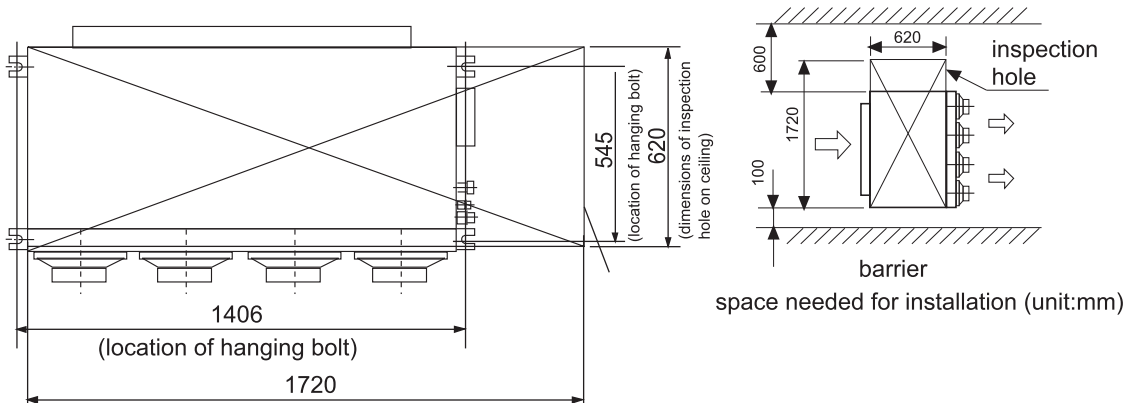
3. Preparation before Installation

(1) Location relation between inspection hole on the ceiling and the unit and the suspender
(Unit: mm).

AWSI-DBV018-N11 AWSI-DBV024-N11 AWSI-DBV028-N11



AWSI-DBV030-N11 AWSI-DBV038-N11 AWSI-DBV048-N11



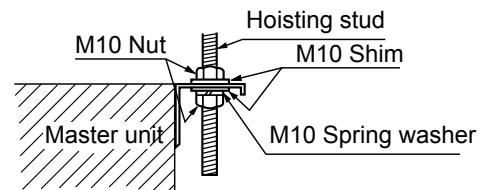
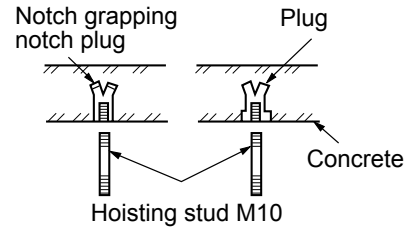
- (2) If necessary, make a hole for installation and inspection on the ceiling. (used for the situation with a ceiling)
- For the size of the inspection hole on the ceiling, please refer to the above drawing.
 - Before installation, finish all the preparations for all piping connected to indoor units (refrigerant, water drainage) and wiring (connection line of the wired control, connection line between indoor units and outdoor unit) so that they can be connected with indoor units after installation.
 - For the inspection hole, the ceiling might be reinforced to keep the evenness of the ceiling and avoid the vibration of the ceiling. For details, please consult the construction contractor.

(3) Install the suspender (M10 bolts)

In order to support the weight of the unit, use barb bolts in the situation with a ceiling. In the situation with the new ceiling, use inlaid bolts, embedded bolts or other parts provided on site. Before proceeding the installation, adjust the gap between the bolt and the ceiling.

(4) Installation of Indoor Units

- Fix the indoor unit with the hoisting stud. If necessary, the machine can be hanged on the beam with bolts instead of the hoisting stud.



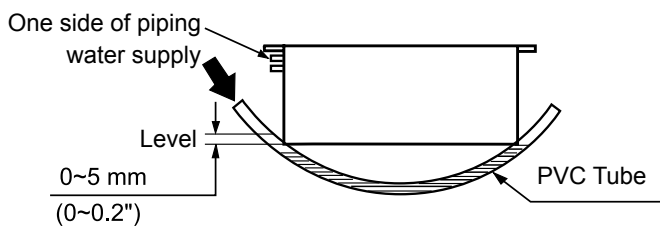
NB:

When the sizes of the master unit don't match the hole on the ceiling, regulate the slot on the hanging bracket.

Adjusting the level

- (a) Adjust the level with a level meter or according to the following ways:

- Make the adjustment as shown in the figure below.

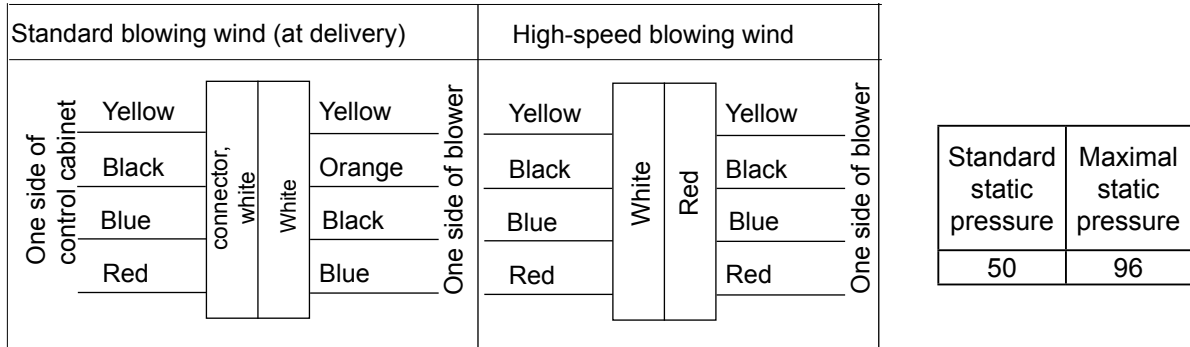


(b) Unless it is regulated to the level position, faults or errors might occur for the floater switch.

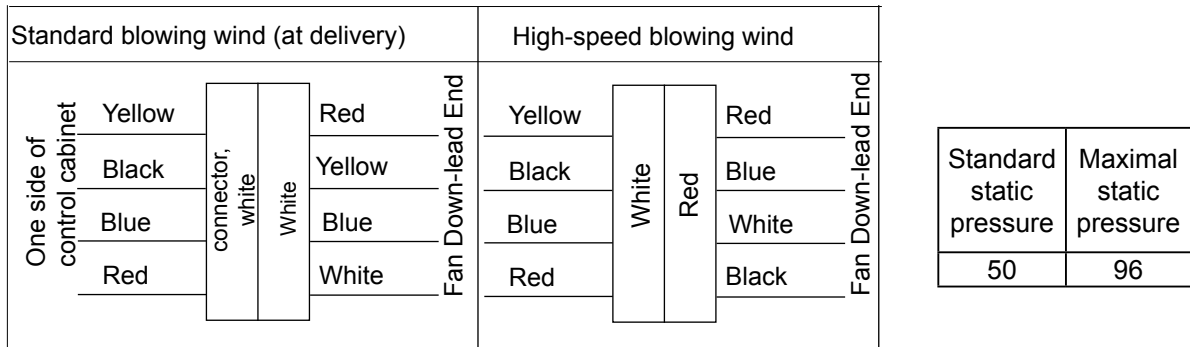
Choice of Blowing Wind from Blower (when using the high performance filter)

The blower is provided with a red terminal and a white terminal. The standard wind choice has been set before delivery. When the use of optional components, such as the high performance filter, causes the static pressure rising, change the connection of the connector mounted on the side of the control cabinet, as shown as follows.

For AWSI-DBV018-N11 AWSI-DBV024-N11 AWSI-DBV028-N11

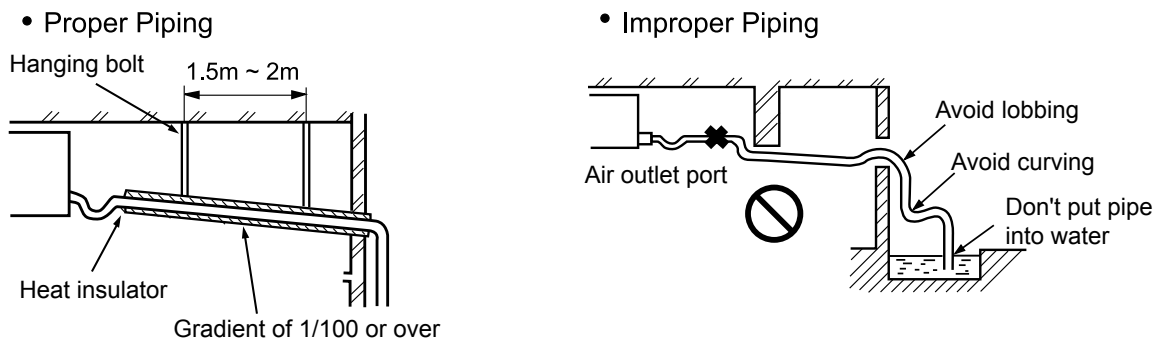


For AWSI-DBV030-N11 AWSI-DBV038-N11 AWSI-DBV048-N11



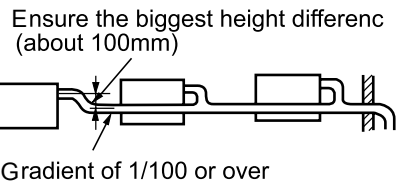
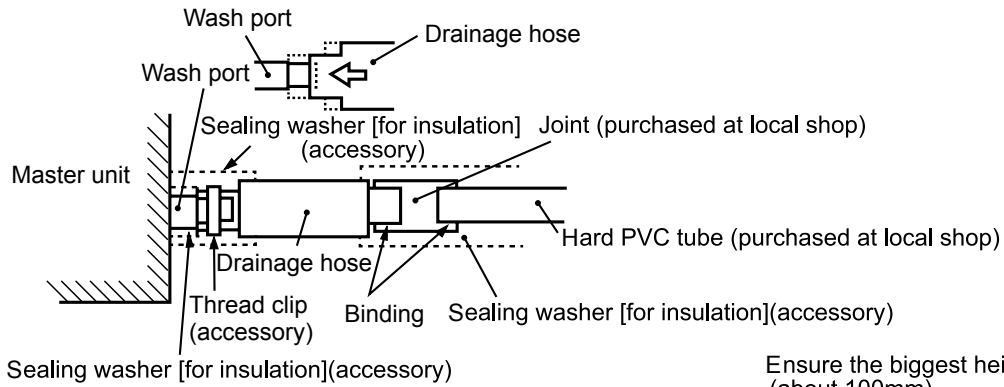
4. Drainpipe

(a) Keep a gradient (1/50-1/100) of the drainpipes and avoid lobbing or curving.



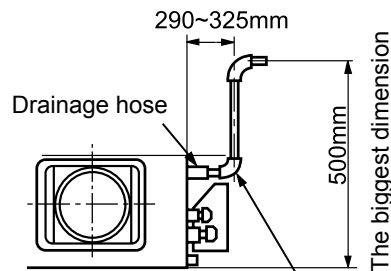
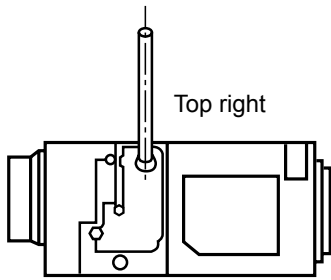
(b) When connecting the drainpipe to the equipment, don't apply too much force on one side of the equipment. Meanwhile, the piping should be positioned as close to the equipment as possible.

(c) For the drainpipe, the general purpose hard PVC tube can be purchased at local shops. During the connection, insert the end of PVC tube into the wash port and fasten it with drainage hose and thread clip. Binding agents shouldn't be used to connect the wash port and drainage hose.



(d) When the laid drain piping is used for multiple equipments, the public piping should be lower about 100mm than the wash ports of equipments, as shown in the figure. Thicker pipes should be used for this application.

(e) The hard PVC tube in the room must be provided with the heat insulating layer.
 (f) The water pipe should be lifted to the height of 500mm above the ceiling. If there is any barrier above the ceiling, a bracket and the like can be used to bypass the barrier. If the extended height exceeds 500mm, there will be too much back flow amount, causing the overflow in the waterspout. Therefore, the height of the drainpipe should be controlled within the allowance given below.



Connector (purchased at local shop)

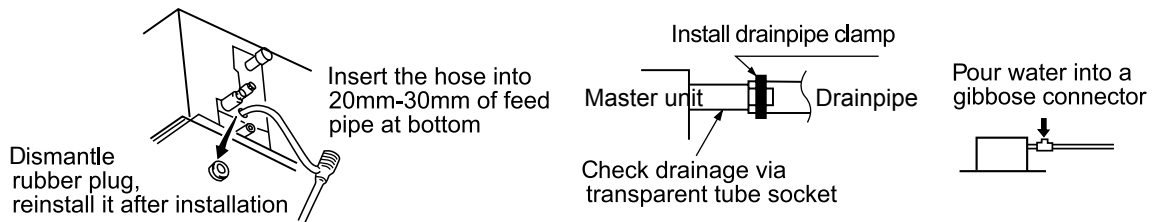
(g) Don't place the drainpipes at the places where there is irritant gas. Don't put the drainpipe directly into the sewer, where there might be gases with sulfur.

Testing Drainage System

- (a) After finishing the electrical system, test the drainage system.
- (b) During testing, make sure that the water flow passes the piping correctly without any water leakage at the connection.
- (c) In the condition of new house, test the drainage system before fitting up the ceiling.
- (d) Even if it is installed in the season needed to heating, the testing should also be performed.

Procedures

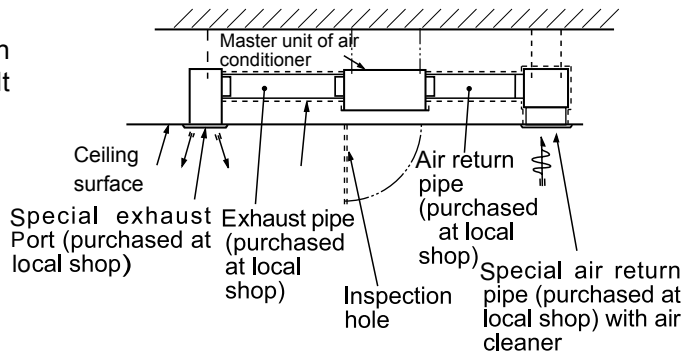
- (a) Charge 1000cc of water to the equipment via air outlet port.
- (b) During cooling operation, check the drainage system.



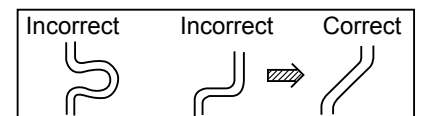
Before completing the electrical connection, a gibbose connector shall be installed on the drainpipe as to provide it with a water inlet port. Then, if any leakage exists in the piping, check it to make the water flow of the drainpipe smooth.

5. Installation of Air Return & Air Exhaust Duct

For the choice and installation of air return port, air return pipe, air exhaust port and exhaust pipe, please consult service personnel of Airwell company. Calculate the design chart and exterior static pressure, and select the exhaust pipe with appropriate length and shapes.

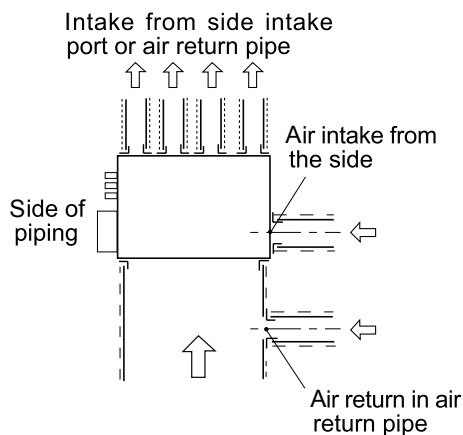


- The length difference between pipes should be limited to be less than 2:1;
- Make the piping as short as possible;
- Keep the min. elbow quantity;
- Wind the heat insulating material around the flange between the master unit and the exhaust pipe for heat insulation and sealing. Install the piping before fitting up the ceiling.

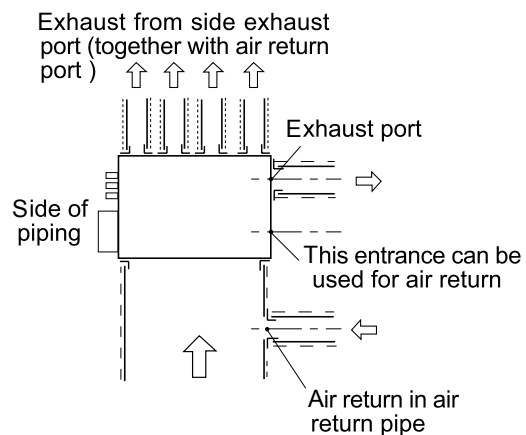


6. Connection of Air Return Pipe & Exhaust Duct

(a) Intake of fresh air (at simplex feeding)



(b) Exhaust



(c) The blast pipe should be heat-insulated as to prevent condensation.

7. Cautions in Installation of Air Return Pipe & Exhaust Pipe

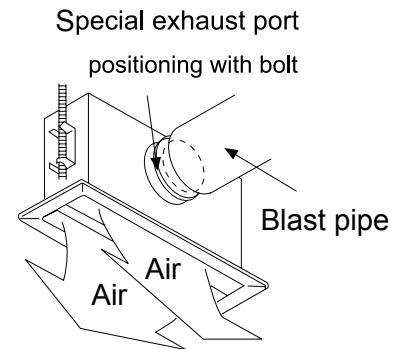
It is recommended to use the blast pipes, which can be anti-condensation and absorb sound. (purchased at local shops)

Complete the installation of the blast pipes before fitting up the suspended ceiling.

Heat insulation should be made for the blast pipes.

The special exhaust port should be arranged at the place where the air is distributed evenly.

An inspection hole should be left on the surface of the ceiling for future maintenance.



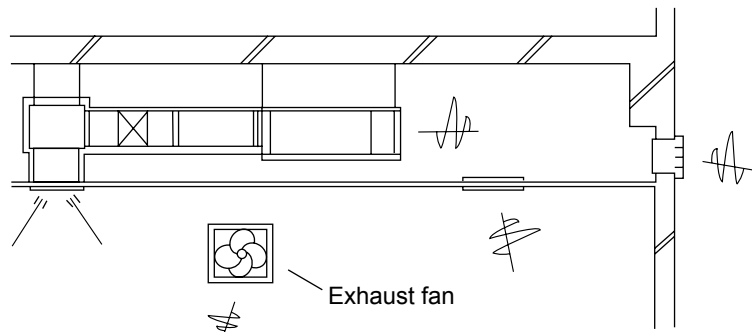
8. Examples for Bad Installation

The unit is not equipped with the air return pipe and the inner side of the suspending ceiling is used as the blast pipe, causing the humidity increasing due to irregular air mass, strong wind or sunlight from the outside world.

There might be condensate dropping down at the outer side of the blast pipe. The humidity is high, even if the inner side of the suspended ceiling isn't used as a blast pipe in new concrete buildings. At this time, the whole body should use the thermo wool for heat preservation (the thermo wool can be packed with a steel wire).

It is operated under the conditions beyond the limits, leading to the overload of the compressor.

Affected by the capacity of the exhaust fan, and the strong wind and wind direction in the outer flue, when the blowing quantity of the air conditioner exceeds the limits, the drained water of the heat exchanger will overflow, causing water leakage.



Example of bad installation

9. Refrigerant Pipe

Pipe Length & Height Difference

Please refer to the attached manual of outdoor units.

Piping Materials & Heat Insulating Materials

As to prevent condensation, heat insulating treatment should be performed. The heat insulating treatment for piping should be done respectively.

Piping Material	Hard PVC tube VP31.5mm (inner bore)
Heat Insulating Material	Vesicant polythene thickness: over 7mm

Tubing Materials & Specifications

Model		AWSI-DBV018-N11	AWSI-DBV024~048-N11
Tubing Size (mm)	Gas pipe	Φ12.7	Φ15.88
	Liquid pipe	Φ6.35	Φ9.52
Tubing Material	Phosphor deoxy bronze seamless pipe (TP2) for air conditioner		

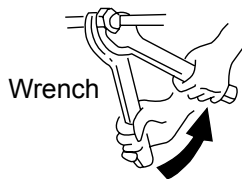
Refrigerant Recharge Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount or compressor failure can be caused by filling too much or little refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table



Outer diameter of tubing (mm)	Mounting torque
Φ6.35	11.8~13.7N·m
Φ9.52	32.7~39.9N·m
Φ12.7	49.0~53.9N·m
Φ15.88	78.4~98.0N·m
Φ19.05	97.2~118.6N·m

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one master unit.]

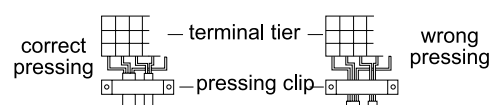
Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting



1. Connecting circular terminals:
The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.
2. Connecting straight terminals:
The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.
3. Pressing connecting line:
After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



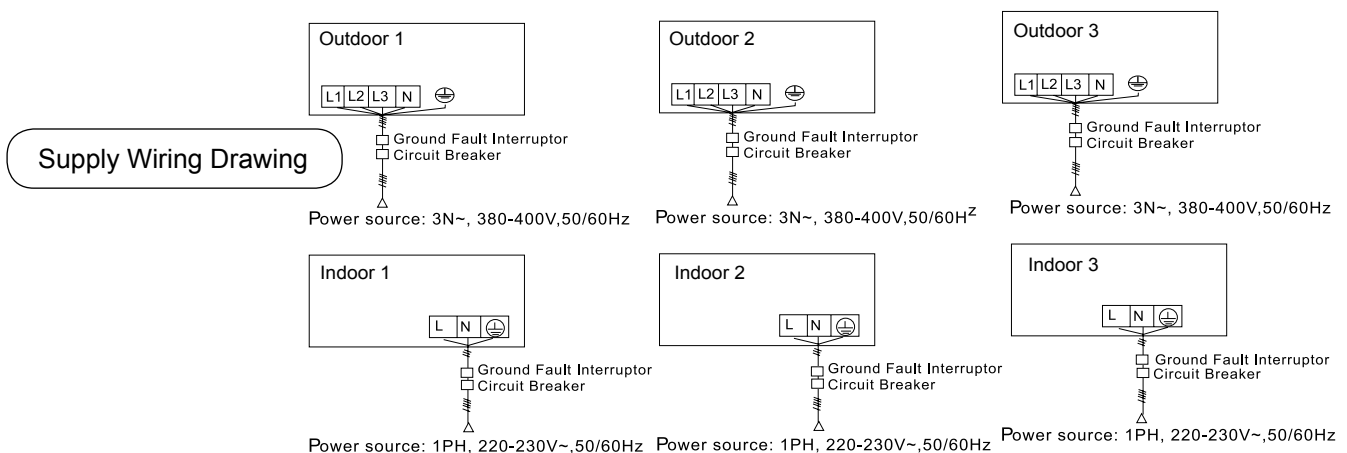
8.9.2 Electrical Wiring

⚠ WARNING

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient.
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents.
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightening rod and telephone line.

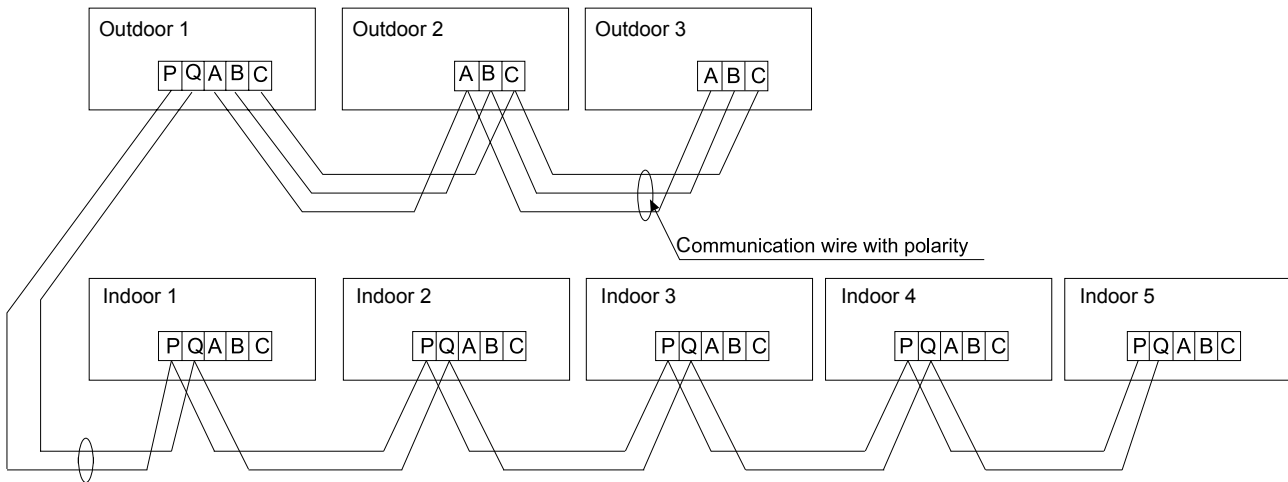
⚠ ATTENTION

- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while ⊕ should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line and signal line are provided by users. Parameters for power lines are shown as below: $3 \times 1.0-1.5 \text{ mm}^2$; parameters for signal line: $2 \times 0.75-1.25 \text{ mm}^2$ (shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

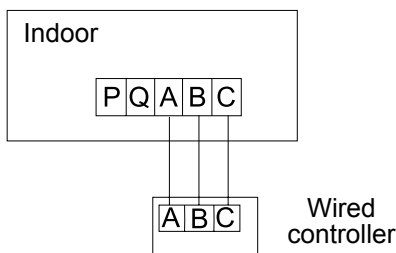
Signal Wiring Drawing



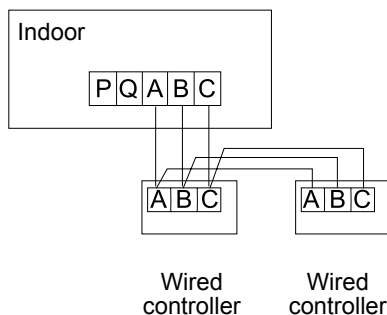
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

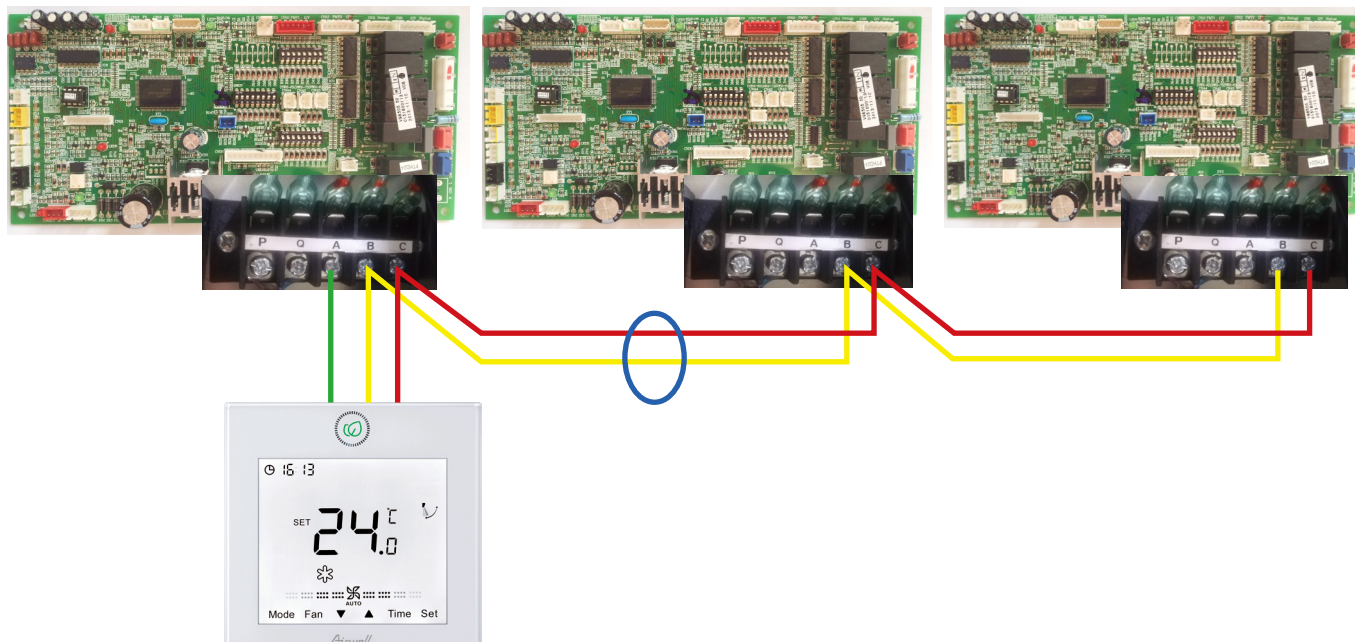


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800113 PCB



Note:

1. The wired controller connects with the ABC terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity

The combination of multiple indoor units can be controlled by wired controller or remote controller.

※ Switching mode of Wired control master unit/ Wired control slave unit/ remote control types can be used for switching over ※

Setting mode Socket/dip switch	Wired control master unit	Wired control slave unit	Remote control
SW01-[1][2][3][4]	All OFF	[0][0][0][1]	All OFF
CN21 socket	Null	Null	Connect to remote receiver
Terminal block (control)	A, B, C connect with wired controller	B, C connect with wired controller	A, B, C Null

Note:

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Items Total current of indoor units (A)	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
					Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
<7	2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line	
≥7 and <11	4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16	6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22	8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27	10	40	32	32 A, 30 mA, 0.1S or below		

- ※ The electrical power line and signal lines must be fastened tightly.
- ※ Every indoor unit must have the ground connection.
- ※ The power line should be enlarged if it exceeds the permissible length.
- ※ Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- ※ It is not permissible if the whole length of signal line exceeds 1000m.

Signal wiring of wired controller

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

8.9.3 Test Run

Before Test Run

Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1MΩ. It can't be operated if it is below 1MΩ.

Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.

Check if the arrangements of the drainpipe and connection line are correct.

The drainpipe shall be placed at the lower part while the connection line placed at the upper part.

Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials.

The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.

Checkup of Installation

- | | |
|---|--|
| <input type="checkbox"/> Check if the mains voltage is matching | <input type="checkbox"/> Check if the installation place meets the requirement |
| <input type="checkbox"/> Check if there is air leakage at the piping joints | <input type="checkbox"/> Check if there is too much noise |
| <input type="checkbox"/> Check if the connections of mains power and indoor & outdoor units are correct | <input type="checkbox"/> Check if the connecting line is fastened |
| <input type="checkbox"/> Check if the serial numbers of terminals are matching | <input type="checkbox"/> Check if the connectors for tubing are heat insulated |
| <input type="checkbox"/> | <input type="checkbox"/> Check if the water is drained to the outside |
| | <input type="checkbox"/> Check if the indoor units are positioned |

Ways of Test Run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.

When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

Set the wired controller to cooling/heating mode, press "ON/OFF" button for 5 seconds to enter into the compulsive cooling/heating mode. Repress "ON/OFF" button to quit the compulsive running and stop the operation of the air conditioner.

9. Medium ESP Duct Type Indoor Unit

9.1 Feature



- 5-48K
- Built-in drain pump
- 50/100Pa

MODEL			AW-DBV030-N11	AW-DBV038-N11
Power supply		Ph-V-Hz	1/220~230/50	1/220~230/50
Cooling	Capacity	kBtu/h	30.7	38.2
	Capacity	kW	9	11.2
	Power Input	W	230	235
	Current	A	1.05	1.07
Heating	Capacity	kBtu/h	34.1	44.3
	Capacity	kW	10	13
	Power Input	W	230	235
	Current	A	1.05	1.07
	Heating capacity at low temp.	kW	8	10
Operating current		A	1.05	1.07
Power consumption		kW	230	235
INDOOR MOTOR	Brand		Broad Ocean	Broad Ocean
	Model		Y7S423B061	Y7S423B225
	Type		AC	AC
	Insulation Class		B	B
	IP Class		20	20
	Power Input	W	230	235
	Power output	W	160	160
	Capacitor	μF	8	8
	Speed (High/Middle/Low)	rpm	1130/1030/950	960/885/800
INDOOR FAN	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		2	3
INDOOR COIL	a. Number of rows		3	2
	b. Tube pitch(a)x row pitch(b)	mm	13.3	13.3
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ7 Inner groove tube
	f. Coil length x height x width	mm	865 x336 x 39.9	1265 x336 x 39.9
	g. Number of circuits		6	8

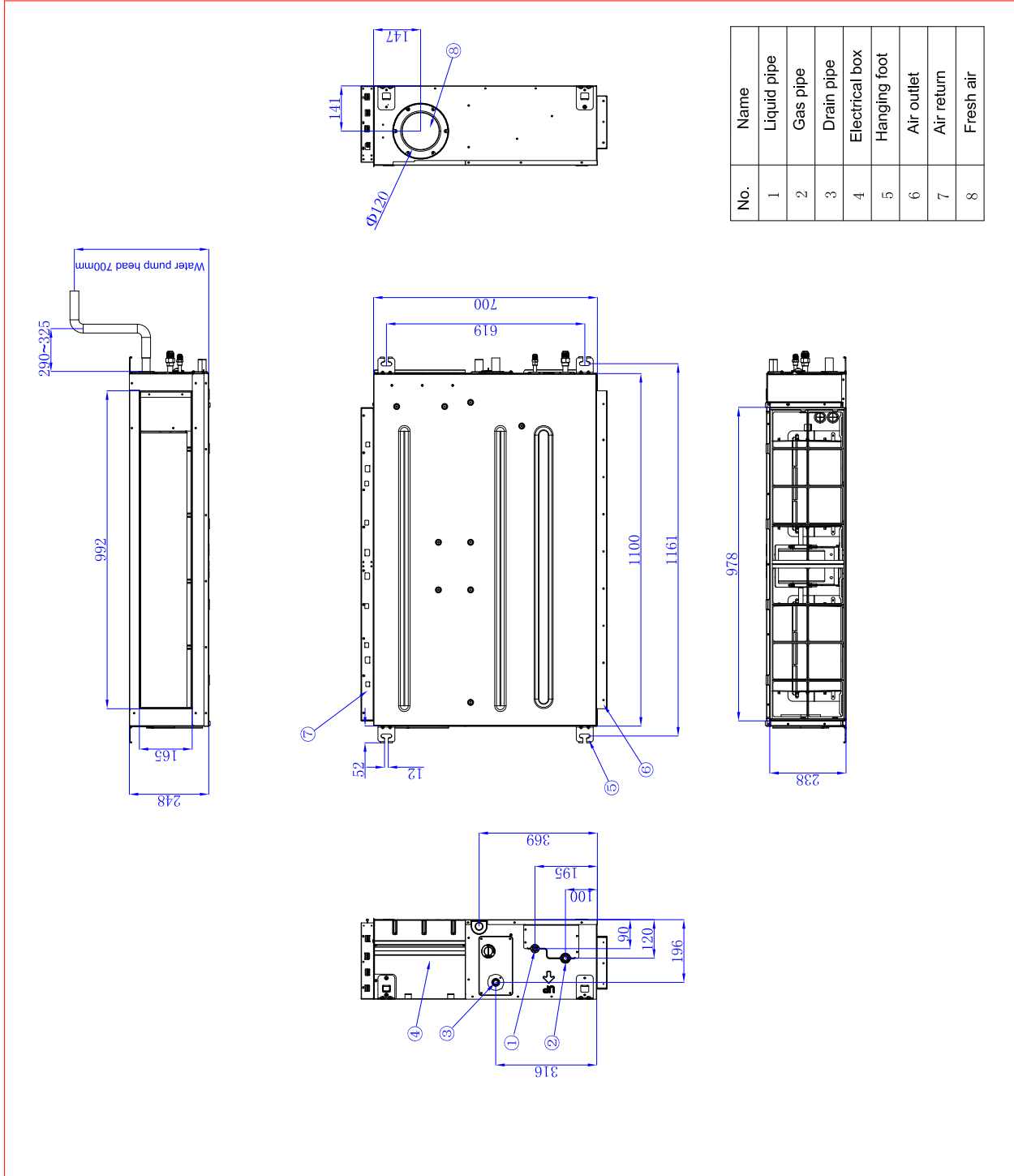
MODEL			AW-DBV030-N11	AW-DBV038-N11
Cabinet	Cabinet Coating Type		Galvanized	Galvanized
	Cabinet Salt Spray Test Duration	Hour	48	48
	Control Box IP Class		IP20	IP20
Construction	Sheet Metal Thickness		0.8	0.8
	Drain Pan Material		EPS	EPS
	Drain Pan Insulation		HF-1	HF-1
	Drain Pump Option	mm	Standard 700mm	Standard 700mm
	Branch Outlet Option		NO	NO
Indoor Wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or Single Skin		Single	Single
Air Filter	Material		PP	PP
	Mesh		100	100
	Pressure Drop	Pa	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52
	Gas pipe	mm	15.88	15.88
	Drain hose	mm	25	25
Fresh air dimension	mm	123	123	
Sound pressure level (H/M/L)	dB(A)	42/38/34	42/39/35	
Sound power level (H/M/L)	dB(A)	46/42/38	46/43/39	
Standard static pressure	Pa	50	50	
Max. static pressure	Pa	100	100	
Indoor air flow (H/M/L)	m ³ /h	1500/1180/930	1700/1300/900	
Air outlet dimensions	mm	992*165	1392*165	
Air return dimensions	mm	978*238	1378*238	
Dimension (W*H*D)	mm	1100/700/248	1500/700/248	
Packing (W*H*D)	mm	1332/835/280	1698/857/305	
Net weight	kg	39.4	48.3	
Gross weight	kg	45.4	56.5	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

MODEL		AW-DBV048-N11	
Power supply		Ph-V-Hz	1/220~230/50
Cooling	Capacity	kBtu/h	47.8
	Capacity	kW	14
	Power Input	W	290
	Current	A	1.32
Heating	Capacity	kBtu/h	55.6
	Capacity	kW	16.3
	Power Input	W	290
	Current	A	1.32
	Heating capacity at low temp.	kW	12.5
Operating current		A	1.32
Power consumption		kW	290
INDOOR MOTOR	Brand		Broad Ocean
	Model		Y7S423B555
	Type		AC
	Insulation Class		B
	IP Class		20
	Power Input	W	290
	Power output	W	220
	Capacitor	μF	12.5
	Speed (High/Middle/Low)	rpm	1055/980/880
INDOOR FAN	Brand		/
	Type		Centrifugal
	Quantity		3
INDOOR COIL	a. Number of rows		3
	b. Tube pitch(a)x row pitch(b)	mm	13.3
	c. Fin spacing	mm	1.4
	d. Fin type (code)		Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube
	f. Coil length x height x width	mm	1265 x336 x 39.9
	g. Number of circuits		11

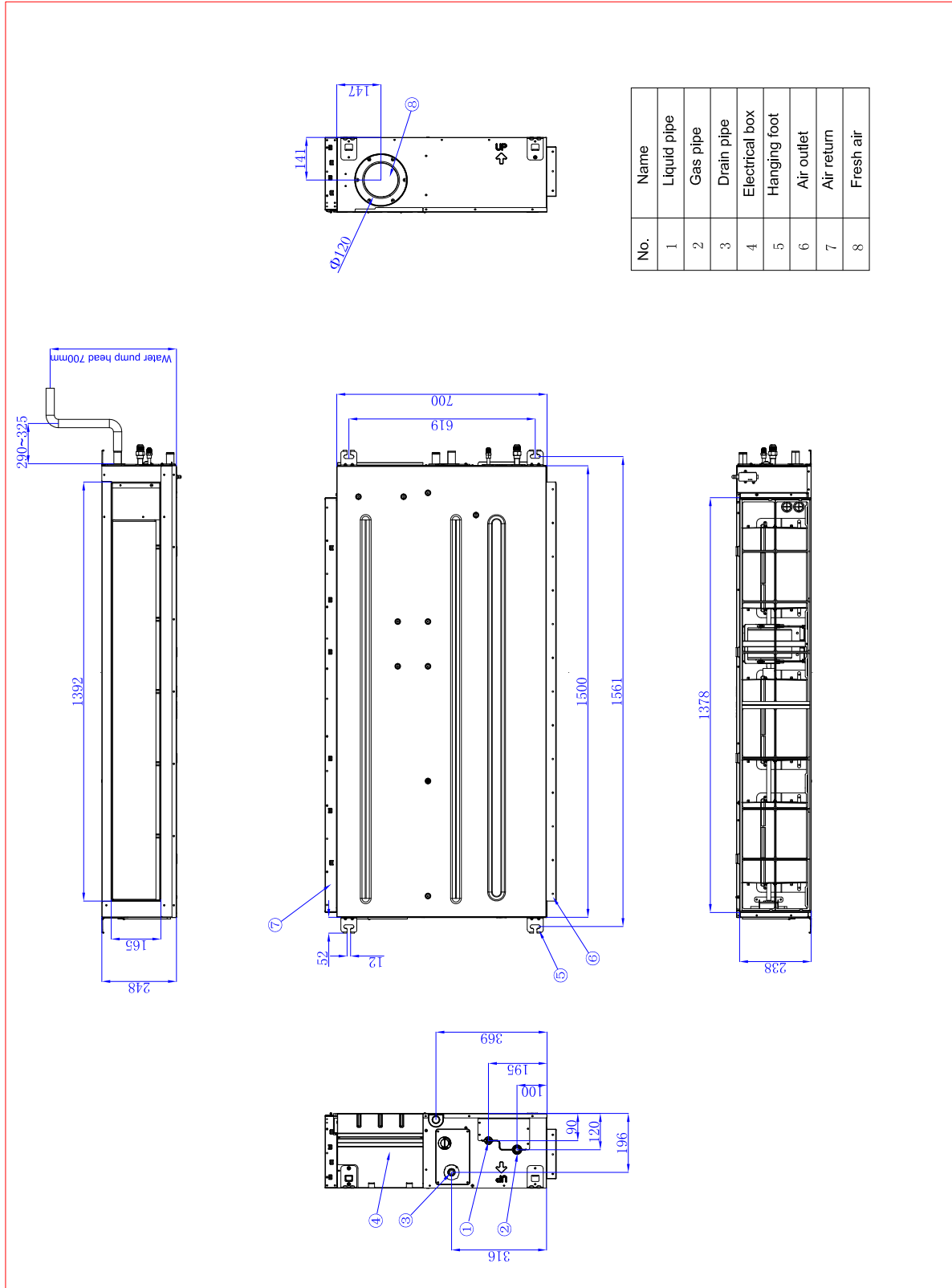
MODEL		AW-DBV048-N11	
Cabinet	Cabinet Coating Type		Galvanized
	Cabinet Salt Spray Test Duration	Hour	48
	Control Box IP Class		IP20
Construction	Sheet Metal Thickness		0.8
	Drain Pan Material		EPS
	Drain Pan Insulation		HF-1
	Drain Pump Option	mm	Standard 700mm
	Branch Outlet Option		NO
Indoor Wall	Material		Hot zinc plate
	Thickness	mm	0.8
	Double or Single Skin		Single
Air Filter	Material		PP
	Mesh		100
	Pressure Drop	Pa	5
Piping dimension	Liquid pipe	mm	9.52
	Gas pipe	mm	15.88
	Drain hose	mm	25
Fresh air dimension	mm		123
Sound pressure level (H/M/L)	dB(A)		43/40/35
Sound power level (H/M/L)	dB(A)		47/44/39
Standard static pressure	Pa		50
Max. static pressure	Pa		100
Indoor air flow (H/M/L)	m ³ /h		2000/1700/1250
Air outlet dimensions	mm		1392*165
Air return dimensions	mm		1378*238
Dimension (W*H*D)	mm		1500/700/248
Packing (W*H*D)	mm		1698/857/305
Net weight	kg		51.3
Gross weight	kg		59.5
<p>Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.</p>			

9.2 Dimension

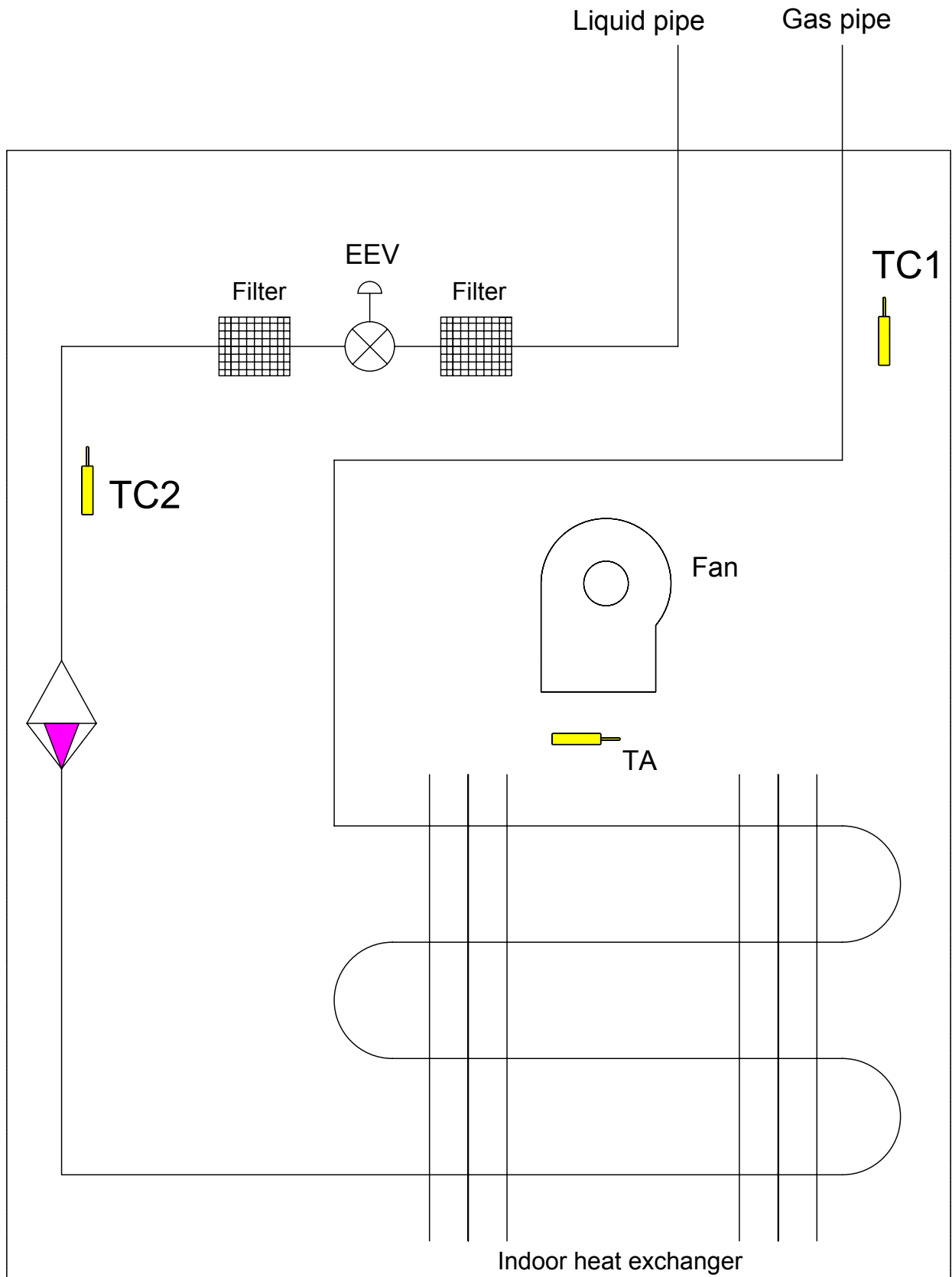
9.2.1 AW-DBV030-N11 dimension



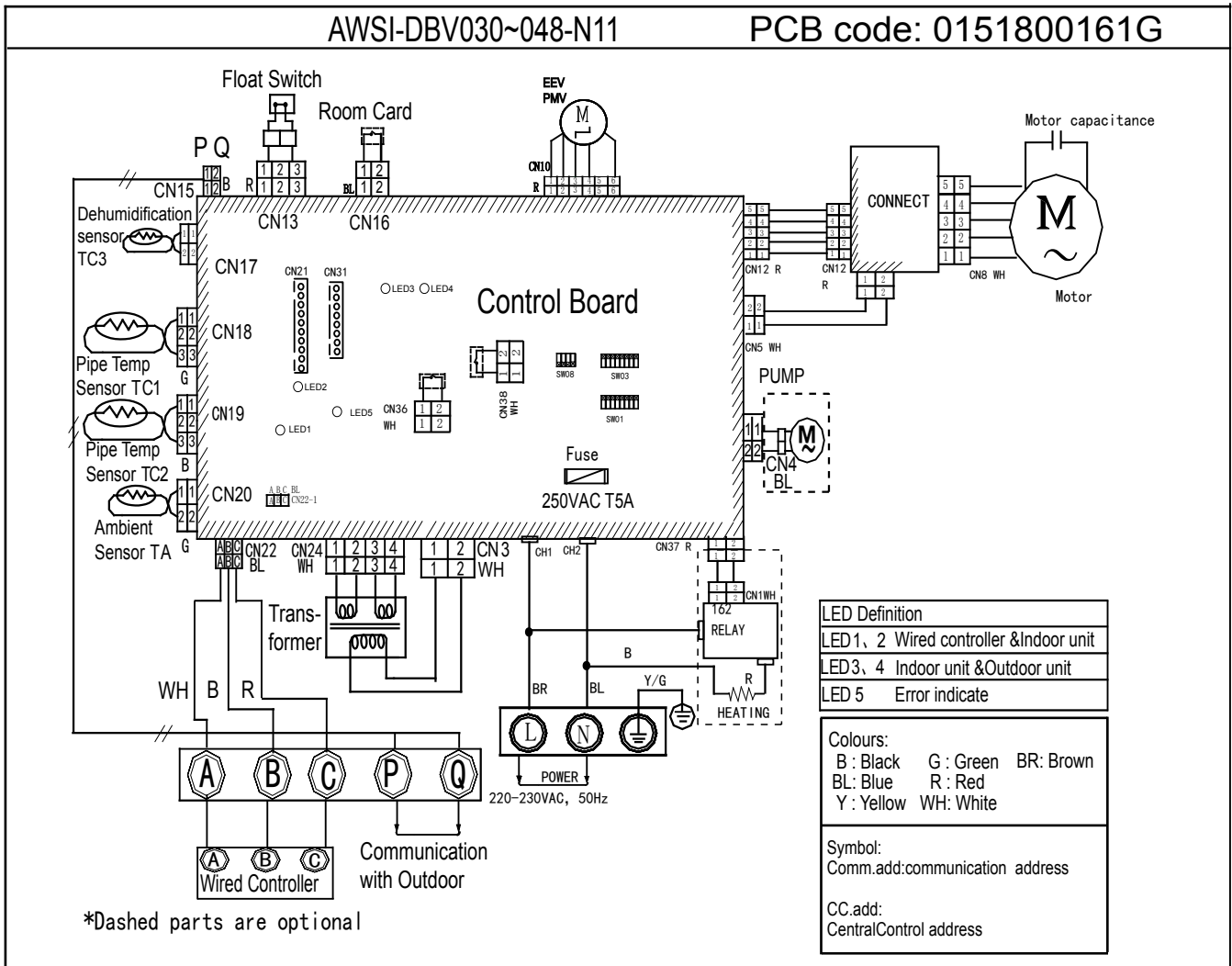
9.2.2 AW-DBV038~48-N11 dimension



9.3 Piping diagram



9.4 Wiring diagram



9.5 Electric characteristics

Model	Units				Power supply		Indoor fan motor		Power input (W)	
	Phase	FQY	Voltage	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AW-DBV030-N11	1	50	220	198~242	1.6	5	160	1.3	230	230
AW-DBV038-N11	1	50	220	198~242	1.7	5	160	1.36	235	235
AW-DBV048-N11	1	50	220	198~242	2	5	220	1.63	290	290

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker Output: Fan motor rated output (w) FLA: Full load amps (A)

Notes:

1. Voltage range

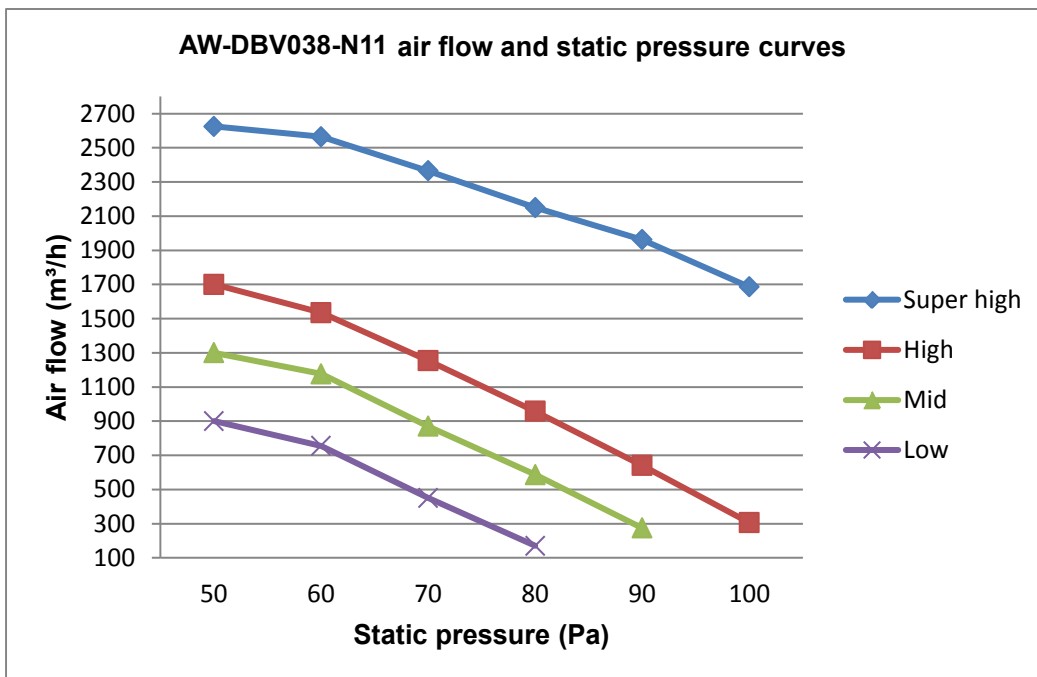
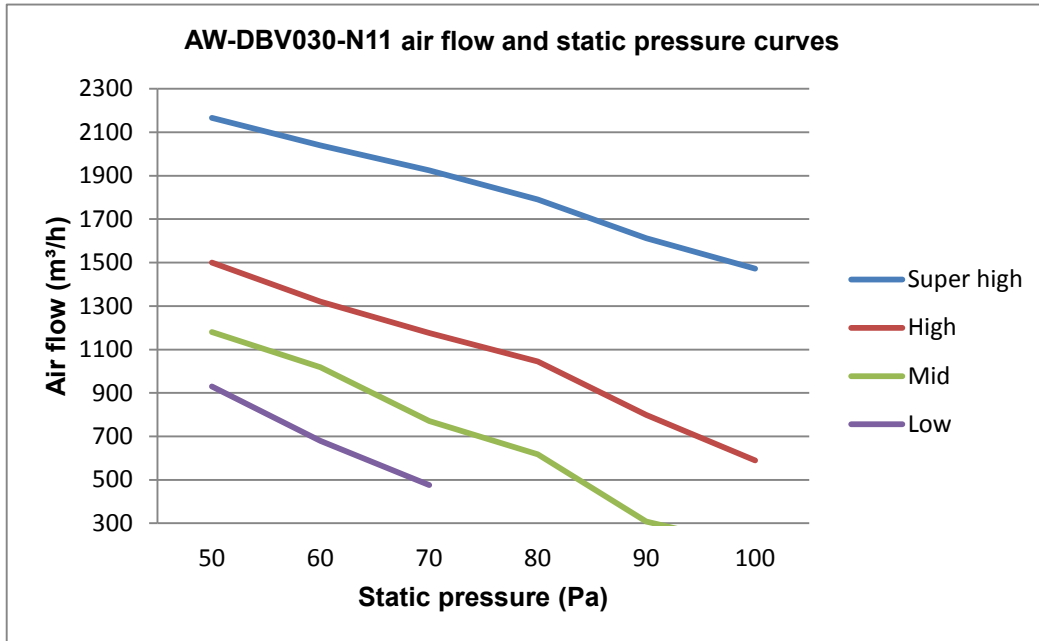
The units are applicable for the electrical systems where voltage supplied to unit is in the range.

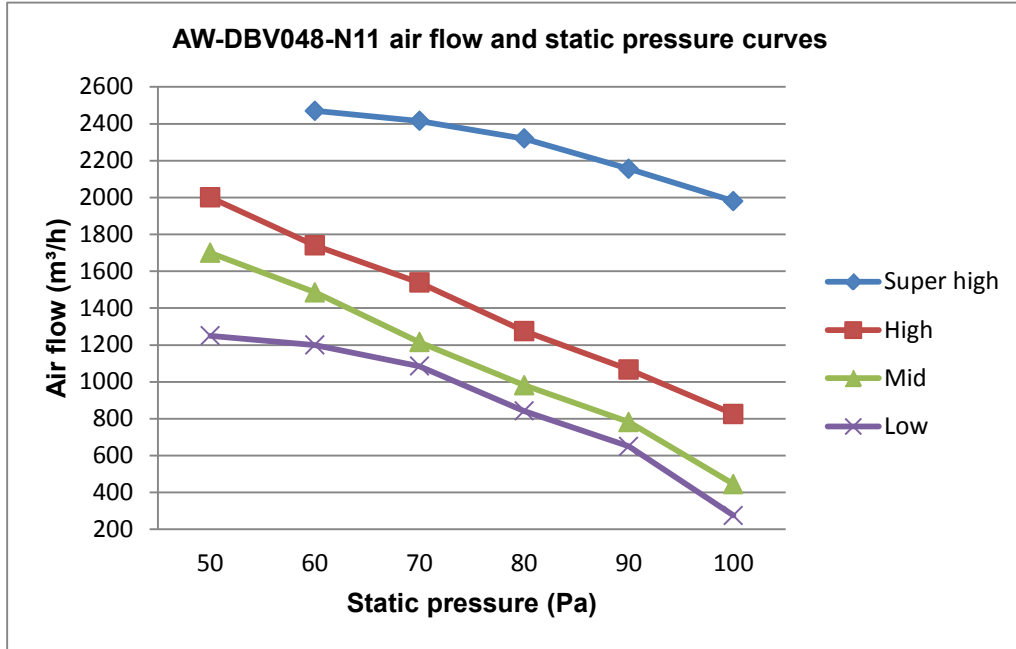
2. Maximum allowable voltage unbalance between phases is 2%.

3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$.

4. Power supply uses the circuit breaker.

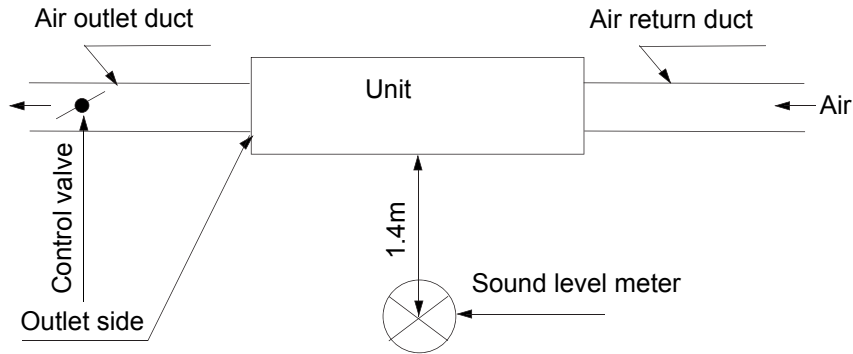
9.6 Airflow and static pressure curves





9.7 Sound pressure level

(1) Testing illustrate:

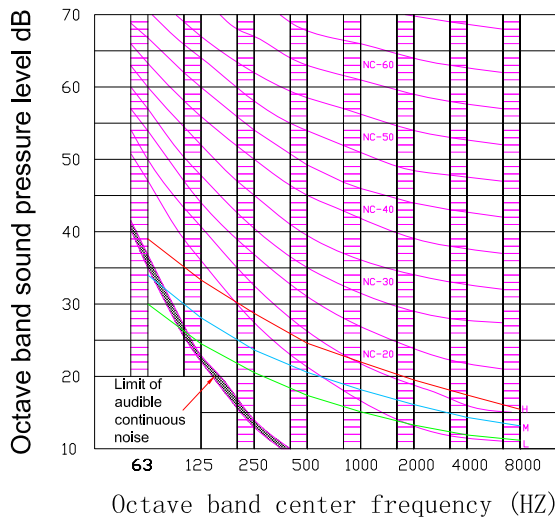


Testing position just below the central of the unit

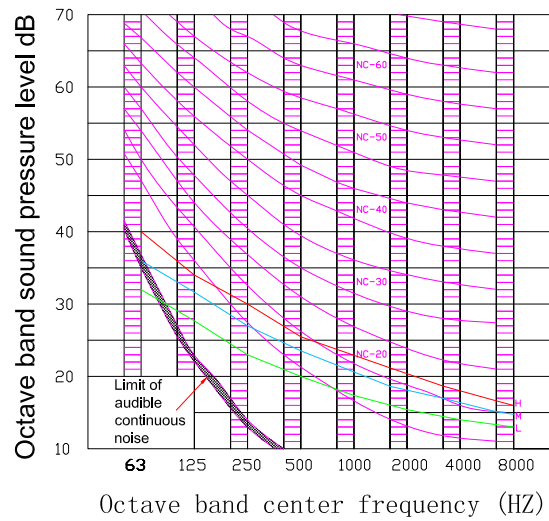
(2) Testing condition:

- Unit running in the standard condition
- Test in the semi-anechoic chamber
- Noise level varies from the actual factors such as room structure, etc.

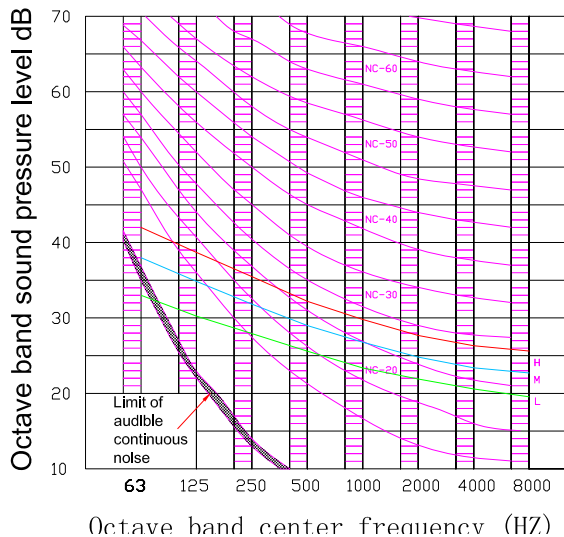
AW-DBV030-N11



AW-DBV038-N11



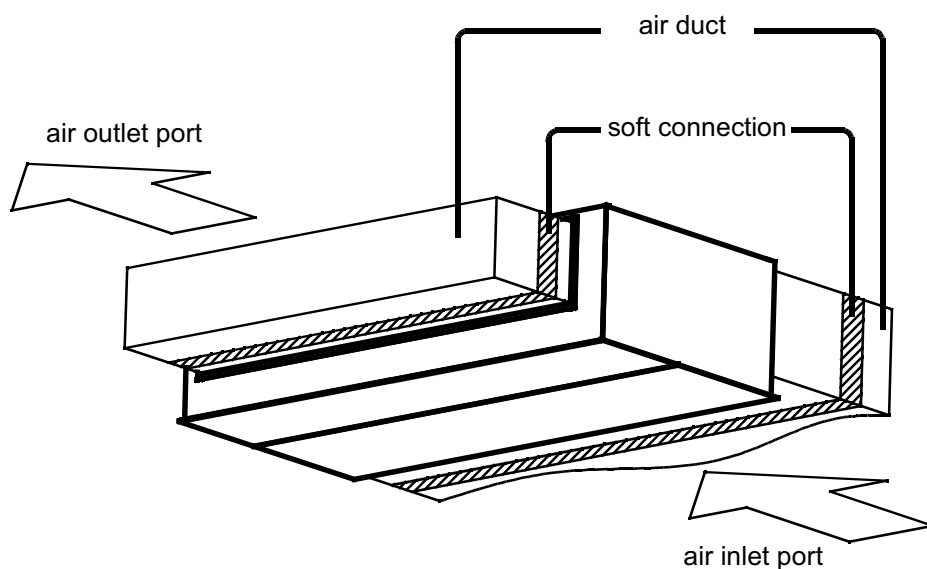
AW-DBV048-N11



9.8 Installation

9.8.1 Parts and functions

Indoor unit



9.8.2 Safety

- If the air conditioner is transferred to a new user, this manual shall be transferred to the user, together with the conditioner.
- Before installation, be sure to read Safety Considerations in this manual for proper installation.
- The safety considerations stated below is divided into “**⚠Warning**” and “**⚠Attention**”. The matters on severe accidents caused from wrong installation, which is likely to lead to death or serious injury, are listed in “**⚠Warning**”. However, the matters listed in “**⚠Attention**” are also likely cause the severe accidents. In general, both of them are the important items related to the security, which should be strictly abided by.
- After the installation, perform test run to make sure everything is in normal conditions, and then operate and maintain the air conditioner in accordance with the User Manual. The User Manual should be delivered to the user for proper keeping.


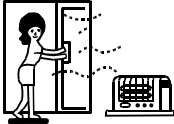















WARNING

- Please ask the special maintenance station for installation and repair. Water leakage, electric shocks or fire accidents might be caused from improper installation if you conduct the installation by your own.
- The installation should be conducted properly according to this manual. Water leakage, electric shocks or fire accidents might be caused from improper installation.
Please make sure to install the air conditioner on the place where can bear the weight of the air conditioner.
- The air conditioner can't be installed on the grids such as the non-special metal burglar-proof net. The place with insufficient support strength might cause the dropdown of the machine, which may lead to personal injuries.
- The installation should be ensured against typhoons and earthquakes, etc. The installation unconformable to the requirements will lead to accidents due to the turnover of the machine.
- Specific cables should be used for reliable connections of the wirings. Please fix the terminal connections reliably to avoid the outside force applied on the cables from being impressed on the cables. Improper connections and fixings might lead to such accidents as heating or fire accidents.
- Correct shapes of wirings should be kept while the embossed shape is not allowed. The wirings should be reliably connected to avoid the cover and the plate of the electrical cabinet lipping the wiring. Improper installation might cause such accidents as heating or fire accidents.
- While placing or reinstalling the air conditioner, except the specific refrigerant (R410A), don't let the air go into the refrigeration cycle system. The air in the refrigeration cycle system might lead to the cracking or personal injuries due to abnormal high pressure of the refrigeration cycle system.
- During installation, please use the accompanied spare parts or specific parts. If not, water leakage, electric shocks, fire accidents or refrigerant leakage might be caused.
- Don't drain the water from the drainpipe to the waterspout where may exist harmful gases such as sulfureted gas to avoid the harmful gases entering into the room.
- During installation, if refrigerant leakage occurs, ventilation measures should be taken, for the refrigerant gas might generate harmful gases upon contacting the flame.
- After installation, check if any refrigerant leakage exists. If the refrigerant gas leaks in the room, such things as air blowing heaters and stoves, etc. may generate harmful gases.
- Don't install the air conditioner at the places where the flammable gases may leak. In case the gas leakage occurs around the machine, such accidents as fire disasters may be caused.
- The drainpipe should be properly mounted according to this manual as to ensure the smooth drainage. In addition, heat preservation should be taken to avoid condensation. Improper drainpipe mounting might cause water leakage, which will get the articles at home wet.
- The refrigerant gas pipe and liquid pipe should be heat insulated to preserve heat. For inappropriate heat insulation, the water caused from the condensation will drop to get the article at home wet.

ATTENTION

- The air conditioner should be effectively grounded. Electric shocks may occur if the air conditioner is ungrounded or inappropriately grounded. The wire for earthing shouldn't be connected to the connections on the gas pipe, water pipe, lightning rod or telephone.
- The breaker for electricity leakage should be mounted. If not, accidents such as electric shocks may happen.
- The installed air conditioner should be checked for electricity leakage by being powered.
- If the ambient humidity bigger than 80%, when the water discharge hole be blocked or the filter becomes dirty, or airflow speed change, there maybe leads to condensing water drop down, and at the same time there maybe some drops of water spit out.

9.8.3 Emergency running & Test operation

 Attention	
Notices during Operation	<ul style="list-style-type: none"> • It is not allowed to put any heating apparatus under the indoor units, for the heat may cause distortion of the units. • Pay attention to the aeration condition to avoid anoxic symptom.   • Flammable apparatus should not be placed in the place where the air conditioner wind could reach directly, or incomplete burning of the apparatus may be caused.   • Check the mount table of the air conditioner for damage for a long period of operation. If placed on the damaged table, the unit may drop down causing damage.  • Plants and animals should not be put to the place where wind of the air conditioner blows directly, otherwise damage to them may be caused.  • It cannot be used for the preservation of food, living creature, precise instrument and artworks, etc, otherwise damage may occur.  • Use the fuse with proper capacity. Metal wires and copper wires, etc., may cause fire or other faults.  • Do not use water heater or like next to the indoor unit and the wired controller. Water/power leakage or short circuit may happen if the steam generating apparatus is working next to machine.  • Defrosting during heating To improve the heating effect, the outdoor unit will perform defrosting automatically when frost appears on the outdoor unit during heating (approximately 2-10 min). During defrosting, the fan of the indoor unit runs at a low speed or stops while that of the outdoor unit stops running. • Power should be cut off when the air conditioner is left unused for a long period. Power will be consumed if the air conditioner is not powered off. The power switch of the outdoor unit switch should be powered on 12 hours in advance before operation to protect the unit after a long period of storage.
	<ul style="list-style-type: none"> • 3-minute protection To protect the unit, compressor can be actuated with at least 3-minute delay after stopping. • Close the window to avoid outdoor air getting in. Curtains or window shutters can be put down to avoid the sunshine.  • Do not touch the switch with the wet hand to avoid power shock.  • Stop running and switch off the manual power switch when cleaning the unit.  • During the operation of the control unit, don't switch off the manual power switch and the controller can be used. Please do not press the liquid crystal zone of controller to prevent damage.  • Cleaning the unit with water may cause electric shock.   • Do not put flammable spray close to the air conditioner. Don't inject flammable spray towards the air conditioner, which may cause fire.  • Stopping fan rotation The unit which stops operating will actuate the fan for a 2-8 min swing every 30-60 minutes for protecting the unit while other indoor unit are in the operating state. • This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. • Children should be supervised to ensure that they do not play with the appliance.

9.8.4 Maintenance

* Only when the air cleaner is switched off and disconnected to the power supply can it be cleaned, or electric shock and injury may appear.

Cleaning the air outlet port and the shell:

⚠ Attention

- Don't use gasoline, benzene, diluents, polishing powder or liquid insecticide to clean them.
- Do not clean them with hot water of above 50°C to avoid fading or distorting.
- Wipe them with soft dry cloth.
- Water or neutral dry cleanser is recommended if the dust cannot be removed.
- The Wind Deflector can be dismantled to clean (as below).

Cleaning Wind Deflector:

- Do not wipe the wind deflector with water forcibly to avoid falling off.

Cleaning Air Cleaner:

⚠ Attention

- Don't rinse the air cleaner with hot water of above 50°C to avoid fading and distorting.
- Don't put the air cleaner on the fire to dry to avoid catching fire.

- Wipe dust with water or dust collector.
- (A) Wipe dust with dust collector.



- (B) Clean it with soft brush in mild detergent if there is too much dust on it

Throw off the water and airing it in the cool dry condition.



Maintenance before and after Operating Season

Before Operating Season:

1. Please make the following checkup. If abnormal condition occurs, consult the after-service personnel.
 - There is no blockage in inlet port and outlet port of outdoor and indoor units.
 - The ground line and the wiring are in the proper state

2. After cleaning, the air cleaner must be mounted.

3. Switch on to the power.


After Operating Season:

1. In sunny days, blowing operation can be performed for half a day to make the inside of machine dry.

2. Electrical power should be cut down to economize electricity, or the machine will still consume power. Air cleaner and shell must be mounted after cleaning.

9.8.5 Fault checkup

Please check the following when consigning repair service:

	Symptoms	Reasons
All these are not problems	<ul style="list-style-type: none"> Water flow sound 	Water flow sound can be heard when starting operation, during operation or immediately after stopping operation. When it starts to work for 2-3 minutes, the sound may become louder, which is the flowing sound of refrigerant or the draining sound of condensed water.
	<ul style="list-style-type: none"> Cracking sound 	During operation, the air conditioner may make the cracking sound, which is caused from the temperature changes or the slight dilation of heat exchanger.
	<ul style="list-style-type: none"> Terrible smell in outlet air 	The terrible smell, caused from walls, carpet, furniture, clothing, cigarette and cosmetics, attaches on the conditioner.
	<ul style="list-style-type: none"> Flashing operating indicator 	When switching it on again after power failure, turn on the manual power switch and the operating indicator flashes.
	<ul style="list-style-type: none"> Awaiting indication 	It displays the awaiting indication as it fails to perform refrigerating operation while other indoor units are in heating operation. When the operator set it to the refrigerating or heating mode and the operation is opposite to the setting, it displays the awaiting indication.
	<ul style="list-style-type: none"> Sound in shutdown indoor unit or white steam or cold air 	To prevent oil and refrigerant from blocking the shutdown indoor units, refrigerant flows in the short time and make the sounds of refrigerant flowing. Otherwise, when other indoor units performs heating operation, white steam may occur; during refrigerating operation, cold air may appear.
	<ul style="list-style-type: none"> Clicking sound when switching the air condition on 	When the conditioner is powered on, the sound is made due to the resetting of the expansion valve.
Please make another check.	<ul style="list-style-type: none"> Start or stop working automatically Failure to work 	<ul style="list-style-type: none"> Check if it is in the state of Timer-ON and Timer-OFF. Check if there is a power failure. Check if the manual power switch is turned off. Check if the supply fuse and breaker are disconnected. Check if the protective unit is working. Check if refrigerating and heating functions are selected simultaneously with the awaiting indication on line control.
	<ul style="list-style-type: none"> Bad cooling & heating effects 	<ul style="list-style-type: none"> Check if air intake port and air outlet port of outdoor units are blocked. Check if the door and windows are open. Check if the filtering screen of air cleaner is blocked with sludge or dust. Check if the setting of wind quantity is at low wind. Check if the setting of operation is at the Fan Operation state. Check if the temperature setting is proper.

Under the following circumstances, immediately stop the operation, disconnect the manual supply switch and contact the after-service personnel.

- When buttons are inflexible actuated;
- When fuse and breaker have been burnt over and over;
- When there are foreign objects and water in the refrigerator;
- When it cannot still be operated after removing the operation of protective unit;
- When other abnormal conditions occur.

9.8.6 Installation procedures

The standard attached accessories of the units of this series refer to the packing; prepare other accessories according to the requirements of the local installation point of our company.

1. Before installation [before finishing the installation, don't throw away the attached parts required for the installation]

- Determine the route to move the unit to the installation site;
- Don't tear the package open before moving the unit to the installation site. When unpacking is needed, a soft material or protector block with ropes can be used to lift the unit to avoid damaging or scraping of the unit.

2. Select the installation site

(1) The installation site should be selected according the following conditions, which should be approved by users.

- where an ideal air distribution can be ensured;
- where there is no blockage in the air passage;
- where the condensed water can be drained out properly;
- where the strength can bear the weight of the indoor unit;
- where enough space can be ensured for maintenance. The outside air should be input from the outdoor directly from the blast pipe. If the blast pipe can't be jointed, the air can't be input from the suspended ceiling.
- where the lengths of the piping between indoor units and outdoor units are within the allowable range (refer to Installation of Outdoor Units)
- where the distance of at least 1m between indoor units, outdoor units, mains supply, connecting wires and television or radio should be kept as to avoid the image disturbance and noises of the above electrical appliances. (Even if 1m can be ensured, noise might occur if there is strong electric wave.) Additionally, equipments, television or other valuables can't be put under the unit as to avoid the condensed water of the unit from dropping into the above articles, causing damaging.

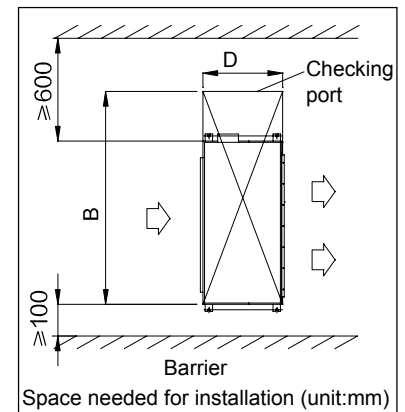
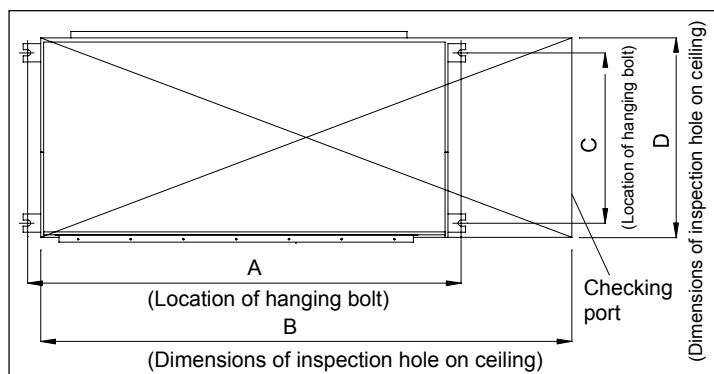
(2) Height of Ceiling:

The ceiling should be located at the place, where the central position of air outlet port is less than 3m high above the ground.

(3) Hoisting studs should be used during installation.

Check if the location can bear the weight of the unit.

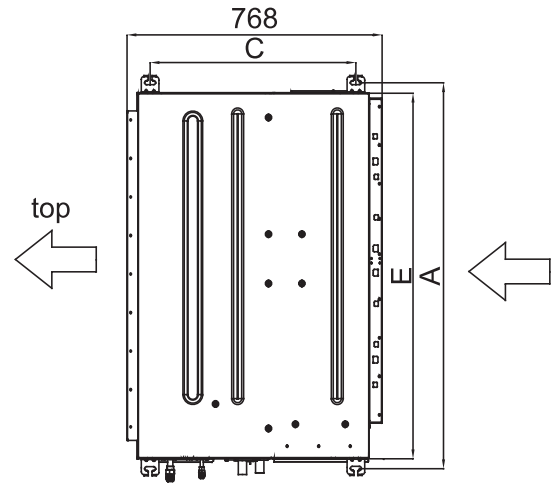
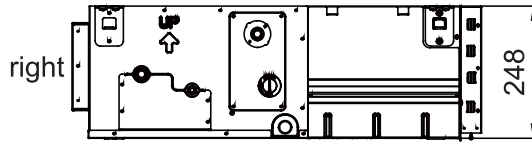
Reinforce it before installation if necessary.



Model	Size	A (mm)	B (mm)	C (mm)	D (mm)
AW-DBV030-N11		1161	1611	619	700
AW-DBV038-N11		1561	2011	619	700
AW-DBV048-N11					

3. Preparation before Installation

(1) Location relation between inspection hole on the ceiling and the unit and the hoisting studs (unit: mm).

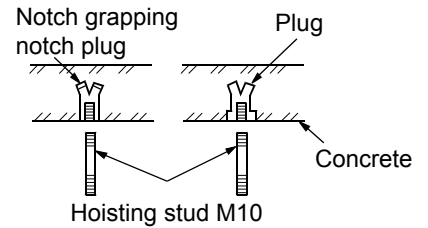


Model \ Size	A (mm)	C (mm)	E (mm)
AW-DBV030-N11	1161	619	1100
AW-DBV038-N11	1561	619	1500
AW-DBV048-N11			

- (2) If necessary, make a hole for installation and inspection on the ceiling. (used for the situation with a ceiling)
- For the size of the inspection hole on the ceiling, please refer to the above drawing.
 - Before installation, finish all the preparations for all piping connected to indoor units (refrigerant, water drainage) and wiring (connection line of the line control, connection line between indoor units and outdoor unit) so that they can be connected with indoor units right after installation.
 - For the inspection hole, the ceiling might be reinforced to keep the evenness of the ceiling and avoid the vibration of the ceiling. For details, please consult the construction contractor.

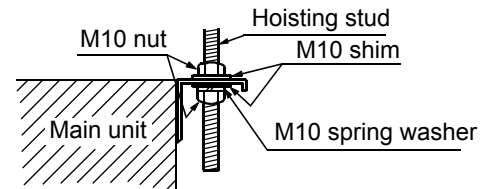
(3) Install the hoisting studs (M10 bolts)

In order to support the weight of the unit, use barb bolts in the situation with a ceiling. In the situation with the new ceiling, use inlaid bolts, embedded bolts or other parts provided on site. Before proceeding the installation, adjust the gap between the bolt and the ceiling.



(4) Installation of Indoor Units

- Fix the indoor unit with the hoisting stud. If necessary, the machine can be hanged on the beam with bolts instead of the hoisting stud.



NB:

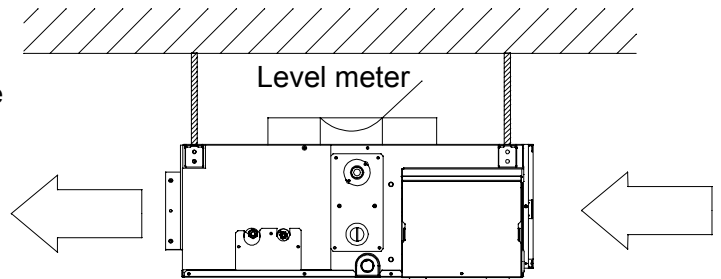
When the sizes of the main unit don't match the hole on the ceiling, regulate the slot on the hanging bracket.

Adjusting the level

Adjust the level with a level meter or according to the following ways:

Adjusting the level

- Make the adjustment as shown in the figure.



Choice of Blowing Wind from Blower (when using the high performance filter)

For AD05-282MJERA, the blower is provided with a red terminal, a white terminal and a blue terminal. The standard wind choice has been set before delivery. When the use of optional components, such as the high performance filter, causes the static pressure rising, change the connection of the connector mounted on the side of the control cabinet, as shown as follows.

Standard blowing wind(at delivery)			High-speed blowing wind			Low-speed blowing wind			
Motor	Blue	white | white	Red	red | white	Red	Blue | white	Black	Blue | white	Red
	Black		Blue		Blue		Orange		Blue
	Orange		Black		Black		Orange		Black
	Yellow		Yellow		Yellow		Yellow		Yellow
									PCB side

Static Pressure Range
unit: Pa

Standard Static Pressure	Max. Static Pressure
50	100

For AD302-482MJERA

The blower can select the maximum static pressure and standard static pressure air volume through the controller, which is set to the standard static pressure before delivery. When the static pressure rises with the optional device is used, such as high performance filters. the static pressure selection is performed as follows:

Remote controller setting mode: remote control selects static pressure. In high wind mode, press the health button 12 times within 5 seconds, the buzzer will reverberate 4 times, set the maximum static pressure successfully. Press the health button 12 times within 5 seconds, the buzzer will sound 2 times, the maximum static pressure function will be canceled, and the default setting will be restored.

YR-E17 Wired Controller setting mode: keep pressing the key **Set** and the key **▲** minus 5 seconds to enter the advanced setting, press the key **Fan** to switch to the function category b (temperature zone display), at this time function category code flashes (clock zone display), press the key **▲** or **▼** to switch the value to 11, then press the key **Set**, the existing static pressure display is performed in the time zone, and the specific information flashes. When it is flashing, press the key **▲** or **▼** to change it. After the change is completed, press the key **Set** to confirm.

01 means the default standard static pressure, 02 means the maximum static pressure.

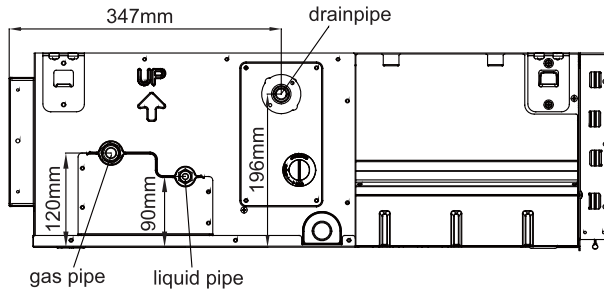
Static Pressure Range

unit: Pa

Standard Static Pressure	Max. Static Pressure
50	100

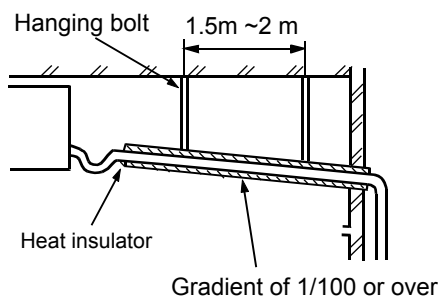
4. Drainpipes

AW-DBV030~048-N11

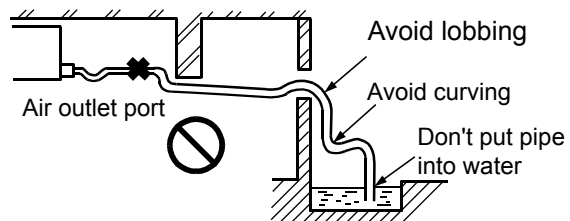


(a) Keep a gradient (1/50-1/100) of the drainpipes and avoid lobbing or curving.

• Proper Piping

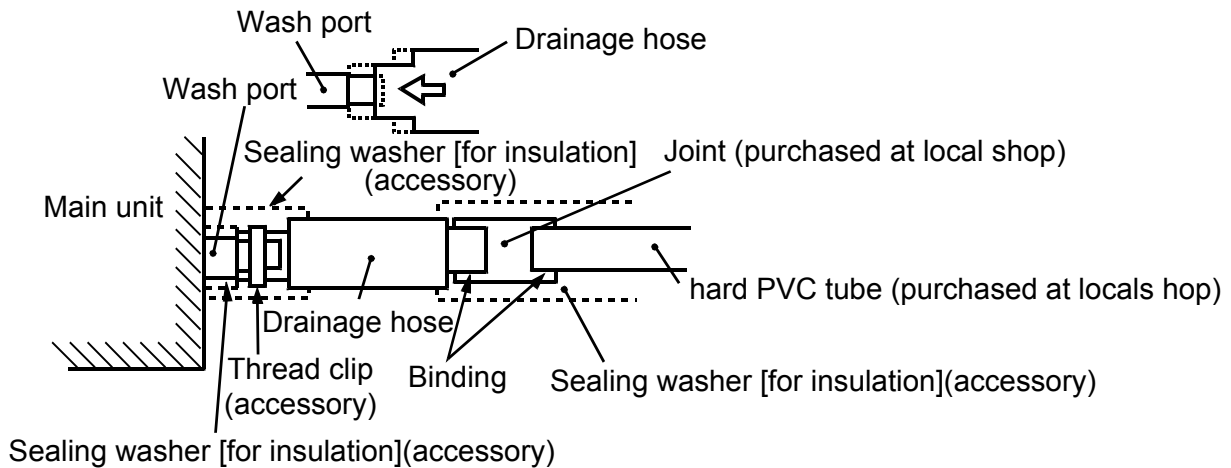


• Improper Piping

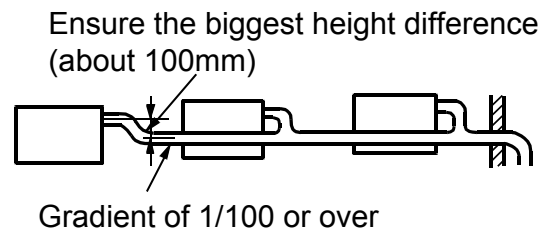


(b) When connecting the drainpipe to the equipment, don't apply too much force on one side of the equipment. Meanwhile, the piping should be positioned as close to the equipment as possible.

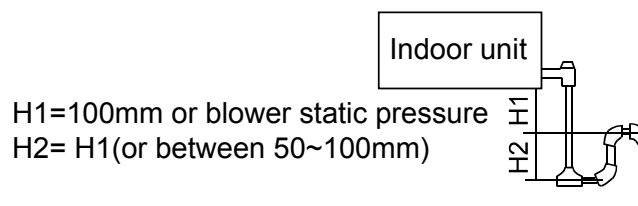
(c) For the drainpipe, the general purpose hard PVC tube can be purchased at local shops. During the connection, insert the end of PVC tube into the wash port and fasten it with drainage hose and thread clip. Binding agents shouldn't be used to connect the wash port and drainage hose.



(d) When the laid drain piping is used for multiple equipments, the public piping should be lower about 100mm than the wash ports of equipments, as shown in the figure. Thicker pipes should be used for this application.



- (e) The hard PVC tube in the room must be provided with the heat insulating layer.
- (f) Don't place the drainpipes at the places where there is irritant gas. Don't put the drainpipe directly into the sewer, where there might be gases with sulfur.
- (g) Backwater bend
Because the drainage was laid in the position of binging subatmospheric pressure easily, gain of elevation of water in the drain pan conduces leakage water, for avoiding leakage water, design a Backwater bend. Configuration of Backwater bend can be cleaned, a " T " joint can be used in installing as shown as in the picture below.
Backwater bend was installed in the neighborhood of air conditioning
A backwater bend was designed in the middle of drain pipe s shown as in the picture below.

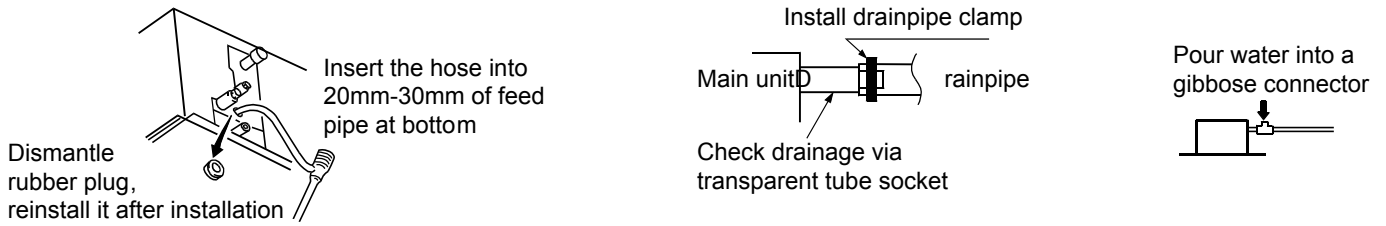


Testing Drainage System

- (a) After finishing the electrical system, test the drainage system.
- (b) During testing, make sure that the water flow passes the piping correctly without any water leakage at the connection.
- (c) In the condition of new house, test the drainage system before fitting up the ceiling.
- (d) Even if it is installed in the season needed to heating, the testing should also be performed.

Procedures

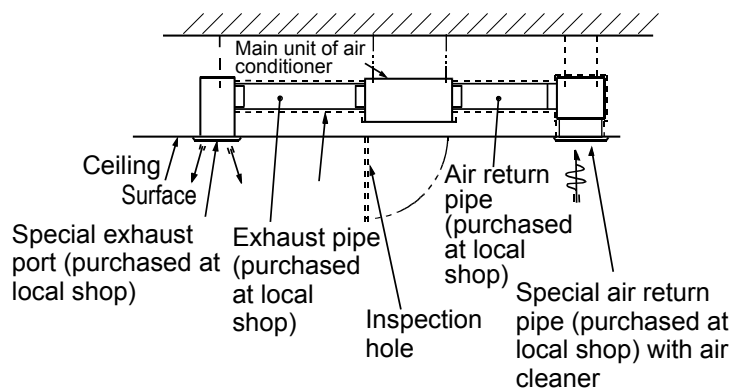
- (a) Provide about 1000cc of water to the equipment via air outlet port with the feed pump.
- (b) During refrigerating operation, check the drainage system..



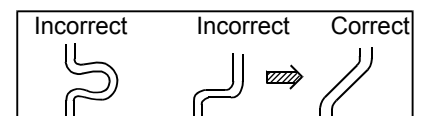
Before completing the electrical connection, a gibbose connector shall be installed on the drainpipe as to provide it with a water inlet port. Then, if any leakage exists in the piping, check it to make the water flow of the drainpipe smooth.

5. Installation of Air Return & Air Exhaust Pipes

For the choice and installation of air return port, air return pipe, air exhaust port and exhaust pipe, please consult service personnel of Airwell company. Calculate the design chart and exterior static pressure, and select the exhaust pipe with appropriate length and shapes.

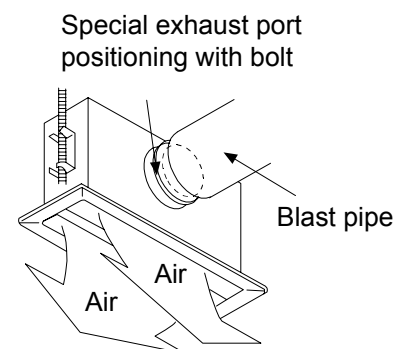


- The length difference between pipes should be limited to be less than 2:1;
- Make the piping as short as possible;
- Keep the min. elbow quantity;
- Wind the heat insulating material around the flange between the main unit and the exhaust pipe for heat insulation and sealing. Install the piping before fitting up the ceiling.



6. Cautions in Installation of Air Return Pipe & Exhaust Pipe

- It is recommended to use the blast pipes, which can be anti-condensation and absorb sound. (purchased at local shops)
- Complete the installation of the blast pipes before fitting up the suspended ceiling.
- Heat insulation should be made for the blast pipes.
- The special exhaust port should be arranged at the place where the air is distributed evenly.
- An inspection hole should be left on the surface of the ceiling for future maintenance.



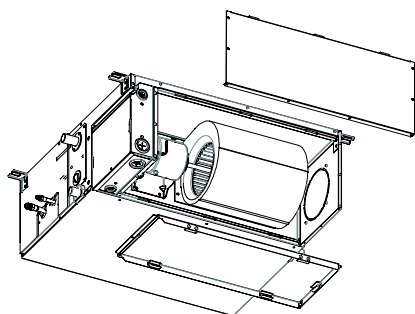
7. Connection of return air duct (setting back air return opening when leaving factory)

Remarks:

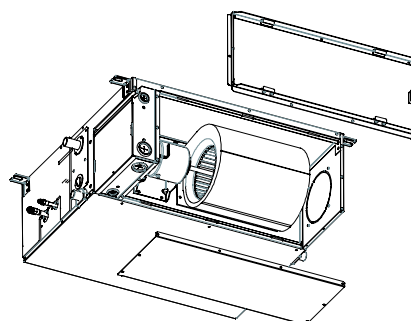
In installation, you can select the lower air return or back air return by adjusting the location of air inlet frame. Air return from bottom will influence the unit noise, so we suggest use rear return installation.



Model	Size	F (mm)	G (mm)
AW-DBV030-N11		992	165
AW-DBV038-N11		1392	165
AW-DBV048-N11			165



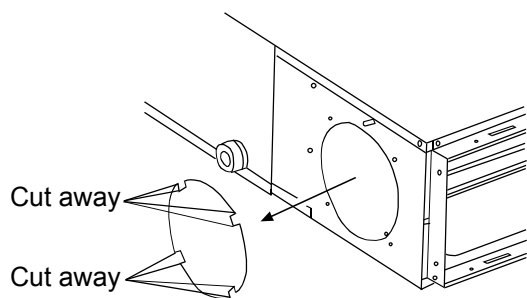
Back air return opening



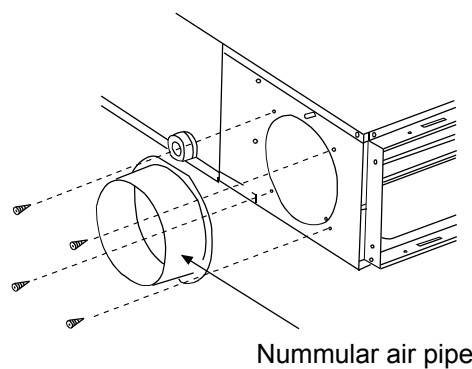
Below air return opening

8. Concatenation means of exchanging fresh air

(1) Cut away the nummular component of lateral board

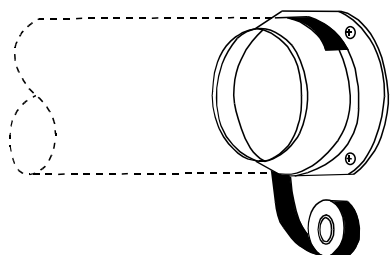


(2) Install the nummular air pipe (air pipe can be purchased in local district)



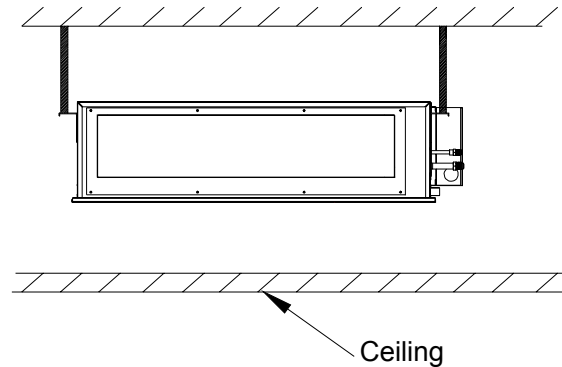
Nummular air pipe

(3) Airproof the joint by airproof cingulum avoiding



9. Install outlet flange

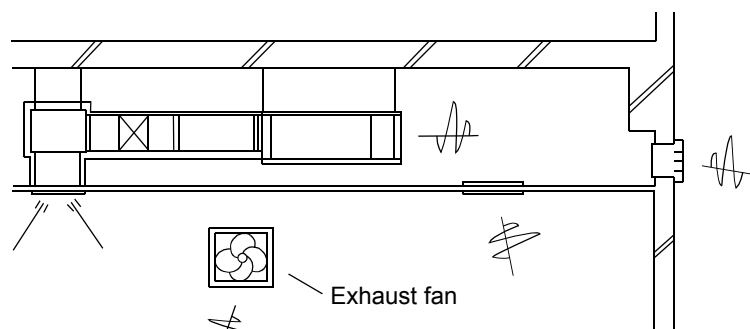
Install outlet flange basis the needs, the outlet flange is standard component, bolts are laid in accessories box.



Note: You can select not to connect with the flange. Instead of it, you can use the round plastic air outlet (purchased by user)

10. Examples for Bad Installation

- The unit is not equipped with the air return pipe and the inner side of the suspending ceiling is used as the blast pipe, causing the humidity increasing due to irregular air mass, strong wind or sunlight from the outside world.
- There might be condensate dropping down at the outer side of the blast pipe. The humidity is high, even if the inner side of the suspended ceiling isn't used as a blast pipe in new concrete buildings. At this time, the whole body should use the thermo wool for heat preservation (the thermo wool can be packed with a steel wire).
- It is operated under the conditions beyond the limits, leading to the overload of the compressor.
- Affected by the capacity of the exhaust fan, and the strong wind and wind direction in the outer flue, when the blowing quantity of the air conditioner exceeds the limits, the drained water of the heat exchanger will overflow, causing water leakage.



Example of bad installation

11. Refrigerant Tube

Tubing Permissible Length & Height Difference

Please refer to the attached manual of outdoor units.

Piping Materials & Heat Insulating Materials

As to prevent condensation, heat insulating treatment should be performed. The heat insulating treatment for gas and liquid piping should be done respectively.

Piping Material	Hard PVC tube VP31.5mm(inner bore)
Heat Insulating Material	Vesicant polythene thickness: over 7mm

Tubing Materials & Specifications

Model	AW-DBV030~048-N11	
Tubing Size (mm)	Gas pipe	φ15.88
	Liquid pipe	φ9.52
Tubing Material	Phosphor deoxybronze seamless pipe (TP 2) for air conditioner	

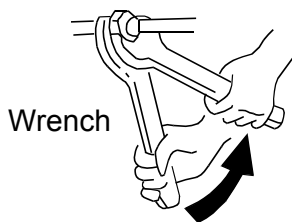
Refrigerant Filling Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount or compressor failure can be caused by filling too much or little refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table



Outer Diameter of Tubing (mm)	Mounting Torque
φ6.35	11.8~13.7N.m
φ9.52	32.7~39.9N.m
φ12.7	49.0~53.9N.m
φ15.88	78.4~98.0N.m
φ19.05	97.2~118.6N.m

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

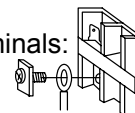
Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one main unit.]

Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting

Connecting circular terminals:



1. Connecting circular terminals:

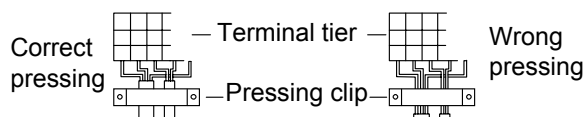
The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.

2. Connecting straight terminals:

The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.




3. Pressing connecting line

After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



9.8.7 Electrical wiring

⚠ WARNING

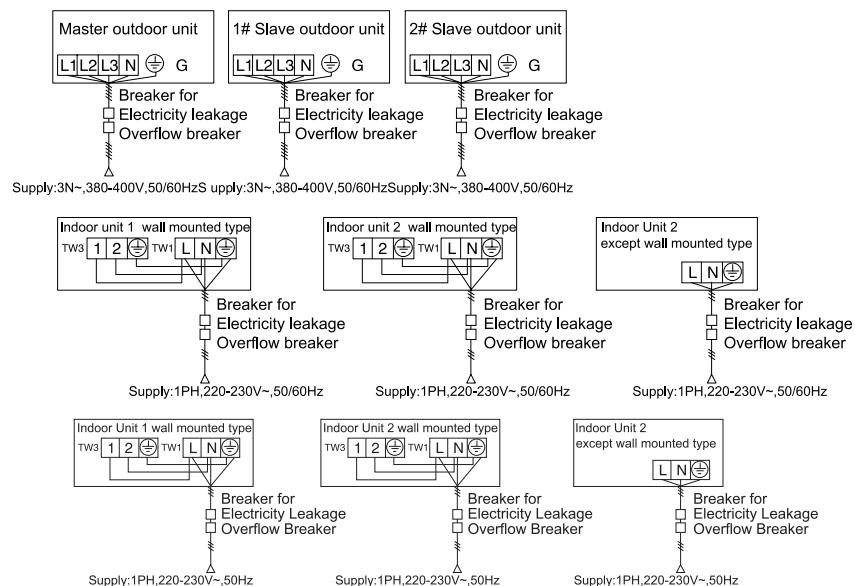
- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient. 
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents. 
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line. 

⚠ ATTENTION

- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line, signal line are provided by users. Parameters for power lines are shown as below: $3 \times (1.0-1.5) \text{ mm}^2$; parameters for signal line: $2 \times (0.75-1.25) \text{ mm}^2$ (shielded line)] 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.

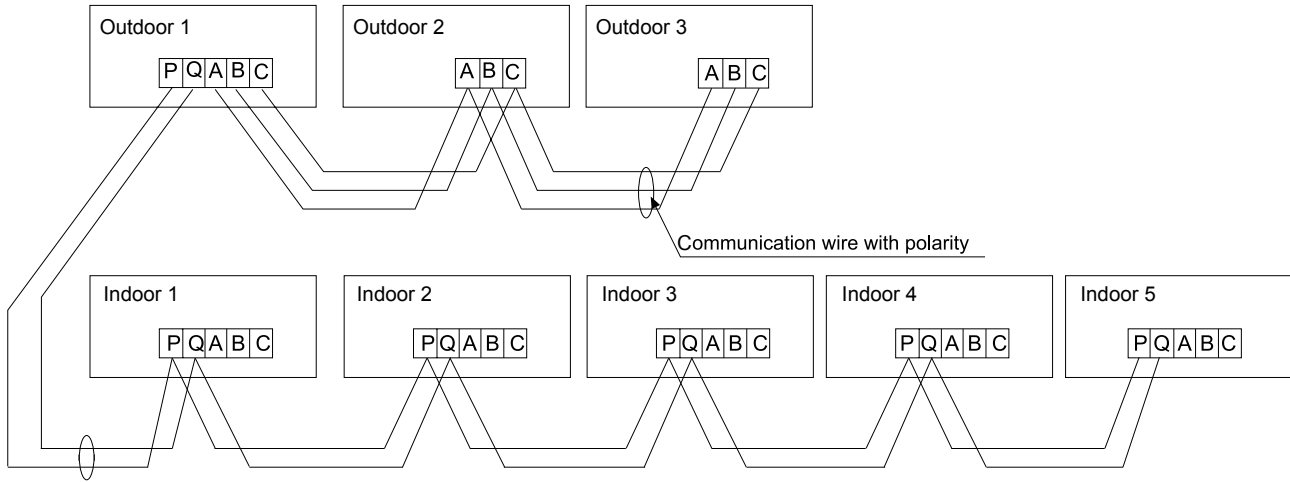
Supply Wiring Drawing

AW-DBV030~048-N11



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

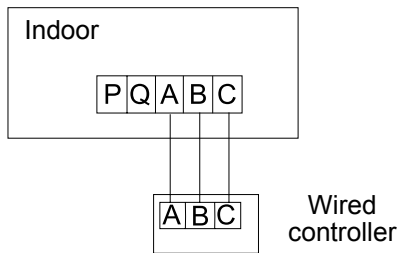
Signal Wiring Drawing



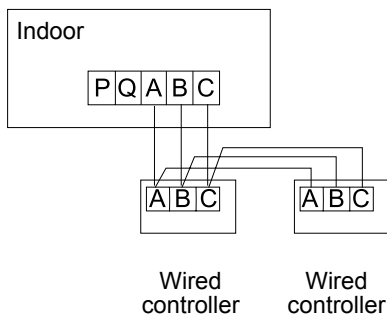
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

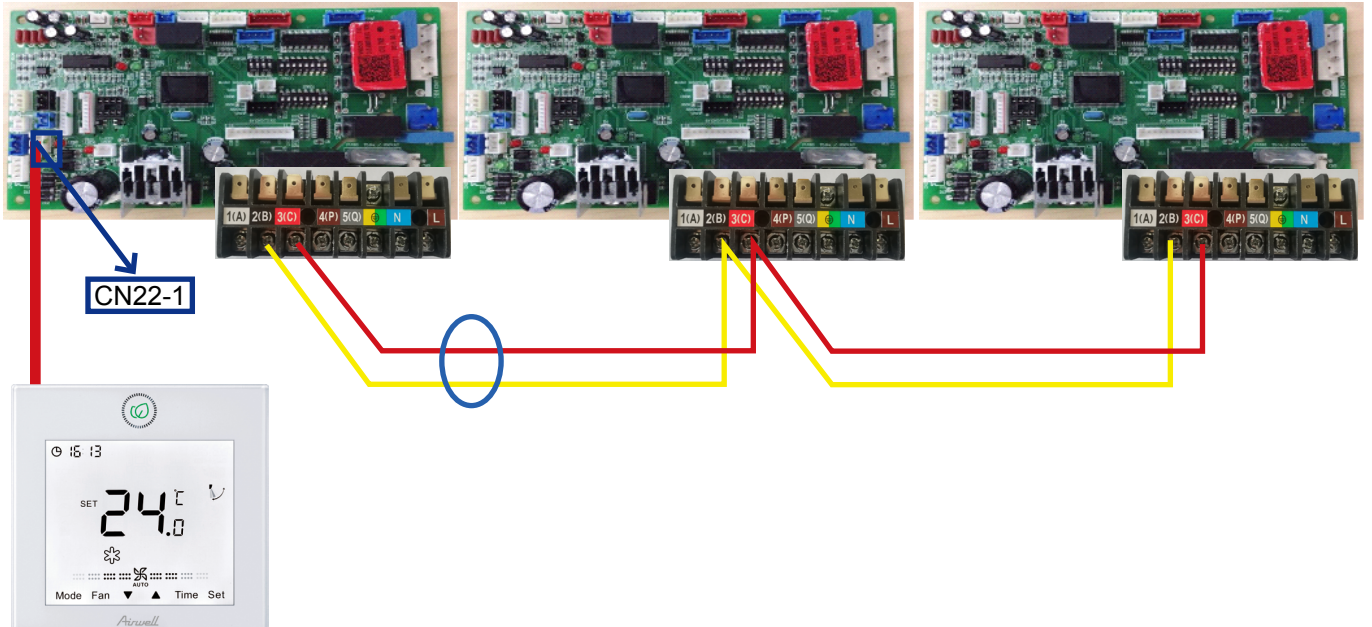


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

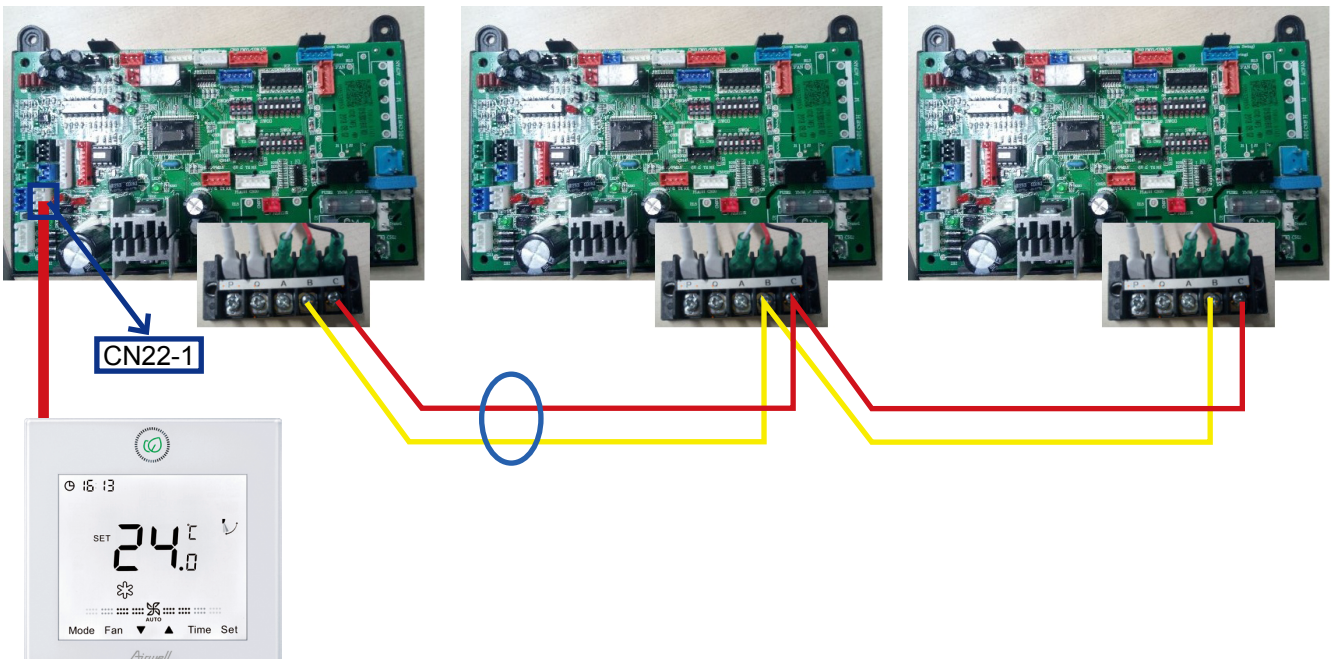
No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800161C PCB



0151800161G PCB



Note:

1. Plug the wired controller terminal to the CN22-1 terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	ON	Slave unit 1 in group control
		OFF	OFF	ON	OFF	Slave unit 2 in group control
		OFF	OFF	ON	ON	Slave unit 3 in group control
	
ON	ON	ON	ON	Slave unit 15 in group control		

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The singal line is polarity

The combination of multiple indoor units can be controlled by wired controller or remote controller.

※ Switching mode of Wired control master unit/ Wired control slave unit/ remote control types can be used for switching over ※

Setting mode	Wired control master unit	Wired control slave unit	Remote control
Socket/dip switch SW01-[2][3][4]	All OFF	[0][0][1]	All OFF
CN21 socket	Null	Null	Connect to remote receiver
Terminal block (control)	A,B,C connect with wired controller	B,C connect with wired controller	A,B,C null

Note:

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Indoor power supply wiring & signal wiring between indoor and outdoor & signal wiring between indoor.

Items	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
					Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
Total current of indoor units (A)	<7	2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line
	≥7 and <11	4	20	16	16 A, 30 mA, 0.1S or below	
	≥11 and <16	6	25	20	20 A, 30 mA, 0.1S or below	
	≥16 and <22	8	30	32	32 A, 30 mA, 0.1S or below	
	≥22 and <27	10	40	32	32 A, 30 mA, 0.1S or below	

- ※ The electrical power line and signal lines must be fastened tightly.
- ※ Every indoor unit must have the ground connection.
- ※ The power line should be enlarged if it exceeds the permissible length.
- ※ Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- ※ It is not permissible if the whole length of signal line exceeds 1000m.

Signal wiring of wired controller

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

10. Medium ESP Duct Type Indoor Unit

10.1 Feature



- 5-28K
- Only 248mm thick
- Built-in drain pump
- 50/100Pa

10.2 Specification

MODEL			AW-DBV005-N11	AW-DBV007-N11
Power supply		Ph-V-Hz	1/220~240/50/60	1/220~240/50/60
Cooling	Capacity	kBtu/h	5.1	7.5
	Capacity	kW	1.5	2.2
	Power Input	W	105	105
	Current	A	0.5	0.5
Heating	Capacity	kBtu/h	5.8	8.5
	Capacity	kW	1.7	2.5
	Power Input	W	105	105
	Current	A	0.5	0.5
	Heating capacity at low temp.	kW	1.42	2.08
Operating current		A	0.5	0.5
Power consumption		kW	105	105
INDOOR MOTOR	Brand		Tongdeli	Tongdeli
	Model		YDK52-4A	YDK52-4A
	Type		AC	AC
	Insulation Class		B	B
	IP Class		20	20
	Power Input	W	105	105
	Power output	W	52	52
	Capacitor	μF	/	/
	Speed (High/Middle/Low)	rpm	1150/920/750/610	1150/920/750/610
INDOOR FAN	Brand		/	/
	Type		Cross	Cross
	Quantity		1	1
INDOOR COIL	a. Number of rows		2	2
	b. Tube pitch(a)x row pitch(b)	mm	13.3	13.3
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ7 Inner groove tube
	f. Coil length x height x width	mm	465 x336 x 26.6	465 x336 x 26.6
	g. Number of circuits		4	4

MODEL			AW-DBV005-N11	AW-DBV007-N11
Cabinet	Cabinet Coating Type		Galvanized	Galvanized
	Cabinet Salt Spray Test Duration	Hour	48	48
	Control Box IP Class		IP20	IP20
Construction	Sheet Metal Thickness		0.8	0.8
	Drain Pan Material		EPS	EPS
	Drain Pan Insulation		HF-1	HF-1
	Drain Pump Option	mm	Standard 700mm	Standard 700mm
	Branch Outlet Option		NO	NO
Indoor Wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or Single Skin		Single	Single
Air Filter	Material		PP	PP
	Mesh		100	100
	Pressure Drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	9.52	9.52
	Drain hose	mm	25	25
Fresh air dimension	mm	123	123	
Sound pressure level (H/M/L)	dB(A)	35/33/31	35/33/31	
Sound power level (H/M/L)	dB(A)	39/37/35	39/37/35	
Standard static pressure	Pa	50	50	
Max. static pressure	Pa	100	100	
Indoor air flow (H/M/L)	m ³ /h	630/510/424	630/510/424	
Air outlet dimensions	mm	592*165	592*165	
Air return dimensions	mm	578*238	578*238	
Dimension (W*H*D)	mm	700/700/248	700/700/248	
Packing (W*H*D)	mm	932/835/280	932/835/280	
Net weight	kg	27	27	
Gross weight	kg	32	32	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

MODEL			AW-DBV009-N11	AW-DBV012-N11
Power supply		Ph-V-Hz	1/220~240/50/60	1/220~240/50/60
Cooling	Capacity	kBtu/h	9.5	12.3
	Capacity	kW	2.8	3.6
	Power Input	W	105	105
	Current	A	0.5	0.5
Heating	Capacity	kBtu/h	10.9	13.6
	Capacity	kW	3.2	4
	Power Input	W	105	105
	Current	A	0.5	0.5
	Heating capacity at low temp.	kW	2.67	3.33
Operating current		A	0.5	0.5
Power consumption		kW	105	105
INDOOR MOTOR	Brand		Tongdeli	Tongdeli
	Model		YDK52-4A	YDK52-4A
	Type		AC	AC
	Insulation Class		B	B
	IP Class		20	20
	Power Input	W	105	105
	Power output	W	52	52
	Capacitor	μF	/	/
	Speed (High/Middle/Low)	rpm	1150/920/750/610	1150/920/750/610
INDOOR FAN	Brand		/	/
	Type		Cross	Cross
	Quantity		1	1
INDOOR COIL	a. Number of rows		2	2
	b. Tube pitch(a)x row pitch(b)	mm	13.3	13.3
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ7 Inner groove tube
	f. Coil length x height x width	mm	465 x336 x 26.6	465 x336 x 26.6
	g. Number of circuits		4	4

MODEL			AW-DBV009-N11	AW-DBV012-N11
Cabinet	Cabinet Coating Type		Galvanized	Galvanized
	Cabinet Salt Spray Test Duration	Hour	48	48
	Control Box IP Class		IP20	IP20
Construction	Sheet Metal Thickness		0.8	0.8
	Drain Pan Material		EPS	EPS
	Drain Pan Insulation		HF-1	HF-1
	Drain Pump Option	mm	Standard 700mm	Standard 700mm
	Branch Outlet Option		NO	NO
Indoor Wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or Single Skin		Single	Single
Air Filter	Material		PP	PP
	Mesh		100	100
	Pressure Drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	9.52	12.7
	Drain hose	mm	25	25
Fresh air dimension	mm	123	123	
Sound pressure level (H/M/L)	dB(A)	35/33/31	35/33/31	
Sound power level (H/M/L)	dB(A)	39/37/35	39/37/35	
Standard static pressure	Pa	50	50	
Max. static pressure	Pa	100	100	
Indoor air flow (H/M/L)	m ³ /h	630/510/424	630/510/424	
Air outlet dimensions	mm	592*165	592*165	
Air return dimensions	mm	578*238	578*238	
Dimension (W*H*D)	mm	700/700/248	700/700/248	
Packing (W*H*D)	mm	932/835/280	932/835/280	
Net weight	kg	27	27	
Gross weight	kg	32	32	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

MODEL			AW-DBV016-N11	AW-DBV018-N11
Power supply		Ph-V-Hz	1/220~240/50/60	1/220~240/50/60
Cooling	Capacity	kBtu/h	15.3	19.1
	Capacity	kW	4.5	5.6
	Power Input	W	125	137
	Current	A	0.6	0.66
Heating	Capacity	kBtu/h	17.1	21.5
	Capacity	kW	5	6.3
	Power Input	W	125	137
	Current	A	0.6	0.66
	Heating capacity at low temp.	kW	4.17	5.25
Operating current		A	0.6	0.66
Power consumption		kW	125	137
INDOOR MOTOR	Brand		Tongdeli	Tongdeli
	Model		YDK72-4A	YSK80-4K
	Type		AC	AC
	Insulation Class		B	B
	IP Class		20	20
	Power Input	W	125	137
	Power output	W	72	80
	Capacitor	μF	/	/
	Speed (High/Middle/Low)	rpm	1245/1050/860/690	1100/890/760/630
INDOOR FAN	Brand		/	/
	Type		Cross	Cross
	Quantity		1	2
INDOOR COIL	a. Number of rows		3	2
	b. Tube pitch(a)x row pitch(b)	mm	13.3	13.3
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ7 Inner groove tube
	f. Coil length x height x width	mm	465 x336 x 39.9	865 x336 x 26.6
	g. Number of circuits		6	4

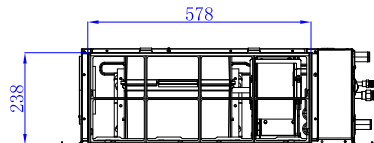
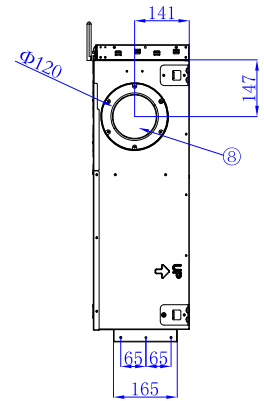
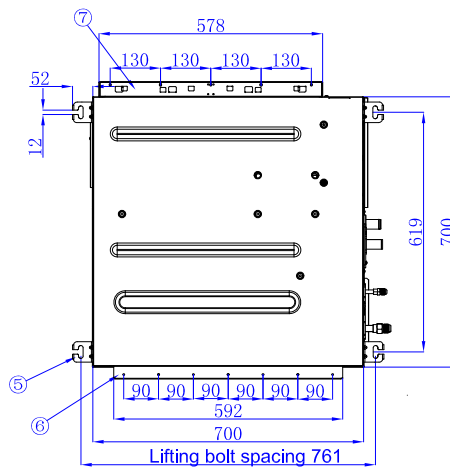
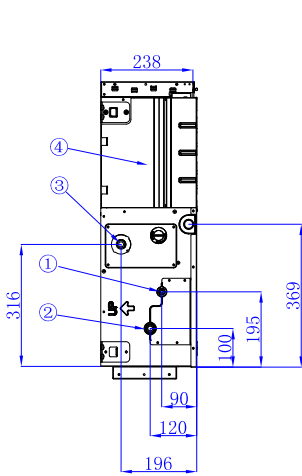
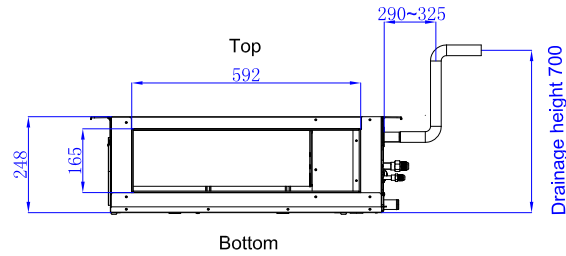
MODEL			AW-DBV016-N11	AW-DBV018-N11
Cabinet	Cabinet Coating Type		Galvanized	Galvanized
	Cabinet Salt Spray Test Duration	Hour	48	48
	Control Box IP Class		IP20	IP20
Construction	Sheet Metal Thickness		0.8	0.8
	Drain Pan Material		EPS	EPS
	Drain Pan Insulation		HF-1	HF-1
	Drain Pump Option	mm	Standard 700mm	Standard 700mm
	Branch Outlet Option		NO	NO
Indoor Wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or Single Skin		Single	Single
Air Filter	Material		PP	PP
	Mesh		100	100
	Pressure Drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	12.7	12.7
	Drain hose	mm	25	25
Fresh air dimension	mm	123	123	
Sound pressure level (H/M/L)	dB(A)	35/33/31	36/34/32	
Sound power level (H/M/L)	dB(A)	39/37/35	40/38/36	
Standard static pressure	Pa	50	50	
Max. static pressure	Pa	100	100	
Indoor air flow (H/M/L)	m ³ /h	740/550/442	980/840/760	
Air outlet dimensions	mm	592*165	992*165	
Air return dimensions	mm	578*238	978*238	
Dimension (W*H*D)	mm	700/700/248	1100/700/248	
Packing (W*H*D)	mm	932/835/280	1332/835/280	
Net weight	kg	28.5	36.8	
Gross weight	kg	33.5	43.4	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

MODEL			AW-DBV024-N11	AW-DBV028-N11
Power supply		Ph-V-Hz	1/220~240/50/60	1/220~240/50/60
Cooling	Capacity	kBtu/h	24.2	27.3
	Capacity	kW	7.1	8
	Power Input	W	190	190
	Current	A	0.9	0.9
Heating	Capacity	kBtu/h	27.3	30.7
	Capacity	kW	8	9
	Power Input	W	190	190
	Current	A	0.9	0.9
	Heating capacity at low temp.	kW	6.67	7.50
Operating current		A	0.9	0.9
Power consumption		kW	190	190
INDOOR MOTOR	Brand		Tongdeli	Tongdeli
	Model		YSK110-4A	YSK110-4A
	Type		AC	AC
	Insulation Class		B	B
	IP Class		20	20
	Power Input	W	190	190
	Power output	W	110	110
	Capacitor	μF	6	6
	Speed (High/Middle/Low)	rpm	1165/960/840/710	1165/960/840/710
INDOOR FAN	Brand		/	/
	Type		Cross	Cross
	Quantity		2	2
INDOOR COIL	a. Number of rows		2	2
	b. Tube pitch(a)x row pitch(b)	mm	13.3	13.3
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ7 Inner groove tube
	f. Coil length x height x width	mm	865 x336 x 26.6	865 x336 x 26.6
	g. Number of circuits		4	4

MODEL			AW-DBV024-N11	AW-DBV028-N11
Cabinet	Cabinet Coating Type		Galvanized	Galvanized
	Cabinet Salt Spray Test Duration	Hour	48	48
	Control Box IP Class		IP20	IP20
Construction	Sheet Metal Thickness		0.8	0.8
	Drain Pan Material		EPS	EPS
	Drain Pan Insulation		HF-1	HF-1
	Drain Pump Option	mm	Standard 700mm	Standard 700mm
	Branch Outlet Option		NO	NO
Indoor Wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	0.8	0.8
	Double or Single Skin		Single	Single
Air Filter	Material		PP	PP
	Mesh		100	100
	Pressure Drop	Pa	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52
	Gas pipe	mm	15.88	15.88
	Drain hose	mm	25	25
Fresh air dimension	mm	123	123	
Sound pressure level (H/M/L)	dB(A)	40/37/34	42/38/34	
Sound power level (H/M/L)	dB(A)	44/41/38	46/42/38	
Standard static pressure	Pa	50	50	
Max. static pressure	Pa	100	100	
Indoor air flow (H/M/L)	m ³ /h	1174/1080/960	1174/1080/960	
Air outlet dimensions	mm	992*165	992*165	
Air return dimensions	mm	978*238	978*238	
Dimension (W*H*D)	mm	1100/700/248	1100/700/248	
Packing (W*H*D)	mm	1332/835/280	1332/835/280	
Net weight	kg	37	37	
Gross weight	kg	43.6	43.6	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

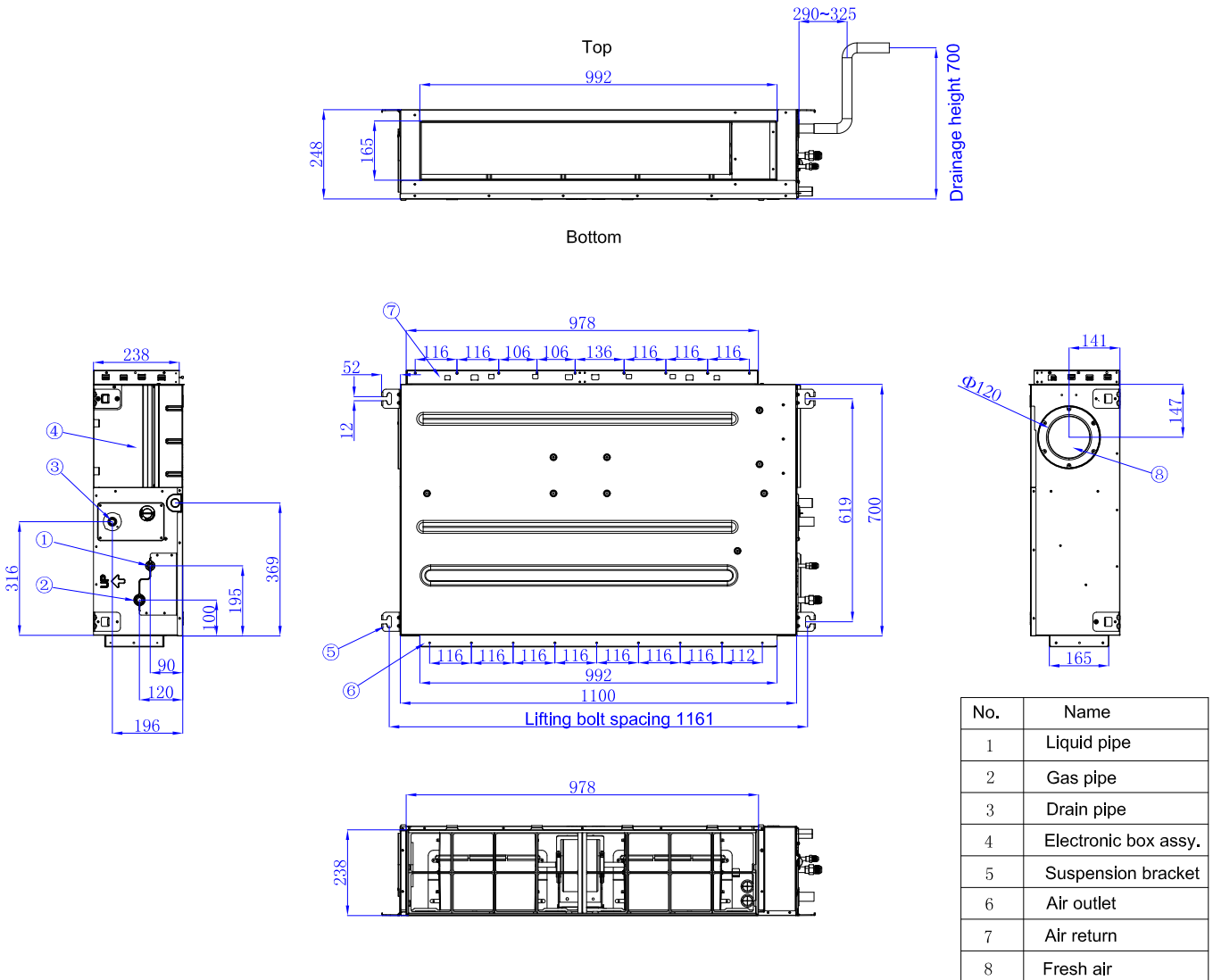
10.3 Dimension

10.3.1 AW-DBV005-N11 AW-DBV007-N11 AW-DBV009-N11 AW-DBV012-N11 AW-DBV016-N11 dimension

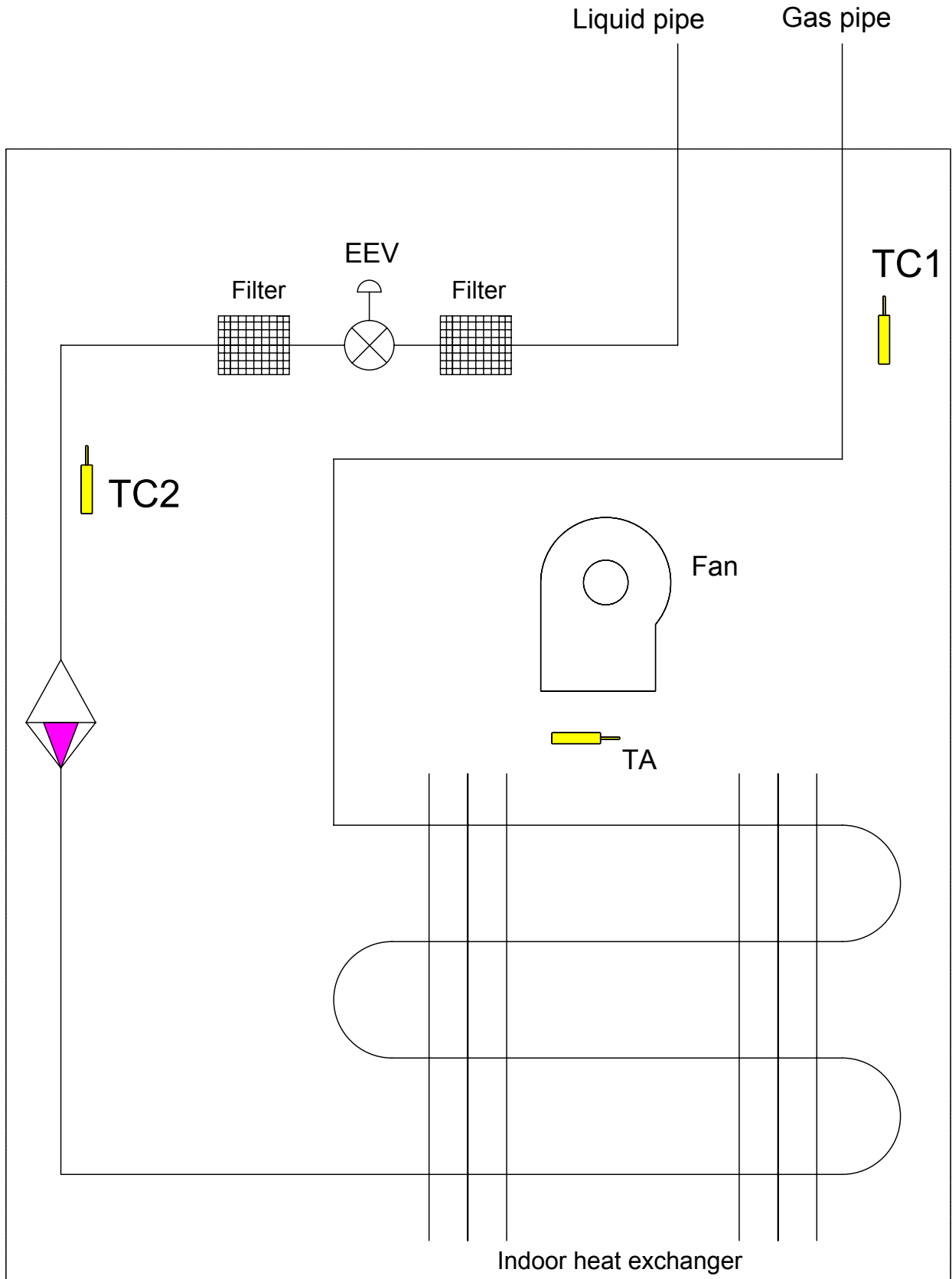


No.	Name
1	Liquid pipe
2	Gas pipe
3	Drain pipe
4	Electronic box assy.
5	Suspension bracket
6	Air outlet
7	Air return
8	Fresh air

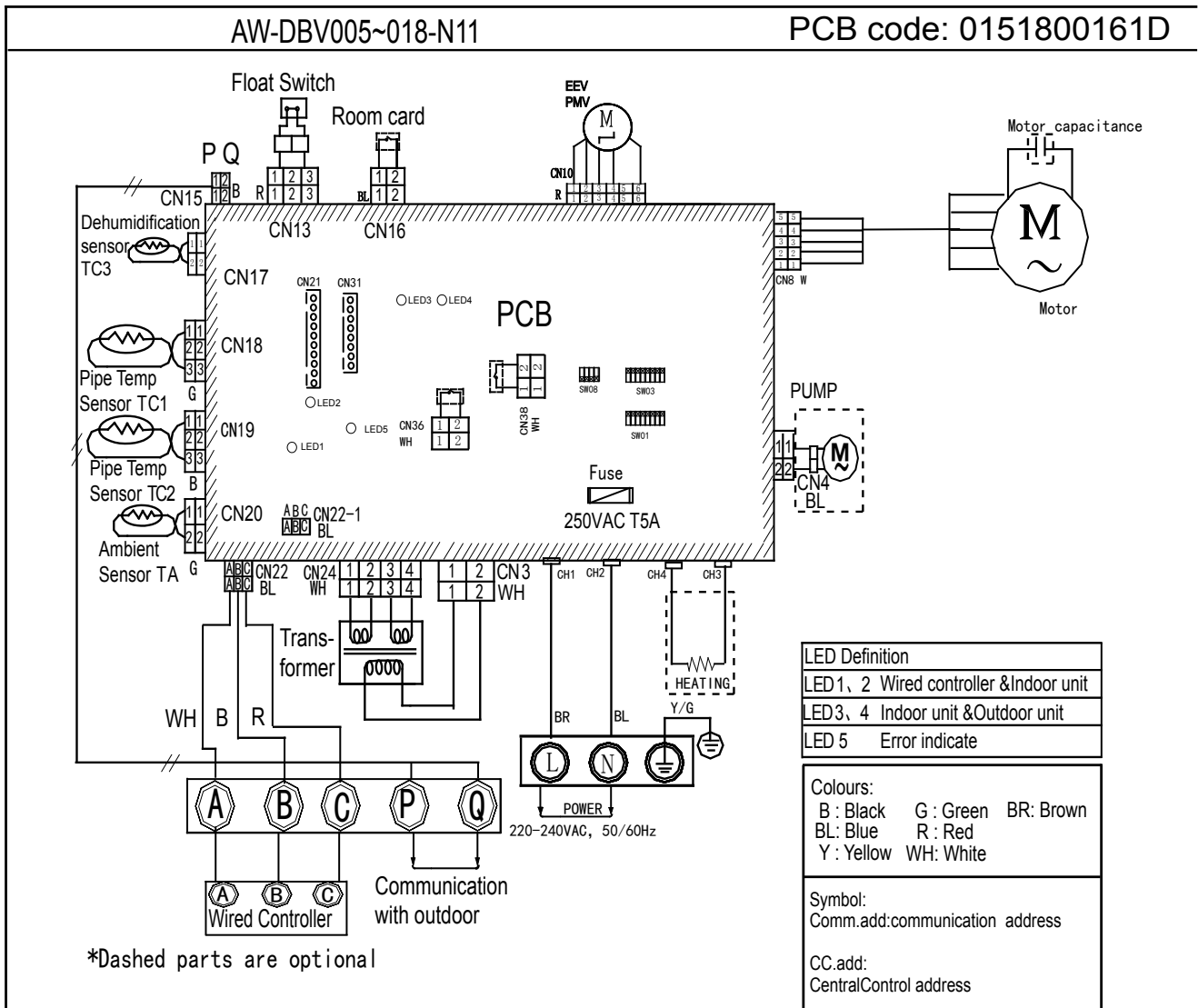
10.3.2 AW-DBV018-N11 AW-DBV024-N11 AW-DBV028-N11 dimension



10.4 Piping diagram



10.5 Wiring diagram



10.6 Electric characteristics

Units					Power supply		Indoor fan motor		Power input (W)	
Model	Phase	FQY	Voltage	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AW-DBV005-N11	1	50/60	220V	198V-242V	7	20	52	0.619	105	105
AW-DBV007-N11	1	50/60	220V	198V-242V	7	20	52	0.619	105	105
AW-DBV009-N11	1	50/60	220V	198V-242V	7	20	52	0.619	105	105
AW-DBV012-N11	1	50/60	220V	198V-242V	7	20	52	0.619	105	105
AW-DBV016-N11	1	50/60	220V	198V-242V	7.4	20	72	0.732	125	125
AW-DBV018-N11	1	50/60	220V	198V-242V	11.9	25	80	0.846	137	137
AW-DBV024-N11	1	50/60	220V	198V-242V	12.1	25	110	0.949	190	190
AW-DBV028-N11	1	50/60	220V	198V-242V	12.1	25	110	0.949	190	190

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker Output: Fan motor rated output (w) FLA: Full load amps (A)

Notes:

1. Voltage range

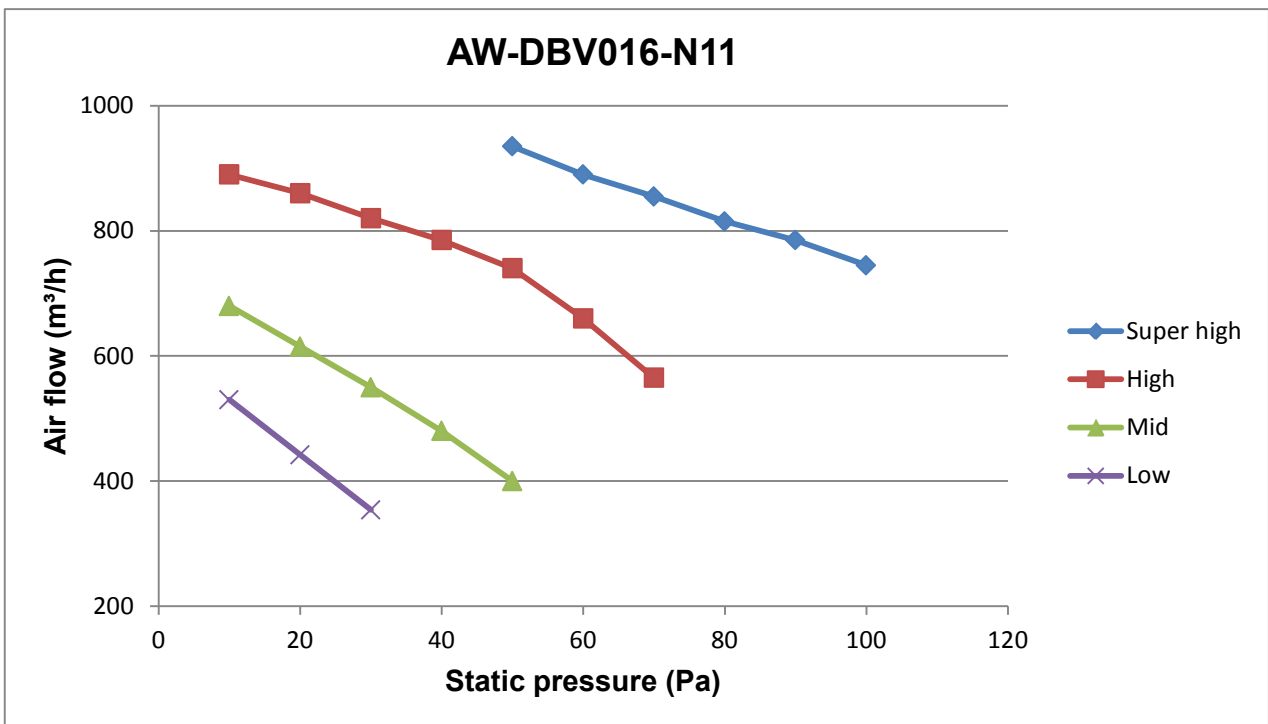
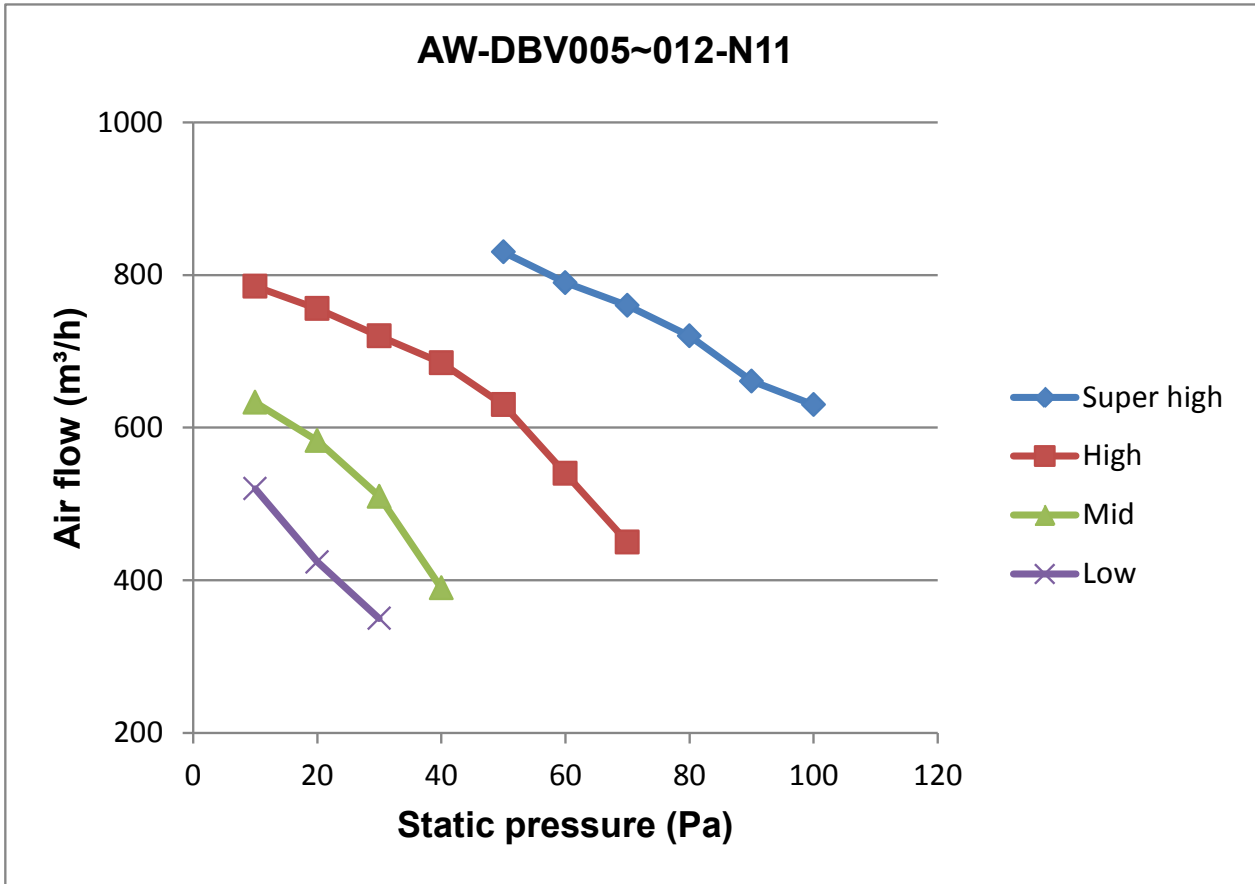
The units are applicable for the electrical systems where voltage supplied to unit is in the range.

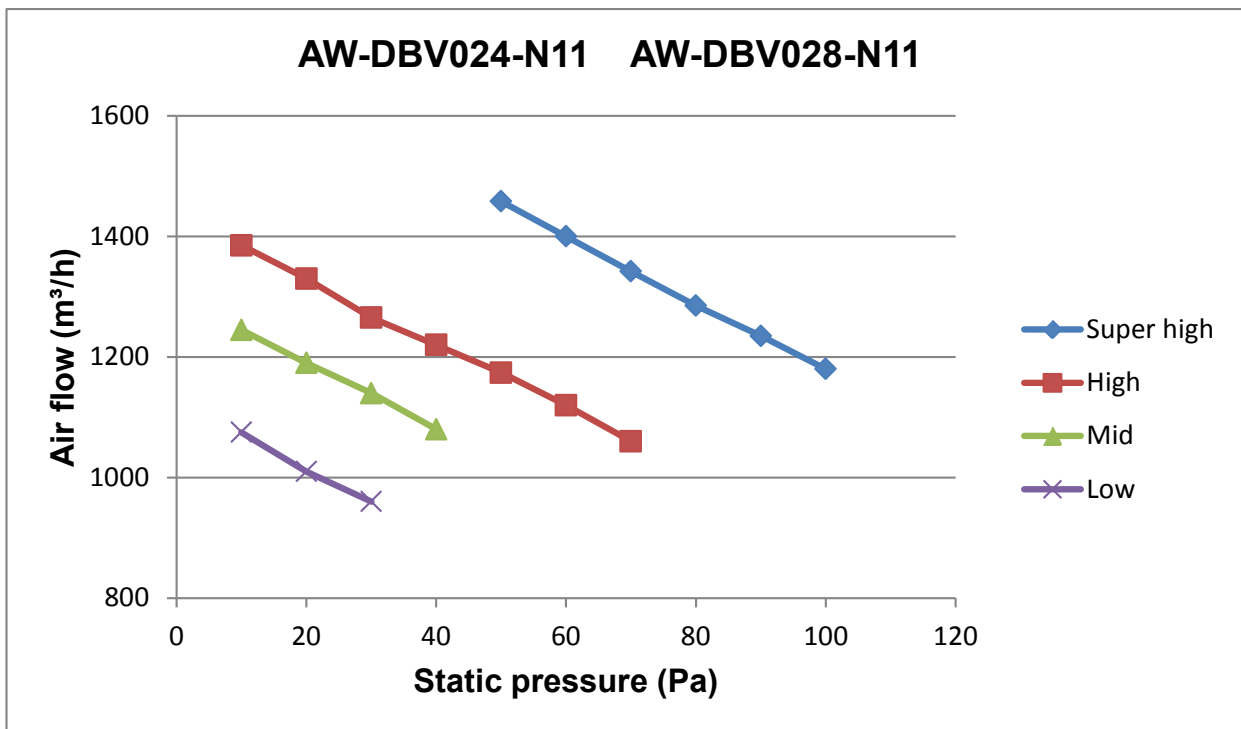
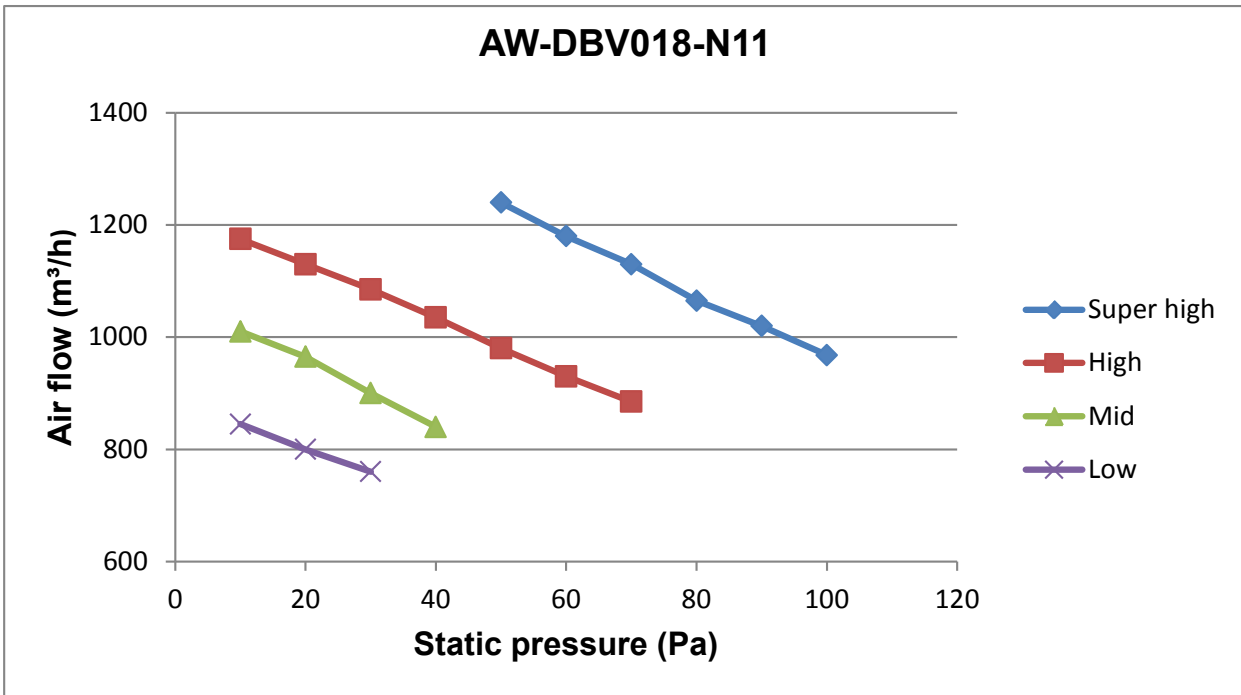
2. Maximum allowable voltage unbalance between phases is 2%.

3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$.

4. Power supply uses the circuit breaker.

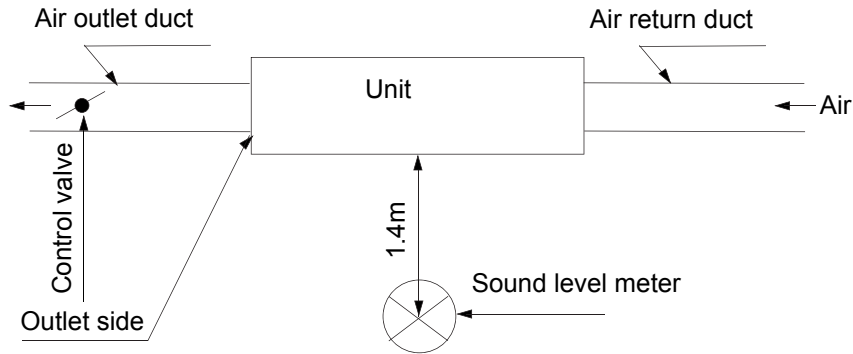
10.7 Airflow and static pressure curves





10.8 Sound pressure level

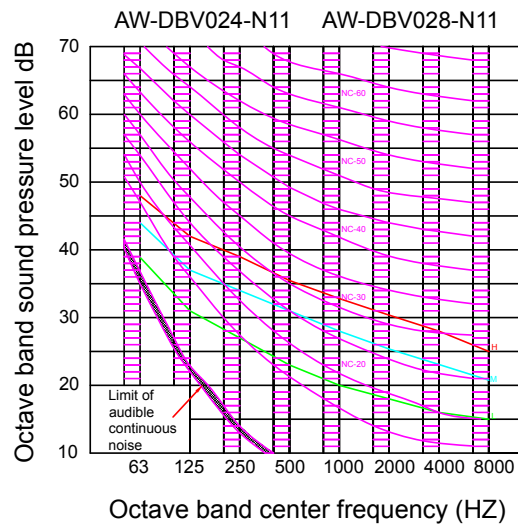
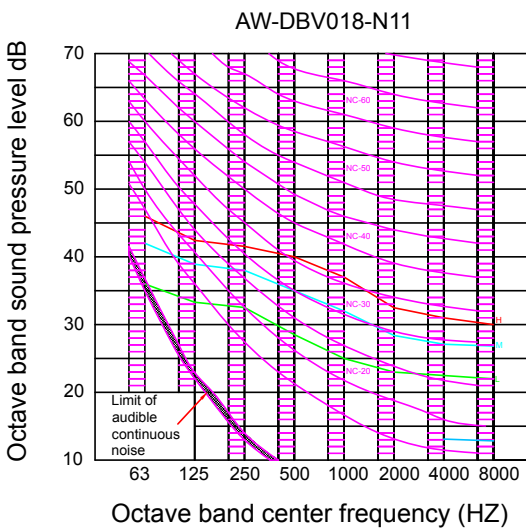
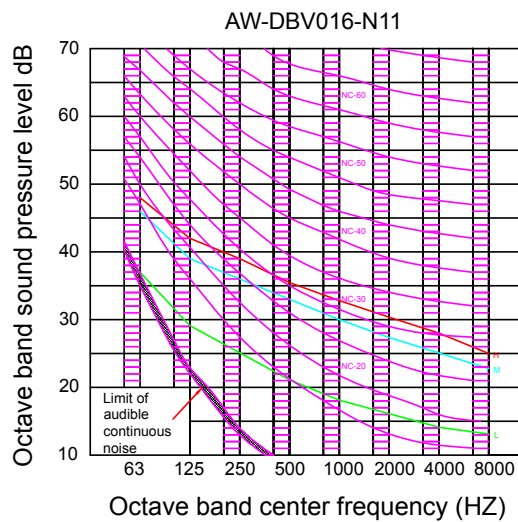
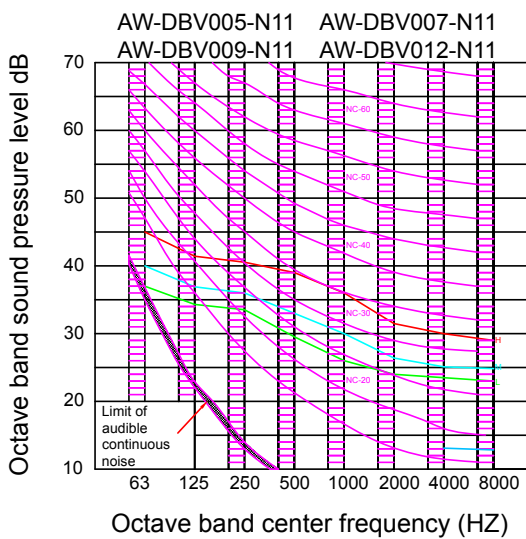
(1) Testing illustrate:



Testing position just below the central of the unit

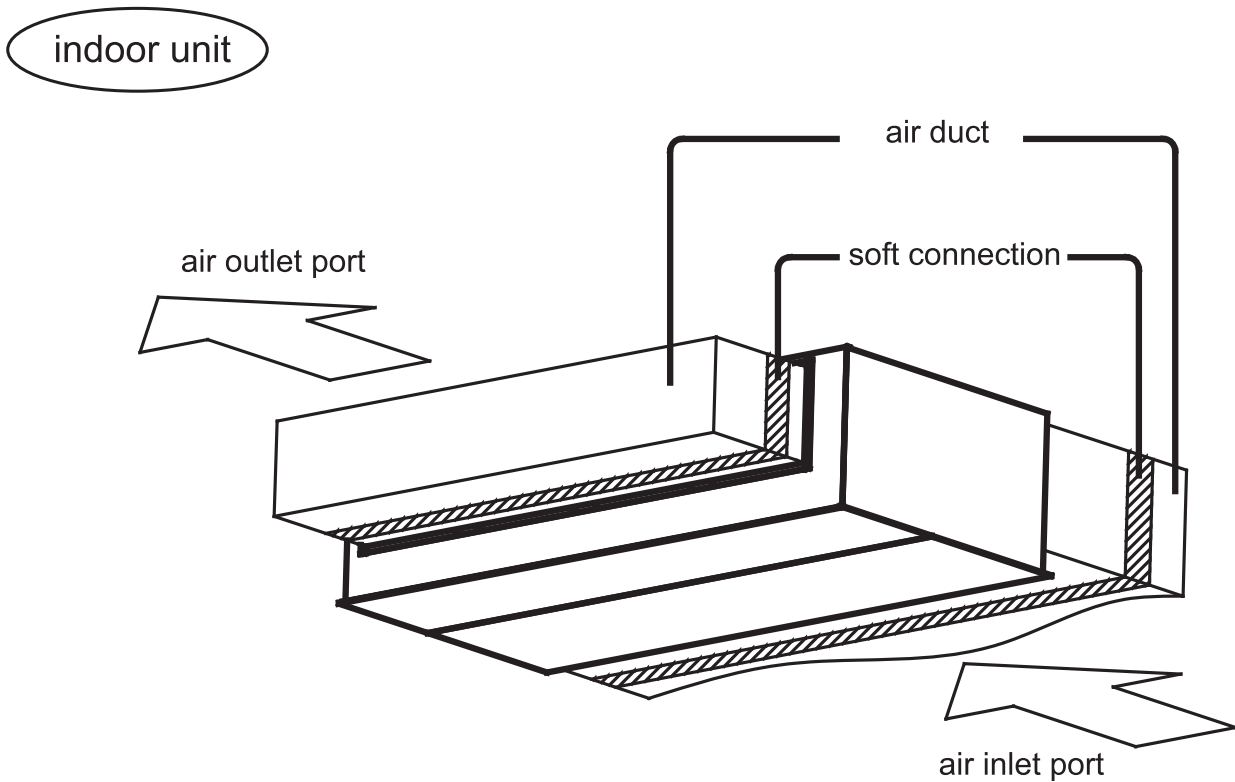
(2) Testing condition:

- a. Unit running in the standard condition
- b. Test in the semi-anechoic chamber
- c. Noise level varies from the actual factors such as room structure, etc.



10.9 Installation

10.9.1 Parts and functions



10.9.2 Safety

- If the air conditioner is transferred to a new user, this manual shall be transferred to the user, together with the conditioner.
- Before installation, be sure to read Safety Considerations in this manual for proper installation.
- The safety considerations stated below is divided into "⚠ Warning" and "⚠ Attention". The matters on severe accidents caused from wrong installation, which is likely to lead to death or serious injury, are listed in "⚠ Warning". However, the matters listed in "⚠ Attention" are also likely cause the severe accidents. In general, both of them are the important items related to the security, which should be strictly abided by.
- After the installation, perform test run to make sure everything is in normal conditions, and then operate and maintain the air conditioner in accordance with the User Manual. The User Manual should be delivered to the user for proper keeping.

Warning

- Please ask the special maintenance station for installation and repair. Water leakage, electric shocks or fire accidents might be caused from improper installation if you conduct the installation by your own.
- The installation should be conducted properly according to this manual. Water leakage, electric shocks or fire accidents might be caused from improper installation.

Please make sure to install the air conditioner on the place where can bear the weight of the air conditioner.

- The air conditioner can't be installed on the grids such as the non-special metal burglar-proof net. The place with insufficient support strength might cause the dropdown of the machine, which may lead to personal injuries.
- The installation should be ensured against typhoons and earthquakes, etc. The installation uncomformable to the requirements will lead to accidents due to the turnover of the machine.
- Specific cables should be used for reliable connections of the wirings. Please fix the terminal connections reliably to avoid the outside force applied on the cables from being impressed on the cables. Improper connections and fixings might lead to such accidents as heating or fire accidents.
- Correct shapes of wirings should be kept while the embossed shape is not allowed. The wirings should be reliably connected to avoid the cover and the plate of the electrical cabinet lipping the wiring. Improper installation might cause such accidents as heating or fire accidents.
- While placing or reinstalling the air conditioner, except the specific refrigerant (R410A), don't let the air go into the refrigeration cycle system. The air in the refrigeration cycle system might lead to the cracking or personal injuries due to abnormal high pressure of the refrigeration cycle system.
- During installation, please use the accompanied spare parts or specific parts. If not, water leakage, electric shocks, fire accidents or refrigerant leakage might be caused.
- Don't drain the water from the drainpipe to the waterspout where may exist harmful gases such as sulfureted gas to avoid the harmful gases entering into the room.
- During installation, if refrigerant leakage occurs, ventilation measures should be taken, for the refrigerant gas might generate harmful gases upon contacting the flame.
- After installation, check if any refrigerant leakage exists. If the refrigerant gas leaks in the room, such things as air blowing heaters and stoves, etc. may generate harmful gases.
- Don't install the air conditioner at the places where the flammable gases may leak. In case the gas leakage occurs around the machine, such accidents as fire disasters may be caused.
- The drainpipe should be properly mounted according to this manual as to ensure the smooth drainage. In addition, heat preservation should be taken to avoid condensation. Improper drainpipe mounting might cause water leakage, which will get the articles at home wet.
- The refrigerant gas pipe and liquid pipe should be heat insulated to preserve heat. For inappropriate heat insulation, the water caused from the condensation will drop to get the article at home wet.

Attention

- The air conditioner should be effectively grounded. Electric shocks may occur if the air conditioner is ungrounded or inappropriately grounded. The wire for earthing shouldn't be connected to the connections on the gas pipe, water pipe, lightning rod or telephone.
- The breaker for electricity leakage should be mounted. If not, accidents such as electric shocks may happen.
- The installed air conditioner should be checked for electricity leakage by being powered.
- If the ambient humidity bigger than 80%, when the water discharge hole be blocked or the filter becomes dirty, or airflow speed change, there maybe leads to condensing water drop down, and at the same time there maybe some drops of water spit out.

10.9.3 Emergency running & Test operation

Attention

Notices during Operation

- It is not allowed to put any heating apparatus under the indoor units, for the heat may cause distortion of the units.



- Pay attention to the aeration condition to avoid anoxic symptom.

- Flammable apparatus should not be placed in the place where the air conditioner wind could reach directly, or incomplete burning of the apparatus may be caused.



- Check the mount table of the air conditioner for damage for a long period of operation. If placed on the damaged table, the unit may drop down causing damage.



- Plants and animals should not be put to the place where wind of the air conditioner blows directly, otherwise damage to them may be caused.



- It cannot be used for the preservation of food, living creature, precise instrument and artworks, etc, otherwise damage may occur.



- Use the fuse with proper capacity. Metal wires and copper wires, etc., may cause fire or other faults.



- Do not use water heater or like next to the indoor unit and the wired controller. Water/power leakage or short circuit may happen if the steam generating apparatus is working next to machine.



- Defrosting during heating
To improve the heating effect, the outdoor unit will perform defrosting automatically when frost appears on the outdoor unit during heating (approximately 2-10 min).
During defrosting, the fan of the indoor unit runs at a low speed or stops while that of the outdoor unit stops running.;

- Power should be cut off when the air conditioner is left unused for a long period. Power will be consumed if the air conditioner is not powered off. The power switch of the outdoor unit should be powered on 12 hours in advance before operation to protect the unit after a long period of storage.

- 3-minute protection

To protect the unit, compressor can be actuated with at least 3-minute delay after stopping.

- Close the window to avoid outdoor air getting in. Curtains or window shutters can be put down to avoid the sunshine.



- Do not touch the switch with the wet hand to avoid power shock.



- Stop running and switch off the manual power switch when cleaning the unit.



- During the operation of the control unit, don't switch off the manual power switch and the controller can be used. Please do not press the liquid crystal zone of controller to prevent damage.



- Cleaning the unit with water may cause electric shock.



- Do not put flammable spray close to the air conditioner. Don't inject flammable spray towards the air conditioner, which may cause fire.



- Stopping fan rotation

The unit which stops operating will actuate the fan for a 2-8 min swing every 30-60 minutes for protecting the unit while other indoor unit are in the operating state.

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

- Children should be supervised to ensure that they do not play with the appliance.

10.9.4 Maintenance

※ Only when the air cleaner is switched off and disconnected to the power supply can it be cleaned, or electric shock and injury may appear.

Cleaning the air outlet port and the shell:

⚠ Attention

Don't use gasoline, benzene, diluents, polishing powder or liquid insecticide to clean them.
Do not clean them with hot water of above 50°C to avoid fading or distorting.

- Wipe them with soft dry cloth.
- Water or neutral dry cleanser is recommended if the dust cannot be removed.
- The Wind Deflector can be dismantled to clean (as below).

Cleaning Wind Deflector:

- Do not wipe the wind deflector with water forcibly to avoid falling off.

Cleaning Air Cleaner:

⚠ Attention

- Don't rinse the air cleaner with hot water of above 50°C to avoid fading and distorting.
- Don't put the air cleaner on the fire to dry to avoid catching fire.

- Wipe dust with water or dust collector.
- (A) Wipe dust with dust collector.



- (B) Clean it with soft brush in mild detergent if there is too much dust on it

Throw off the water and airing it in the cool dry condition.



Maintenance before and after Operating Season

Before Operating Season:


1. Please make the following checkup. If abnormal condition occurs, consult the after-service personnel.
There is no blockage in inlet port and outlet port of outdoor and indoor units.
The ground line and the wiring are in the proper state
2. After cleaning, the air cleaner must be mounted.
3. Switch on to the power.

After Operating Season:

1. In sunny days, blowing operation can be performed for half a day to make the inside of machine dry.
2. Electrical power should be cut down to economize electricity, or the machine will still consume power. Air cleaner and shell must be mounted after cleaning.

10.9.5 Fault checkup

Please check the following when consigning repair service:

	Symptoms	Reasons
All these are not problems	• Water flow sound	Water flow sound can be heard when starting operation, during operation or immediately after stopping operation. When it starts to work for 2-3 minutes, the sound may become louder, which is the flowing sound of refrigerant or the draining sound of condensed water.
	• Cracking sound	During operation, the air conditioner may make the cracking sound, which is caused from the temperature changes or the slight dilation of heat exchanger.
	• Terrible smell in outlet air	The terrible smell, caused from walls, carpet, furniture, clothing, cigarette and cosmetics, attaches on the conditioner.
	• Flashing operating indicator	When switching it on again after power failure, turn on the manual power switch and the operating indicator flashes.
	• Awaiting indication	It displays the awaiting indication as it fails to perform refrigerating operation while other indoor units are in heating operation. When the operator set it to the refrigerating or heating mode and the operation is opposite to the setting, it displays the awaiting indication.
	• Sound in shutdown indoor unit or white steam or cold air	To prevent oil and refrigerant from blocking the shutdown indoor units, refrigerant flows in the short time and make the sounds of refrigerant flowing. Otherwise, when other indoor units performs heating operation, white steam may occur; during refrigerating operation, cold air may appear.
	• Clicking sound when switching the air condition on	When the conditioner is powered on, the sound is made due to the resetting of the expansion valve.
Please make another check.	• Start or stop working automatically	Check if it is in the state of Timer-ON and Timer-OFF.
	• Failure to work 	Check if there is a power failure. Check if the manual power switch is turned off. Check if the supply fuse and breaker are disconnected. Check if the protective unit is working. Check if refrigerating and heating functions are selected simultaneously with the awaiting indication on line control.
	• Bad cooling & heating effects	Check if air intake port and air outlet port of outdoor units are blocked. Check if the door and windows are open. Check if the filtering screen of air cleaner is blocked with sludge or dust. Check if the setting of wind quantity is at low wind. Check if the setting of operation is at the Fan Operation state. Check if the temperature setting is proper.

Under the following circumstances, immediately stop the operation, disconnect the manual supply switch and contact the after-service personnel.

- When buttons are inflexible actuated;
- When fuse and breaker have been burnt over and over;
- When there are foreign objects and water in the refrigerator;
- When it cannot still be operated after removing the operation of protective unit;
- When other abnormal conditions occur.

10.9.6 Installation procedures

The standard attached accessories of the units of this series refer to the packing; prepare other accessories according to the requirements of the local installation point of our company.

1. Before installation [before finishing the installation, don't throw away the attached parts required for the installation]

- Determine the route to move the unit to the installation site;
- Don't tear the package open before moving the unit to the installation site. When unpacking is needed, a soft material or protector block with ropes can be used to lift the unit to avoid damaging or scraping of the unit.

2. Select the installation site

- (1) The installation site should be selected according the following conditions, which should be approved by users.
- where an ideal air distribution can be ensured;
 - where there is no blockage in the air passage;
 - where the condensed water can be drained out properly;
 - where the strength can bear the weight of the indoor unit;
 - where enough space can be ensured for maintenance. The outside air should be input from the outdoor directly from the blast pipe. If the blast pipe can't be jointed, the air can't be input from the suspended ceiling.
 - where the lengths of the piping between indoor units and outdoor units are within the allowable range (refer to Installation of Outdoor Units)

• where the distance of at least 1m between indoor units, outdoor units, mains supply, connecting wires and television or radio should be kept as to avoid the image disturbance and noises of the above electrical appliances. (Even if 1m can be ensured, noise might occur if there is strong electric wave.) Additionally, equipments, television or other valuables can't be put under the unit as to avoid the condensed water of the unit from dropping into the above articles, causing damaging.

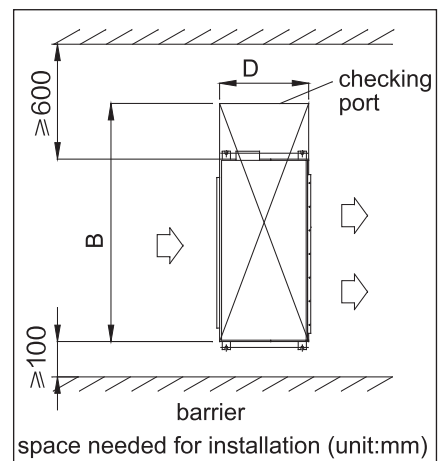
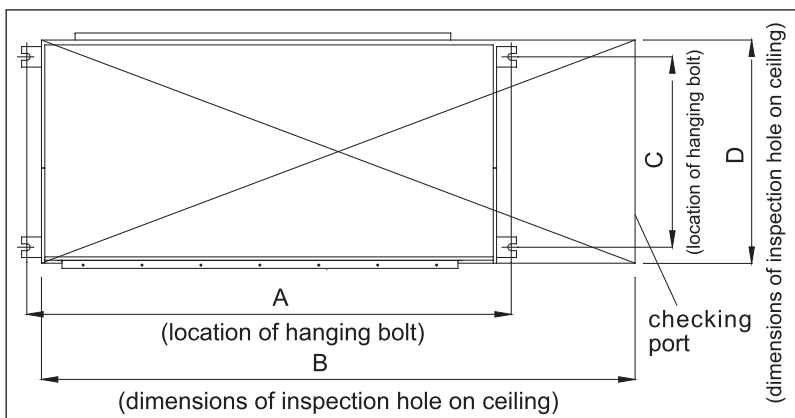
(2) Height of Ceiling:

The ceiling should be located at the place, where the central position of air outlet port is less than 3m high above the ground.

(3) Hoisting studs should be used during installation. Check if the location can bear the weight of the unit. Reinforce it before installation if necessary.

(4)The dimension of maintenance

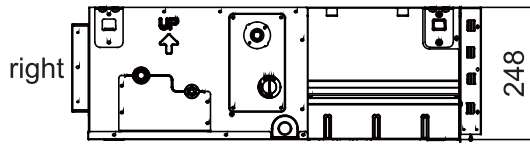
Make sure that it is easy to demount the electrical control box, fan, montor, filter.



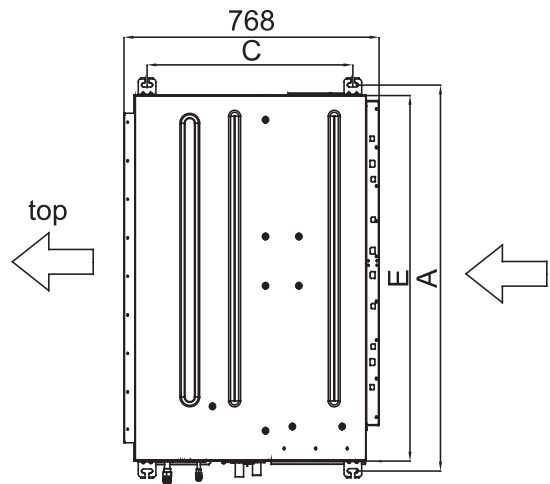
Size	A(mm)	B(mm)	C(mm)	D(mm)
AW-DBV005-N11				
AW-DBV007-N11				
AW-DBV009-N11	761	1211	619	700
AW-DBV012-N11				
AW-DBV016-N11				
AW-DBV018-N11				
AW-DBV024-N11	1161	1611	619	700
AW-DBV028-N11				

3. Preparation before Installation

(1) Location relation between inspection hole on the ceiling and the unit and the hoisting studs (unit: mm).



Model	Size	A(mm)	C(mm)	E(mm)
AW-DBV005-N11		761	619	700
AW-DBV007-N11				
AW-DBV009-N11				
AW-DBV012-N11				
AW-DBV016-N11				
AW-DBV018-N11		1161	619	1100
AW-DBV024-N11				
AW-DBV028-N11				



(2) If necessary, make a hole for installation and inspection on the ceiling. (used for the situation with a ceiling)

- For the size of the inspection hole on the ceiling, please refer to the above drawing.
- Before installation, finish all the preparations for all piping connected to indoor units (refrigerant, water drainage) and wiring (connection line of the line control, connection line between indoor units and outdoor unit) so that they can be connected with indoor units right after installation.
- For the inspection hole, the ceiling might be reinforced to keep the evenness of the ceiling and avoid the vibration of the ceiling. For details, please consult the construction contractor.

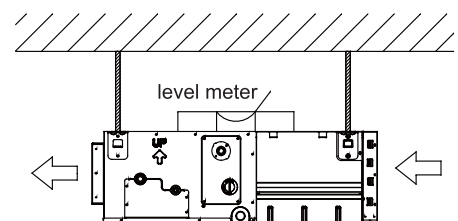
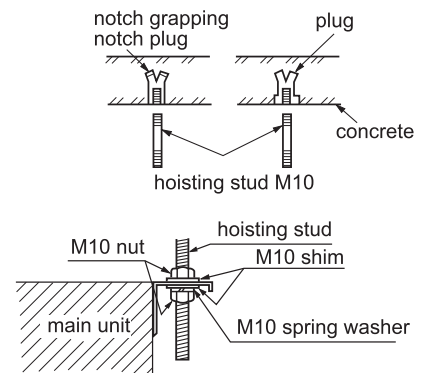
(3) Install the hoisting studs (M10 bolts)
 In order to support the weight of the unit, use barb bolts in the situation with a ceiling. In the situation with the new ceiling, use inlaid bolts, embedded bolts or other parts provided on site. Before proceeding the installation, adjust the gap between the bolt and the ceiling.

(4) Installation of Indoor Units
 • Fix the indoor unit with the hoisting stud. If necessary, the machine can be hung on the beam with bolts instead of the hoisting stud.

NB:
 When the sizes of the main unit don't match the hole on the ceiling, regulate the slot on the hanging bracket.

Adjusting the level

Adjust the level with a level meter or according to the following ways:
 • Make the adjustment as shown in the figure.



Choice of Blowing Wind from Blower (when using the high performance filter)

The blower can select the maximum static pressure and standard static pressure air volume through the controller, which is set to the standard static pressure before delivery. When the static pressure rises with the optional device is used, such as high performance filters. the static pressure selection is performed as follows:

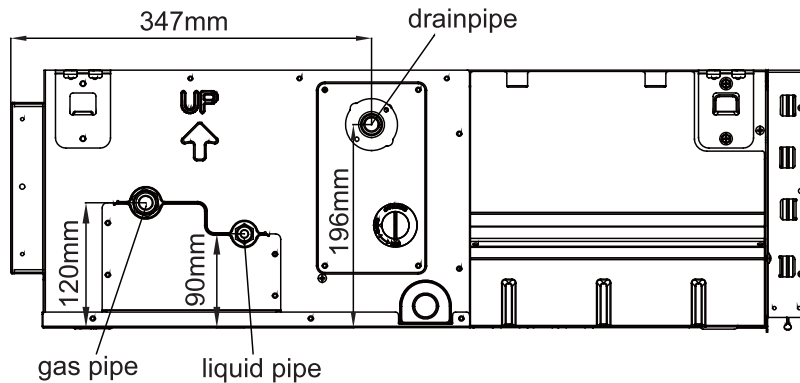
Remote controller setting mode: remote control selects static pressure. In high wind mode, press the health button 12 times within 5 seconds, the buzzer will reverberate 4 times, set the maximum static pressure successfully. Press the health button 12 times within 5 seconds, the buzzer will sound 2 times, the maximum static pressure function will be canceled, and the default setting will be restored.

RWV05 Wired Controller setting mode: keep pressing the key Set and the key ▲ minus 5 seconds to enter the advanced setting, press the key Fan to switch to the function category b (temperature zone display), at this time function category code flashes (clock zone display), press the key ▲ or ▼ to switch the value to 11, then press the key Set, the existing static pressure display is performed in the time zone, and the specific information flashes. When it is flashing, press the key ▲ or ▼ to change it. After the change is completed, press the key Set to confirm. 01 means the default standard static pressure, 02 means the maximum static pressure.

Static Pressure Range
unit: Pa

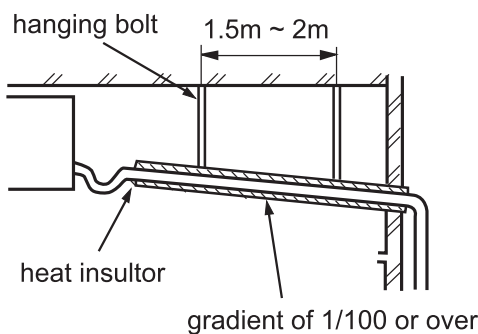
Standard Static Pressure	Max. Static Pressure
50	100

4. Drainpipes

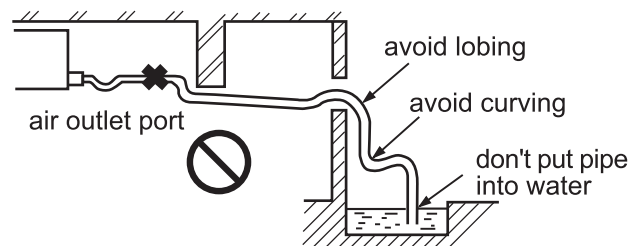


(a) Keep a gradient (1/50-1/100) of the drainpipes and avoid lobing or curving.

• Proper Piping

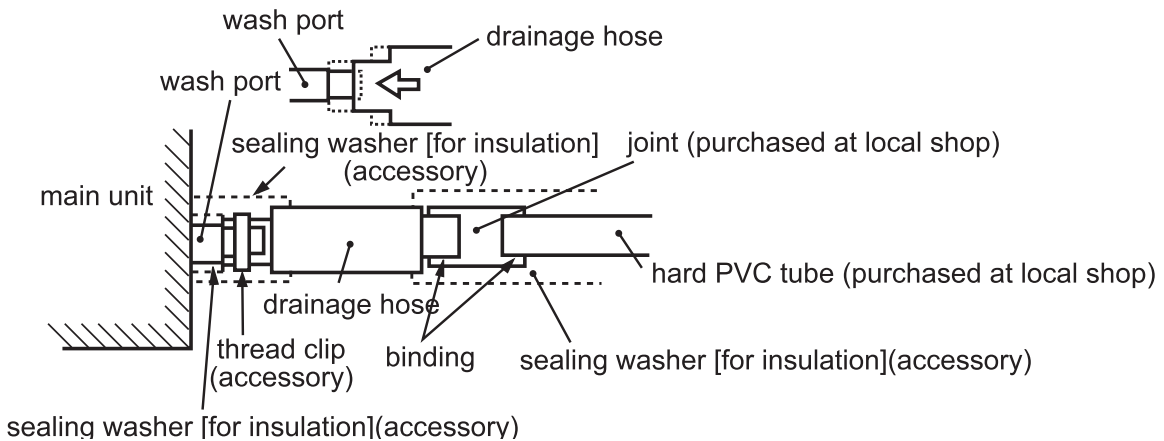


• Improper Piping



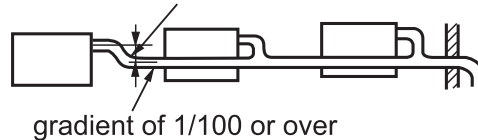
(b) When connecting the drainpipe to the equipment, don't apply too much force on one side of the equipment. Meanwhile, the piping should be positioned as close to the equipment as possible.

(c) For the drainpipe, the general purpose hard PVC tube can be purchased at local shops. During the connection, insert the end of PVC tube into the wash port and fasten it with drainage hose and thread clip. Binding agents shouldn't be used to connect the wash port and drainage hose.



(d) When the laid drain piping is used for multiple equipments, the public piping should be lower about 100mm than the wash ports of equipments, as shown in the figure. Thicker pipes should be used for this application.

ensure the biggest height difference (about 100mm)



(e) The hard PVC tube in the room must be provided with the heat insulating layer.

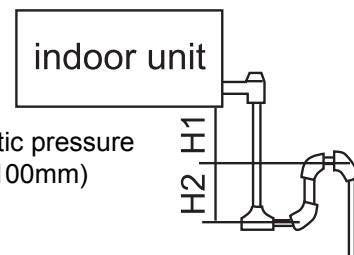
(f) Don't place the drainpipes at the places where there is irritant gas. Don't put the drainpipe directly into the sewer, where there might be gases with sulfur.

(g) Backwater bend

Because the drainage was laid in the position of bringing Subatmospheric pressure easily, gain of elevation of water in the drain pan conducesd Leakage water, for avoiding Leakage water , design a Backwater bend. Configuration of Backwater bend can be cleaned, a " T " joint can be used in installing as shown as in the picture below.

Backwater bend was installed in the neighborhood of airconditioning

A backwater bend was designed in the middle of drain pipe s shown as in the picture.



H1=100mm or blower static pressure
H2= H1(or between 50~100mm)

Testing Drainage System

(a) After finishing the electrical system, test the drainage system.

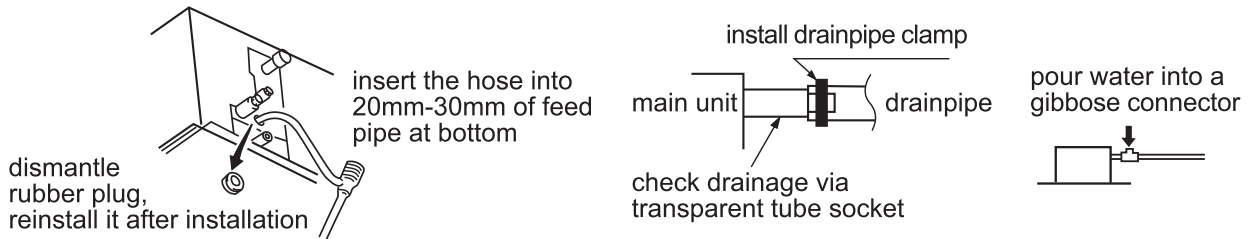
(b) During testing, make sure that the water flow passes the piping correctly without any water leakage at the connection.

(c) In the condition of new house, test the drainage system before fitting up the ceiling.

(d) Even if it is installed in the season needed to heating, the testing should also be performed.

procedures

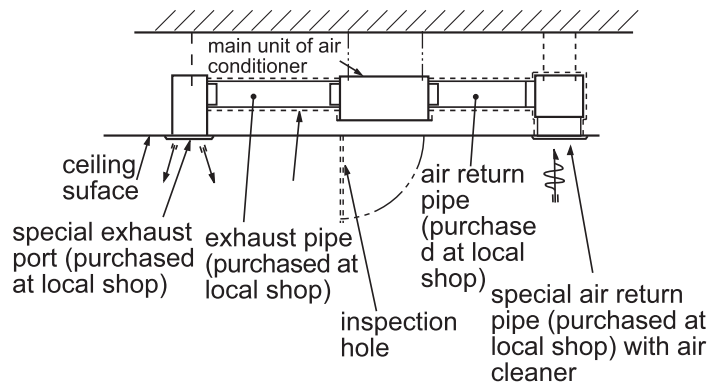
- Provide about 1000cc of water to the equipment via air outlet port with the feed pump.
- During refrigerating operation, check the drainage system..



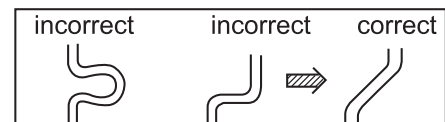
Before completing the electrical connection, a gibbose connector shall be installed on the drainpipe as to provide it with a water inlet port. Then, if any leakage exists in the piping, check it to make the water flow of the drainpipe smooth.

5. Installation of Air Return & Air Exhaust Pipes

For the choice and installation of air return port, air return pipe, air exhaust port and exhaust pipe, please consult service personnel of Airwell company. Calculate the design chart and exterior static pressure, and select the exhaust pipe with appropriate length and shapes.

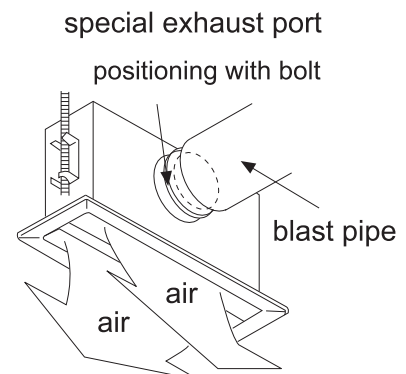


- The length difference between pipes should be limited to be less than 2:1;
- Make the piping as short as possible;
- Keep the min. elbow quantity;
- Wind the heat insulating material around the flange between the main unit and the exhaust pipe for heat insulation and sealing. Install the piping before fitting up the ceiling.



6. Cautions in Installation of Air Return Pipe & Exhaust Pipe

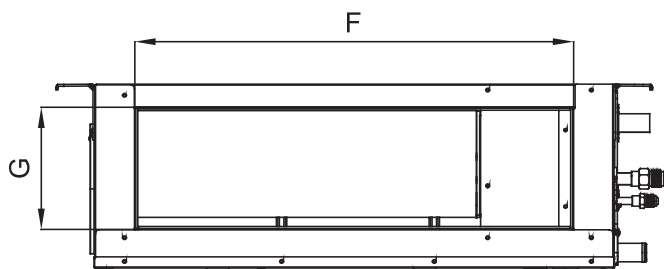
- It is recommended to use the blast pipes, which can be anti-condensation and absorb sound. (purchased at local shops)
- Complete the installation of the blast pipes before fitting up the suspended ceiling.
- Heat insulation should be made for the blast pipes.
- The special exhaust port should be arranged at the place where the air is distributed evenly.
- An inspection hole should be left on the surface of the ceiling for future maintenance.



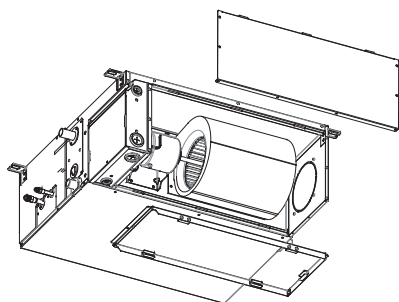
7.Connection of return air duct (setting back air return opening when leaving factory)

Remarks:

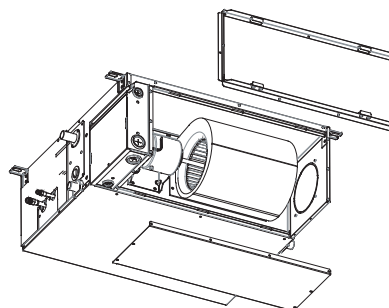
In installation, you can select the lower air return or back air return by adjusting the location of air inlet frame. Air return from bottom will influence the unit noise,so we suggest use rear return installation.



Model	Size	F (mm)	G (mm)
AW-DBV005-N11		592	165
AW-DBV007-N11			
AW-DBV009-N11			
AW-DBV012-N11			
AW-DBV016-N11			
AW-DBV018-N11		992	165
AW-DBV024-N11			
AW-DBV028-N11			



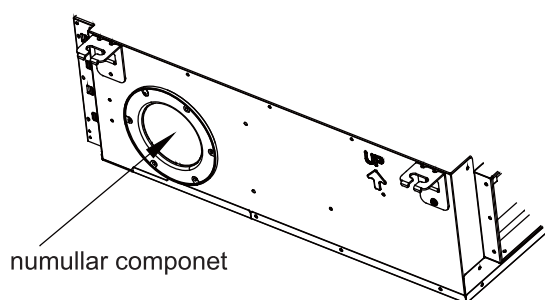
Bottom air return opening



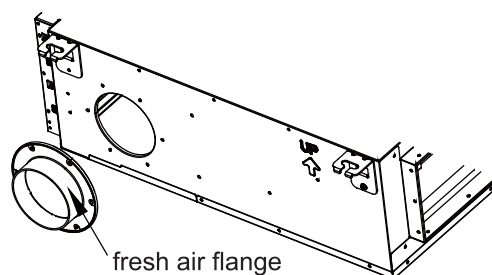
Back air return opening

8.Concatenation means of exchanging fresh air

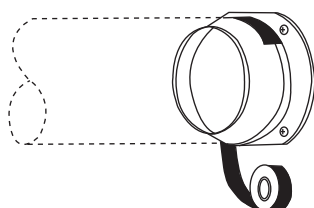
(1) Disassemble the fresh air flange, and cut away the nummular component in the middle



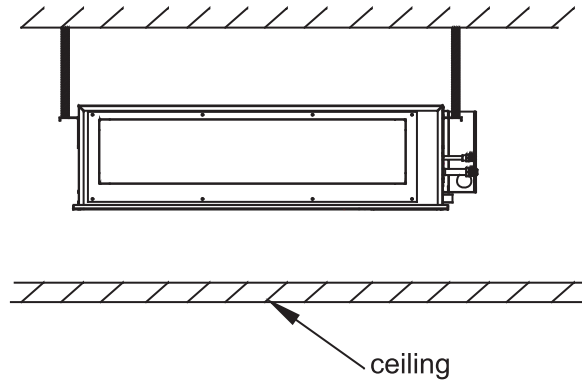
(2) Reverse the fresh air flange, and re-install it



(3) Airproof the joint by airproof cingulum avoiding



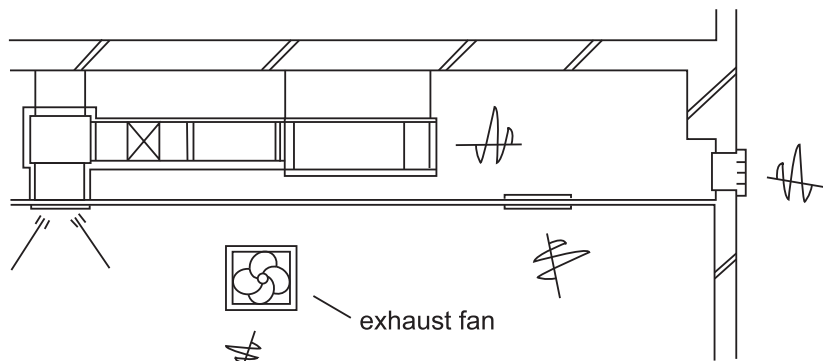
9. Install outlet flange



Note: You can select not to connect with the flange. Instead of it, you can use the round plastic air outlet (purchased by user)

10. Examples for Bad Installation

- The unit is not equipped with the air return pipe and the inner side of the suspending ceiling is used as the blast pipe, causing the humidity increasing due to irregular air mass, strong wind or sunlight from the outside world.
- There might be condensate dropping down at the outer side of the blast pipe. The humidity is high, even if the inner side of the suspended ceiling isn't used as a blast pipe in new concrete buildings. At this time, the whole body should use the thermo wool for heat preservation (the thermo wool can be packed with a steel wire).
- It is operated under the conditions beyond the limits, leading to the overload of the compressor.
- Affected by the capacity of the exhaust fan, and the strong wind and wind direction in the outer flue, when the blowing quantity of the air conditioner exceeds the limits, the drained water of the heat exchanger will overflow, causing water leakage.



example of bad installation

11. Refrigerant Tube

— Tubing Permissible Length & Height Difference —

Please refer to the attached manual of outdoor units.

— Piping Materials & Heat Insulating Materials —

As to prevent condensation, heat insulating treatment should be performed. The heat insulating treatment for gas and liquid piping should be done respectively.

Piping Material	Hard PVC tube VP31.5mm(inner bore)
Heat Insulating Material	Vesicant polythene thickness: over 7mm

Tubing Materials & Specifications

Model		AW-DBV005~009-N11	AW-DBV012~018-N11	AW-DBV024~28-N11
Tubing Size (mm)	Gas pipe	Ø9.52	Ø12.7	Ø15.88
	Liquid pipe	Ø6.35	Ø6.35	Ø9.52
Tubing Material		Phosphor deoxybronze seamless pipe (TP2) for air conditioner		

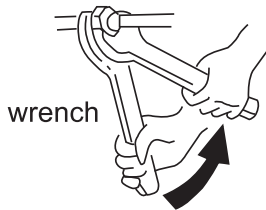
Refrigerant Filling Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount or compressor failure can be caused by filling too much or little refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table



Outer Diameter of Tubing (mm)	Mounting Torque
Ø6.35	11.8~13.7N.m
Ø9.52	32.7~39.9N.m
Ø12.7	49.0~53.9N.m
Ø15.88	78.4~98.0N.m
Ø19.05	97.2~118.6N.m

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one main unit.

Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting

Connecting circular terminals:



1. Connecting circular terminals:

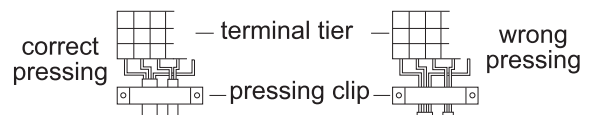
The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.

2. Connecting straight terminals:

The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.

3. Pressing connecting line

After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



10.9.7 Electrical wiring

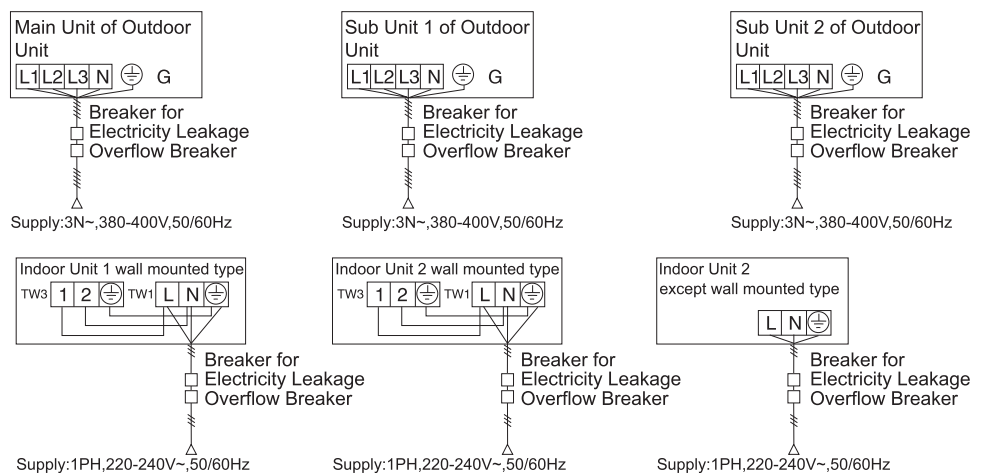
Warning

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient. !
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents. !
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line. !

Attention

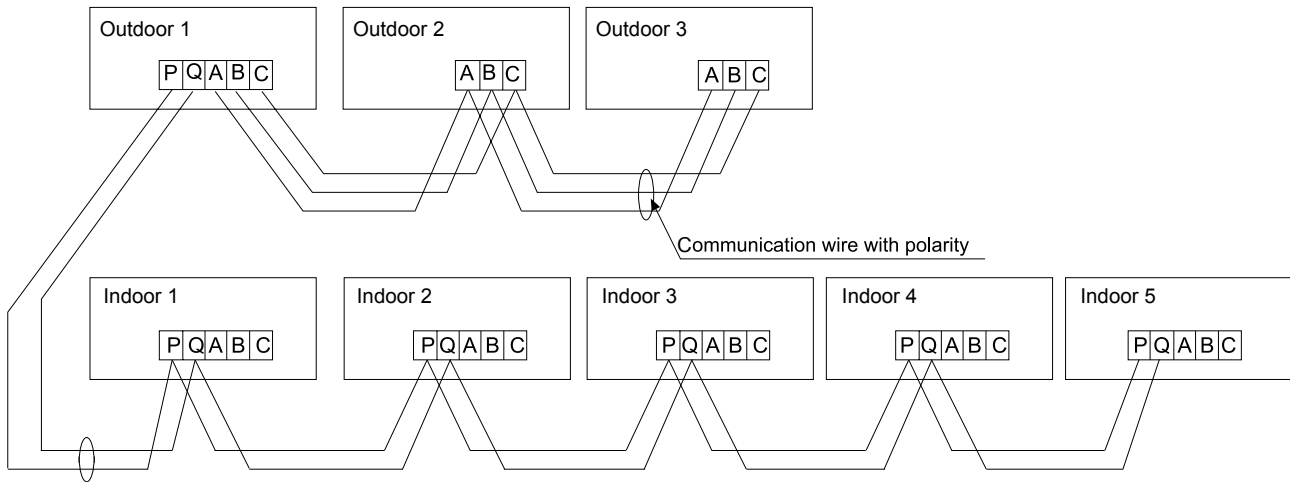
- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line, signal line are provided by users. Parameters for power lines are shown as below: 3x(1.0-1.5) mm²; parameters for signal line: 2x(0.75-1.25)mm²(shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.

Supply Wiring Drawing



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

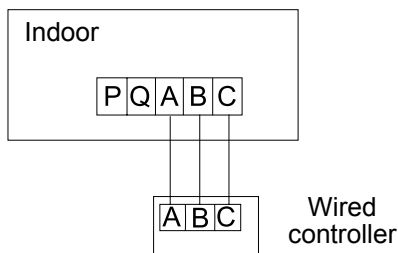
Signal Wiring Drawing



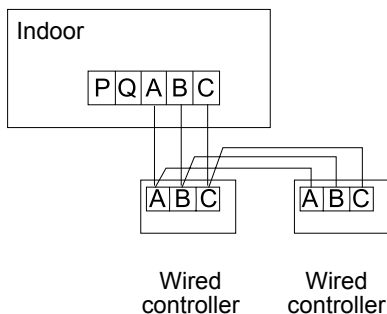
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



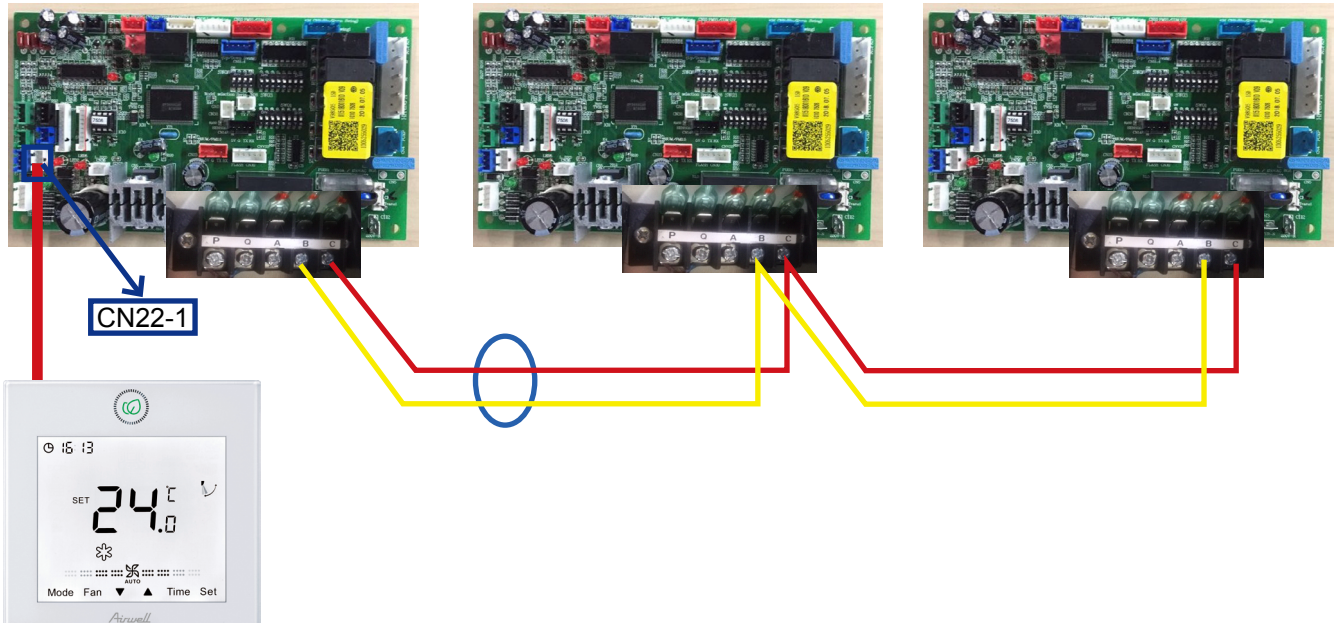
B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.



Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units



Note:

1. Plug the wired controller terminal to the CN22-1 terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	ON	Slave unit 1 in group control
		OFF	OFF	ON	OFF	Slave unit 2 in group control
		OFF	OFF	ON	ON	Slave unit 3 in group control
	
		ON	ON	ON	ON	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.

4. Hand-in-hand connection method

5. The signal line is polarity

The combination of multiple indoor units can be controlled by wired controller or remote controller.

※ Switching mode of Wired control master unit/ Wired control slave unit/ remote control types can be used for switching over ※

Socket/dip switch	Setting mode	Wired control master unit	Wired control slave unit	Remote control
	SW01-[2][3][4]		All OFF	[0][0][1]	All OFF
CN21 socket		Null	Null	Connect to remote receiver
Terminal block (control)		A,B,C connect with wired controller	B,C connect with wired controller	A,B,C null

Note:

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Indoor power supply wiring & signal wiring between indoor and outdoor & signal wiring between indoors.

Items Total Current of Indoor Units(A)	Cross Section(mm ²)	Length (m)	Rated Current of Overflow Breaker(A)	Rated current of residual Circuit Breaker (A) Ground Fault Interruptor(mA) Response time(S)	Cross Sectional Area of Singal Line	
					Outdoor-Indoor (mm ²)	Indoor-indoor (mm ²)
<7	2.5	20	10	10A, 30mA, 0.1S or below	2 cores x0.75-2.0 mm ² shieleded lin	
≥7 and <11	4	20	16	16A, 30mA, 0.1S or below		
≥11 and <16	6	25	20	20A, 30mA, 0.1S or below		
≥16 and <22	8	30	32	32A, 30mA, 0.1S or below		
≥22 and <27	10	40	32	32A, 30mA, 0.1S or below		

- The electrical power line and signal lines must be fastened tightly.
- Every indoor unit must have the ground connection.
- The power line should be enlarged if it exceeds the permissible length.
- Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- It is not permissible if the whole length of signal line exceeds 1000m.

Signal Wiring of Wired controier

Length of Line (m)	Wiring Dimensions
≤250	0.75mm ² x 3 core shielding line

- ※The shielding lay of the signal line must be grounded at one end.
- ※The total length of the signal line shall not be more than 250m.

11. High ESP Duct Type Indoor Unit

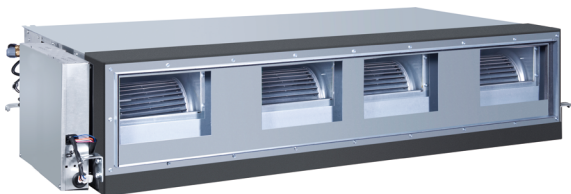
11.1 Features



AWSI-DCV018-N11
AWSI-DCV024-N11



AWSI-DCV030-N11
AWSI-DCV038-N11
AWSI-DCV048-N11



AWSI-DCV072-N11
AWSI-DCV096-N11

0~198Pa external static pressure

The external static pressure can be adjusted from 0Pa to 196Pa steplessly, which will make the unit supply quick temperature adjustment to the room.

Build-in the ceiling, space saving

The duct unit is installed above the ceiling, just leaving the air outlet in the ceiling, which will not affect the indoor decor and supply less space of indoor.

Multi rooms sharing one indoor unit

The duct unit can be applicable for multi rooms, because the duct can be set as multiple air outlets according to the load.

11.2 Specification

MODEL			AWSI-DCV018-N11	AWSI-DCV024-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	19.1	24.2
	Capacity	kW	5.6	7.1
	Power input	W	450	450
	Current	A	2.05	2.05
Heating	Capacity	kBtu/h	21.5	27.3
	Capacity	kW	6.3	8
	Power input	W	450	450
	Current	A	2.05	2.05
	Heating capacity at low temp.	kW	5.0	6.3
Operating current		A	2.2	2.2
Power consumption		kW	0.49	0.49
Indoor motor	Brand		SANSO / Broad ocean	
	Model		MLA832-14W-R / Y7S423B529	
	Type		AC	AC
	Insulation class		E / B	E / B
	IP class		IP20	IP20
	Power input	W	480/605	480/605
	Power output	W	260	260
	Capacitor	μF	12.5 μF	12.5 μF
	Speed (High/Middle/Low)	rpm	1400/1350/1290	1400/1350/1290
Indoor fan	Brand		/	/
	Type		Centrifugal	Centrifugal
	Quantity		2	2
Indoor coil	a. Number of rows		2	3
	b. Tube pitch (a)×row pitch (b)	mm	21*13.3	21*13.3
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	
	e. Tube outside dia. and type	mm	Φ7.0 Inner groove tube	
	f. Coil length×height×width	mm	685*441*26.6	685*441*39.9
	g. Number of circuits		7	5

MODEL			AWSI-DCV018-N11	AWSI-DCV024-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72
	Control box IP class		IP20	IP20
Construction	Sheet metal thickness		1	1
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		No	No
	Branch outlet option		No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	1	1
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	9.52
	Gas pipe	mm	12.7	15.88
	Drain hose	mm	32	32
Fresh air dimension		mm	750*250	750*250
Sound pressure level (H/L)		dB(A)	42/40/38	42/40/38
Sound power level (H/L)		dB(A)	55/53/51	55/53/51
Standard static pressure		Pa	100	100
Max. static pressure		Pa	196	196
Indoor air flow (H/M/L)		m ³ /h	1500/1357/1089	1500/1357/1089
Air outlet dimensions		mm	600*250	600*250
Air return dimensions		mm	750*250	750*250
Dimension (W*H*D)		mm	975*360*906	975*360*906
Packing (W*H*D)		mm	1048*413*943	1048*413*943
Net weight		kg	54	54
Gross weight		kg	62	62
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

MODEL			AWSI-DCV030-N11	AWSI-DCV038-N11	AWSI-DCV048-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	30.7	38.2	47.8
	Capacity	kW	9.0	11.2	14.0
	Power input	W	560	560	560
	Current	A	2.55	2.55	2.55
Heating	Capacity	kBtu/h	34.1	42.7	54.6
	Capacity	kW	10.0	12.5	16.0
	Power input	W	560	560	560
	Current	A	2.55	2.55	2.55
	Heating capacity at low temp.	kW	8.0	10.0	12.5
Operating current		A	2.6	2.6	2.6
Power consumption		kW	0.58	0.58	0.58
Indoor motor	Brand		HUATE / Broad ocean		
	Model		YSK-270W-4 / Y7S423B815		
	Type		AC	AC	AC
	Insulation class		B / B	B / B	B / B
	IP class		IP20	IP20	IP20
	Power input	W	550/702	550/702	550/702
	Power output	W	270	270	270
	Capacitor	μF	12.5 μF	12.5 μF	12.5 μF
	Speed (SH/H/M/L)	rpm	1070/950/860/690	1070/950/860/690	1070/950/860/690
Indoor fan	Brand		/	/	/
	Type		Centrifugal	Centrifugal	Centrifugal
	Quantity		2	2	2
Indoor coil	a. Number of rows		2	2	2
	b. Tube pitch (a)×row pitch (b)	mm	25*21.65	25*21.65	25*21.65
	c. Fin spacing	mm	1.8	1.8	1.8
	d. Fin type (code)		Hydrophilic aluminum		
	e. Tube outside dia. and type	mm	Φ9.52 Inner groove tube		
	f. Coil length×height×width	mm	1062*450*43.4	1062*450*43.4	1062*450*43.4
	g. Number of circuits		5	5	5

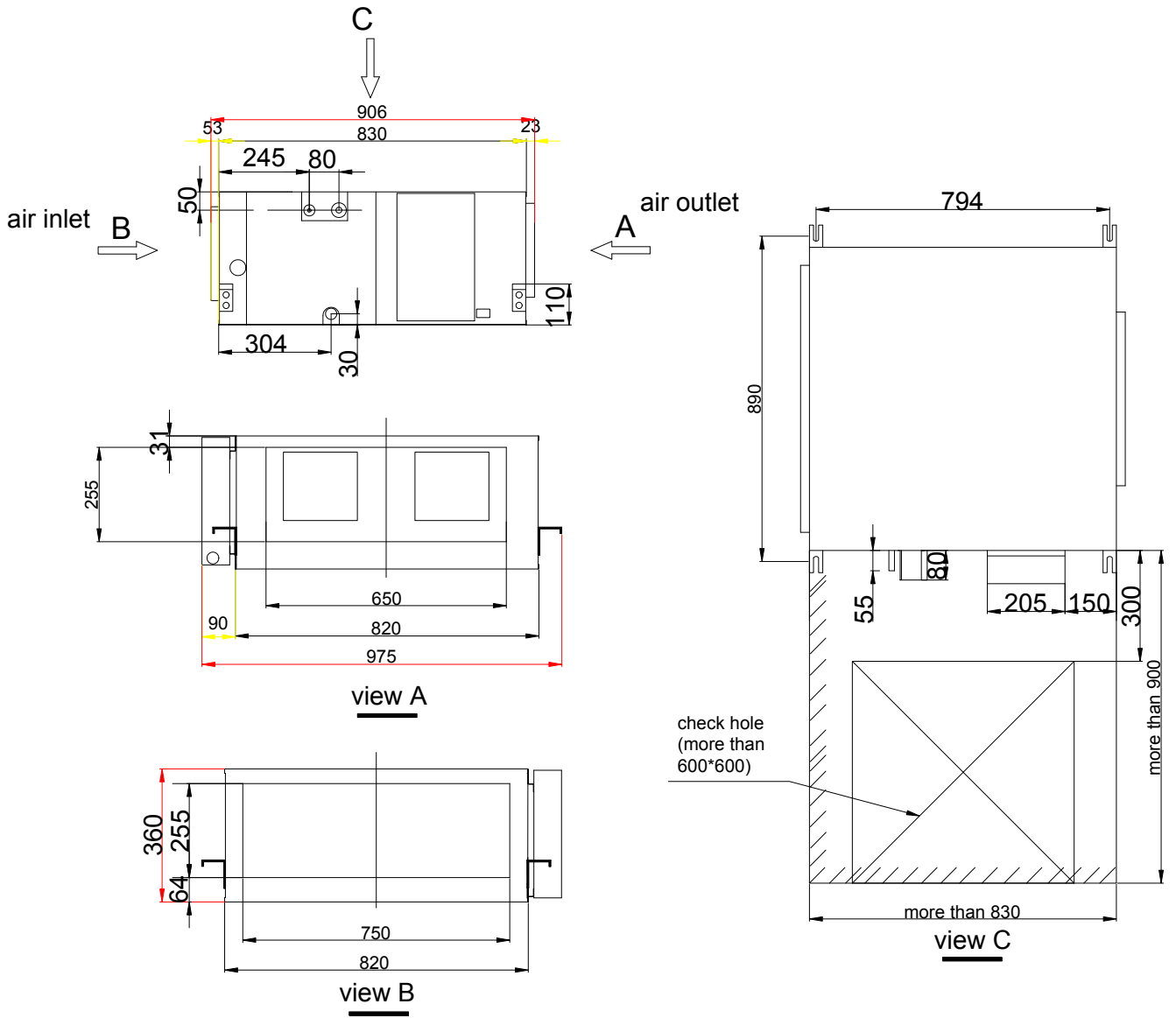
MODEL			AWSI-DCV030-N11	AWSI-DCV038-N11	AWSI-DCV048-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72	72
	Control box IP class		IP20	IP20	IP20
Construction	Sheet metal thickness		1	1	1
	Drain pan material		PS	PS	PS
	Drain pan insulation		20	20	20
	Drain pump option		No	No	No
	Branch outlet option		No	No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate	Hot zinc plate
	Thickness	mm	1	1	1
	Double or single skin		Single	Single	Single
Air filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52	9.52
	Gas pipe	mm	15.88	15.88	15.88
	Drain hose	mm	32	32	32
Fresh air dimension	mm	1100*255	1100*255	1100*255	
Sound pressure level (H/L)	dB(A)	45/43/40	45/43/40	45/43/40	
Sound power level (H/L)	dB(A)	58/53/50	58/53/50	58/53/50	
Standard static pressure	Pa	100	100	100	
Max. static pressure	Pa	196	196	196	
Indoor air flow (H/M/L)	m ³ /h	1560/1412/1133	1600/1448/1162	2100/1901/1525	
Air outlet dimensions	mm	853*255	853*255	853*255	
Air return dimensions	mm	1100*255	1100*255	1100*255	
Dimension (W*H*D)	mm	1355*360*876	1355*360*876	1355*360*876	
Packing (W*H*D)	mm	1378*405*938	1378*405*938	1378*405*938	
Net weight	kg	66	66	66	
Gross weight	kg	74	74	74	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.					

MODEL		AWSI-DCV072-N11	AWSI-DCV096-N11
Power supply		Ph-V-Hz	1,220~230,50/60
Cooling	Capacity	kBtu/h	77.1
	Capacity	kW	22.6
	Power input	W	1110
	Current	A	5.05
Heating	Capacity	kBtu/h	85.3
	Capacity	kW	25
	Power input	W	1110
	Current	A	5.05
	Heating capacity at low temp.	kW	---
Operating current		A	4.1
Power consumption		kW	0.895
Indoor motor	Brand		HUATE / Broad ocean
	Model		YSK270-4C / Y7S423C238
	Type		AC
	Insulation class		B
	IP class		IP20
	Power input	W	550*2
	Power output	W	238*2
	Capacitor	μF	12.5 μF
	Speed (High/Middle/Low)	rpm	1250/1020/870
Indoor fan	Brand		/
	Type		Centrifugal
	Quantity		4
Indoor coil	a. Number of rows		3
	b. Tube pitch (a)×row pitch (b)	mm	25*21.65
	c. Fin spacing	mm	1.6
	d. Fin type (code)		Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ9.52 Inner groove tube
	f. Coil length×height×width	mm	1430*450*64.95
	g. Number of circuits		9

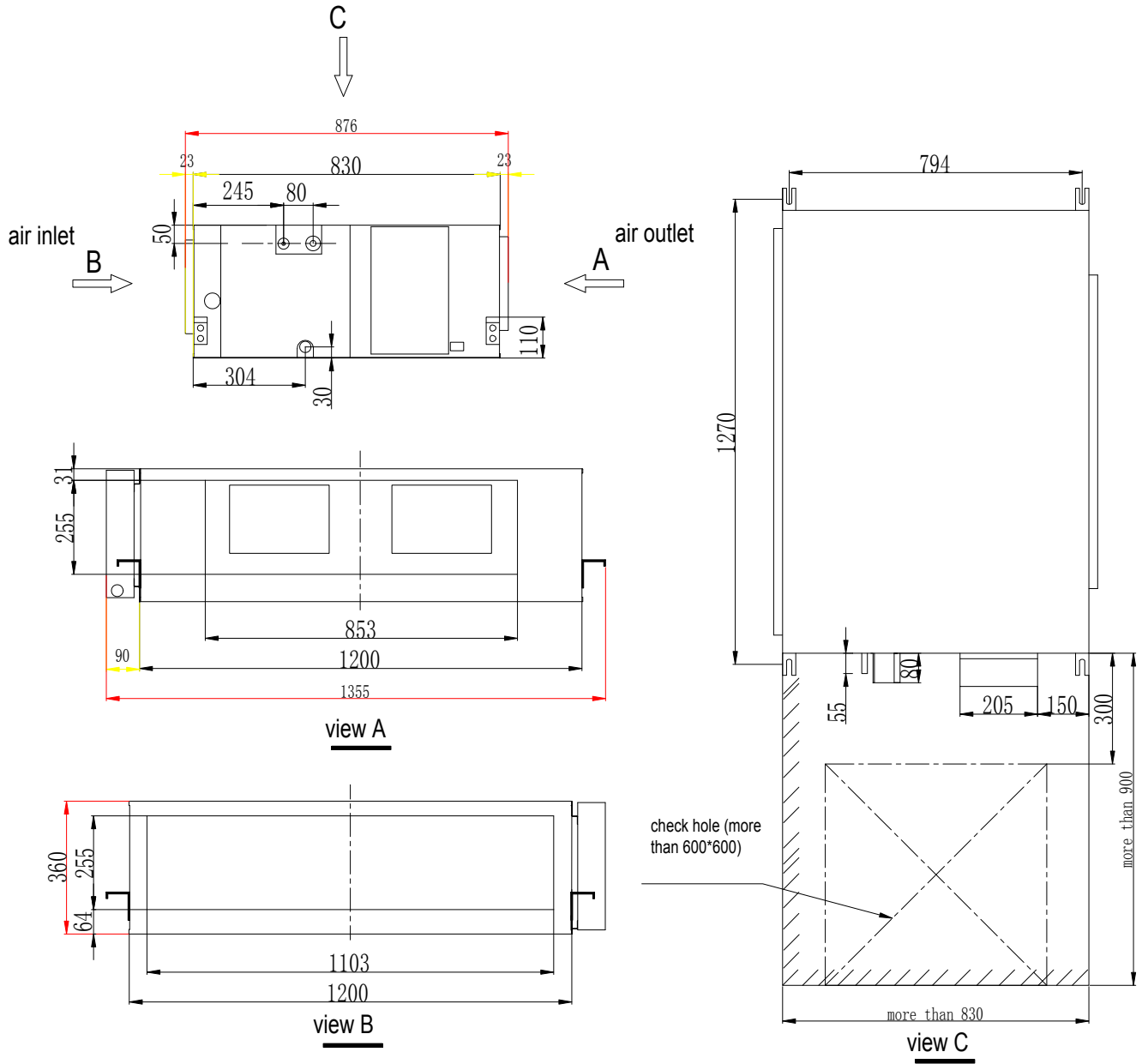
MODEL			AWSI-DCV072-N11	AWSI-DCV096-N11
Cabinet	Cabinet coating type		Galvanized	Galvanized
	Cabinet salt spray test duration	Hour	72	72
	Control box IP class		IP20	IP20
Construction	Sheet metal thickness		1	1
	Drain pan material		PS	PS
	Drain pan insulation		20	20
	Drain pump option		No	No
	Branch outlet option		No	No
Indoor wall	Material		Hot zinc plate	Hot zinc plate
	Thickness	mm	1	1
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		100	100
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52
	Gas pipe	mm	25.4	25.4
	Drain hose	mm	32	32
Fresh air dimension	mm	1510*255	1510*255	
Sound pressure level (H/L)	dB(A)	54/51/49	54/51/49	
Sound power level (H/L)	dB(A)	67/62/59	67/62/59	
Standard static pressure	Pa	100	100	
Max. static pressure	Pa	196	196	
Indoor air flow (H/M/L)	m ³ /h	4050/3255/2612	4050/3255/2612	
Air outlet dimensions	mm	1510*255	1510*255	
Air return dimensions	mm	1510*255	1510*255	
Dimension (W*H*D)	mm	1725*360*876	1725*360*876	
Packing (W*H*D)	mm	1830*530*990	1830*530*990	
Net weight	kg	100	100	
Gross weight	kg	112	112	
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

11.3 Dimension

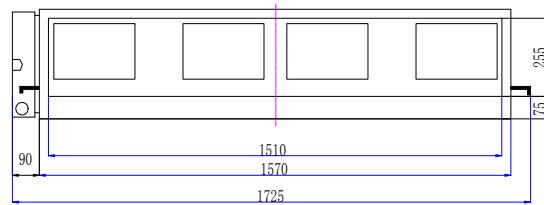
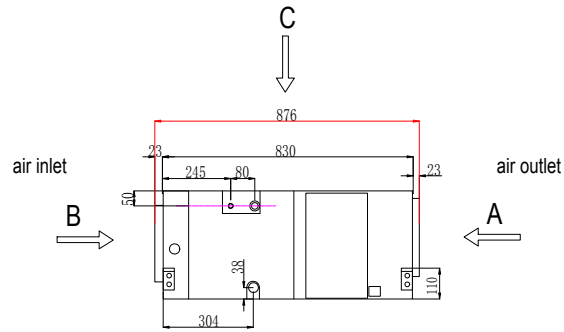
AWSI-DCV018-N11 AWSI-DCV024-N11



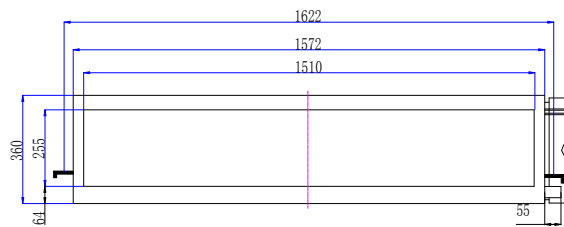
AWSI-DCV030-N11 AWSI-DCV038-N11 AWSI-DCV048-N11



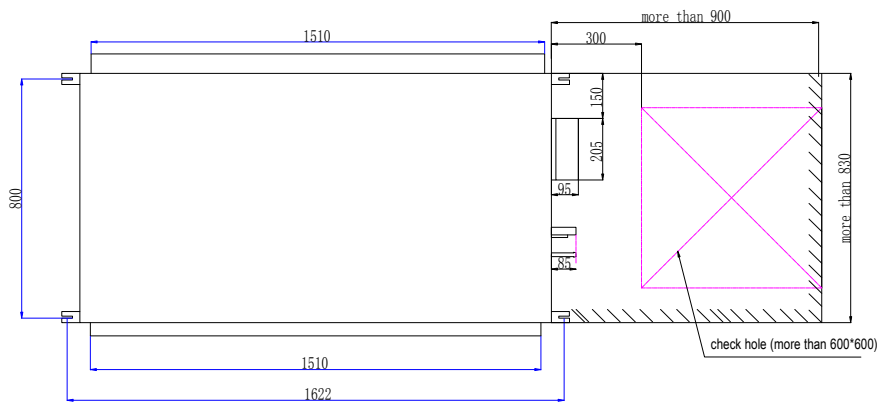
AWSI-DCV072-N11 AWSI-DCV096-N11



view A



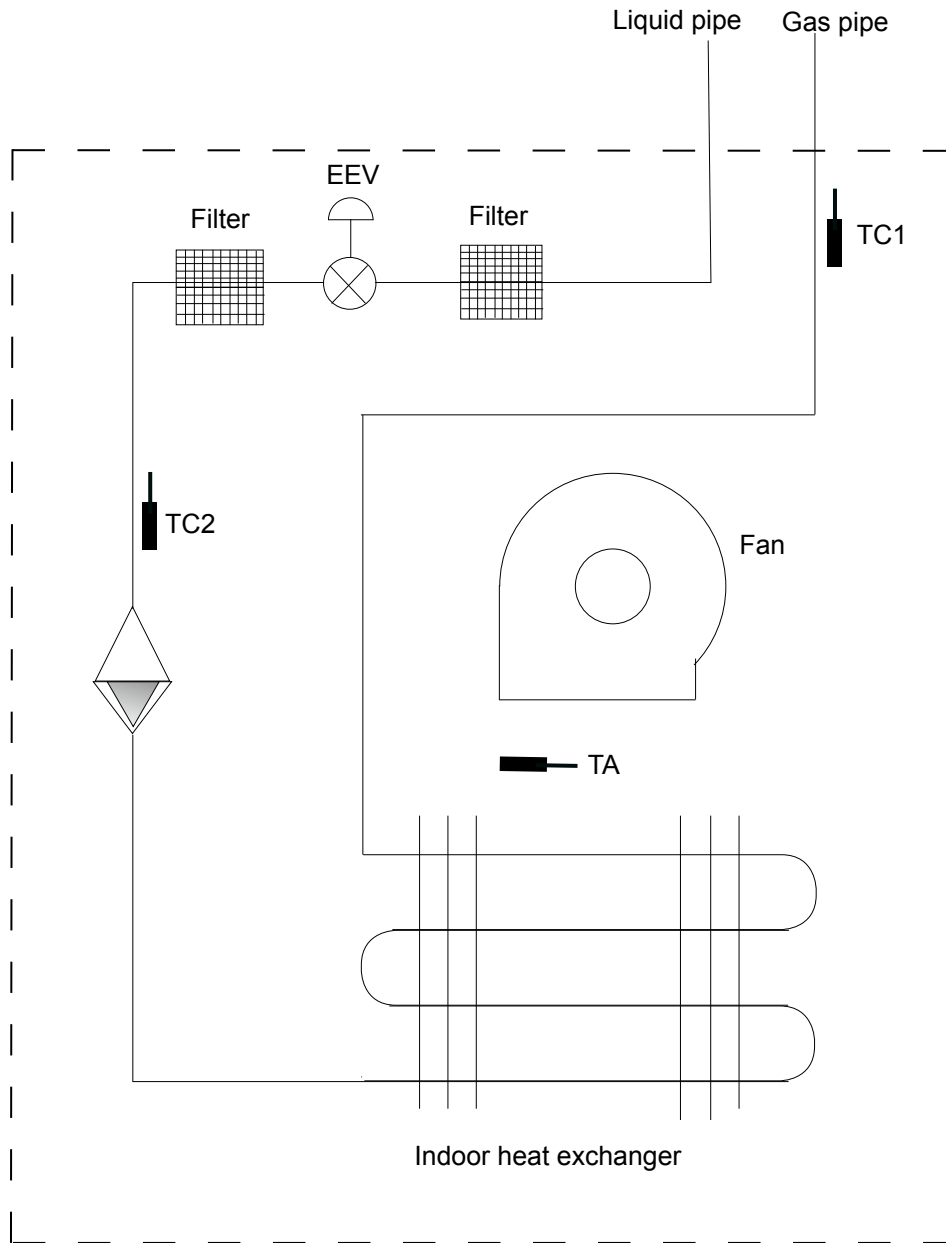
view B



view C

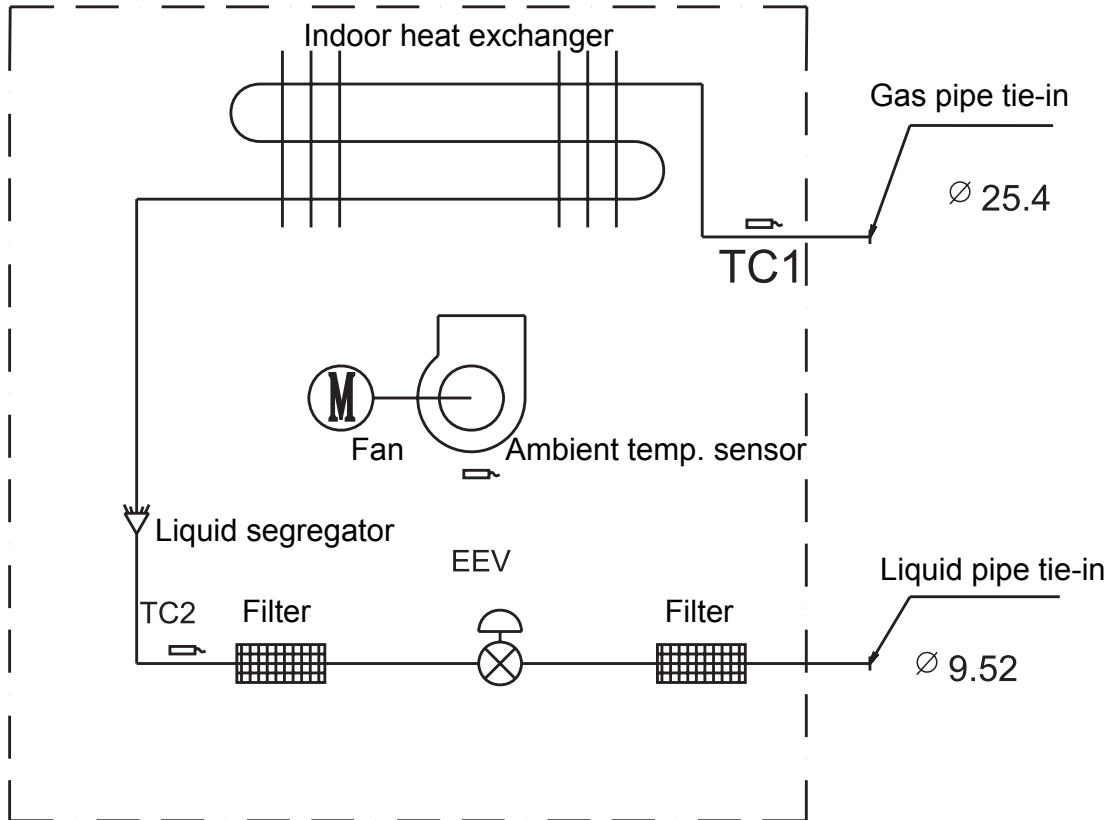
11.4 Piping diagram

AWSI-DCV018-N11 AWSI-DCV024-N11
AWSI-DCV030-N11 AWSI-DCV038-N11 AWSI-DCV048-N11

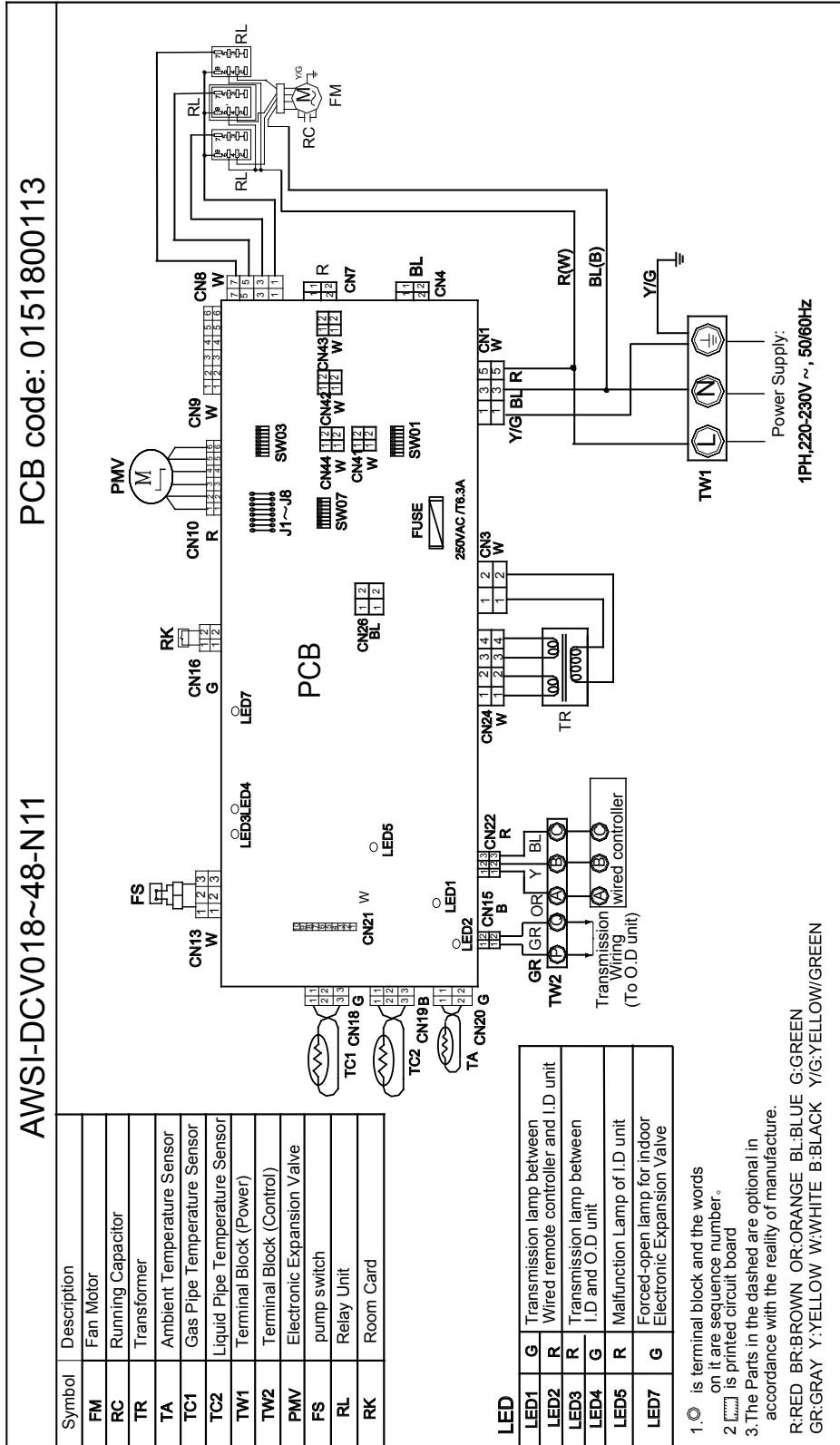


AWSI-DCV072-N11

AWSI-DCV096-N11

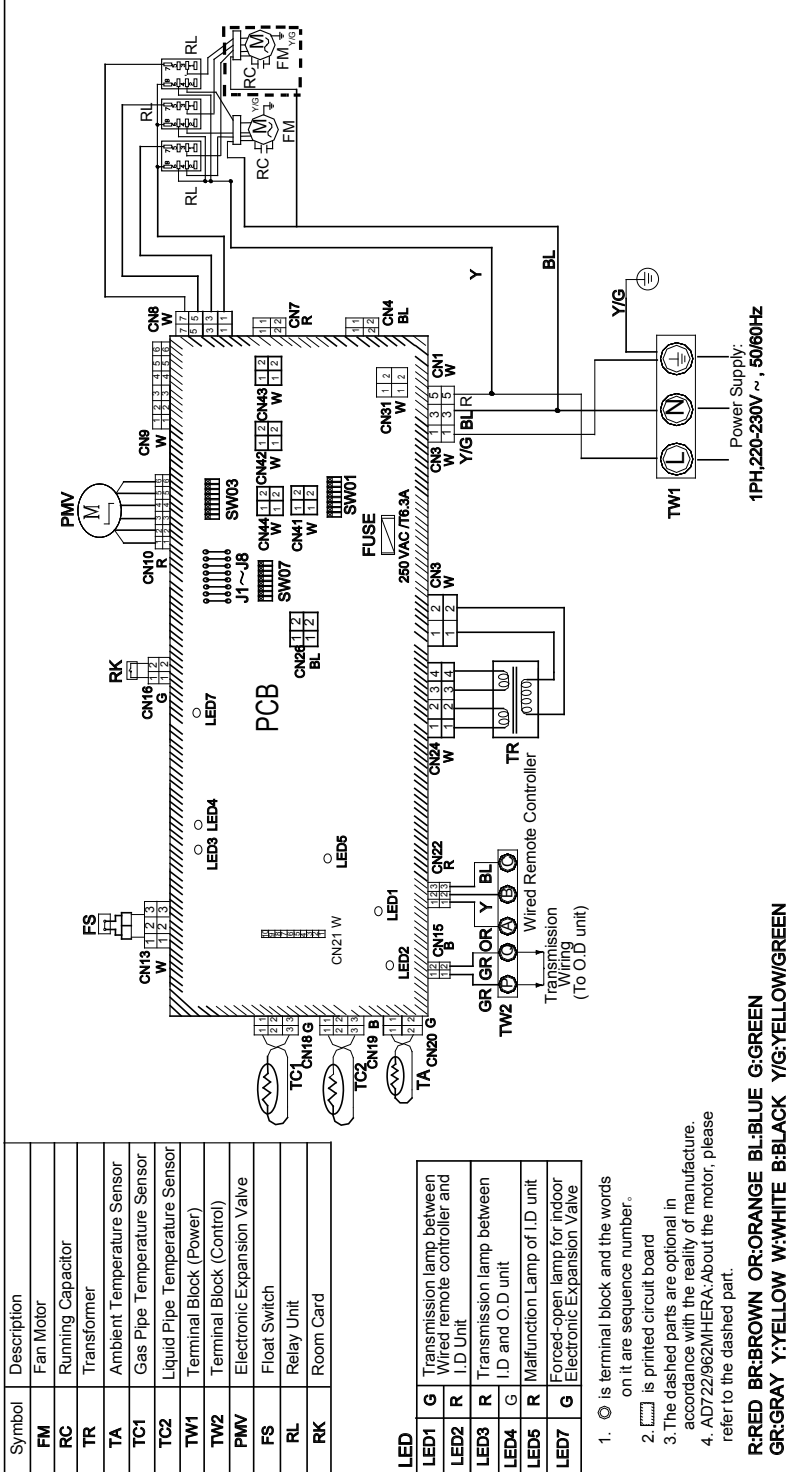


11.5 Wiring diagram



PCB code: 0151800113

AWSI-DCV072-N11



Symbol	Description
FM	Fan Motor
RC	Running Capacitor
TR	Transformer
TA	Ambient Temperature Sensor
TC1	Gas Pipe Temperature Sensor
TC2	Liquid Pipe Temperature Sensor
TW1	Terminal Block (Power)
TW2	Terminal Block (Control)
PMV	Electronic Expansion Valve
FS	Float Switch
RL	Relay Unit
RK	Room Card

LED	Description
LED1	Transmission lamp between Wired remote controller and I.D Unit
LED2	Transmission lamp between I.D and O.D unit
LED3	Transmission lamp between I.D and O.D unit
LED4	Transmission lamp between I.D and O.D unit
LED5	Forced-open lamp for indoor Electronic Expansion Valve
LED7	Forced-open lamp for indoor Electronic Expansion Valve

1. Ⓞ is terminal block and the words on it are sequence number.
2. [] is printed circuit board
3. The dashed parts are optional in accordance with the reality of manufacture.
4. AD722962MHHERA>About the motor, please refer to the dashed part.

**R:RED BR:BROWN OR:ORANGE BL:BLUE G:GREEN
GR:GRAY Y:YELLOW W:WHITE B:BLACK Y/G:YELLOW/GREEN**

Power Supply:
1PH,220-230V ~, 50/60Hz

11.6 Electric characteristics

Units					Power supply		Indoor fan motor		Power input (w)	
Model	Phase	FQY	Voltage	Volt range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AWSI-DCV018-N11	1ph	50/60	220	198~242	2.5	8	260	2	450	450
AWSI-DCV024-N11	1ph	50/60	220	198~242	2.5	8	260	2	450	450
AWSI-DCV030-N11	1ph	50/60	220	198~242	3	9.6	270	2.4	560	560
AWSI-DCV038-N11	1ph	50/60	220	198~242	3	9.6	270	2.4	560	560
AWSI-DCV048-N11	1ph	50/60	220	198~242	3	9.6	270	2.4	560	560
AWSI-DCV072-N11	1ph	50/60	220	198~242	4.65	14.88	238*2	1.86*2	1100	1100
AWSI-DCV096-N11	1ph	50/60	220	198~242	4.65	14.88	238*2	1.86*2	1100	1100

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker

Output: Fan motor rated output (w)

FLA: Full load amps (A)

Note:

1. Voltage range

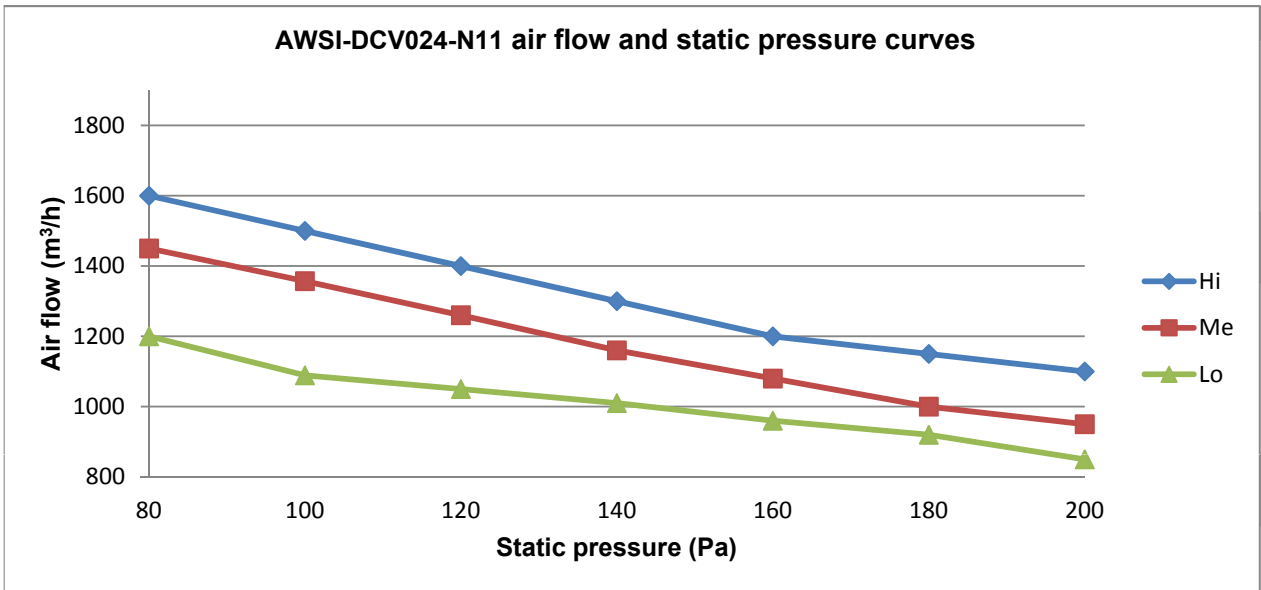
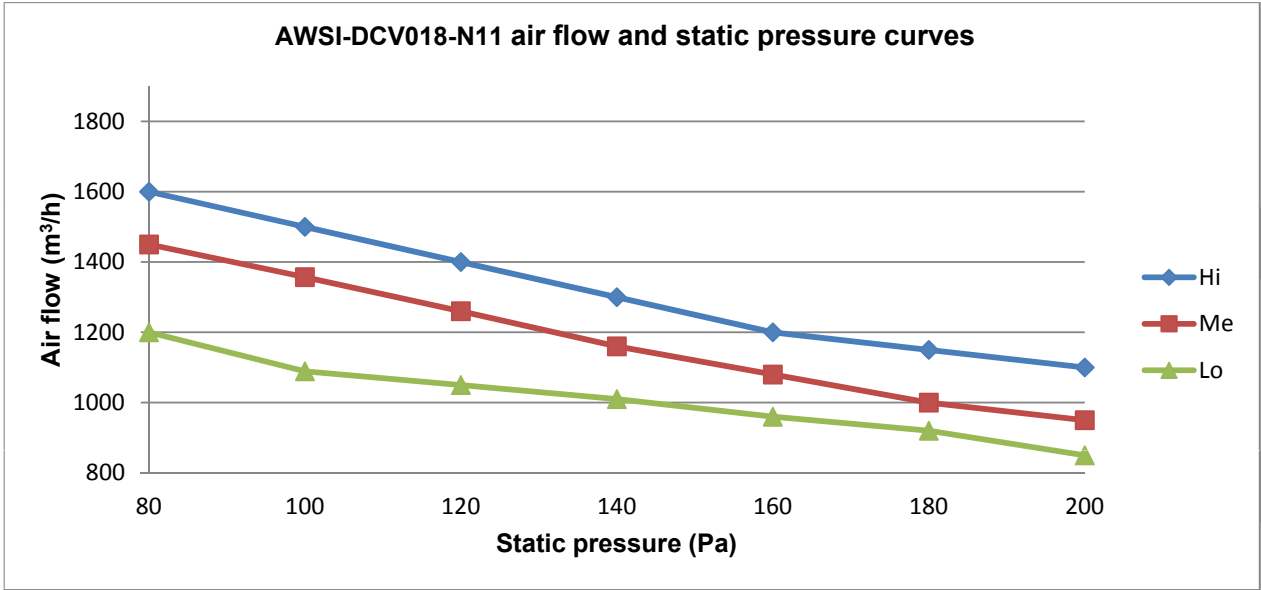
The units are applicable for the electrical systems where voltage supplied to unit is in the range.

2. Maximum allowable voltage unbalance between phases is 2%.

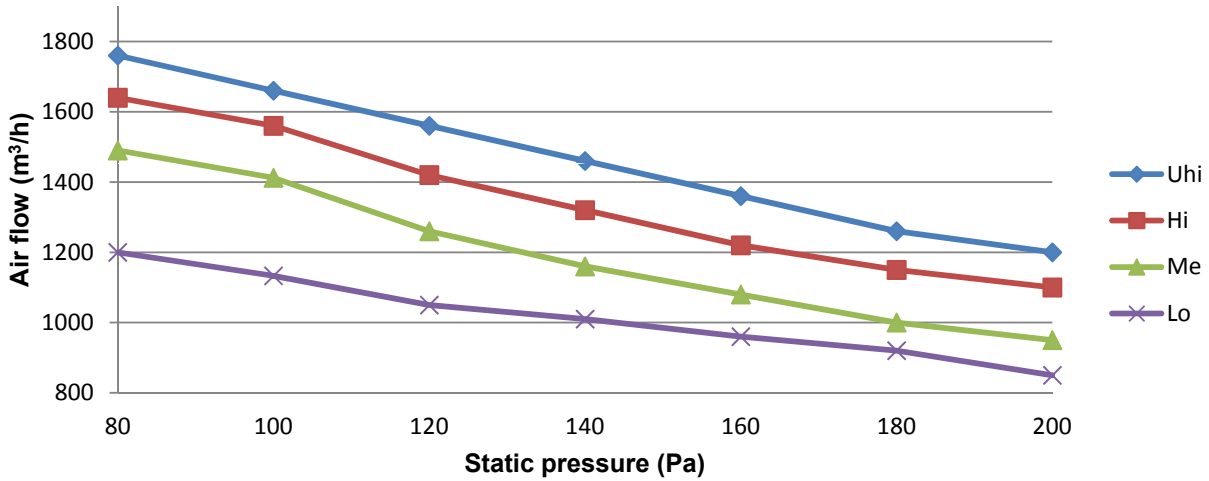
3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$

4. Power supply uses the circuit breaker.

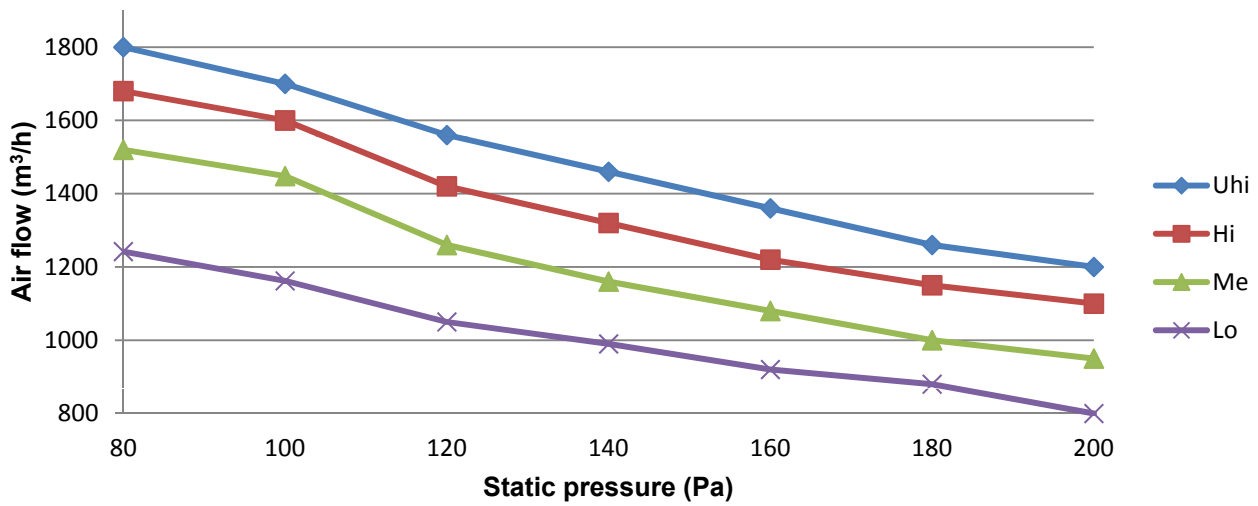
11.7 Air flow and static pressure curves

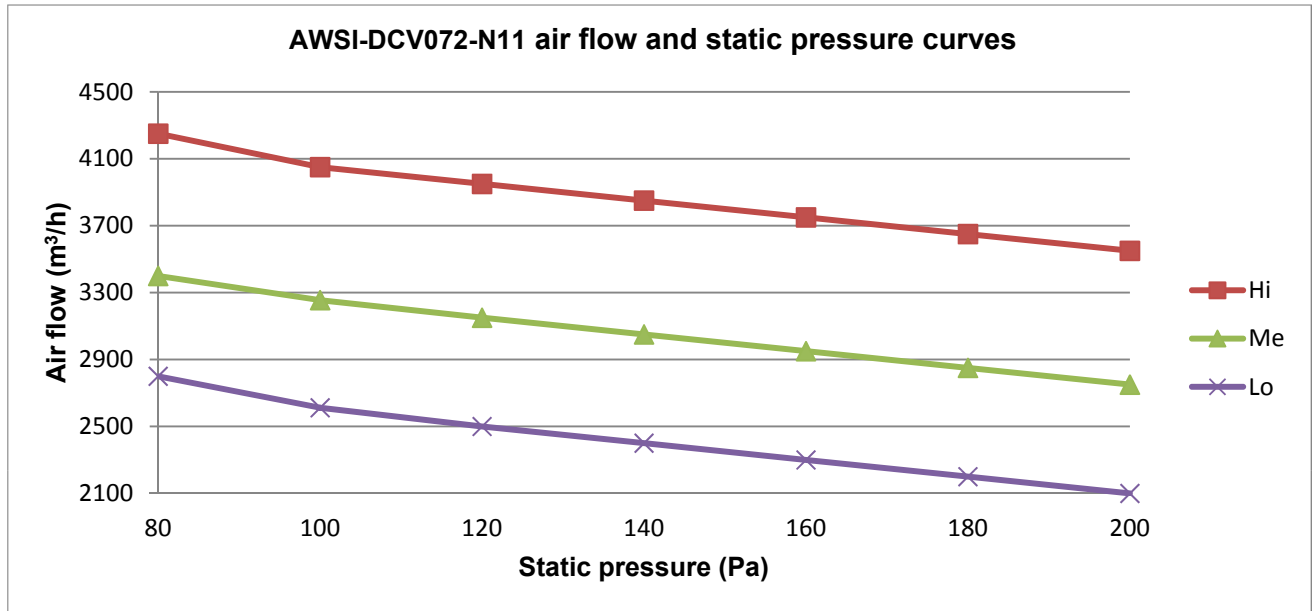
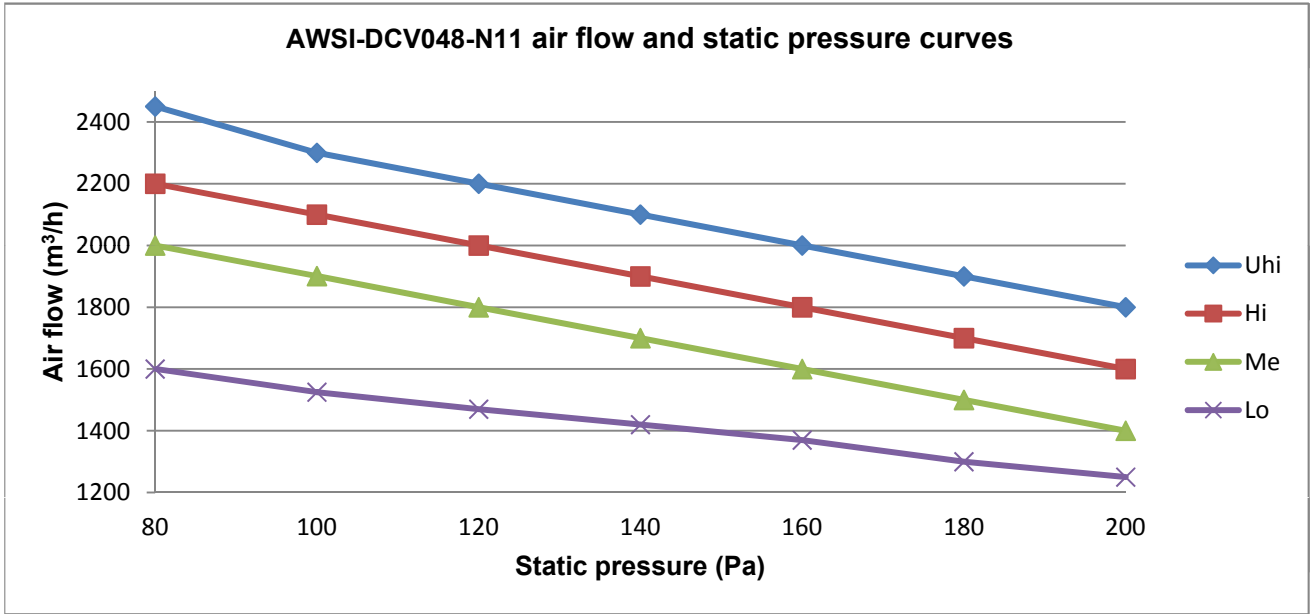


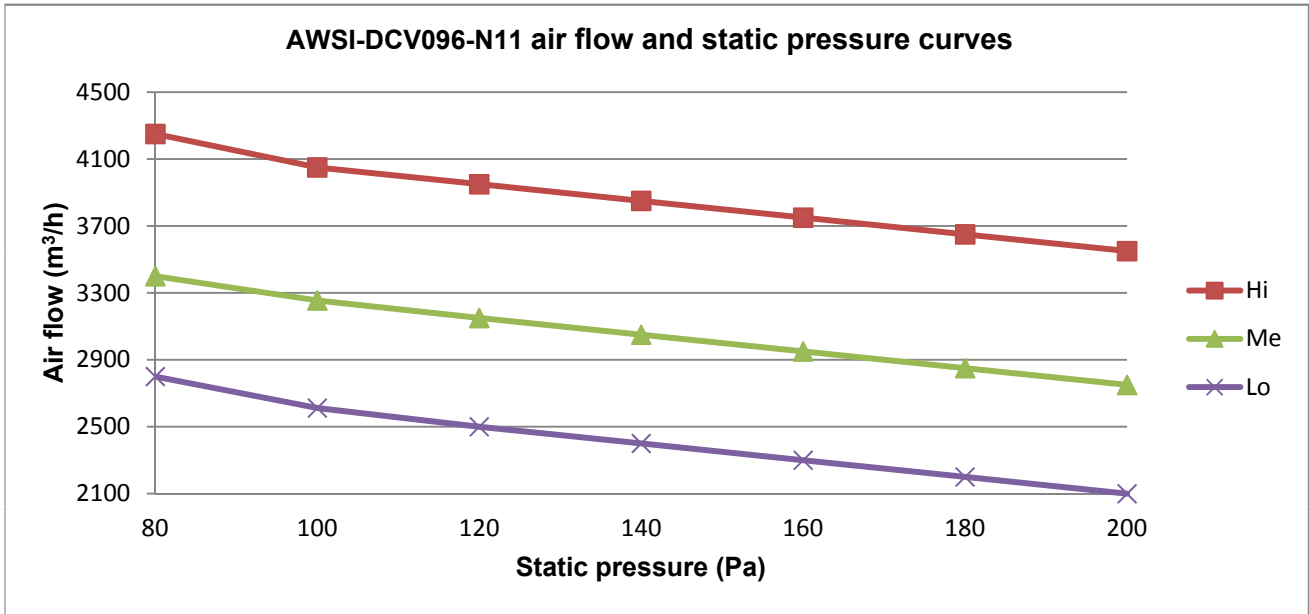
AWSI-DCV030-N11 air flow and static pressure curves



AWSI-DCV038-N11 air flow and static pressure curves

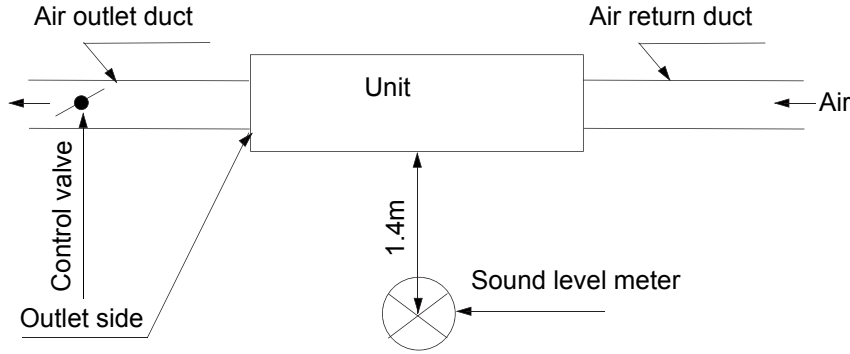






11.8 Sound pressure level

(1) Testing illustrate:



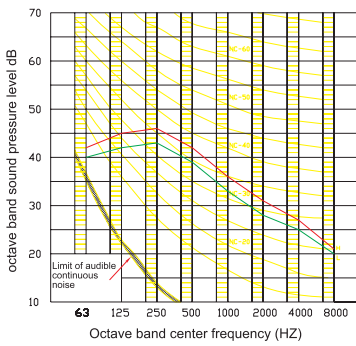
Testing position just below the central of the unit

(2) Testing condition:

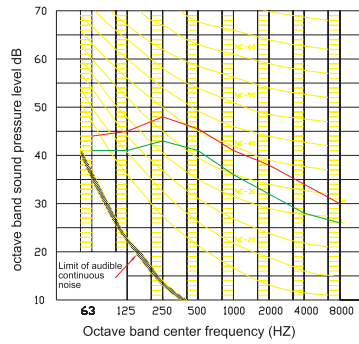
- a. Unit running in the standard condition
- b. Test in the semi-anechoic chamber
- c. Noise level varies from the actual factors such as room structure, etc.

(3) Octave band level:

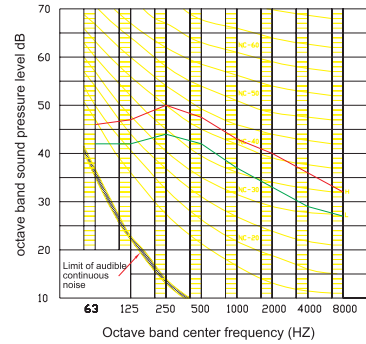
AWSI-DCV018-N11
AWSI-DCV024-N11



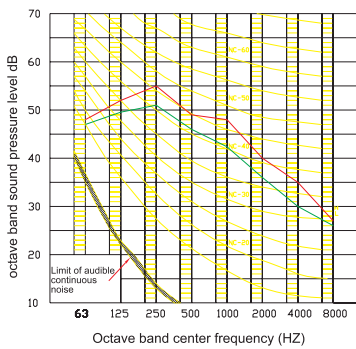
AWSI-DCV030-N11



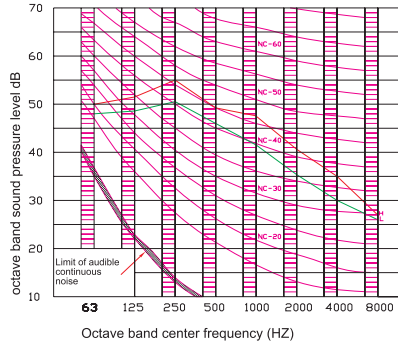
AWSI-DCV038-N11



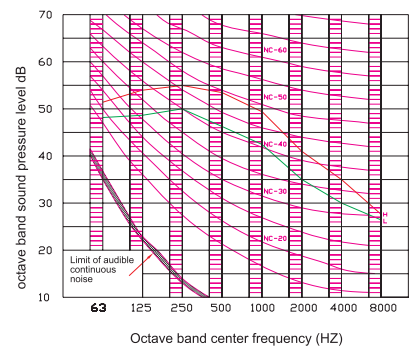
AWSI-DCV048-N11



AWSI-DCV072-N11



AWSI-DCV096-N11



11.9 Installation

11.9.1 Installation Procedures

The standard attached accessories of the units of this series refer to the packing; prepare other accessories according to the requirements of the local installation point of our company.

1. Before installation [before finishing the installation, don't throw away the attached parts required for the installation]

- Determine the route to move the unit to the installation site;
- Don't tear the package open before moving the unit to the installation site. When unpacking is needed, a soft material or protector block with ropes can be used to lift the unit to avoid damaging or scraping of the unit.

2. Select the installation site

(1) The installation site should be selected according the following conditions, which should be approved by users.

- Where an ideal air distribution can be ensured;
- Where there is no blockage in the air passage;
- Where the condensed water can be drained out properly;
- Where the strength can bear the weight of the indoor unit;
- Where enough space can be ensured for maintenance. The outside air should be input from the outdoor directly from the blast pipe. If the blast pipe can't be jointed, the air can't be input from the suspended ceiling. range (refer to Installation of Outdoor Units)
- Where the distance of at least 1m between indoor units, outdoor units, mains supply, connecting wires and television or radio should be kept as to avoid the image disturbance and noises of the above electrical appliances. (Even if 1m can be ensured, noise might occur if there is strong electric wave.) Additionally, equipments, television or other valuables can't be put under the unit as to avoid the condensed water of the unit from dropping into the above articles, causing damaging.

(2) Height of Ceiling:

The ceiling should be located at the place, where the central position of air outlet port is less than 3m high above the ground.

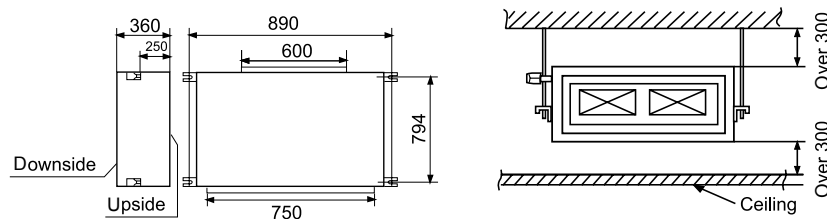
(3) Suspender should be used during installation. Check if the location can bear the weight of the unit. Reinforce it before installation if necessary.

3. Preparation before Installation

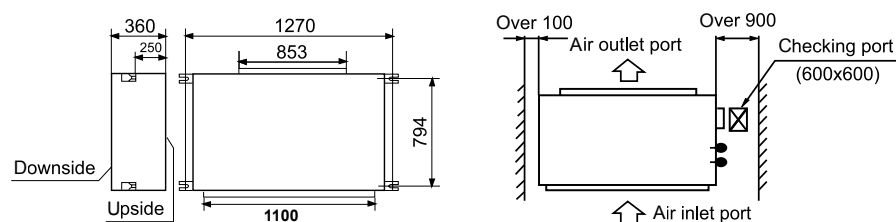
(1) Location relation between inspection hole on the ceiling and the unit and the suspender

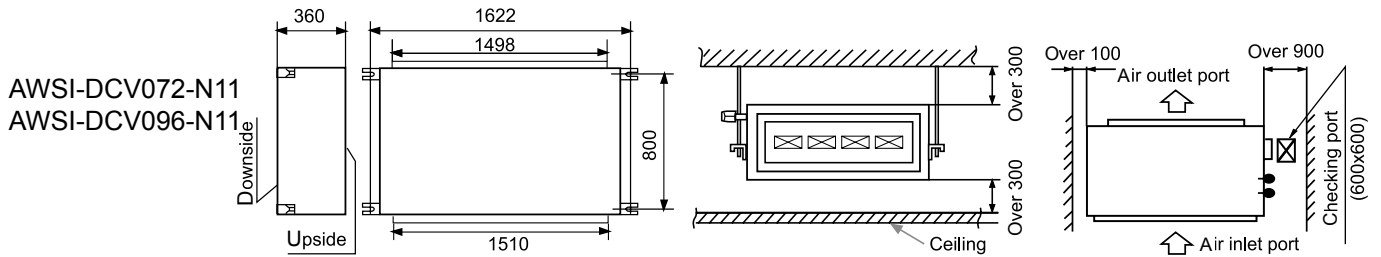
(unit: mm).

AWSI-DCV018-N11
AWSI-DCV024-N11



AWSI-DCV030-N11
AWSI-DCV038-N11
AWSI-DCV048-N11



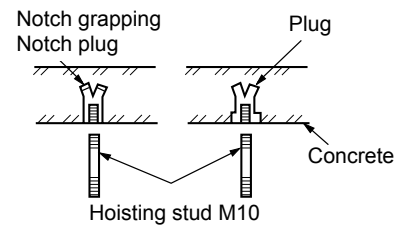


(2) If necessary, make a hole for installation and inspection on the ceiling. (used for the situation with a ceiling)

- For the size of the inspection hole on the ceiling, please refer to the above drawing.
- Before installation, finish all the preparations for all piping connected to indoor units (refrigerant, water drainage) and wiring (connection line of the wired control, connection line between indoor units and outdoor unit) so that they can be connected with indoor units after installation.
- For the inspection hole, the ceiling might be reinforced to keep the evenness of the ceiling and avoid the vibration of the ceiling. For details, please consult the construction contractor.

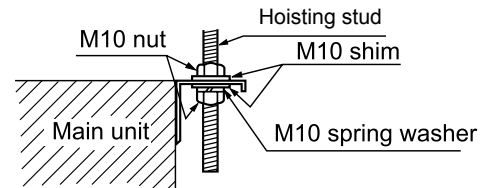
(3) Install the suspender (M10 bolts)

In order to support the weight of the unit, use barb bolts in the situation with a ceiling. In the situation with the new ceiling, use inlaid bolts, embedded bolts or other parts provided on site. Before proceeding the installation, adjust the gap between the bolt and the ceiling.



(4) Installation of indoor units

- Fix the indoor unit with the hoisting stud. If necessary, the machine can be hung on the beam with bolts instead of the hoisting stud.

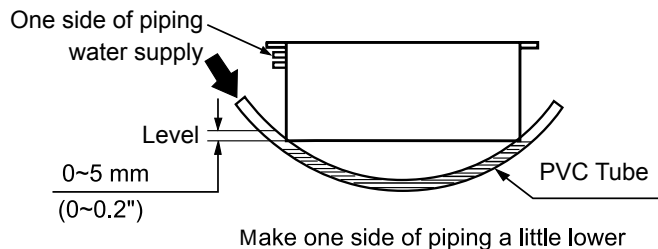


NB:

When the sizes of the master unit don't match the hole on the ceiling, regulate the slot on the hanging bracket.

Adjusting the level

(a) Adjust the level with a level meter or according to the following ways: Make the adjustment as shown in the figure below.



(b) Unless it is regulated to the level position, faults or errors might occur for the floater switch.

Choice of Blowing Wind from Blower

(when using the high performance filter)

The blower is provided with a red terminal and a white terminal. The standard wind choice has been set before delivery. When the use of optional components, such as the high performance filter, causes the static pressure rising, change the connection of the connector mounted on the side of the control cabinet, as shown as follows.

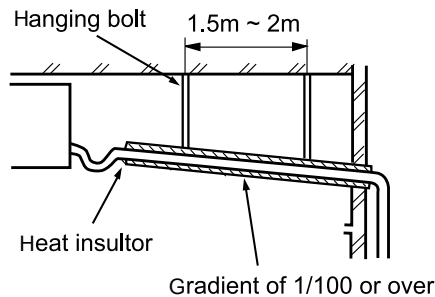
Standard blowing wind (at delivery)		High-speed blowing wind		Super high-speed blowing wind	
One side of control cabinet	Blue	Connector, white White	White	One side of blower	Blue
	Blue				Blue
	Black				Red
One side of control cabinet	Blue	White Red	White Red	One side of blower	Blue
	Blue				Blue
	Black				Brown
One side of control cabinet	Blue	White Red	White Red	One side of blower	Blue
	Blue				Red
	Black				Black

Standard static pressure	Maximal static pressure	
100	196	AD302-482MHERA

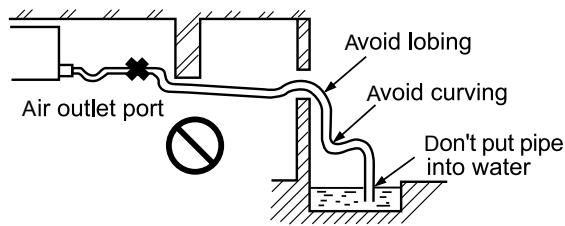
4. Drainpipe

(a) Keep a gradient (1/50-1/100) of the drainpipes and avoid lobbing or curving.

■ Proper Piping

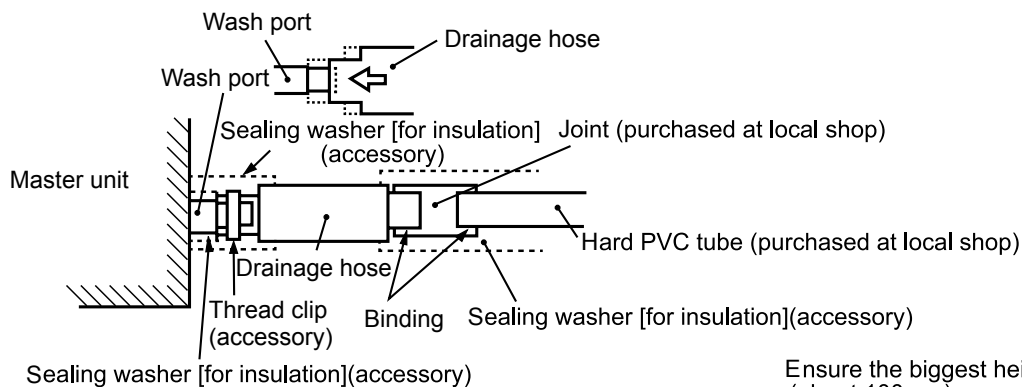


■ Improper Piping



(b) When connecting the drainpipe to the equipment, don't apply too much force on one side of the equipment. Meanwhile, the piping should be positioned as close to the equipment as possible.

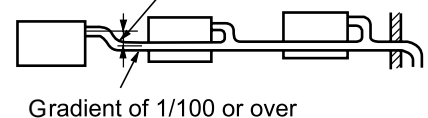
(c) For the drainpipe, the general purpose hard PVC tube can be purchased at local shops. During the connection, insert the end of PVC tube into the wash port and fasten it with drainage hose and thread clip. Binding agents shouldn't be used to connect the wash port and drainage hose.



Ensure the biggest height different (about 100mm)

(d) When the laid drain piping is used for multiple equipments, the public piping should be lower about 100mm than the wash ports of equipments, as shown in the figure.

Thicker pipes should be used for this application.



(e) The hard PVC tube in the room must be provided with the heat insulating layer.

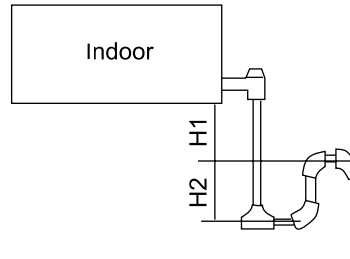
(f) Water trap:

Because it is easy to cause minus pressure at the water drainage hole, once the water level in drainage pan goes up, water will leak. To prevent water leakage, we design a water trap here.

Water trap should be easy to be cleaned. Adopt T-shape connector like below figure. It should be near the unit, as the figure, it is set at the middle of drainage hose.

$H1=100\text{mm}$ or fan motor static pressure

$H2=\frac{1}{2} H1$ (or among 50mm~100mm)



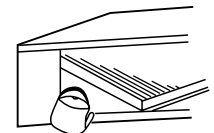
(g) Don't place the drainpipes at the places where there is irritant gas. Don't put the drainpipe directly into the sewer, where there might be gases with sulfur.

Testing Drainage System

- (a) After finishing the electrical system, test the drainage system.
- (b) During testing, make sure that the water flow passes the piping correctly without any water leakage at the connection.
- (c) In the condition of new house, test the drainage system before fitting up the ceiling.
- (d) Even if it is installed in the season needed to heating, the testing should also be performed.

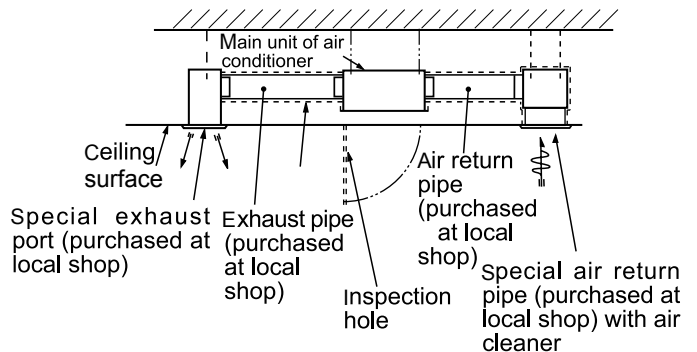
Procedures

- (a) Charge 1000cc of water to the equipment via air outlet port.
- (b) During cooling operation, check the drainage system.

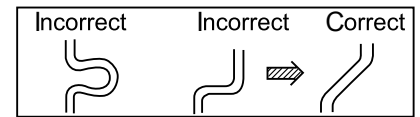


5. Installation of Air Return & Air Exhaust Duct

For the choice and installation of air return port, air return pipe, air exhaust port and exhaust pipe, please consult service personnel of Airwell company. Calculate the design chart and exterior static pressure, and select the exhaust pipe with appropriate length and shapes.

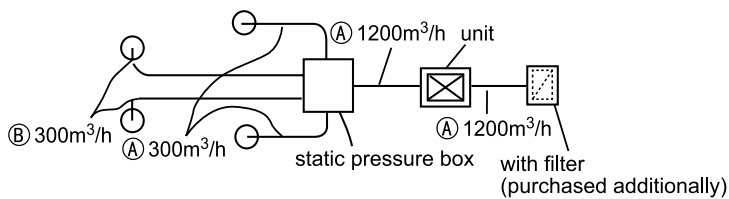


- The length difference between pipes should be limited to be less than 2:1;
- Make the piping as short as possible;
- Keep the min. elbow quantity;
- Wind the heat insulating material around the flange between the master unit and the exhaust pipe for heat insulation and sealing. Install the piping before fitting up the ceiling.



6. Calculation of simple duct

Assume the friction resistance per unit is 1Pa/m, when the size of one side of air pipe is 250mm, like below figure:



	Flux	Gas pipe (mm×mm)
Ⓐ	1200m³/h (20m³/min)	250×310
Ⓑ	300m³/h (5m³/min)	250×120

■ Calculation of resistance in duct:

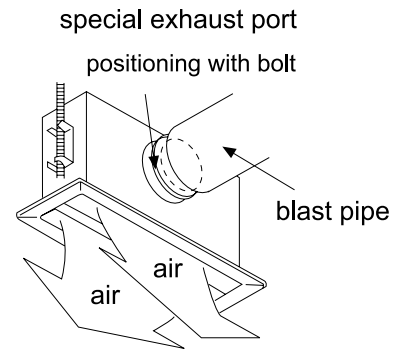
Straight pipe	1Pa per meter, 1Pa/m
Bended section	Each bend regarded as 3-4m of straight pipe
Air outlet	25Pa per outlet
Static pressure box	50Pa per static pressure box
Inlet grille (with filter)	40Pa for each one

■ Simple duct selection Note: 1Pa/m

Flux (m³/h)	Shape	Square pipe
	Item	Size (mm×mm)
100		250×60
200		250×90
300		250×120
400		250×140
500		250×170
600 (10)		250×190
800		250×230
1000		250×270
1200 (20)		250×310
1400		250×350
1600		250×390
1800 (30)		250×430
2000		250×470
2400		250×560
3000 (50)		250×650
3500		250×740
4000		250×830
4500		250×920
5000		250×1000
5500		250×1090
6000 (100)		250×1180

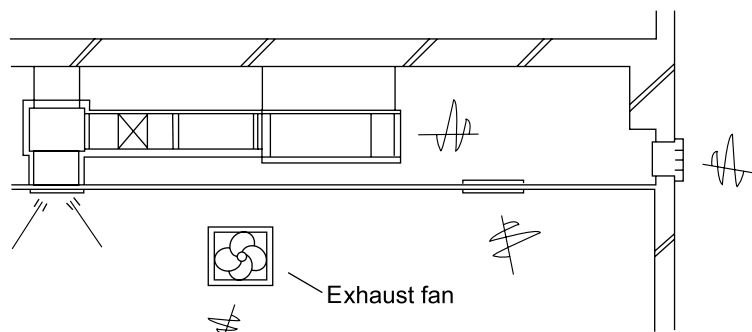
7. Cautions in Installation of Air Return Pipe & Exhaust Pipe

- It is recommended to use the blast pipes, which can be anti-condensation and absorb sound. (purchased at local shops)
- Complete the installation of the blast pipes before fitting up the suspended ceiling.
- Heat insulation should be made for the blast pipes.
- The special exhaust port should be arranged at the place where the air is distributed evenly.
- An inspection hole should be left on the surface of the ceiling for future maintenance.



8. Examples for Bad Installation

- The unit is not equipped with the air return pipe and the inner side of the suspending ceiling is used as the blast pipe, causing the humidity increasing due to irregular air mass, strong wind or sunlight from the outside world.
- There might be condensate dropping down at the outer side of the blast pipe. The humidity is high, even if the inner side of the suspended ceiling isn't used as a blast pipe in new concrete buildings. At this time, the whole body should use the thermo wool for heat preservation (the thermo wool can be packed with a steel wire).
- It is operated under the conditions beyond the limits, leading to the overload of the compressor.
- Affected by the capacity of the exhaust fan, and the strong wind and wind direction in the outer flue, when the blowing quantity of the air conditioner exceeds the limits, the drained water of the heat exchanger will overflow, causing water leakage.



Example of bad installation

9. Refrigerant Pipe

Pipe Length & Height Difference

Please refer to the attached manual of outdoor units.

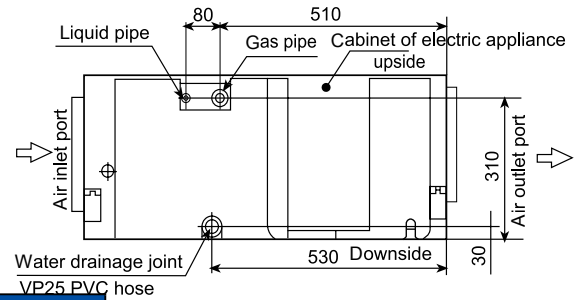
Piping Materials & Heat Insulating Materials

As to prevent condensation, heat insulating treatment should be performed. The heat insulating treatment for piping should be done respectively.

Piping Material	Hard PVC tube VP31.5mm (inner bore)
Heat Insulating Material	Vesicant polythene thickness: over 7mm

Pipe Materials & Specifications

Model		AWSI-DCV018-N11	AWSI-DCV024~48-N11
Tubing Size (mm)	Gas pipe	Φ12.7	Φ15.88
	Liquid pipe	Φ6.35	Φ9.52
Tubing Material	Phosphor deoxy bronze seamless pipe (TP2) for air conditioner		



Model		AWSI-DCV072-N11	AWSI-DCV096-N11
Tubing Size (mm)	Gas pipe	Φ25.4	Φ25.4
	Liquid pipe	Φ9.52	Φ9.52
Tubing Material	Phosphor deoxy bronze seamless pipe (TP2) for air conditioner		

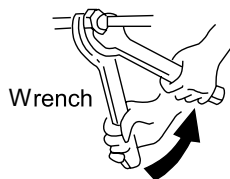
Refrigerant Recharge Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount or compressor failure can be caused by filling too much or little refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table.



Outer diameter of tubing (mm)	Mounting torque
Φ6.35	11.8~13.7N·m
Φ9.52	32.7~39.9N·m
Φ12.7	49.0~53.9N·m
Φ15.88	78.4~98.0N·m

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one master unit.]

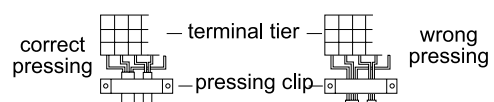
Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting



- Connecting circular terminals:**
The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.
- Connecting straight terminals:**
The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.
- Pressing connecting line**
After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



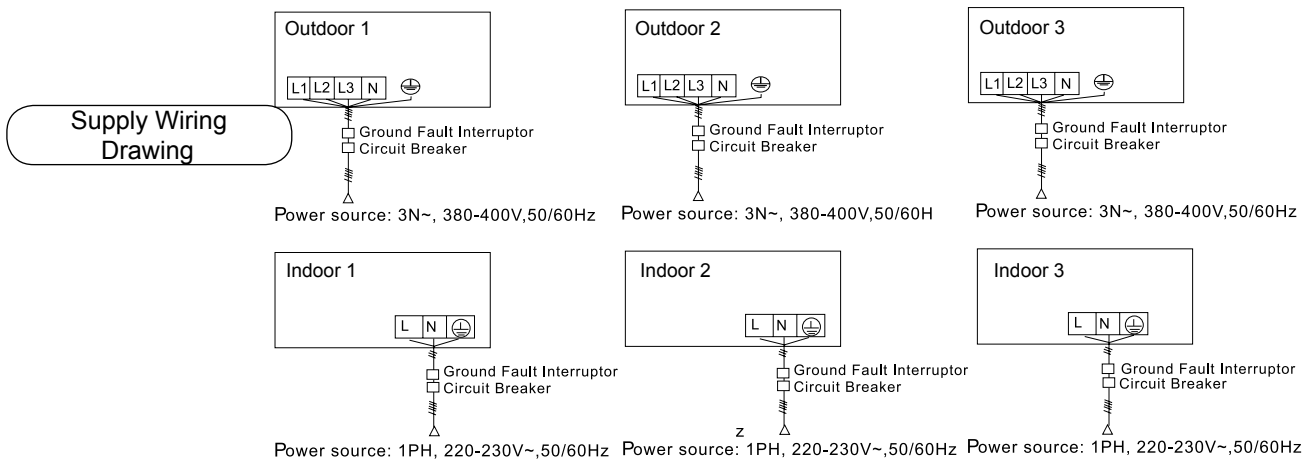
11.9.2 Electrical Wiring

⚠ WARNING

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient.
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents.
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line.

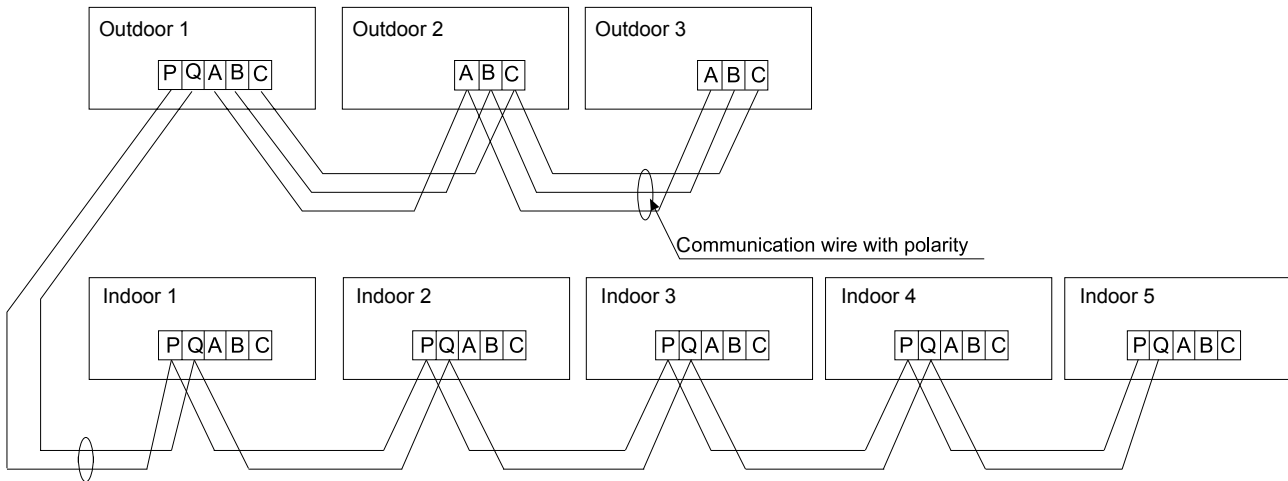
⚠ ATTENTION

- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while \oplus should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line and signal line are provided by users. Parameters for power lines are shown as below: $3 \times 1.0-1.5$ mm²; parameters for signal line: $2 \times 0.75-1.25$ mm² (shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

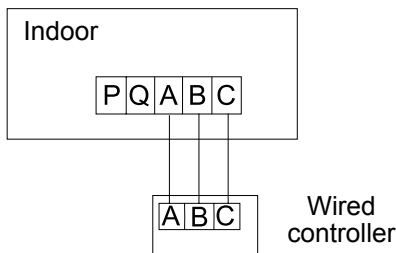
Signal Wiring Drawing



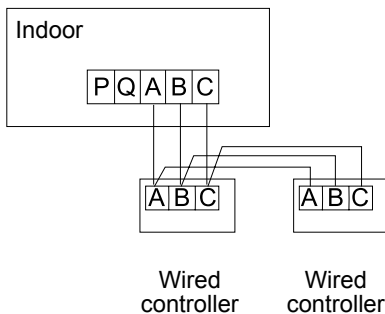
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

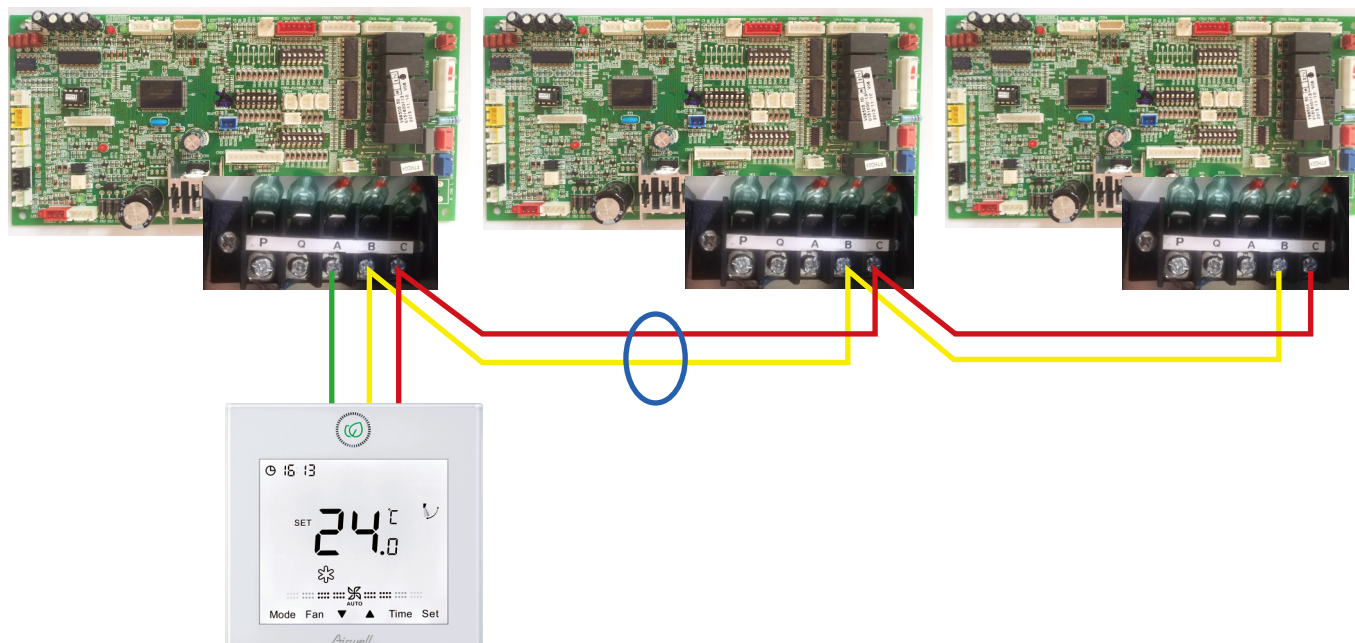


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800113 PCB



Note:

1. The wired controller connects with the ABC terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity

The combination of multiple indoor units can be controlled by wired controller or remote controller.

※ Switching mode of Wired control master unit/ Wired control slave unit/ remote control types can be used for switching over ※

Socket/dip switch \ Setting mode	Wired control master unit	Wired control slave unit	Remote control
SW01-[1][2][3][4]	All OFF	[0][0][0][1]	All OFF
CN21 socket	Null	Null	Connect to remote receiver
Terminal block (control)	A, B, C connect with wired controller	B, C connect with wired controller	A, B, C Null

Note:

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Indoor power supply wiring & signal wiring between indoor and outdoor & signal wiring between indoor.

Total current of indoor units (A) \ Items	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
					Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
<7	2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line	
≥7 and <11	4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16	6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22	8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27	10	40	32	32 A, 30 mA, 0.1S or below		

- ※ The electrical power line and signal lines must be fastened tightly.
- ※ Every indoor unit must have the ground connection.
- ※ The power line should be enlarged if it exceeds the permissible length.
- ※ Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- ※ It is not permissible if the whole length of signal line exceeds 1000m.

Signal wiring of wired controller

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

11.9.3 Test Run

Before Test Run

- Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1MΩ. It can't be operated if it is below 1MΩ.
- Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.
- Check if the arrangements of the drainpipe and connection line are correct.
- The drainpipe shall be placed at the lower part while the connection line placed at the upper part.
- Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials.
- The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.
- Checkup of Installation

- | | |
|---|--|
| <input type="checkbox"/> Check if the mains voltage is matching | <input type="checkbox"/> Check if the installation place meets the requirement |
| <input type="checkbox"/> Check if there is air leakage at the piping joints | <input type="checkbox"/> Check if there is too much noise |
| <input type="checkbox"/> Check if the connections of mains power and indoor & outdoor units are correct | <input type="checkbox"/> Check if the connecting line is fastened |
| <input type="checkbox"/> Check if the serial numbers of terminals are matching | <input type="checkbox"/> Check if the connectors for tubing are heat insulated |
| <input type="checkbox"/> | <input type="checkbox"/> Check if the water is drained to the outside |
| | <input type="checkbox"/> Check if the indoor units are positioned |
| | <input type="checkbox"/> |

Ways of Test Run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.

When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

- Set the wired controller to cooling/heating mode, press "ON/ OFF" button for 5 seconds to enter into the compulsive cooling/heating mode. Repress "ON/ OFF" button to quit the compulsive running and stop the operation of the air conditioner.

12. Console Type Indoor Unit (new)

12.1 Features



AW-EAV009-N11

AW-EAV012-N11

AW-EAV018-N11

Compact unit, space saving

The console indoor unit is very slim and will be harmonious with room. It can be placed at the corner, and it is very space saving.

Quiet operation

Thanks to the low noise centrifugal fan, the unit always works quietly, it lets your life more comfortable.

Dual air sending position

The console indoor unit can send the air from the top and the bottom, which will realize the indoor temperature be adjusted soon.

High efficiency filter

The console indoor unit adopts high efficiency filter to improve the air quality.

12.2 Specification

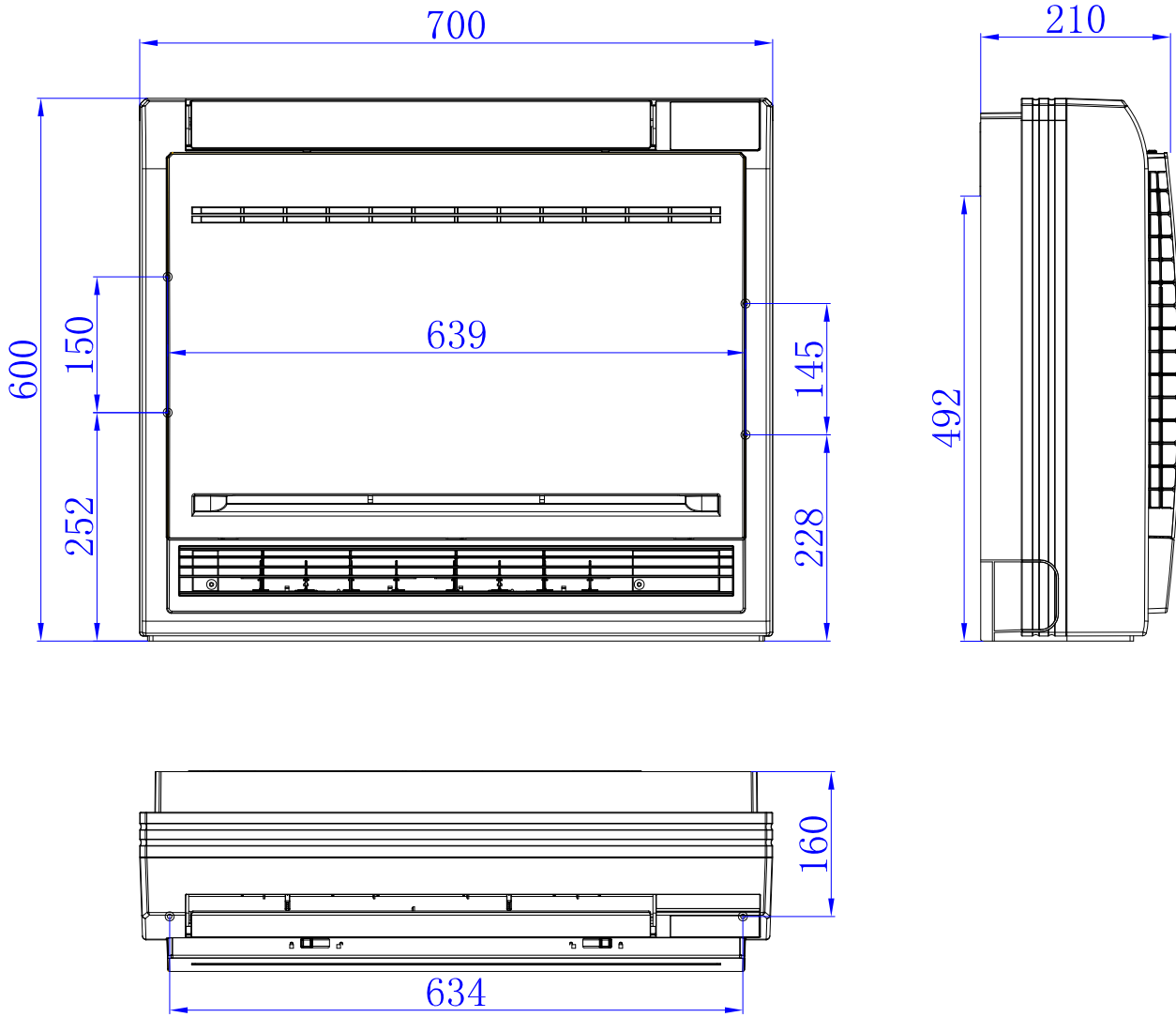
MODEL		AW-EAV009-N11	
Power supply		Ph-V-Hz	1,220~230,50/60
Cooling	Capacity	kBtu/h	9.5
	Capacity	kW	2.8
	Power input	W	31
	Current	A	0.30
Heating	Capacity	kBtu/h	10.9
	Capacity	kW	3.2
	Power input	W	31
	Current	A	0.30
	Heating capacity at low temp.	kW	2.1
Operating current		A	0.30
Power consumption		kW	0.031
Indoor motor	Brand		ZWK465A000114 /SIC-41CVJ-F130-20
	Model		Broad-Ocean/Nidec
	Type		DC
	Insulation class		E
	IP class		41
	Power input	W	31
	Power output (up/down)	W	30
	Speed (High/Middle/Low)	rpm	
Indoor fan	Brand		Shunwei
	Type		Centrifugal
	Quantity		1
Indoor coil	a. Number of rows		2
	b. Tube pitch (a)×row pitch(b)	mm	21*13
	c. Fin spacing	mm	1.4
	d. Fin type (code)		
	e. Tube outside dia. and type	mm	
	f. Coil length×height×width	mm	509×378×26
	g. Number of circuits		3

MODEL			AW-EAV009-N11
Cabinet	Cabinet coating type		Plastic
	Control box IP class		IP20
Construction	Sheet metal thickness		/
	Drain pan material		PS
	Drain pan insulation		22
	Drain pump option		NO
	Branch outlet option		NO
Indoor wall	Material		Plastic
	Thickness	mm	/
	Double or single skin		Single
Air filter	Material		PP
	Mesh		15*13
	Pressure drop	Pa	5
Piping dimension	Liquid pipe	mm	6.35
	Gas pipe	mm	12.7
	Drain hose	mm	16
Fresh air dimension		mm	/
Sound pressure level (H/M/L)		dB(A)	45/42/39/35/32
Sound power level (H/M/L)		dB(A)	58/55/52/48/45
Standard static pressure		Pa	0
Indoor air flow (H/M/L)		m ³ /h	
Dimension (W*H*D)		mm	700/210/600
Packing (W*H*D)		mm	783/303/695
Net weight		kg	15.2
Gross weight		kg	18.7
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.			

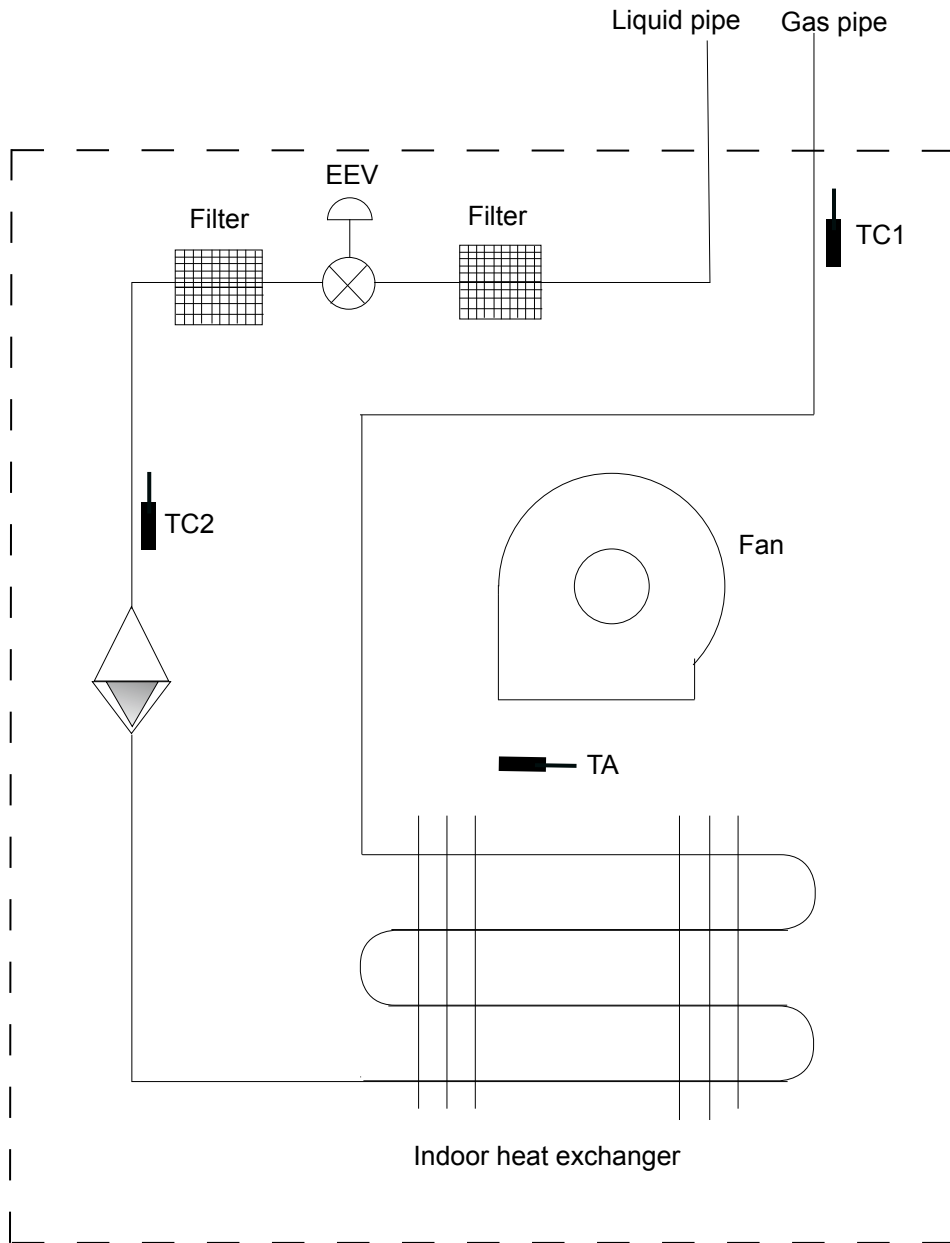
MODEL			AW-EAV012-N11	AW-EAV018-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Cooling	Capacity	kBtu/h	12.3	17
	Capacity	kW	3.6	5
	Power input	W	34	36
	Current	A	0.32	0.34
Heating	Capacity	kBtu/h	13.6	18.5
	Capacity	kW	4	5.5
	Power input	W	34	36
	Current	A	0.32	0.34
	Heating capacity at low temp.	kW	2.6	3.6
Operating current		A	0.32	0.34
Power consumption		kW	0.034	0.036
Indoor motor	Brand		ZWK465A000114 /SIC-41CVJ-F130-20	ZWK465A000114 /SIC-41CVJ-F130-20
	Model		Broad-Ocean/Nidec	Broad-Ocean/Nidec
	Type		DC	DC
	Insulation class		E	E
	IP class		41	41
	Power input	W	34	36
	Power output (up/down)	W	30	30
	Speed (High/Middle/Low)	rpm	750/650/550 /450/350	800/700/600 /500/350
Indoor fan	Brand		Shunwei	Shunwei
	Type		Centrifugal	Centrifugal
	Quantity		1	1
Indoor coil	a. Number of rows		2	2
	b. Tube pitch (a)×row pitch(b)	mm	21*13	21*13
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	
	f. Coil length×height×width	mm	509×378×26	509×378×26
	g. Number of circuits		3	3

MODEL			AW-EAV012-N11	AW-EAV018-N11
Cabinet	Cabinet coating type		Plastic	Plastic
	Control box IP class		IP20	IP20
Construction	Sheet metal thickness		/	/
	Drain pan material		PS	PS
	Drain pan insulation		22	22
	Drain pump option		NO	NO
	Branch outlet option		NO	NO
Indoor wall	Material		Plastic	Plastic
	Thickness	mm	/	/
	Double or single skin		Single	Single
Air filter	Material		PP	PP
	Mesh		15*13	15*13
	Pressure drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	12.7	12.7
	Drain hose	mm	16	16
Fresh air dimension	mm	/	/	
Sound pressure level (H/M/L)	dB(A)		47/44/41/38/34	48/45/42/39/35
Sound power level (H/M/L)	dB(A)		60/57/54/51/47	61/58/55/52/48
Standard static pressure	Pa		0	0
Indoor air flow (H/M/L)	m ³ /h		580/500/420 /350/270	620/540/460 /390/270
Dimension (W*H*D)	mm		700/210/600	700/210/600
Packing (W*H*D)	mm		783/303/695	783/303/695
Net weight	kg		15.2	15.2
Gross weight	kg		18.7	18.7
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

12.3 Dimension

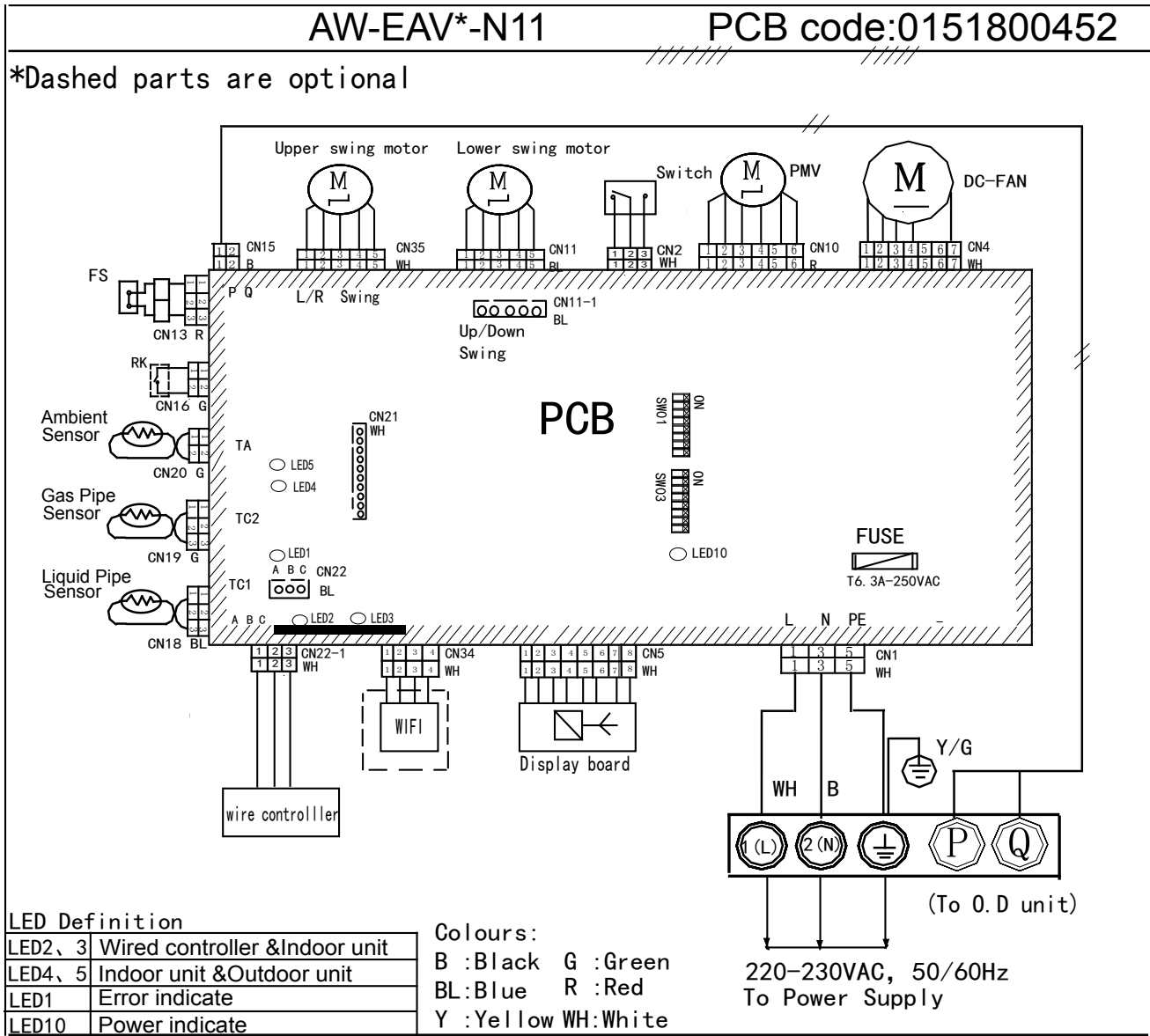


12.4 Piping diagram



Console Type
Indoor Unit

12.5 Wiring diagram



12.6 Electric characteristics

Units					Power supply		Indoor fan motor		Power input (w)	
Model	Phase	FQY	Voltage	Volt range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AW-EAV009-N11	1	50/60	220	198~242	0.38	1.20	30	0.30	31	31
AW-EAV012-N11	1	50/60	220	198~242	0.39	1.24	30	0.31	34	34
AW-EAV018-N11	1	50/60	220	198~242	0.43	1.36	30	0.34	36	36

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker

Output: Fan motor rated output (w)

FLA: Full load amps (A)

Note:

1. *Voltage range*

The units are applicable for the electrical systems where voltage supplied to unit is in the range.

2. *Maximum allowable voltage unbalance between phases is 2%.*

3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$

4. *Power supply uses the circuit breaker.*

12.7 Air velocity and temperature distribution

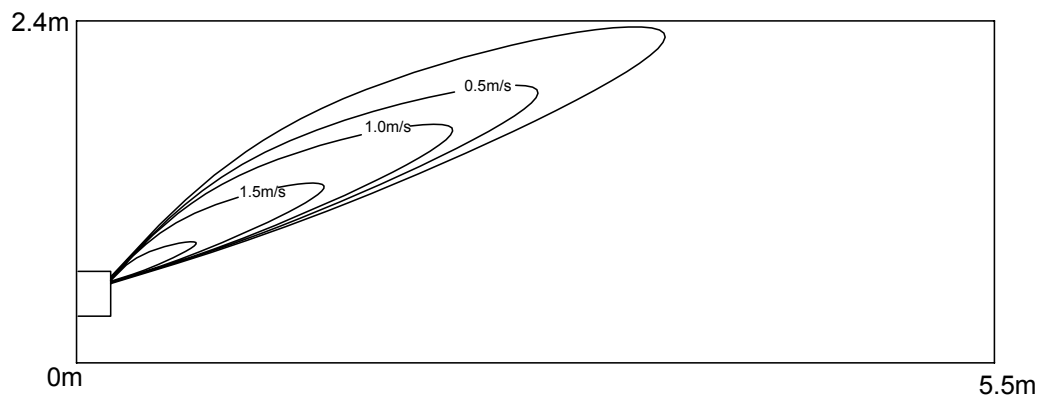
A) On the floor

a. Cooling / Air velocity distribution

Cooling

Blow angle: 25

Air velocity distribution

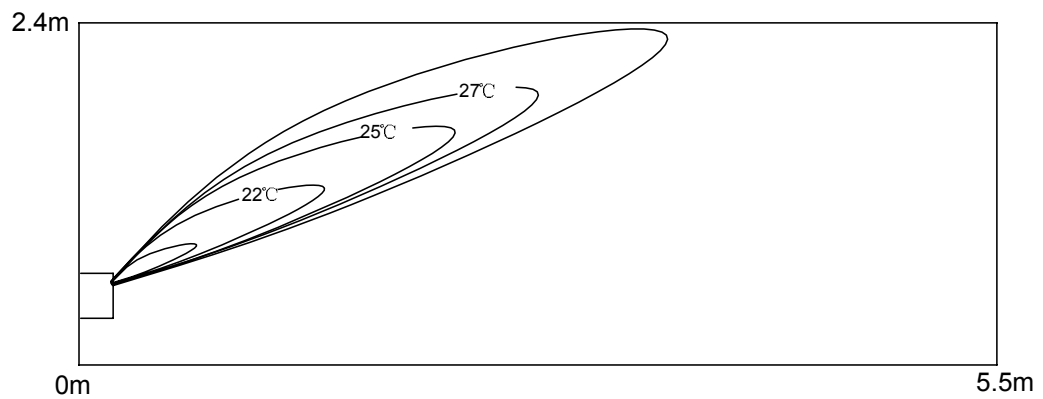


b. Cooling / Temperature distribution

Cooling

Blow angle: 25

Temperature distribution

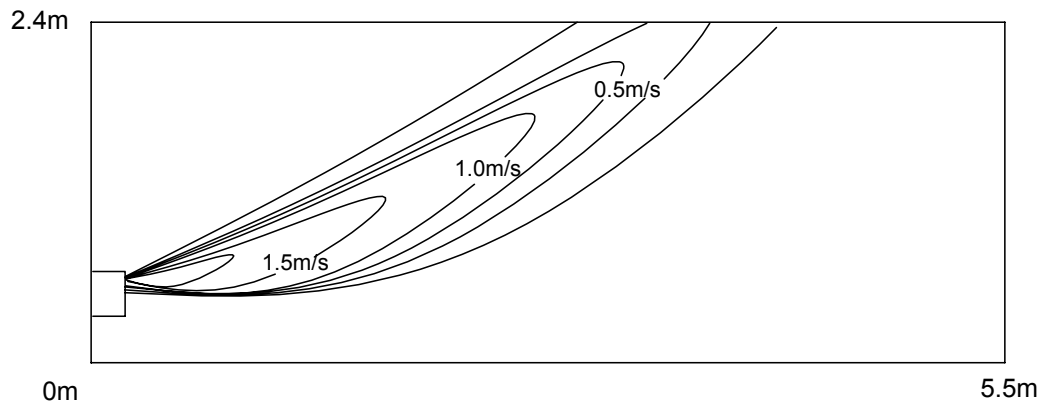


c. Heating / Air velocity distribution

Heating

Blow angle: 5

Air velocity distribution

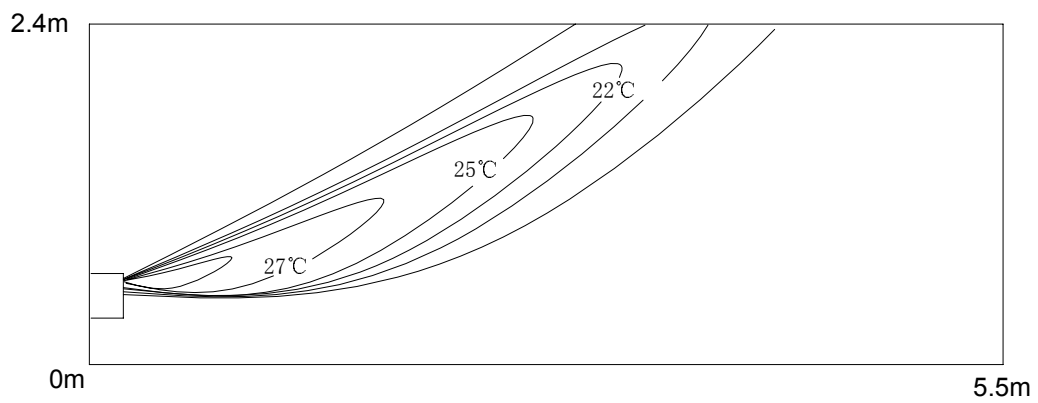


d. Heating / Temperature distribution

Heating

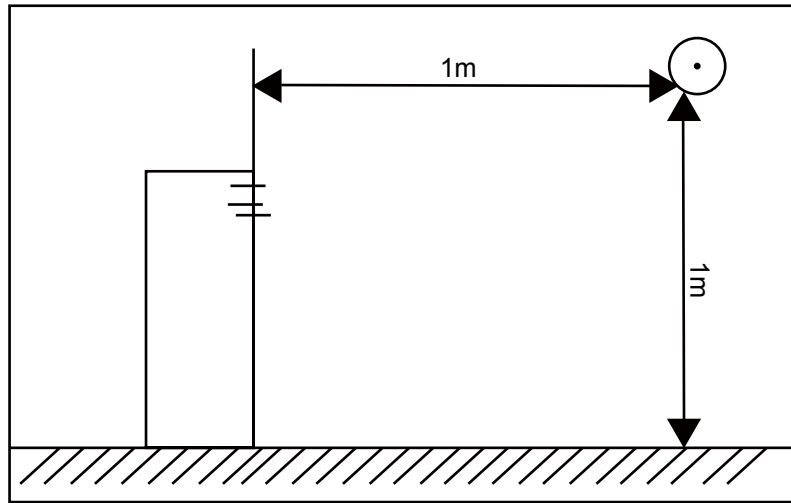
Blow angle: 5

Temperature distribution



12.8 Sound pressure level

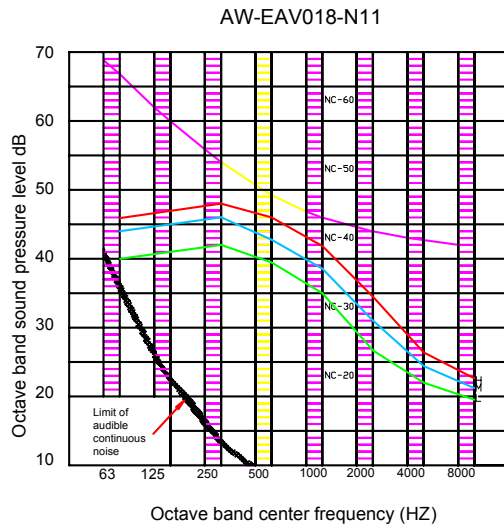
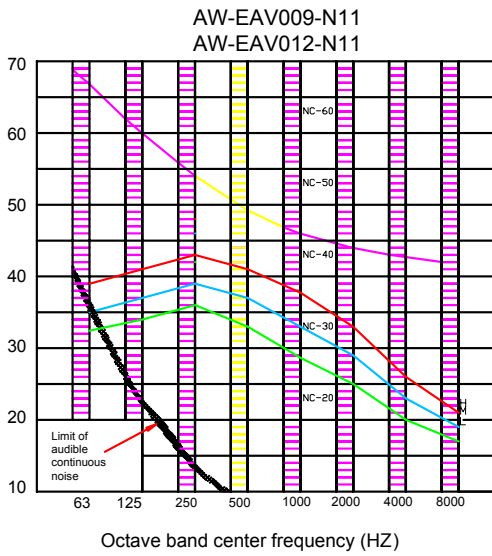
(1) Testing illustrate:



(2) Testing condition:

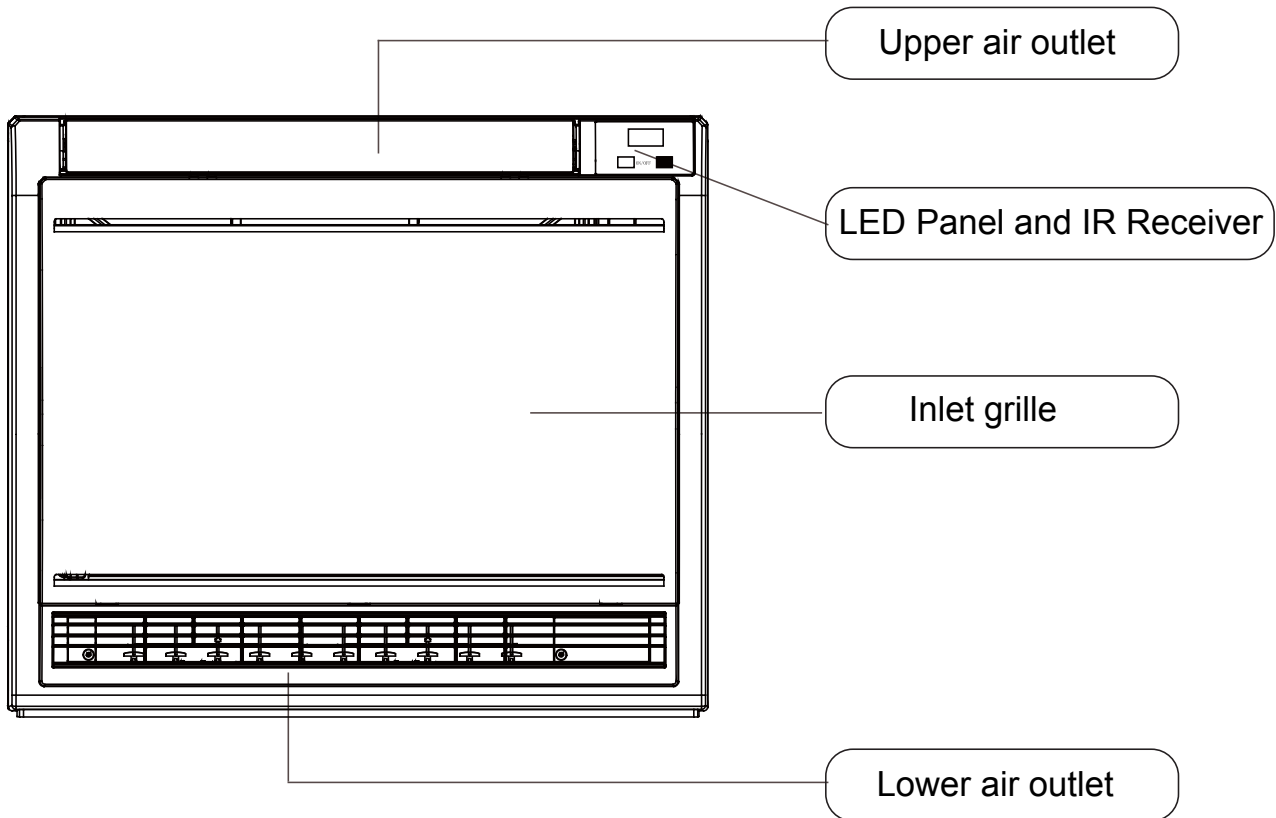
- Unit running in the nominal condition.
- Test in the semi-anechoic chamber.
- Noise level varies from the actual factors such as room structure, etc.

(3) Octave band level:

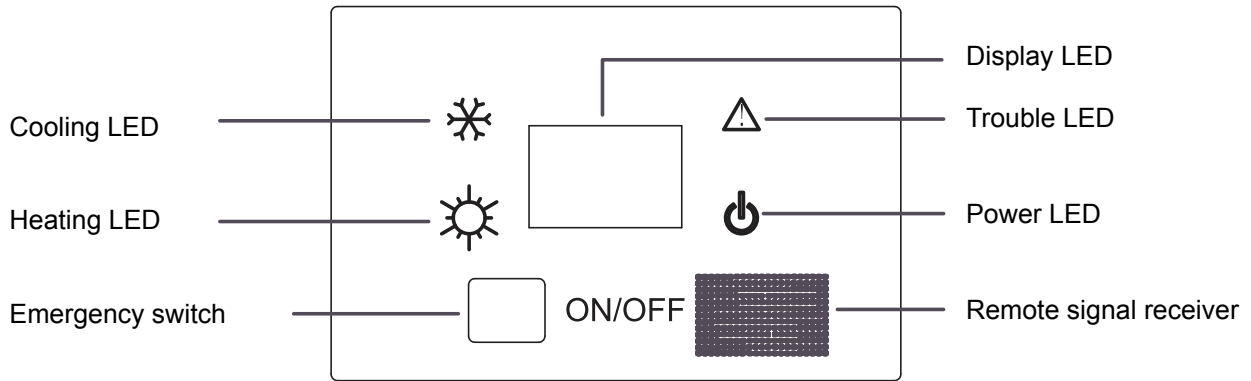


12.9 Installation

12.9.1 Parts

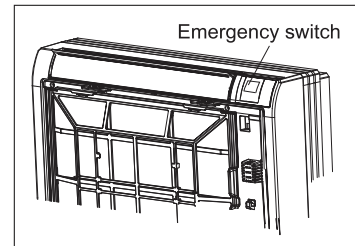


12.9.2 Operation hints



Emergency operation of indoor unit

- When the remote controller is lost or damaged, the emergency switch can be operated under the panel. (as shown in the figure).
- In the OFF state, pressing the emergency switch can turn on automatic operation. Air conditioning automatically selects operation mode according to indoor temperature (cooling or heating).
- However, temperature setting and wind speed can not be changed. In the ON state, press this button to stop the air conditioner.

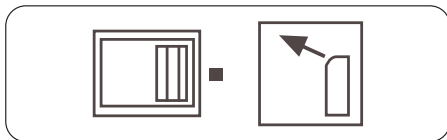


Indoor air supply control

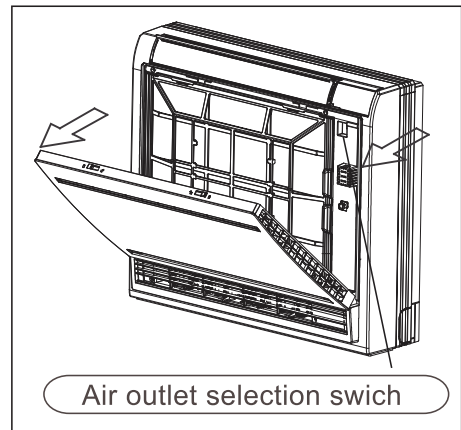
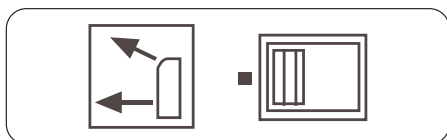
⚠ CAUTION

- Before opening the front grille, be sure to stop the operation and turn the breaker OFF.
- Do not touch the metal parts on the inside of the indoor unit, as it may result in injury.

- Regardless of the operating mode or situation, air blows from the upper air outlet.
- Use this switch when you do not want air coming out of lower air outlet. (While sleeping etc..)



- Air conditioner automatically decides the appropriate blowing pattern depending on the operating mode and situation.
- During Cool/Dry and Fan mode, so that cold air does not come into direct contact with people, air is blown upper air outlet.



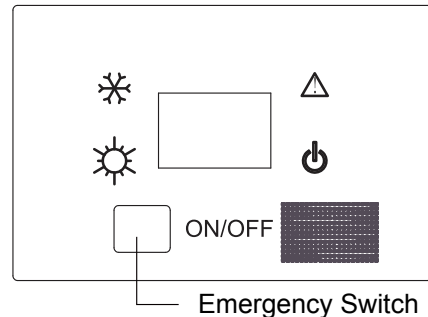
EMERGENCY OPERATION AND TEST OPERATION

EMERGENCY OPERATION

Carry out this operation only when the remote controller is defective or lost.

Unit start

When the emergency operation switch is pressed, a sound you can hear, which means the start of this operation.



Follow the requirements below.

Room temperature	Designated temperature	Timer mode	Air flow speed	Operation mode	Anion
>23°C	26°C	None	AUTO	COOL	None
≤23°C	23°C	None	AUTO	HEAT	None

Unit stop (to cancel emergency operation)

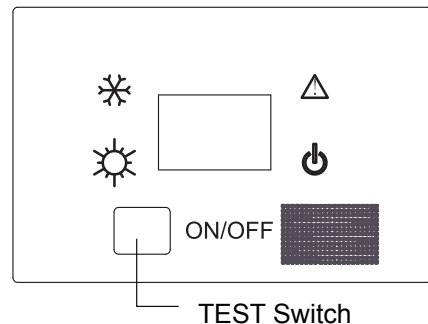
Press the emergency switch and hear a sound, the unit stops.

TEST OPERATION

Use this switch in the test operation when the room temperature is less than 16 °C, do not use it in the normal operation.

Unit start

Continue to press the test operation switch for more than 5 seconds. After you hear the "BI" sound twice, release your finger from the switch, the test operation starts and the air conditioner starts with the air flow speed setting "HI".



Unit stop (to cancel test operation)

Push the test run switch or operate with remote controller to cancel the test run.

If you use the remote controller to cancel the test run, the conditioner will then run as per the working mode displayed on the remote controller.

Power failure resume (please set and apply as necessary)

With setting of power failure resume, if sudden power failure occurs, the unit will resume original operation when power is supplied again.

Setting method:

with ON of remote controller (except TIMER and FAN), repeatedly press SLEEP button 10 times in 5 seconds, after 4 Beep from the buzzer, the unit comes into power failure resume mode.

To cancel:

press SLEEP button continuously 10 times in 5 seconds, the buzzer sounds Beep twice and power failure resume function is canceled.

Note:

When sudden power failure happens during unit operation in power failure resume mode, if the air conditioner is not desired for use in a long period, please shut off the power supply in case that the unit automatically resume operation when power is re-supplied, or press ON/OFF to turn off the unit when power resumes.

Special function

A. Emergency switch:

- a) Press the emergency switch in stop condition, indoor unit operate with AUTO, AUTO SPEED, 24 Setting modes, pressure the emergency switch in start condition, indoor unit will stop operation.
- b) Malfunction history list checking: In cooling or heating mode, using the remote controller set automatic wind speed, press Press SWING button 6 times can query the recent history of fault, the times the buzzer rang or timing lights flashing times stands for a recent fault code .

B. Temp. consumption:

The heating mode, the temp. compensation range is $-14 \sim 0^{\circ}\text{C}$.

Set the temp. consumption in Heating mode with remote controller, heating mode ,set 30°C as the reference point, press the sleep button 7 times, the buzzer ring 2 times, the unit enter temp. consumption condition. Temp. consumption data=current temp.- 30°C

In the cooling mode, the temp. compensation range is $-7 \sim 7^{\circ}\text{C}$.

Set the temp. consumption in Cooling mode with remote controller, cooling mode ,set 23°C as the reference point, press the sleep button 7 times in 5 seconds , the buzzer ring 2 times, the unit enter temp. consumption condition. Temp. consumption data=current temp.- 23°C

C. Compulsive Defrost:

In heating mode, setting high speed ,set temp. is 30°C , press sleep button for 6 times, buzzer short ring 3 times, unit enter manual defrost mode..

D. Auto start function:

In on condition ,press the sleep button 10 times within 5 seconds, buzzer short ring 4 times stands for enter auto restart function; press the sleep button 10 times within 5 seconds, buzzer short ring 2 times stands for exit auto restart function .

The memory information: on/off condition, mode, fan speed, setting temp., swing position.

E. Room card Function:

Room card function can realize by remote controller.

Press the light button 12 times with remote controller,if the buzzer rings 4 times that the room card is valid, if the buzzer rings 2 times that the room card is invalid.

Note:

If the wired controller is selected, then the implementation of special functions of A, B, C and D can refer to the wired controller manual. E function shall be set up by the installation personnel during debugging and installation.

12.9.3 Installation Procedures

CAUTIONS:

To ensure proper installation, read "Cautions" carefully before working. After installation, start the unit correctly and show customers how to operate and maintain the unit.

Meanings of Warning and Cautions:

⚠ WARNING: Serious injury or even death might happen, if it is not observed.

⚠ CAUTION: Injury to people or damages to machine might happen, if it is not observed.

⚠ WARNING:

- Installation shall be done by professional people, don't install unit by yourself. Incorrect installation will cause water leakage, electric shock or fire.
- Install unit as per the Manual. Incorrect installation will cause water leakage, electric shock or fire accident.
- Be sure to use specified accessories and parts. Otherwise, water leakage, electric shock, fire accident or unit falling down may happen.
- Unit should be placed on a place strong enough to hold the unit. Or, unit will fall down causing injuries.
- When install the unit, take in consideration of storms, typhoon, earthquake. Incorrect installation may cause unit to fall down.
- All electric work shall be done by experienced people as per local code, regulations and this Manual.
- Use exclusive wire for the unit. Incorrect installation or undersized electric wire may cause electric shock or fire accident.
- All the wires and circuit shall be safe. Use exclusive wire firmly fixed. Be sure that external force will not affect terminal block and electric wire. Poor contact and installation may cause fire accident.
- Arrange wire correctly when connecting indoor and outdoor power supply. Fix terminal cover firmly to avoid
- In case refrigerant leakage occurred during unit installation, keep a good ventilation in the room.
- Poisonous gas will occur when meet with fire.
- Check the unit upon installation. Be sure there is no leakage. Refrigerant will induce poisonous gas when meet heat source as heater, oven, etc.
- Cut power supply before touching terminal block.

⚠ CAUTION:

- Unit shall be grounded. But grounding shall not be connected to gas pipe water pipe, telephone line. Poor grounding will cause electric shock.
- Be sure to install a leakage breaker to avoid electric shock.
- Arrange water drainage according to this Manual. Cover pipe with insulation materials in case dew may occur. Unproper installation of water drainage will cause water leakage and wet your furniture.
- To maintain good picture or reduce noise, keep at least 1 m from T.V. radio, when install indoor and outdoor unit, connecting wire and power line. (If the radio wave is relatively strong, 1 m is not enough to reduce noise).
- Don't install unit in following places:
 - (a) Oil mist or oil gas exists, such as kitchen, or, plastic parts may get aged, or water leakage.
 - (b) Where there is corrosive gas. Copper tube and welded part may be damaged due to corrosion, causing leakage.
 - (c) Where there is strong radiation. This will affect unit's control system, causing malfunction of the unit
 - (d) Where flammable gas, dirt, and volatile matter (thinner, gasoline) exist, These matter might cause fire accident.
- Refer to paper pattern when installing unit.



Cautions for the installation personnel

Don't fail to show customers how to operate unit.

BEFORE INSTALLATION <Don't discard any accessories until comp>

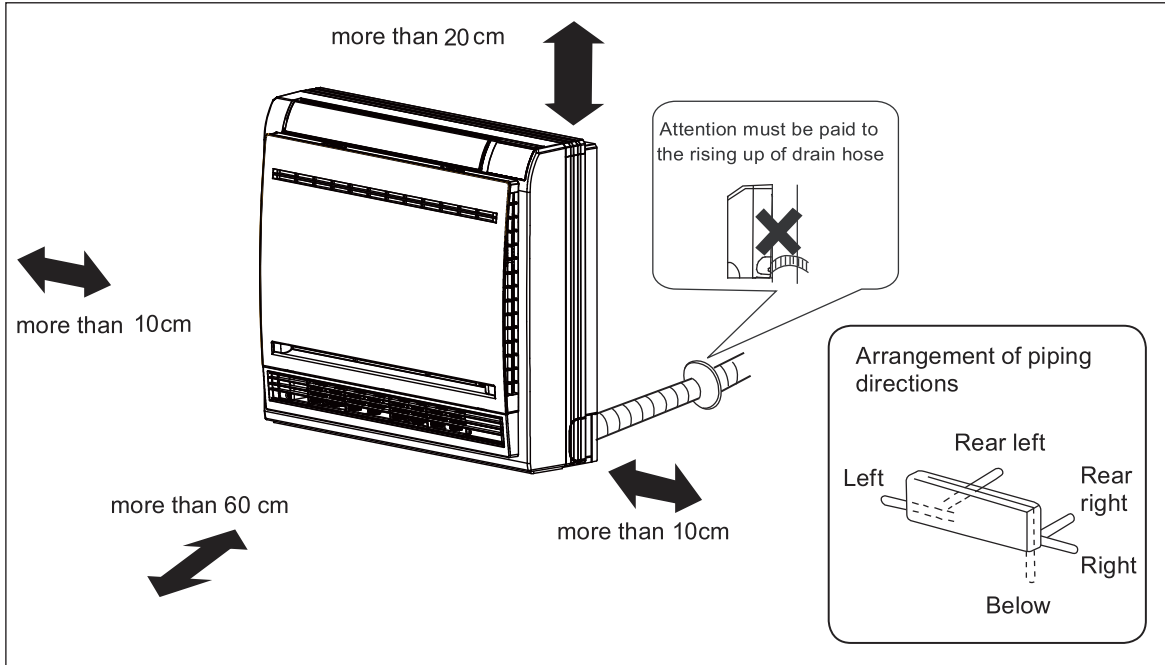
- Determine the way to carry unit to installation place.
- Don't remove packing until unit reaches installation place.
- If unpacking is unavoidable, protect unit properly.

SELECTION OF INSTALLATION PLACE

Installation place shall meet the following and agreed by customers:

- Place where proper air flow can be ensured.
- No block to air flow. Water drainage is smooth.
- Place strong enough to support unit weight. Place where inclination is not evident on ceiling.
- Enough space for maintenance.
- Indoor and outdoor unit piping length is within limit. (Refer to Installation Manual for outdoor unit.)
- Indoor and outdoor unit, power cable, inter unit cable are at least 1 m away from T.V. radio. This is helpful to avoid picture disturbance and noise. (Even if 1 m is kept, noise can still appear if radio wave is strong)

DRAWING FOR THE INSTALLATION OF INDOOR UNITS

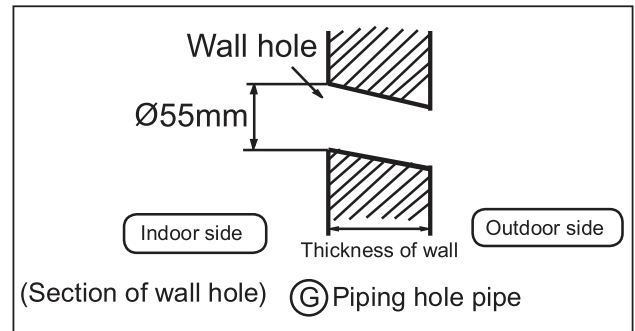


Indoor Unit Installation

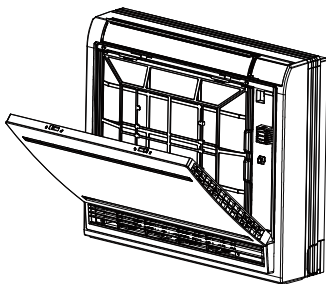
(1) Making a Hole on the Wall and Fitting the Piping Hole Cover

- Make a hole of 55mm in diameter, slightly descending to outside the wall.
- Install piping hole cover and seal it off with putty after installation.

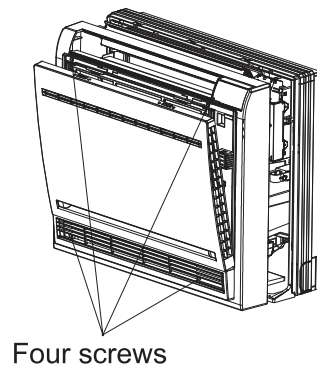
(2) Installation of the Indoor Unit Removal of Front Grille



- Hole the front panel by the tabs on the both sides and lift it until it stops with a click.



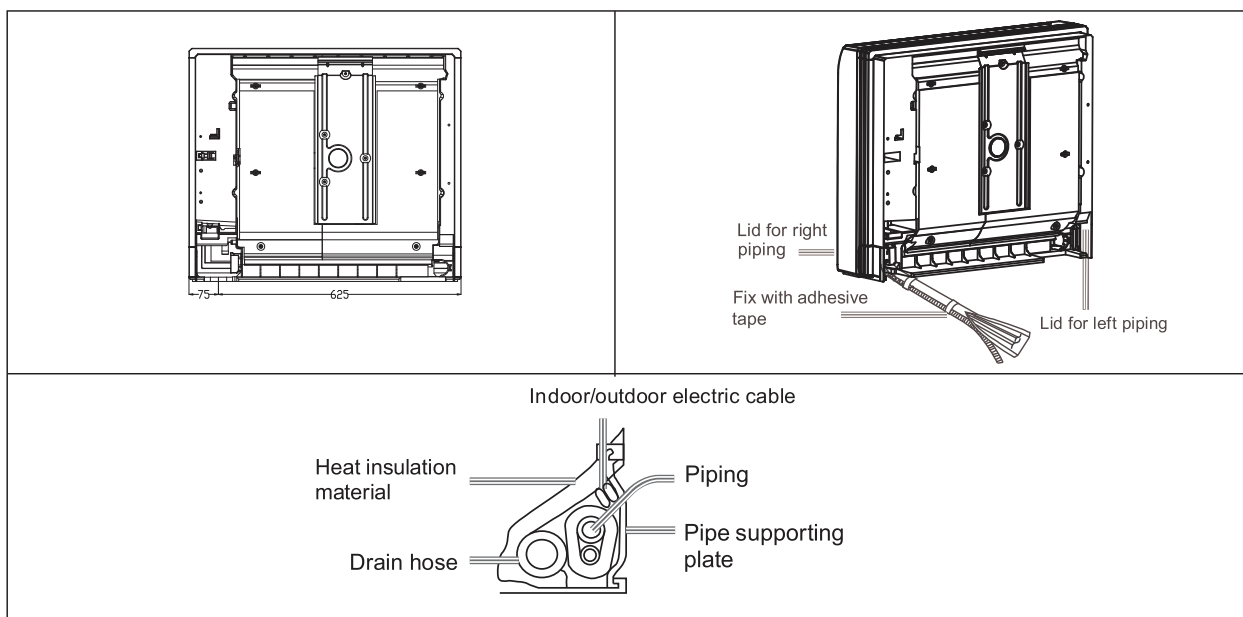
- Loosen the marked four screws and open the grille.



Drawing of pipe

[Rear piping]

- Draw pipes and the drain hose, then fasten them with the adhesive tape. [Left-Left-rear piping]
 - In case of left side piping, cut away, with a nipper, the lid for left piping.
 - In case of left-rear piping, bend the pipes according to the piping direction to the mark of hole for left-rear piping which is marked on heat insulation materials.
1. Insert the drain hose into the dent of heat insulation materials of indoor unit.
 2. Insert the indoor/outdoor electric cable from backside of indoor unit, and pull it out on the front side, then connect them.
 3. Coat the flaring seal face with refrigerant oil and connect pipes.
- Cover the connection part with heat insulation materials closely, and make sure fixing with adhesive tape.



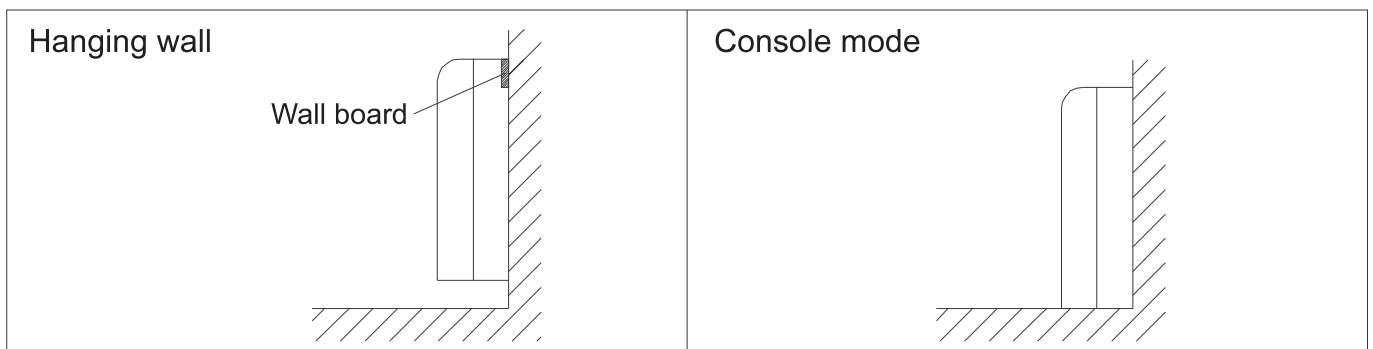
- Indoor/outdoor electric cable and drain hose must be bound with refrigerant piping by protecting tape.

[Other direction piping]

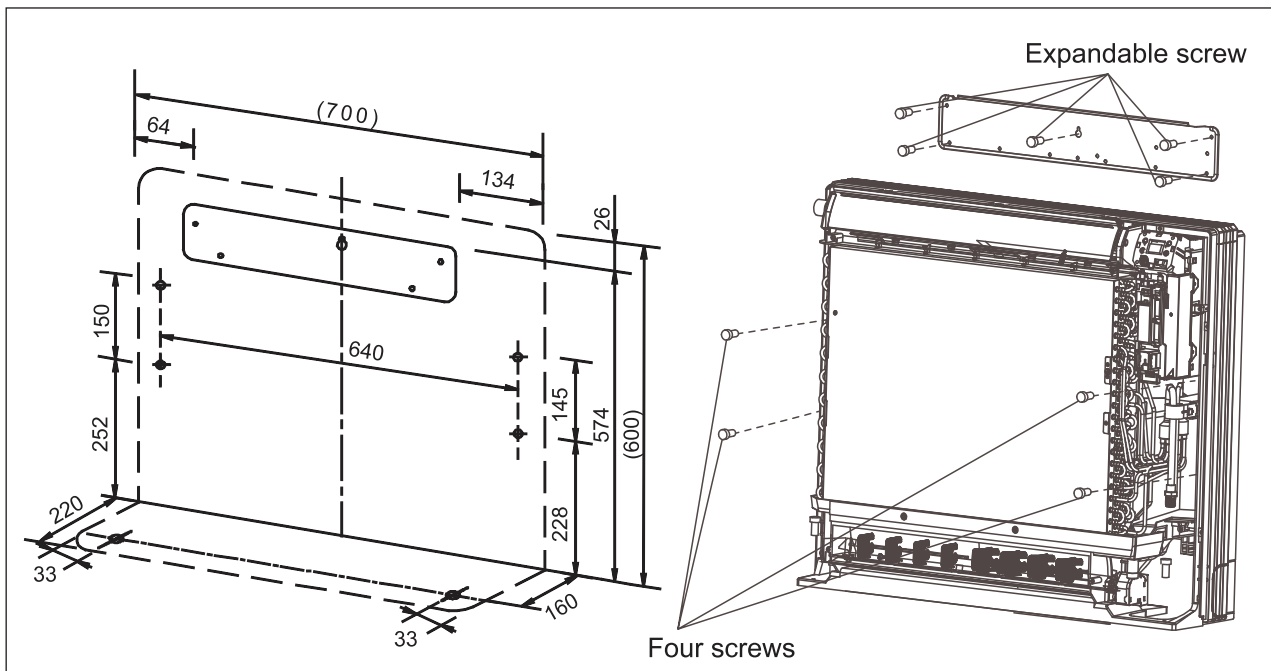
- Cut away, with a nipper, the lid for piping according to the piping direction and then bend the pipe according to the position of wall hole. When bending, be careful not to crash pipes.
- Connect beforehand the indoor/outdoor electric cable, and then pull out the connected to the heat insulation of connecting part specially.

Fixing the indoor unit body

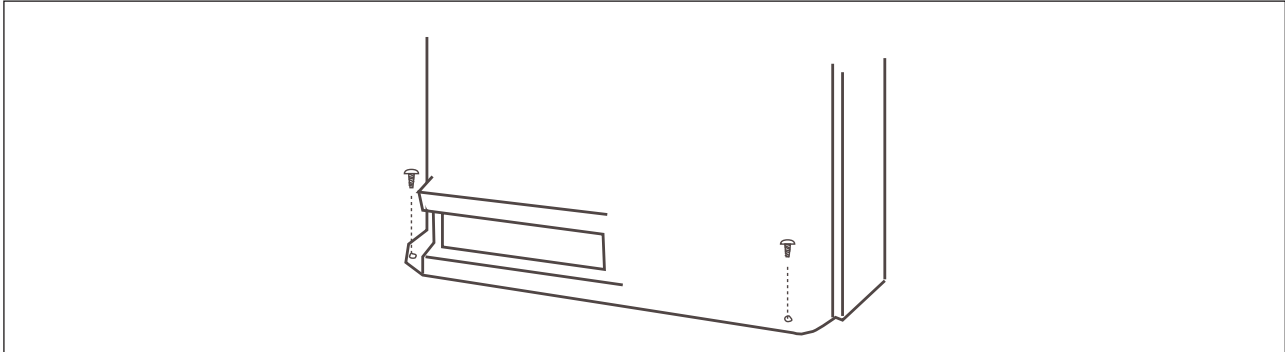
Indoor installation can be done in any of the following two ways:



- Fix the wall board, then use four screws to fix the unit on the wall. As the figure shown.



- Remove the front panel, then use two fastening screws to fix the unit on the floor. As the figure shown.

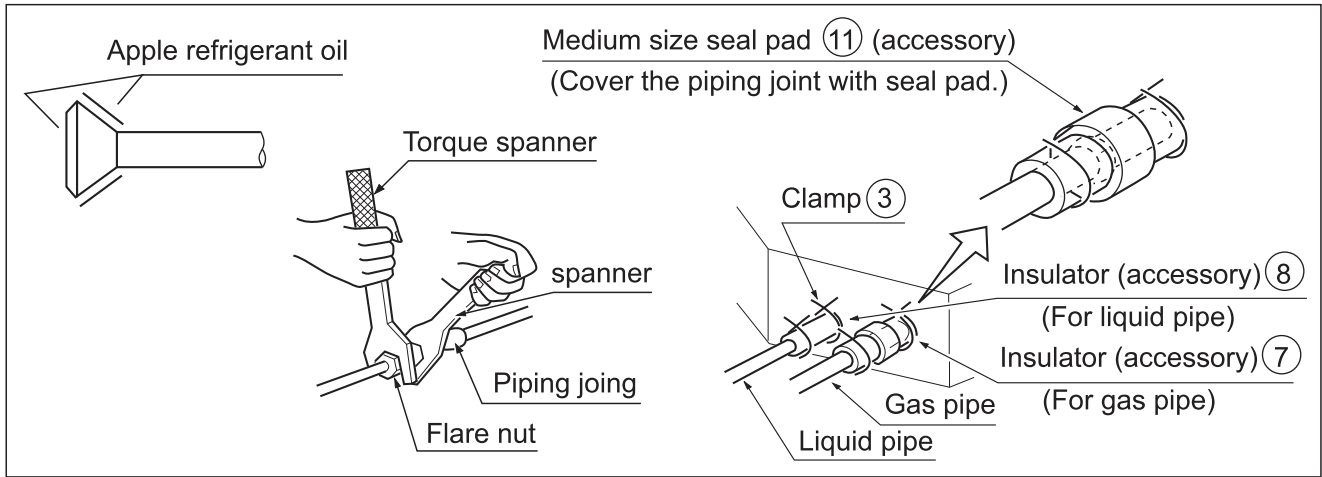


- Once refrigerant piping and drain piping connections are complete, fill the gap of the through hole with putty. Attach the front panel and front grille in their original positions once all connections are complete.

REFRIGERANT PIPING

(As for outdoor piping, please refer to installation Manual of outdoor unit.)

- Outdoor is precharged with refrigerant.
- Be sure to see the Fig.1, when connecting and removing piping from unit.
- For the size of the flare nut, please refer to Table 1.
- Apply refrigerant oil at both inside and outside of flare nut. Tighten it band tight 3-4 turns then tighten it.
- Use torque specified in Table 1. (Too much force may damage flare nut, causing gas leakage).
- Check piping joints for gas leakage. Insulate piping as shown in Fig. below.
- Cover joint of gas piping and insulator 7 with seal.



Pipe size

Model	Gas pipe	Liquid pipe
AW-EAV009~018-N11	ø6.35mm	ø12.7mm

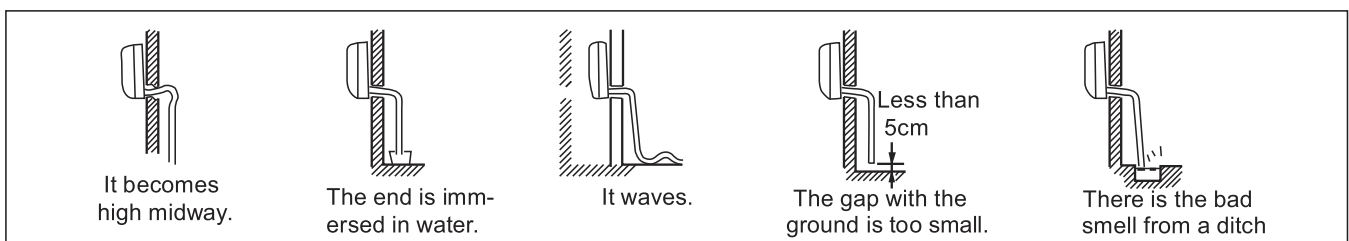
Table 1

Pipe size	Tighten torque	A(mm)	Flare shape
ø6.35	1420~1720N.cm (144~176kgf.cm)	8.3~8.7	
ø9.52	3270~3990N.cm (333~407kgf.cm)	12.0~12.4	
ø12.7	4950~6030N.cm (490~500kgf.cm)	12.4~16.6	
ø15.88	6180~7540N.cm (630~770kgf.cm)	18.6~19.0	
ø19.05	9720~11860 N.cm (990~1210 kgf.cm)	22.9~23.3	

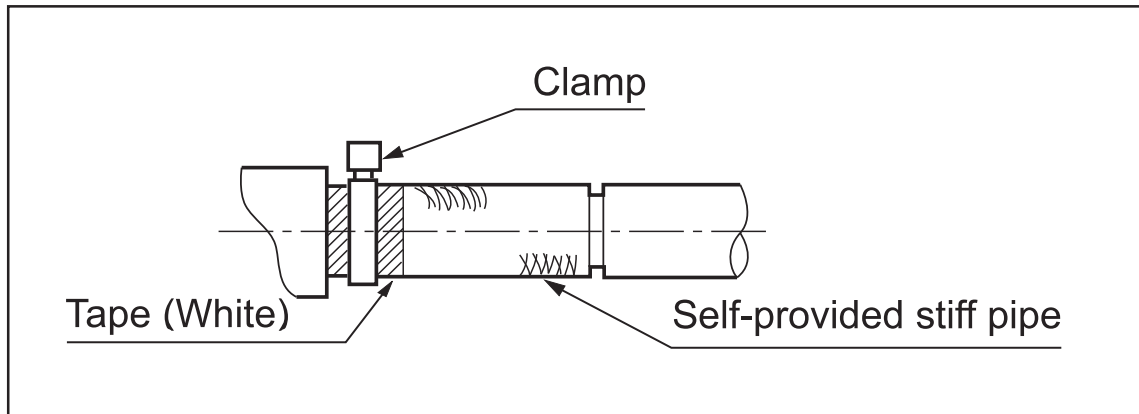
INSTALLATION OF WATER DRAINAGE PIPE

(1) Install water drainage pipe

- Pipe dia, shall be equal or larger than that of unit piping.(pipe of polyethylene; size: 20mm; O.D:26mm)
- Drain pipe should be short, with a downward slope at least 1/100 to prevent air bag from happening.
- If downward slope can't be made, take other measures to lift it up.
- Please install the drain hose so as to be downward slope without fall.
- Please don't do the drainage as shown below.
- Please pour water in the drain pan of the indoor unit, and confirm that drainage is carried out surely to outdoor.
- In case that the attached drain hose is in a room, please apply heat insulation to it without fall.






- Use the self-provided stiff pipe and clamp with unit. Insert water pipe into water plug until it reaches the white tape.
- Insulate drain hose in the room.






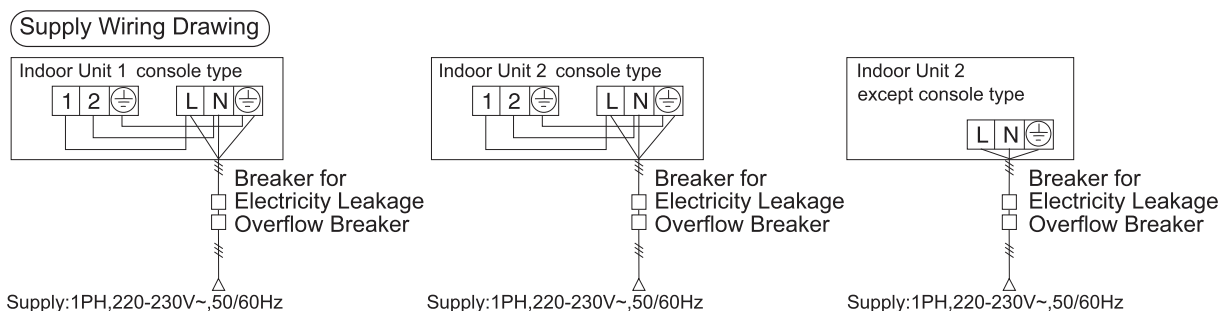
12.9.4 Electrical Wiring

⚠ Warning

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient. 
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents. 
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line. 

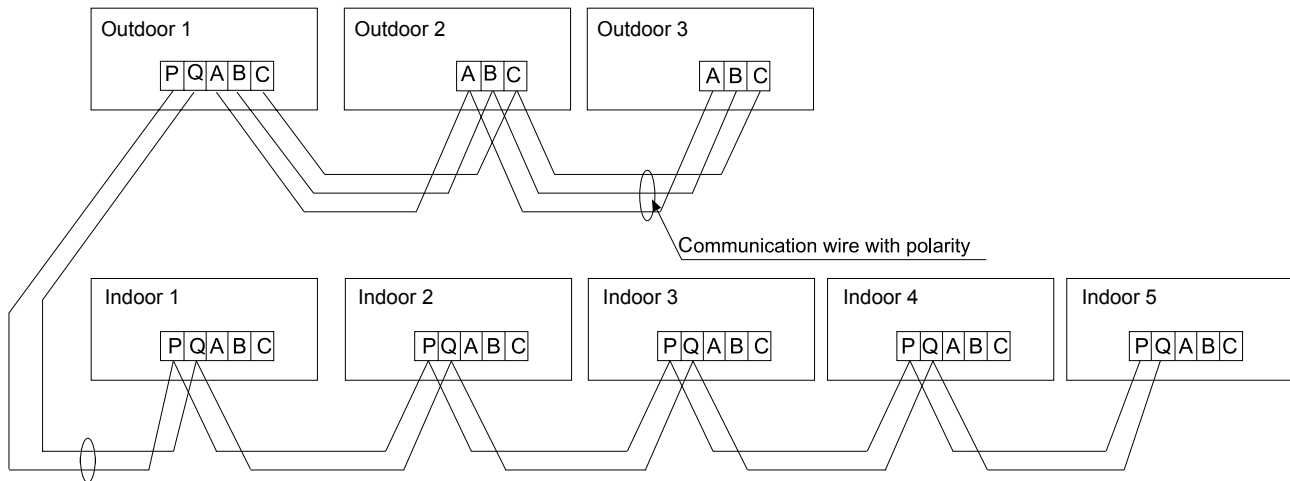
⚠ Attention

- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while  should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire  and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together.
- The machine can't be powered on before electrical operation. Maintenance should be done while  power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line, signal line are provided by users. Parameters for power lines are shown as below: $3 \times (1.0-1.5) \text{ mm}^2$; parameters for signal line: $2 \times (0.75-1.25) \text{ mm}^2$ (shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

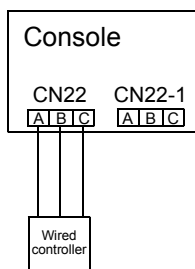
Signal Wiring Drawing



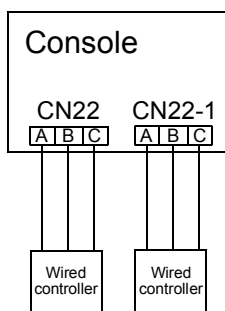
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

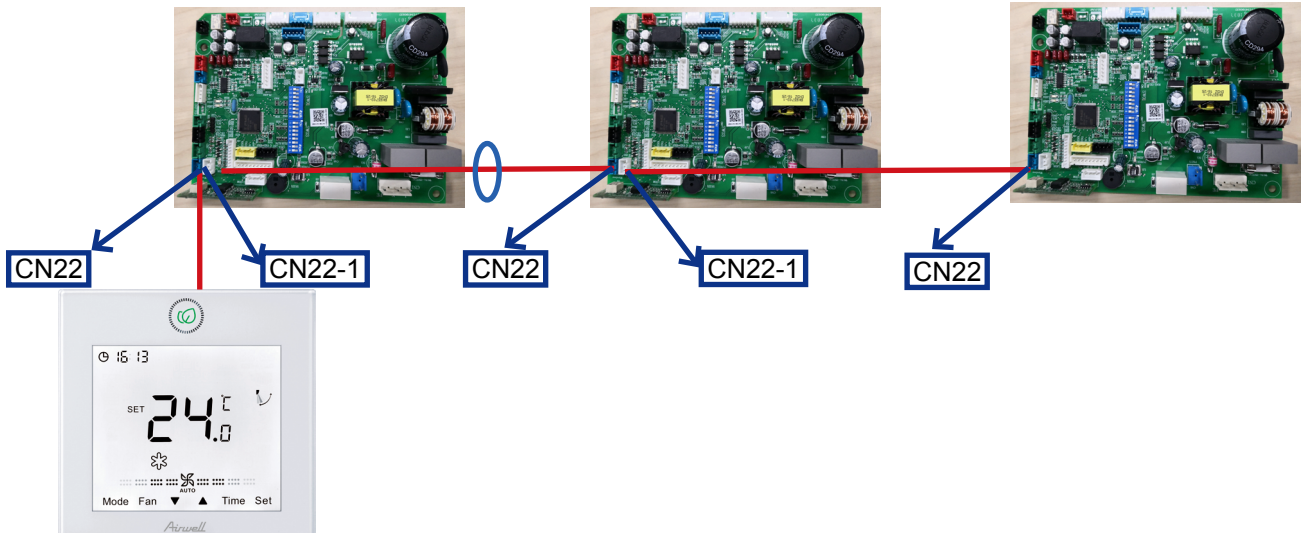


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800452 PCB



Note:

1. Plug the wired controller terminal to the CN22 terminal of master unit which wired address is 0.
2. The CN22-1 terminal of the previous unit is connected to the CN22 terminal of the next unit
3. Wired address setting

0151800452

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

4. One controller can Max. control 16 indoor units.
5. Hand-in-hand connection method
6. The signal line is polarity
7. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

Indoor power supply wiring & signal wiring between indoor and outdoor & signal wiring between indoor.

Items Total current of indoor units (A)	Cross section (mm ²)	Length (m)	Rated current of overflow breaker (A)	Rated current of residual circuit breaker (A) Ground fault Interrupter (mA) Response time (S)	Cross sectional area of signal Line	
					Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
<7	2.5	20	10	10 A, 30 mA, 0.1S or below	2 cores×(0.75-2.0) mm ² shielded line	
≥7 and <11	4	20	16	16 A, 30 mA, 0.1S or below		
≥11 and <16	6	25	20	20 A, 30 mA, 0.1S or below		
≥16 and <22	8	30	32	32 A, 30 mA, 0.1S or below		
≥22 and <27	10	40	32	32 A, 30 mA, 0.1S or below		

- ※ The electrical power line and signal lines must be fastened tightly.
- ※ Every indoor unit must have the ground connection.
- ※ The power line should be enlarged if it exceeds the permissible length.
- ※ Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- ※ It is not permissible if the whole length of signal line exceeds 1000m.

Test Run & Fault Code

Before Test Run

- Before switching it on, test the supply terminal tier (L, N terminals) and grounding points with 500V megaohm meter and check if the resistance is above 1MΩ. It can't be operated if it is below 1MΩ.
- Connect it to the power supply of outdoor units to energize the heating belt of the compressor. To protect the compressor at startup, power it on 12 hours prior to the operation.

Check if the arrangements of the drainpipe and connection line are correct.

The drainpipe shall be placed at the lower part while the connection line placed at the upper part.

Heat preservation measures should be taken such as winding the drainpipe esp. in the indoor units with heating insulating materials.

The drain pipe should be made a slope type to avoid protruding at the upper part and concaving at the lower part on the way.

Checkup of Installation

- check if the mains voltage is matching
- check if there is air leakage at the piping joints
- check if the connections of mains power and indoor & outdoor units are correct
- check if the serial numbers of terminals are matching
- check if the installation place meets the requirement
- check if there is too much noise
- check if the connecting line is fastened
- check if the connectors for tubing are heat insulated
- check if the water is drained to the outside
- check if the indoor units are positioned

Ways of Test Run

Do ask the installation personnel to make a test run. Take the testing procedures according to the manual and check if the temperature regulator works properly.

When the machine fails to start due to the room temperature, the following procedures can be taken to do the compulsive running. The function is not provided for the type with remote control.

- Set the wired controller to refrigerating/heating mode, press "ON/OFF" button for 5 seconds to enter into the compulsive refrigerating/heating mode. Re-press "ON/OFF" button to quit the compulsive running and stop the operation of the air conditioner.

13. High Wall Type Indoor Unit (N platform)

13.1 Feature



- Wider capacity range from 1.5kW to 9.0kW, meeting variable capacity needs.
- Built-in EEV and easy support clip, enabling easy installation
- DC fan motor for low sound level and higher efficiency
- Long distance and 3D air supplying,
- Quick cooling & heating

13.2 Specification

MODEL			AWSI-HBV007-N11	AWSI-HBV009-N11
Power supply		V-Ph-Hz	1/220~240/50/60	1/220~240/50/60
Cooling	Capacity	kBtu/h	7.5	9.5
	Capacity	kW	2.2	2.8
	Power Input	W	43	43
	Current	A	0.15	0.15
Heating	Capacity	kBtu/h	8.5	10.9
	Capacity	kW	2.5	3.2
	Power Input	W	43	43
	Current	A	0.15	0.15
	Heating capacity at low temp.	kW	2.0	2.5
Operating current		A	0.15	0.15
Power consumption		kW	0.043	0.043
Indoor Motor	Brand		Broad-ocean	Broad-ocean
	Model		ZWK465A00402	ZWK465A00402
	Type		DC	DC
	Insulation Class		E	E
	IP Class		IP41	IP41
	Power Input	W	38	38
	Power output	W	30	30
	Capacitor	μF	/	/
	Speed (High/Middle/Low)	rpm	1000/850/700	1000/850/700
Indoor Fan	Brand		/	/
	Type		Cross	Cross
	Quantity		1	1
Indoor Coil	a. Number of rows		2	2
	b. Tube pitch(a)x row pitch(b)	mm	26.6*1.4	26.6*1.4
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ7 Inner groove tube
	f. Coil length x height x width	mm	/	/
	g. Number of circuits		2	2

			AWSI-HBV007-N11	AWSI-HBV009-N11
Cabinet	Cabinet Coating Type		Plastic	Plastic
	Cabinet Salt Spray Test Duration	Hour	/	/
	Control Box IP Class		IP20	IP20
Construction	Sheet Metal Thickness		/	/
	Drain Pan Material		ABS	ABS
	Drain Pan Insulation		15	15
	Drain Pump Option		no	no
	Branch Outlet Option		yes	yes
Indoor Wall	Material		Plastic	Plastic
	Thickness	mm	/	/
	Double or Single Skin		Single	Single
Air Filter	Material		PP	PP
	Mesh		100	100
	Pressure Drop	Pa	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35
	Gas pipe	mm	9.52	9.52
	Drain hose	mm	16.8	16.8
Fresh air dimension		mm	/	/
Sound pressure level (H/M/L)		dB(A)	35/31/29	36/31/29
Sound power level (H/M/L)		dB(A)	50/47/42	52/48/44
Standard static pressure		Pa	0	0
Indoor air flow (H/M/L)		m ³ /h	550/480/420	600/530/470
Dimension (W*H*D)		mm	855/208/280	855/200/280
Packing (W*H*D)		mm	954/279/355	954/279/355
Net weight		kg	9.9	9.9
Gross weight		kg	12	12

Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C)
 Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C)
 The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

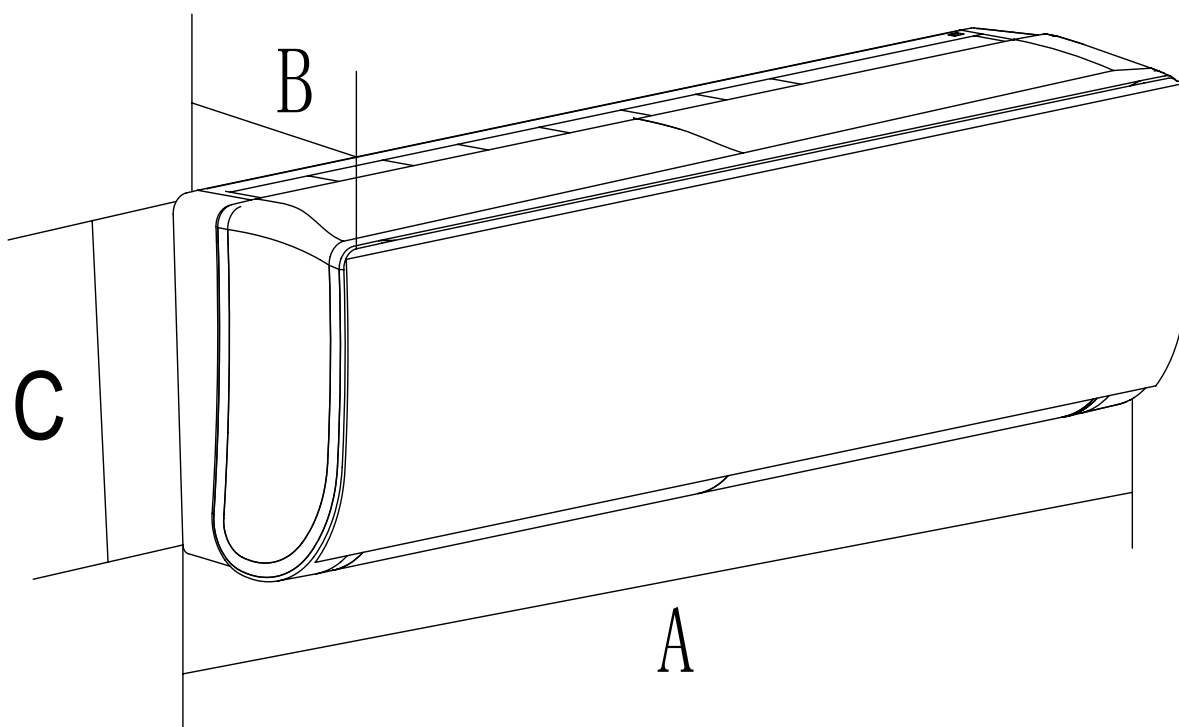
MODEL			AWSI-HBV012-N11	AWSI-HBV016-N11	AWSI-HBV018-N11
Power supply		V-Ph-Hz	1/220~240/50/60	1/220~240/50/60	1/220~240/50/60
Cooling	Capacity	kBtu/h	12.3	15.3	19.1
	Capacity	kW	3.6	4.5	5.6
	Power Input	W	43	57	57
	Current	A	0.15	0.5	0.5
Heating	Capacity	kBtu/h	13.6	17.1	21.5
	Capacity	kW	4	5	6.3
	Power Input	W	43	57	57
	Current	A	0.15	0.5	0.5
	Heating capacity at low temp.	kW	3.2	4.0	5.0
Operating current		A	0.15	0.5	0.5
Power consumption		kW	0.043	0.057	0.057
Indoor Motor	Brand		Broad-ocean	Broad-ocean	Broad-ocean
	Model		ZWK465A00402	ZWK465A00411	ZWK465A00411
	Type		DC	DC	DC
	Insulation Class		E	E	E
	IP Class		IP41	IP40	IP40
	Power Input	W	38	52	52
	Power output	W	30	40	40
	Capacitor	μF	/	/	/
	Speed (High/Middle/Low)	rpm	1200/1000/700	1000/800/700	1000/800/700
Indoor Fan	Brand		/	/	/
	Type		Cross	Cross	Cross
	Quantity		1	1	1
Indoor Coil	a. Number of rows		2	2	2
	b. Tube pitch(a)x row pitch(b)	mm	26.6*1.4	26.6*1.4	26.6*1.4
	c. Fin spacing	mm	1.4	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ7 Inner groove tube	Φ7 Inner groove tube
	f. Coil length x height x width	mm	/	/	/
	g. Number of circuits		2	5	5

MODEL			AWSI-HBV012-N11	AWSI-HBV016-N11	AWSI-HBV018-N11
Cabinet	Cabinet Coating Type		Plastic	Plastic	Plastic
	Cabinet Salt Spray Test Duration	Hour	/	/	/
	Control Box IP Class		IP20	IP20	IP20
Construction	Sheet Metal Thickness		/	/	/
	Drain Pan Material		ABS	ABS	ABS
	Drain Pan Insulation		15	15	15
	Drain Pump Option		no	no	no
	Branch Outlet Option		yes	yes	yes
Indoor Wall	Material		Plastic	Plastic	Plastic
	Thickness	mm	/	/	/
	Double or Single Skin		Single	Single	Single
Air Filter	Material		PP	PP	PP
	Mesh		100	100	100
	Pressure Drop	Pa	5	5	5
Piping dimension	Liquid pipe	mm	6.35	6.35	6.35
	Gas pipe	mm	12.7	12.7	12.7
	Drain hose	mm	16.8	16.8	16.8
Fresh air dimension		mm	/	/	/
Sound pressure level (H/M/L)		dB(A)	37/33/29	39/36/34	40/39/35
Sound power level (H/M/L)		dB(A)	54/51/50	56/53/51	57/54/52
Standard static pressure		Pa	0	0	0
Indoor air flow (H/M/L)		m ³ /h	630/560/500	800/720/650	920/800/720
Dimension (W*H*D)		mm	855/200/280	1115/243/336	1115/243/336
Packing (W*H*D)		mm	954/279/355	1206/342/418	1206/342/418
Net weight		kg	9.9	15.8	15.8
Gross weight		kg	12	18.9	18.9
<p>Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.</p>					

MODEL			AWSI-HBV024-N11	AWSI-HBV030-N11
Power supply		V-Ph-Hz	1/220~240/50/60	1/220~240/50/60
Cooling	Capacity	kBtu/h	24.2	30.7
	Capacity	kW	7.1	9
	Power Input	W	57	99
	Current	A	0.5	0.59
Heating	Capacity	kBtu/h	27.3	34.1
	Capacity	kW	8	10
	Power Input	W	57	99
	Current	A	0.5	0.59
	Heating capacity at low temp.	kW	6.3	8.0
Operating current		A	0.5	0.59
Power consumption		kW	0.057	0.099
Indoor Motor	Brand		Broad-ocean	Broad-ocean
	Model		ZWK465A00411	ZWK465B200014
	Type		DC	DC
	Insulation Class		E	E
	IP Class		IP40	IP41
	Power Input	W	52	94
	Power output	W	40	70
	Capacitor	μF	/	/
	Speed (High/Middle/Low)	rpm	1200/1000/700	1250/900/700
Indoor Fan	Brand		/	/
	Type		Cross	Cross
	Quantity		1	2
Indoor Coil	a. Number of rows		2	2
	b. Tube pitch(a)x row pitch(b)	mm	26.6*1.4	26.6*1.4
	c. Fin spacing	mm	1.4	1.4
	d. Fin type (code)		Hydrophilic aluminum	Hydrophilic aluminum
	e. Tube outside dia. and type	mm	Φ7 Inner groove tube	Φ7 Inner groove tube
	f. Coil length x height x width	mm	/	/
	g. Number of circuits		5	6

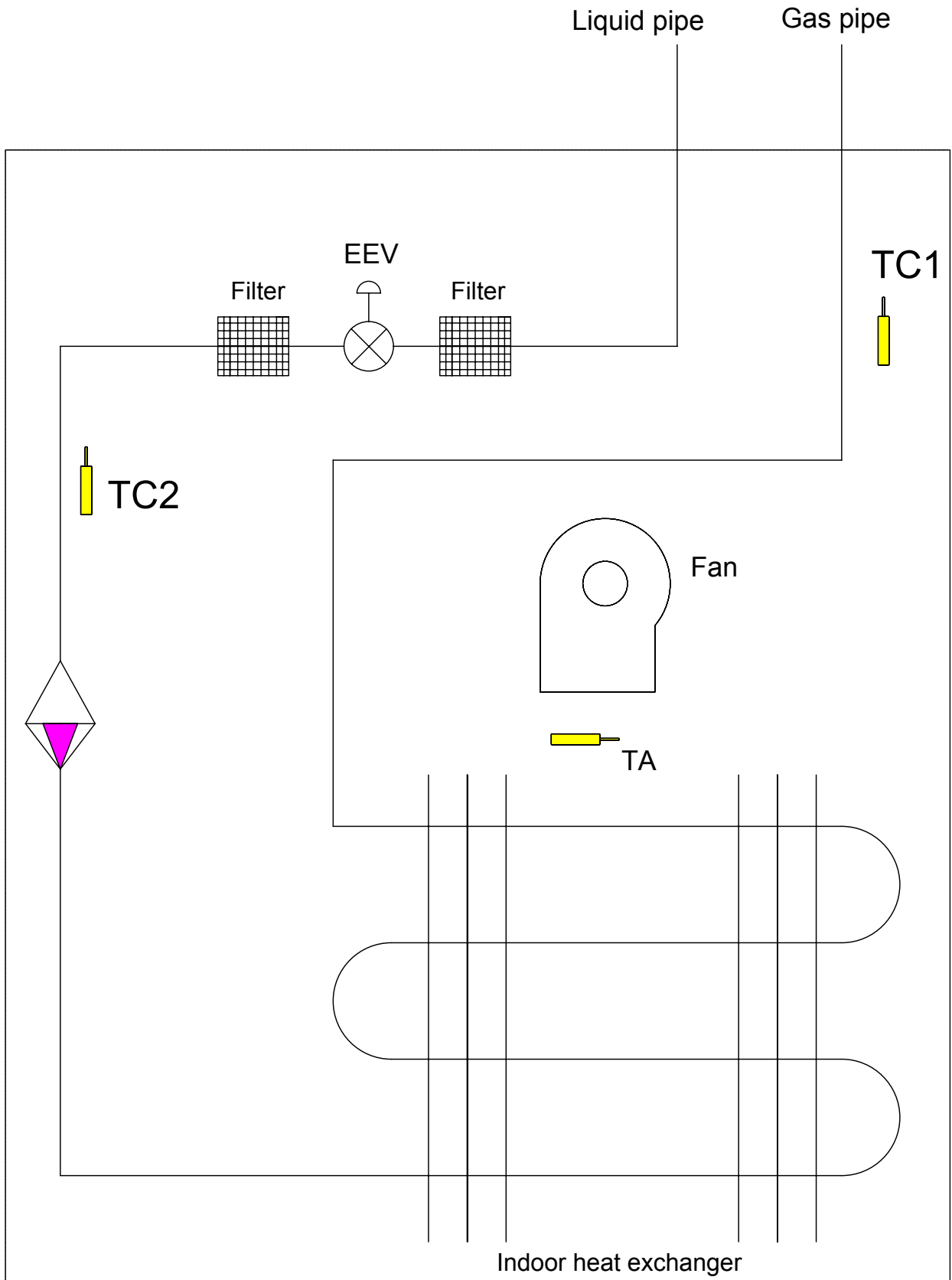
MODEL			AWSI-HBV024-N11	AWSI-HBV030-N11
Cabinet	Cabinet Coating Type		Plastic	Plastic
	Cabinet Salt Spray Test Duration	Hour	/	/
	Control Box IP Class		IP20	IP20
Construction	Sheet Metal Thickness		/	/
	Drain Pan Material		ABS	ABS
	Drain Pan Insulation		15	15
	Drain Pump Option		no	no
	Branch Outlet Option		yes	yes
Indoor Wall	Material		Plastic	Plastic
	Thickness	mm	/	/
	Double or Single Skin		Single	Single
Air Filter	Material		PP	PP
	Mesh		100	100
	Pressure Drop	Pa	5	5
Piping dimension	Liquid pipe	mm	9.52	9.52
	Gas pipe	mm	15.88	15.88
	Drain hose	mm	16.8	16.8
Fresh air dimension	mm	/	/	
Sound pressure level (H/M/L)	dB(A)		44/40/36	49/44/41
Sound power level (H/M/L)	dB(A)		58/56/54	61/58/54
Standard static pressure	Pa		0	0
Indoor air flow (H/M/L)	m ³ /h		1010/920/800	1600/1500/1400
Dimension (W*H*D)	mm		1115/243/336	1316/270/365
Packing (W*H*D)	mm		1206/342/418	1403/384/463
Net weight	kg		15.8	21.8
Gross weight	kg		18.9	26.3
Nominal condition: indoor temperature (cooling): 27DB (°C)/19WB (°C), indoor temperature (heating): 20DB (°C) Outdoor temperature (cooling): 35DB (°C)/24WB (°C), outdoor temperature (heating): 7DB (°C)/6WB (°C) The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.				

13.3 Dimension

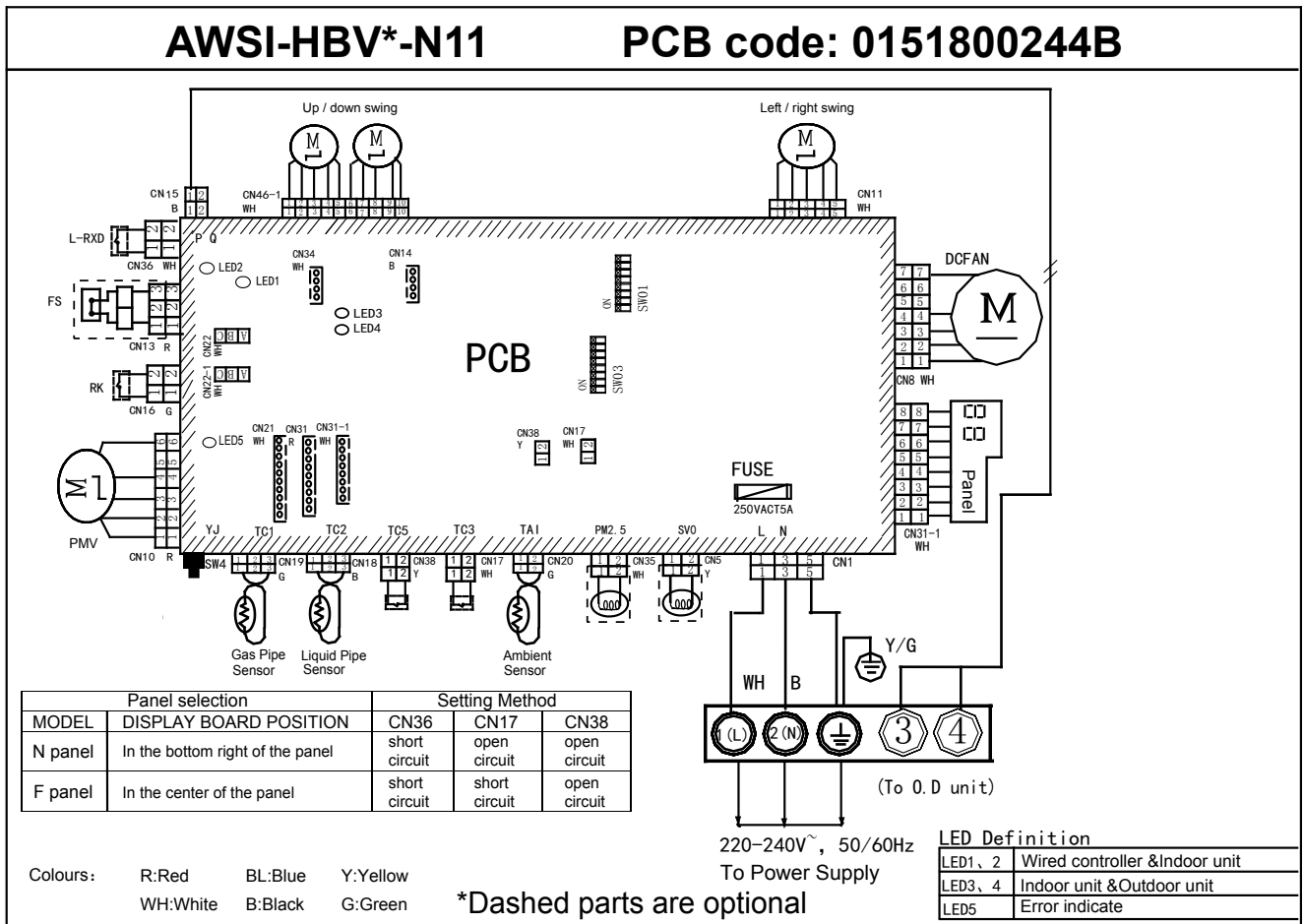


Model	A	B	C
AWSI-HBV007-N11			
AWSI-HBV009-N11	855	200	280
AWSI-HBV012-N11			
AWSI-HBV016-N11			
AWSI-HBV018-N11	1115	243	336
AWSI-HBV024-N11			
AWSI-HBV030-N11	1316	270	365

13.4 Piping diagram



13.5 Wiring diagram



13.6 Electric characteristics

Units					Power supply		Indoor fan motor		Power input (W)	
Model	Phase	FQY	Voltage	Volt. range	MCA	MFA	Output (W)	FLA	Cooling	Heating
AWSI-HBV007-N11	1	50/60	220	198~242	0.18	0.56	30	0.14	43	43
AWSI-HBV009-N11	1	50/60	220	198~242	0.18	0.56	30	0.14	43	43
AWSI-HBV012-N11	1	50/60	220	198~242	0.18	0.56	30	0.14	43	43
AWSI-HBV016-N11	1	50/60	220	198~242	0.24	0.76	40	0.19	57	57
AWSI-HBV018-N11	1	50/60	220	198~242	0.24	0.76	40	0.19	57	57
AWSI-HBV024-N11	1	50/60	220	198~242	0.24	0.76	40	0.19	57	57
AWSI-HBV030-N11	1	50/60	220	198~242	0.4	1.28	70	0.32	99	99

Symbols:

MCA: Min. circuit amps (A)

MFA: Max. fuse amps of circuit breaker Output: Fan motor rated output (w) FLA: Full load amps (A)

Notes:

1. Voltage range

The units are applicable for the electrical systems where voltage supplied to unit is in the range.

2. Maximum allowable voltage unbalance between phases is 2%.

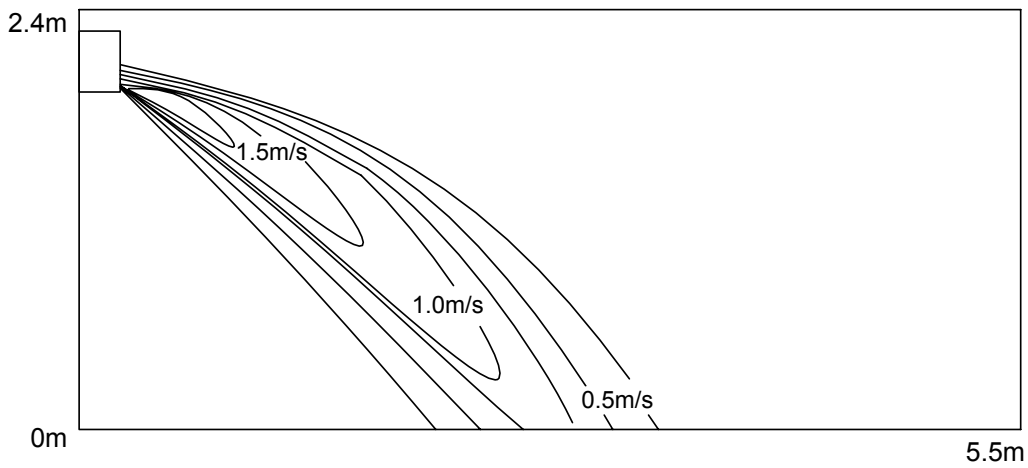
3. $MCA=1.25*FLA$ $MFA\leq 4*FLA$.

4. Power supply uses the circuit breaker.

13.7 Air velocity and temperature distribution

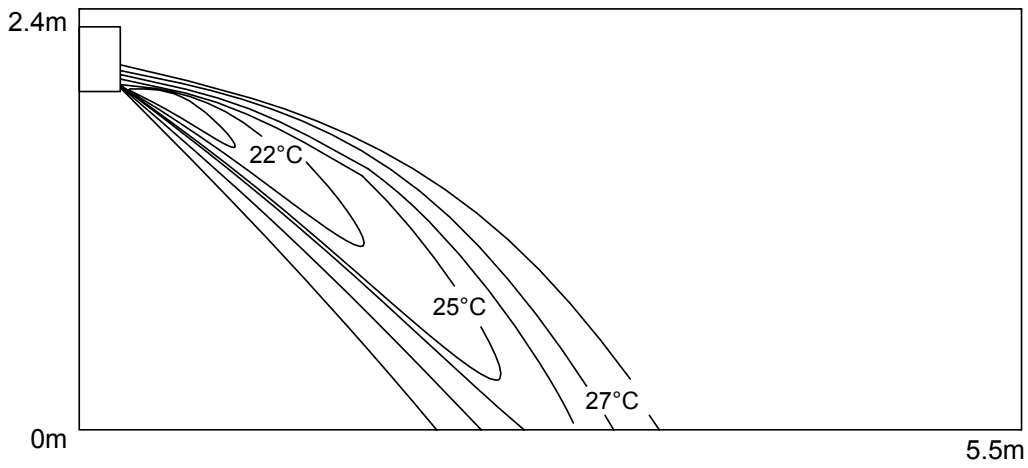
a. Cooling / Air velocity distribution

Blow angle: 25

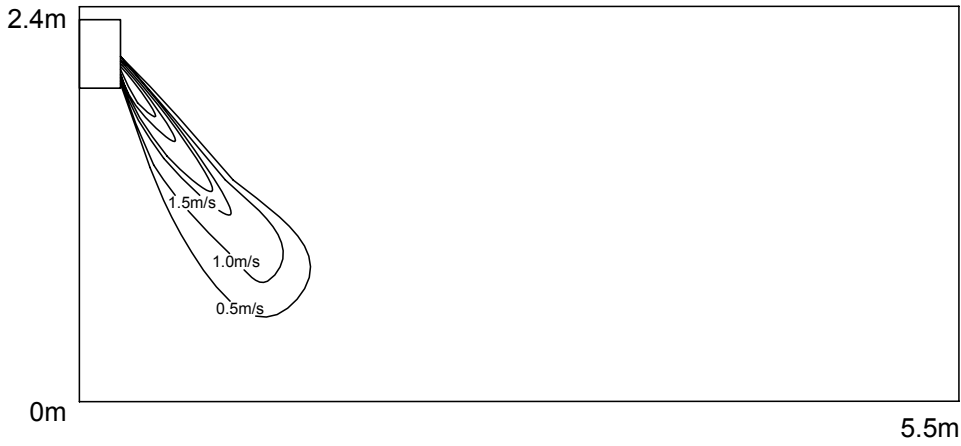


b. Cooling / Temperature distribution

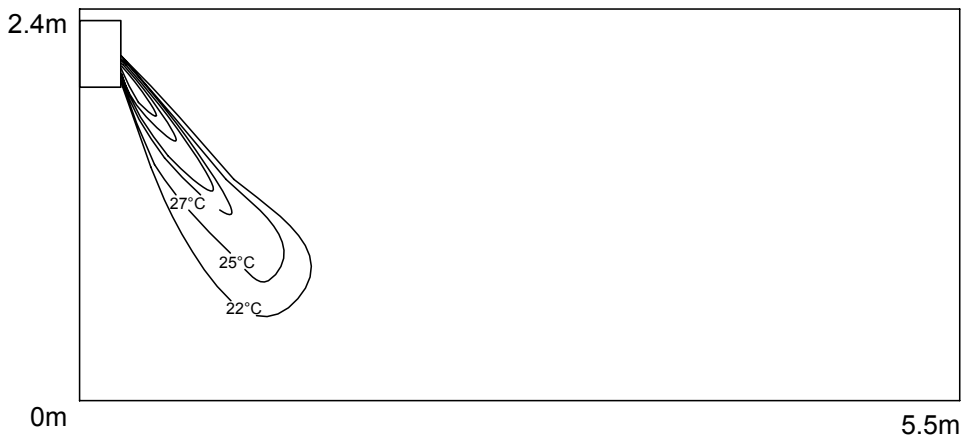
Blow angle: 25



c. Heating / Air velocity distribution
Blow angle: 65

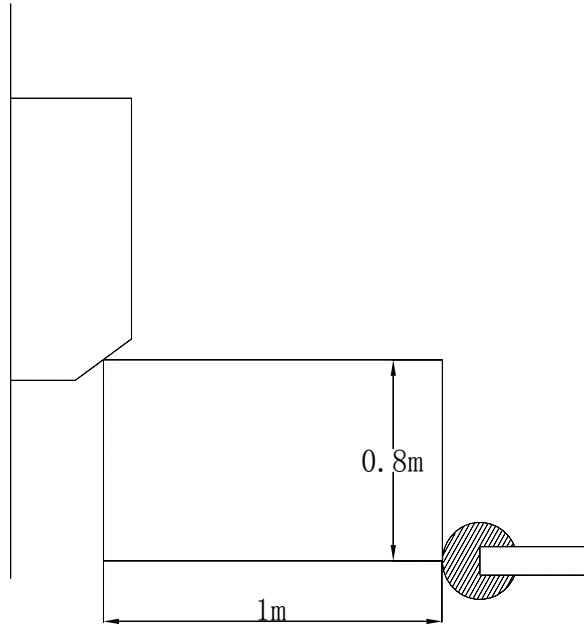


d. Cooling / Temperature distribution
Blow angle: 65



13.8 Sound pressure level

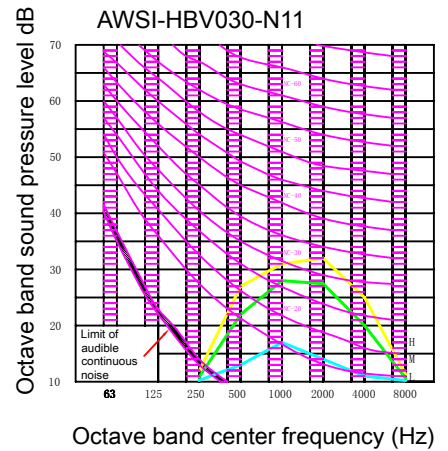
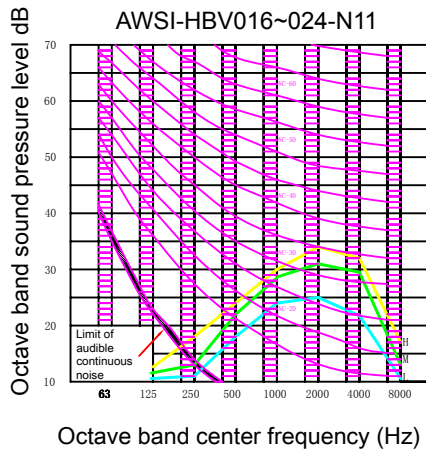
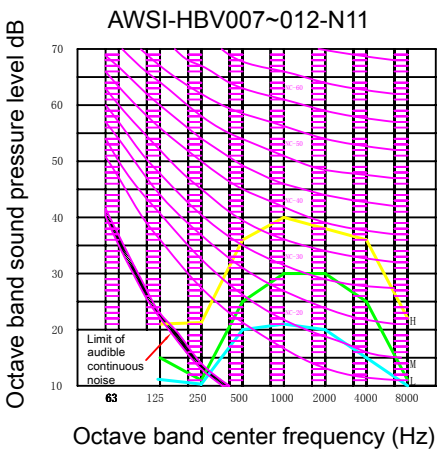
1) Testing illustrate:



2) Testing condition:

- a: Unit running in the normal condition
- b: Test in the semi-anechoic chamber
- c: Noise level varies from the actual factors such as room structure, etc.

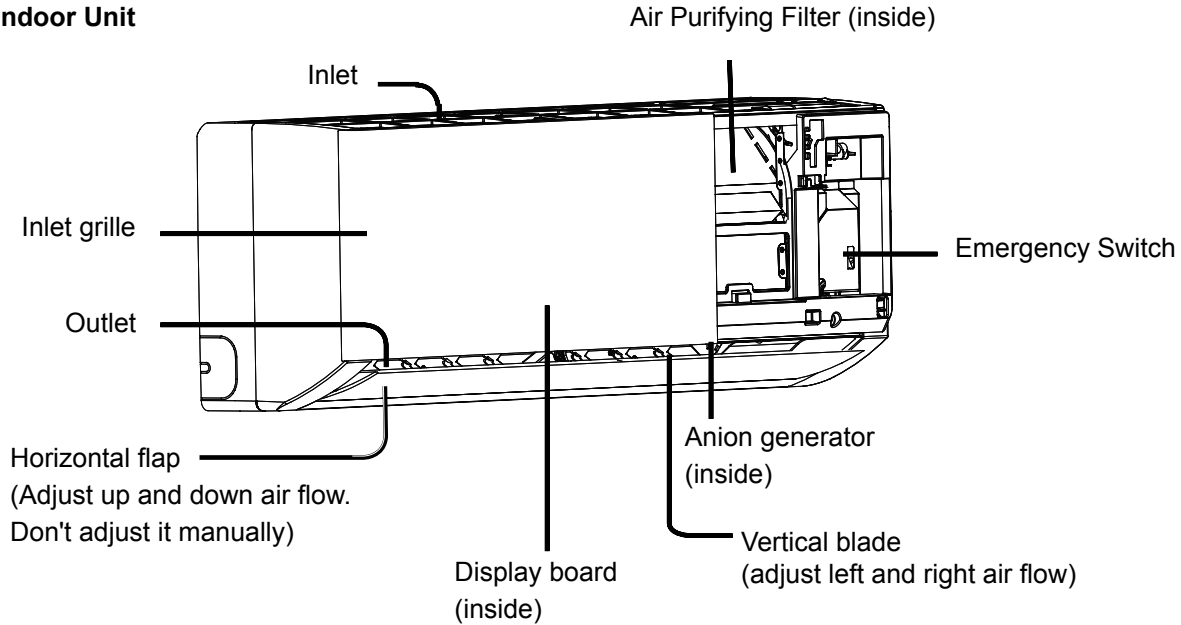
3) Sound curves:



13.9 Installation

13.9.1 Parts and functions

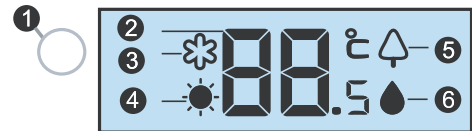
Indoor Unit



Actual inlet grille and display board may vary from the one shown in the manual according to the product purchased.

Display board A

- ① Signal receiver hole
 - ② Ambient temp. display
 - ③ COOL display
 - ④ HEAT display
 - ⑤ HEALTH display
 - ⑥ DRY display
- When receiving the remote control signal, display the set temperature.







Display board B

- *Remote signal receiver (A beeping sound is generated when a signal from remote controller is received.)
 - *Power indicator (Lights up when unit starts.)
 - *Timer mode indicator (Lights up when Timer operation is selected.)
 - *Operation mode indicator (lights up when the compressor is on.)
 - *Ambient temp display
- When receiving the remote control signal, display the set temperature.



13.9.2 Safety

- If the air conditioner is transferred to a new user, this manual shall be transferred to the user, together with the conditioner.
- Before installation, be sure to read Safety Considerations in this manual for proper installation.
- The safety considerations stated below is divided into “ Warning” and “ Attention” The matters on severe accidents caused from wrong installation, which is likely to lead to death or serious injury, are listed in “ Warning”. However, the matters listed in “ Attention” are also likely causing the severe accidents. In general, both of them are the important items related to the security, which should be strictly abided by.
- After the installation, perform test run to make sure everything is in normal conditions, and then operate and maintain the air conditioner in accordance with the User Manual. The User Manual should be delivered to the user for proper keeping.



Warning

- Please ask the special maintenance station for installation and repair. Water leakage, electric shocks or fire accidents might be caused from improper installation if you conduct the installation by your own.
- The installation should be conducted properly according to this manual. Water leakage, electric shocks or fire accidents might be caused from improper installation.
- Please make sure to install the air conditioner on the place where can bear the weight of the air conditioner. The air conditioner can't be installed on the grids such as the non-special metal burglar-proof net. The place with insufficient support strength might cause the dropdown of the machine, which may lead to personal injuries.
- The installation should be ensured against typhoons and earthquakes, etc. The installation unconformable to the requirements will lead to accidents due to the turnover of the machine.
- Specific cables should be used for reliable connections of the wirings. Please fix the terminal connections reliably to avoid the outside force applied on the cables from being impressed on the cables. Improper connections and fixings might lead to such accidents as heating or fire accidents.
- Correct shapes of wirings should be kept while the embossed shape is not allowed. The wirings should be reliably connected to avoid the cover and the plate of the electrical cabinet lapping the wiring. Improper installation might cause such accidents as heating or fire accidents.
- While placing or reinstalling the air conditioner, except the specific refrigerant (R410A), don't let the air go into the refrigeration cycle system. The air in the refrigeration cycle system might lead to the cracking or personal injuries due to abnormal high pressure of the refrigeration cycle system.
- During installation, please use the accompanied spare parts or specific parts. If not, water leakage, electric shocks, fire accidents or refrigerant leakage might be caused.
- Don't drain the water from the drainpipe to the waterspout where may exist harmful gases such as sulfureted gas to avoid the harmful gases entering into the room.
- During installation, if refrigerant leakage occurs, ventilation measures should be taken, for the refrigerant gas might generate harmful gases upon contacting the flame.
- After installation, check if any refrigerant leakage exists. If the refrigerant gas leaks in the room, such things as air blowing heaters and stoves, etc. may generate harmful gases.

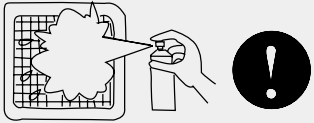
- Don't install the air conditioner at the places where the flammable gases may leak. In case the gas leakage occurs around the machine, such accidents as fire disasters may be caused.
- The drainpipe should be properly mounted according to this manual as to ensure the smooth drainage. In addition, heat preservation should be taken to avoid condensation. Improper drainpipe mounting might cause water leakage, which will get the articles at home wet.
- The refrigerant gas pipe and liquid pipe should be heat insulated to preserve heat. For inappropriate heat insulation, the water caused from the condensation will drop to get the article at home wet.

Warning

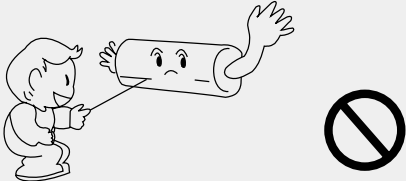
- The air conditioner should be effectively grounded. Electric shocks may occur if the air conditioner is ungrounded or inappropriately grounded. The wire for earthing shouldn't be connected to the connections on the gas pipe, water pipe, lightning rod or telephone.
- The breaker for electricity leakage should be mounted. If not, accidents such as electric shocks may happen.
- The installed air conditioner should be checked for electricity leakage by being powered.
- when the water discharge hole be blocked or the filter becomes dirty, there maybe leads to condensing water drop down, and at the same time there maybe some drops of water spit out.
- In case of ambient dew point temperature greater than 28 degrees Celsius or humidity greater than 80%, there maybe cause condensation drops or blow out, electrical or moisture sensitive items shouldn't be put below.

	<p>Items with this warning sign concerning the product's safety and the personal security must be performed strictly.</p>
	<p>Items with this forbidding sign refer to absolutely forbidden behaviors. If not, they may cause machine damage or endanger operator's personal safety.</p>

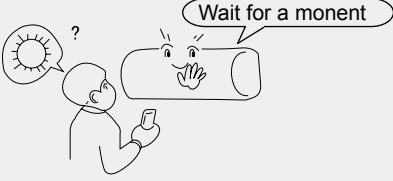
Clean the filter regularly.
Cooling or heating performance will be degraded if the filter is blocked, resulting in large power consumption, failure, and water dripping at freezing.



Don't touch the outlet while the flap is moving. Don't put anything in the grid in case danger may occur.



Avoid cold wind from blowing out.
During heating running, the fan of indoor units will not rotate immediately as to prevent cold wind from blowing out.




Changing Wind Speeds:
In the state of refrigerating, with automatic blowing mode, the wind speed automatically decreases when the room temperature approaches the setting. In the state of heating, when the room temperature reaches the setting temperature the compressor stops working and the fan turns to low wind or stops. Wind speed changes automatically in the dehumidifying mode.

Regulating Wind Direction:
It is recommended not to make the wind deflector downwards for a long time to avoid condensation at air outlet port during refrigerating or dehumidifying. Water dropping might appear at the air outlet port in refrigerating or dehumidifying mode.

Defrosting:
During heating running, the air conditioner would defrost automatically if there is frost on heat exchanger of outdoor units. Do not rotate fans of both indoor units and outdoor units during defrosting. After finishing defrosting, the air conditioner will resume running automatically.










The machine operation must be controlled by the control.










Hints:
As air conditioners absorb heat from the environment and release it to the room, heating effects will be influenced by the temperature in and out of the room.

 Attention

Notices during Operation

- It is not allowed to put any heating apparatus under the indoor units, for the heat may cause distortion of the units.
- Pay attention to the aeration condition to avoid anoxic symptom.  
- Flammable apparatus should not be placed in the place where the air conditioner wind could reach directly, or incomplete burning of the apparatus may be caused.  
- Check the mount table of the air conditioner for damage for a long period of operation. If placed on the damaged table, the unit may drop down causing damage. 
- Plants and animals should not be put to the place where wind of the air conditioner blows directly, otherwise damage to them may be caused. 
- It cannot be used for the preservation of food, living creature, precise instrument and artworks, etc, otherwise damage may occur. 
- Use the fuse with proper capacity. Metal wires and copper wires, etc., may cause fire or other faults. 
- Do not use water heater or like next to the indoor unit and the wired controller. Water/ power leakage or short circuit may happen if the steam generating apparatus is working next to machine. 
- Defrosting during heating
To improve the heating effect, the outdoor unit will perform defrosting automatically when frost appears on the outdoor unit during heating (approximately 2-10 min). During defrosting, the fan of the indoor unit runs at a low speed or stops while that of the outdoor unit stops running.
- Power should be cut off when the air conditioner is left unused for a long period. Power will be consumed if the air conditioner is not powered off. The power switch of the outdoor unit switch should be powered on 12 hours in advance before operation to protect the unit after a long period of storage.

- 3-minute protection
To protect the unit, compressor can be actuated with at least 3-minute delay after stopping.
- Close the window to avoid outdoor air getting in. Curtains or window shutters can be put down to avoid the sunshine. 
- Do not touch the switch with the wet hand to avoid power shock. 
- Stop running and switch off the manual power switch when cleaning the unit. 
- During the operation of the control unit, don't switch off the manual power switch and the controller can be used. Please do not press the liquid crystal zone of controller to prevent damage. 
- Cleaning the unit with water may cause electric shock.  
- Do not put flammable spray close to the air conditioner. Don't inject flammable spray towards the air conditioner, which may cause fire. 
- Stopping fan rotation
The unit which stops operating will actuate the fan for a 2-8 min swing every 30-60 minutes for protecting the unit while other indoor unit are in the operating state.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

13.9.3 Emergency running & Test operation

Emergency Running & Test operation:

- Emergency running will help air conditioner operate automatically if your remote control is missing or out of work.
- Test operation is recommended when room temperature is below 16°C but not in normal condition.

Emergency Running

It is recommended to use only when the remote control is missing or damaged.

■Startup

A warning tone could be heard after turning on the Emergency Running switch, which means that the emergency running gets started.

- Air conditioner operates automatically according to the working modes blow:

Set Temp	Wind Speed	Working Mode
24°C	auto	auto

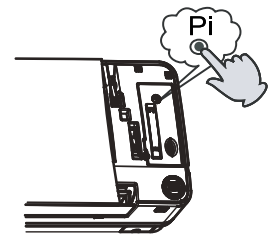
Temperature setting values and wind speed cannot be changed in the mode of emergency running. Meanwhile, dehumidification and timing operation cannot be operated simultaneously.

■Shutdown (canceling the emergency running)

All the indicator lamps on the conditioner extinguish after pressing the emergency running switch and hearing the warning tone.

■Canceling the emergency running with the remote controller

A warning tone is heard after pressing the ON/OFF button on remote controller. The air conditioner works according to the indication of operating state on the remote controller.

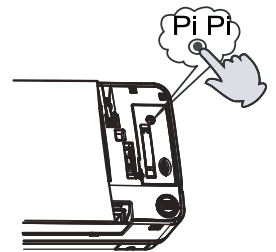


Test Operation

It is recommended when the room temperature is below 16°C but not in normal condition.

■Startup

Press it for over 5 seconds till 2 warning tones are heard and then release your finger to start the test operation. The air conditioner is operating at high wind speed. The test operation lasts for 30 minutes before the air conditioner stops automatically.



■Shutdown (canceling the test operation)

The warning tones are followed after pressing the test operation switch.

■Canceling the test operation with the remote controller

The warning tone could be heard after pressing the switch on remote controller.

The air conditioner works according to the indication of operating state on the remote controller.

13.9.4 Maintenance

*Only when the air cleaner is switched off and disconnected to the power supply can it be cleaned, or electric shock and injury may appear.

Cleaning the air outlet port and the shell:

⚠ Attention

- Don't use gasoline, benzene, diluents, polishing powder or liquid insecticide to clean them.
- Do not clean them with hot water of above 50°C to avoid fading or distorting.

- Wipe them with soft dry cloth.
- Water or neutral dry cleanser is recommended if the dust cannot be removed.
- The Wind Deflector can be dismantled to clean (as below).

Cleaning Wind Deflector:

- Do not wipe the wind deflector with water forcibly to avoid falling off.

Cleaning Air Cleaner:

⚠ Attention

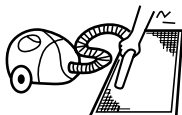
- Don't rinse the air cleaner with hot water of above 50°C to avoid fading and distorting.
- Don't put the air cleaner on the fire to dry to avoid catching fire.

- Wipe dust with water or dust collector.

(A) Wipe dust with dust collector.

(B) Clean it with soft brush in mild detergent if there is too much dust on it

Throw off the water and airing it in the cool dry condition.



Maintenance before and after Operating Season

Before Operating Season:

1. Please make the following checkup. If abnormal condition occurs, consult the after-service personnel.
 - There is no blockage in inlet port and outlet port of outdoor and indoor units.
 - The ground line and the wiring are in the proper state
2. After cleaning, the air cleaner must be mounted.
3. Switch on to the power.

After Operating Season:

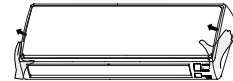
1. In sunny days, blowing operation can be performed for half a day to make the inside of machine dry.
2. Electrical power should be cut down to economize electricity, or the machine will still consume power. Air cleaner and shell must be mounted after cleaning.

Clean the machine (Cleaning ways are approximately same, taking AS182MNERA indoor machine as example).

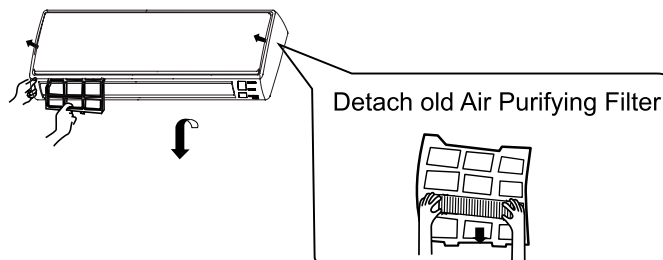
Turn off the air conditioner before cleaning. Do not touch the machine if the hands are wet. Neither hot water nor solvent should be used in cleaning.

Replacement of Air Purifying Filter

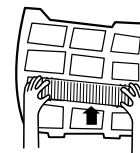
1. Open the inlet grille
Prop up the inlet grille by using a small device named grille-support which located in the right side of the indoor unit.



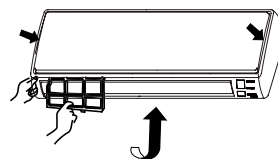
2. Detach the standard air filter
Slide the knob slightly upward to release the filter, then withdraw it.



3. Attach Air Purifying Filter
Put air purifying filter appliances into the right and left filter frames.



4. Attach the standard air filter
(Necessary installation)



ATTENTION:

The white side of the photo catalyst air purifying filter face outside, and the black side face the unit. The green side of the bacteria-killing medium air purifying filter face outside, and the white side face the unit.


5. Close the inlet grille
Close the Grille surely

NOTE:

- The photo catalyst air purifying filter will be polarized in fixed time. In normal family, it will be polarized every 6 months.
- The bacteria-killing medium air purifying filter will be used for a long time, no need for replacement. But in the period of using them, you should remove the dust frequently by using vacuum cleaner or flaping them lightly, otherwise, its performance will be affected.
- Please keep the bacteria-killing medium air purifying filter in the cool and dry conditions avoid long time directly sunshine when you stop using it, or its ability of sterilization will be reduced.

13.9.5 Fault checkup

Please check the following when consigning repair service:

	Symptoms	Reasons
All these are not problems	<ul style="list-style-type: none"> Water flow sound 	Water flow sound can be heard when starting operation, during operation or immediately after stopping operation. When it starts to work for 2-3 minutes, the sound may become louder, which is the flowing sound of refrigerant or the draining sound of condensed water.
	<ul style="list-style-type: none"> Cracking sound 	During operation, the air conditioner may make the cracking sound, which is caused from the temperature changes or the slight dilation of heat exchanger.
	<ul style="list-style-type: none"> Terrible smell in outlet air 	The terrible smell, caused from walls, carpet, furniture, clothing, cigarette and cosmetics, attaches on the conditioner.
	<ul style="list-style-type: none"> Flashing operating indicator 	When switching it on again after power failure, turn on the manual power switch and the operating indicator flashes.
	<ul style="list-style-type: none"> Awaiting indication 	It displays the awaiting indication as it fails to perform refrigerating operation while other indoor units are in heating operation. When the operator set it to the refrigerating or heating mode and the operation is opposite to the setting, it displays the awaiting indication.
	<ul style="list-style-type: none"> Sound in shutdown indoor unit or white steam or cold air 	To prevent oil and refrigerant from blocking the shutdown indoor units, refrigerant flows in the short time and make the sounds of refrigerant flowing. Otherwise, when other indoor units performs heating operation, white steam may occur; during refrigerating operation, cold air may appear.
Please make another check.	<ul style="list-style-type: none"> Start or stop working automatically 	Check if it is in the state of Timer-ON and Timer-OFF.
	<ul style="list-style-type: none"> Failure to work 	<ul style="list-style-type: none"> Check if there is a power failure. Check if the manual power switch is turned off. Check if the supply fuse and breaker are disconnected. Check if the protective unit is working. Check if refrigerating and heating functions are selected simultaneously with the awaiting indication on line control.
	<ul style="list-style-type: none"> Bad cooling & heating effects 	<ul style="list-style-type: none"> Check if air intake port and air outlet port of outdoor units are blocked. Check if the door and windows are open. Check if the filtering screen of air cleaner is blocked with sludge or dust. Check if the setting of wind quantity is at low wind. Check if the setting of operation is at the Fan Operation state. Check if the temperature setting is proper.

- When buttons are inflexible actuated;
- When fuse and breaker have been burnt over and over;
- When there are foreign objects and water in the refrigerator;
- When it cannot still be operated after removing the operation of protective unit;
- When other abnormal conditions occur.

13.9.6 Installation procedures

This manual cannot completely illustrate all the properties of the products you bought. Please contact the local Airwell distribution center if you have any question or request.

Please use the standard tool according to the installation requirements.

The standard attached accessories of the units of this series refer to the packing; prepare other accessories according to the requirements of the local installation point of our company.

1. Choose the suitable installation location. Indoor units should be installed in places with the environment of even circulation of cool and warm blows. The following places should be avoided.

✘ Places with high salinity (beach), high sulfured gas (such as the thermal spring regions where copper tubes and soft soldering are easy to be eroded), much oil (including mechanical oil) and steam; places where organic substance solvent is frequently used; places where machines generate the high frequency electromagnetic wave (abnormal condition will appear in the control system); places where there is high humidity exists near the door or windows (dew is easily formed); and places where the special sprayer is frequently used.

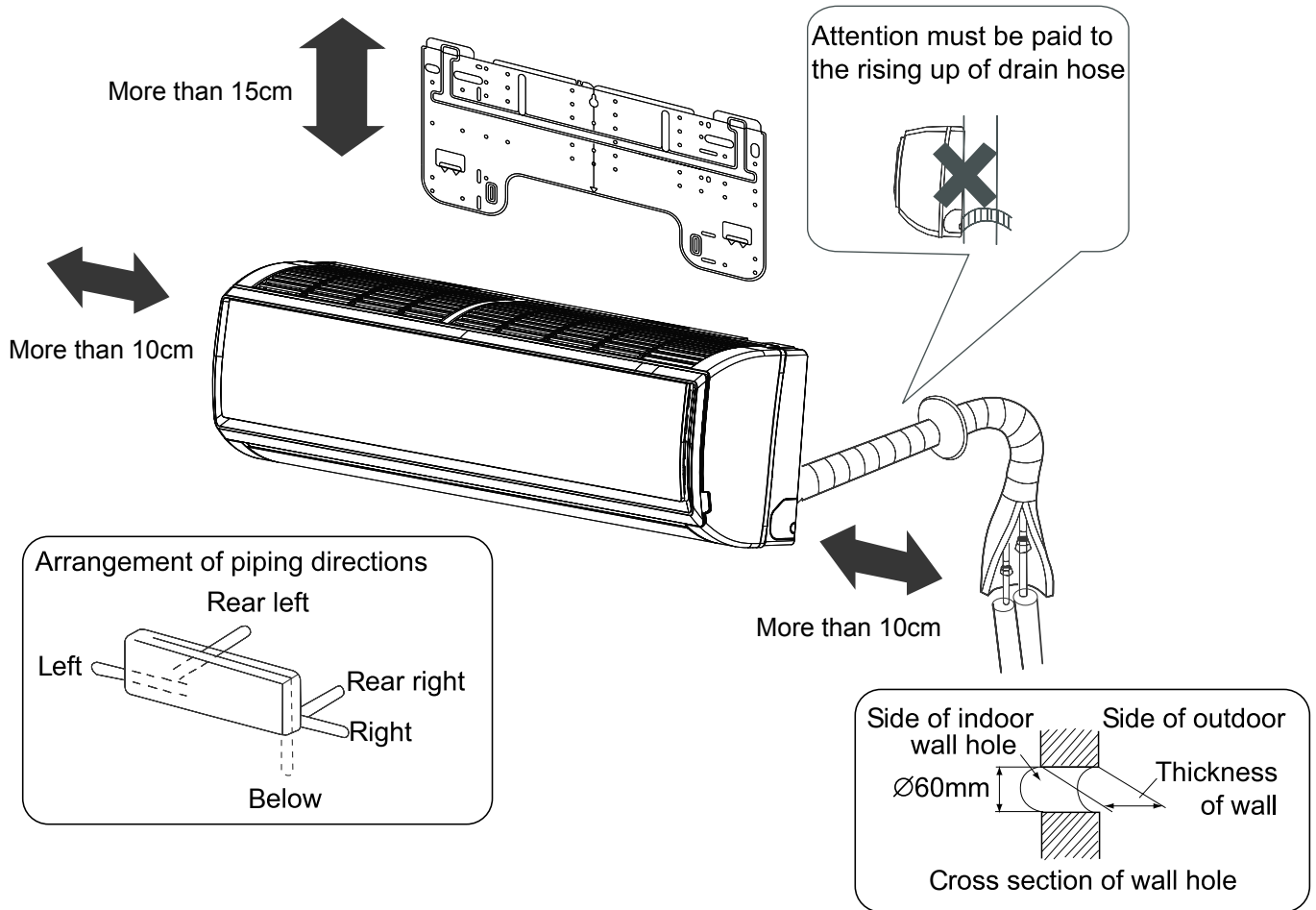
Indoor Units

- (1) The distance between wind outlet port and the ground should not be more than 2.7m. The distance to streets should not be less than 2.5m.
- (2) Select appropriate places for installation where the outlet air can be spread to places all over the house and arrange proper locations for connecting pipes and lines as well as the drainpipe to the outdoor.
- (3) Ceiling construction must be hard enough to hold the weight of the unit.
- (4) Make sure that the connecting pipe, drainpipe and connecting guide line can be put into walls to connect the outdoor units.
- (5) It is recommended to make the connecting pipe between the outdoor and indoor units and the drainpipe as short as possible.
- (6) Please read the attached installation instruction of outdoor units for regulation of filling amount of refrigerant if necessary.
- (7) Select a place close to the supply socket of air conditioner and enough space should be kept near the machine.
- (8) Those electrical appliances such as television, instruments, devices, artwork, piano, wireless equipment and other valuables should not be placed under the indoor unit and over 1m away from the daylight lamp as to prevent condensate from dropping into them and causing damage.

2. The following steps can be taken after selecting the installation place:

Cut a hole on the wall and put the connecting pipe and connecting thread into the PVC, which is purchased at the local shop. With a slight downwards tilt towards the exterior, the gradient should be kept at least 1/100. before cutting the hole, check if there are pipes or reinforcing steel bars at the rear of the hole. Making the hole in the place with wires or pipes should be avoided.

3. Installation Drawing of Indoor Units:



(1) Positioning Wall Pad & Locating Wall Holes

Fix the pad according to the installation location and the pipe layout of indoor unit (please refer to the installation drawing).

Installation should be done under the crossbeam or on the flat wall near the pillar. First fix the pad with a steel nail on the wall.

Drop a thread with a bolt through the pad center or use a level meter to find the level.

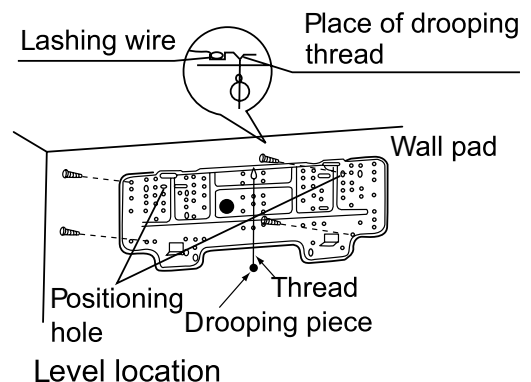
Then fix it with a concrete steel nail, and measure the position of the wall hole A.

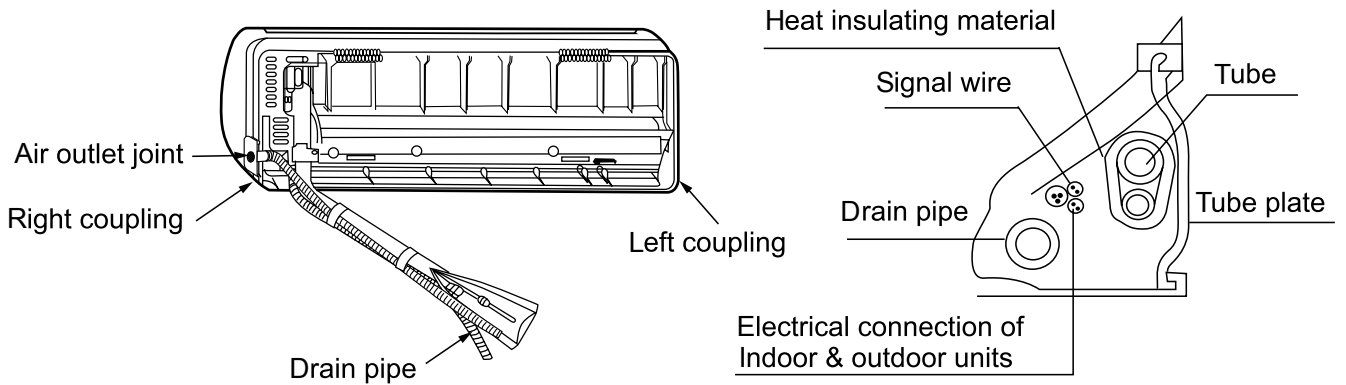
(2) Drilling Hole & Mounting Guard Ring

Drill a hole of 60mm bore with a slight tilt downwards to the outside, mount the guard ring, and seal it with gesso or putty after finishing the installation.

(3) Arranging Wiring of Indoor Unit

Arrange the layout of connection pipe, drain pipe, connecting line, signal line and air refreshing pipe according to the locations of your indoor unit, outdoor unit and wall holes, with drainage hose lower, connecting line upper. Intercrossing winding is not allowed between the mains line and the connecting line, and the drain pipe (especially in the indoor unit and the inside of machine) should be wound with heat insulating materials for heat preservation.





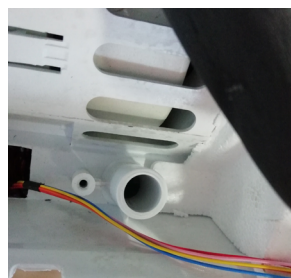
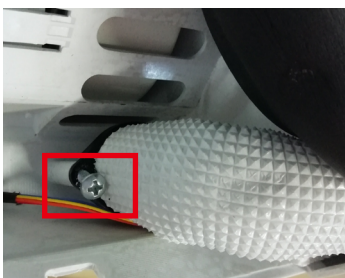
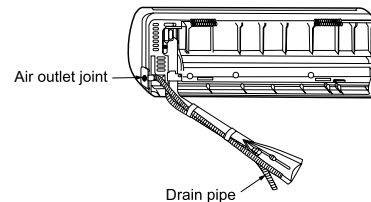
(4) Lead the connection tubing(liquid pipe and gas pipe) through the hole into the wall, or connect piping and wiring of indoor unit(check the number of wiring terminals of indoor and outdoor units and connect terminals with the same number and color), and then put the connection tubing and the connecting line through from the inside wall for the connection with outdoor unit.

The operation for changing the direction of drain pipe

The N high wall indoor units are right side drainage when out of factory, but you can change it to left side drainage

Operation method as follows:

Step 1: Remove the screw that secures the right side drain pipe, then unplug the drain pipe



Step 2: Unplug the rubber plug on the drain hole on the left side of the unit



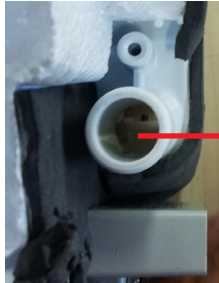
Step 3: Install the drain pipe removed from the right side onto the drain hole of the left side, fixed with the screw

Drain pipe



Note:

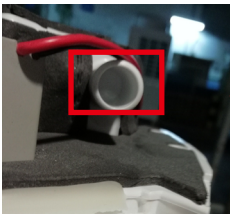
For the AWSI-HBV007-N11/AWSI-HBV009-N11/AWSI-HBV012-N11 indoor units the middle of the left drain is unblocked, can install the drain pipe directly.



Unblocked

But for AWSI-HBV16/18/24 and WSI-HBV30 indoor units the middle of the left drain is blocked, so first need to knock off the middle of the blocking piece and take it out to avoid noise when the unit is running. Then install the drain pipe.

See from outside



See from outside

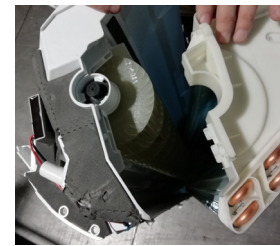


Blocked

Knock off the middle of the blocking piece by screwdriver



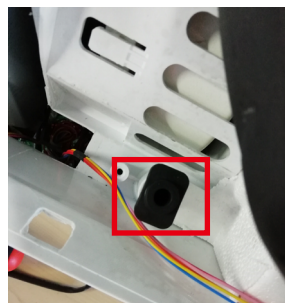
Disassemble the unit



Take out the blocking piece



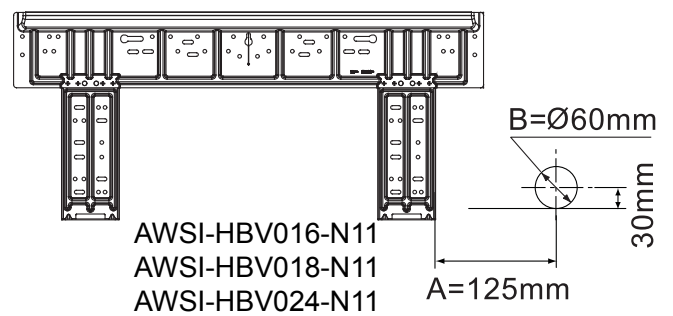
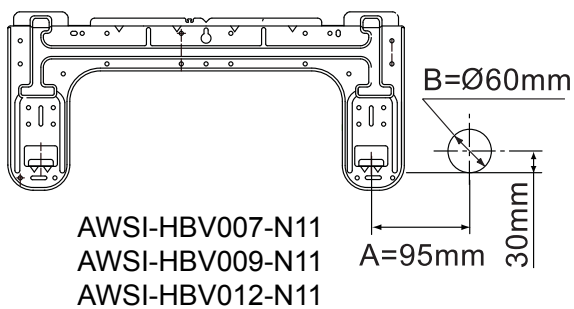
Step 4: Install the rubber plug on the left drain hole to the right drain hole to prevent water leakage.



Fitting of the Mounting Plate and Positioning of the wall Hole

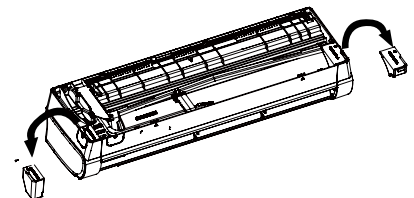
When the mounting plate is first fixed

1. Carry out, based on the neighboring pillars or lintels, a proper leveling for the plate to be fixed against the wall, then temporarily fasten the plate with one steel nail.
2. Make sure once more the proper level of the plate, by hanging a thread with a weight from the central top of the plate, then fasten securely the plate with the attachment steel nail.
3. Find the wall hole location A using a measuring tape.



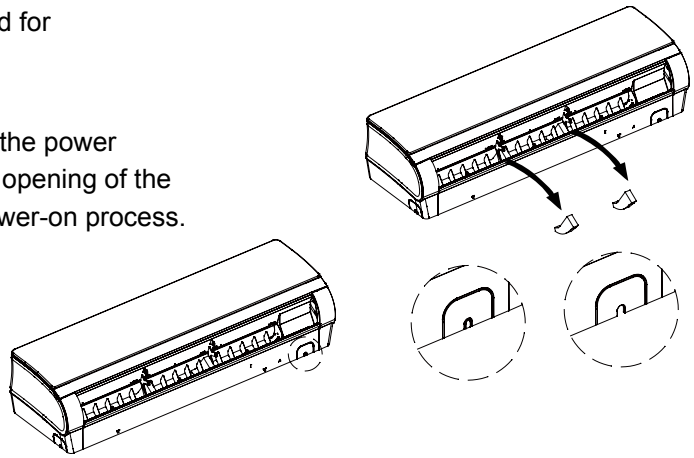
Pay attention to the following points before installation of machine:

1. Take out cushion blocks on the left and right angle beads as shown in the following Figure.



2. Remove 2 gaskets under the cross-flow fan. (used for AWSI-HBV016~024-N11)

3. Clean the burr on the surface of fracture to avoid the power wire from being scratched after removing the virtual opening of the outgoing line slot on the case by hands in indoor power-on process.



When the mounting plate is fixed side bar and lintel

- Fix to side bar and lintel a mounting bar, which is separately sold, and then fasten the plate to the fixed mounting bar.
- Refer to the previous article, "When the mounting plate is first fixed" for the position of wall hole.

Tubing Permissible Length & Height Difference

Please refer to the attached manual of outdoor units.

Tubing Materials & Specifications

Model		AWSI-HBV007~009-N11	AWSI-HBV012~018-N11	AWSI-HBV024~030-N11
Tubing Size (mm)	Gas pipe	φ9.52	φ12.7	φ15.88
	Liquid pipe	φ6.35	φ6.35	φ9.52
Tubing Material	Phosphor deoxy bronze seamless pipe (TP2) for air conditioner			

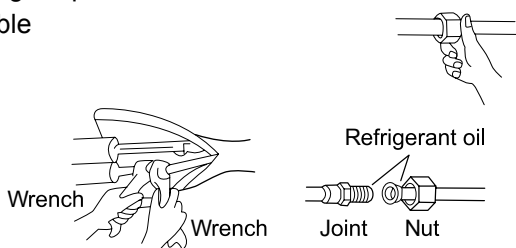
Refrigerant Filling Amount

Add the refrigerant according to the installation instruction of outdoor unit. The addition of R410A refrigerant must be performed with a measure gage to ensure the specified amount or compressor failure can be caused by filling too much or little refrigerant.

Connecting Procedures of Refrigerant Tubing

Proceed the flare tube connecting operation to connect all the refrigerant tubes.

- Dual wrenches must be used in the connection of indoor unit tubing.
- Mounting torque refers to the right table



Outer Diameter of Tubing (mm)	Mounting Torque (N-m)	Increase mounting Torque (N-m)
φ6.35	11.8(1.2kgf-m)	13.7(1.4kgf-m)
φ9.52	24.5(2.5kgf-m)	29.4(3.0kgf-m)
φ12.70	49.0(5.0kgf-m)	53.9(5.5kgf-m)
φ15.88	78.4(8.0kgf-m)	98.0(10.0kgf-m)
φ19.05	98.0(10.0kgf-m)	117.7(12.0kgf-m)

Cutting and Enlarging

Cutting or enlarging pipes should be proceeded by installation personnel according to the operating criterion if the tube is too long or flare opening is broken.

Vacuumizing

Vacuumize from the stop valve of outdoor units with vacuum pump. Refrigerant sealed in indoor machine is not allowed to use for vacuumization.

Open All Valves

Open all the valves of outdoor units. [NB: oil balancing stop valve must be shut up completely when connected one main unit.]

Checkup for Air Leakage

Check if there is any leakage at the connecting part and bonnet with hydrophone or soapsuds.

Connecting

Connecting circular terminals:



1. Connecting circular terminals:

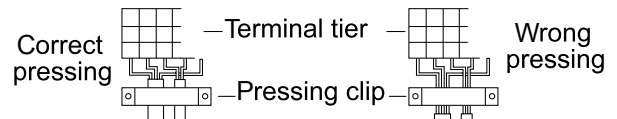
The connecting method of circular terminal is shown in the Fig. Take off the screw, connect it to the terminal tier after heading it through the ring at the end of the lead and then tighten it.

2. Connecting straight terminals:

The connection methods for the circular terminals are shown as follows: loosen the screw before putting the line terminal into the terminal tier, tighten the screw and confirm it has been clamped by pulling the line gently.

3. Pressing connecting line

After connecting line is completed, press the connecting line with clips which should press on the protective sleeve of the connecting line.



Installing and Dismantling Indoor Unit

1. Installation

During the installation of this series machines, fasten the wall pad on the wall first, hang the machine on the pothook, push it towards the wall pad until the sound of 'pa' 'pa' is heard. At this time, the agraffes of the indoor unit have hitched on the pad, as shown in the Fig.1 with dotted line.

2. Dismantling

During dismantling this series machines, push agraffes at the bottom of indoor unit upwards to release them, as shown in Fig.3, and pull up the bottom of indoor unit outwards gently and then raise the unit upwards in the bevel direction to release the pothook at the upper part of the wall pad, as shown in Fig.3.

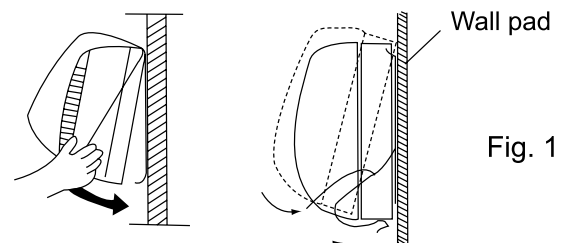


Fig. 1

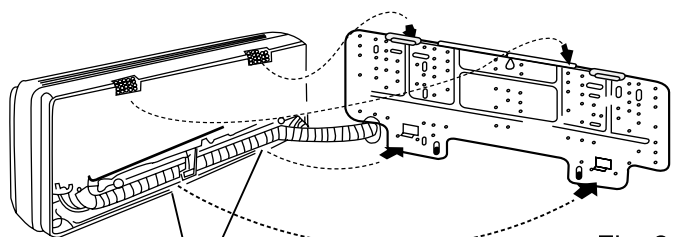


Fig. 2

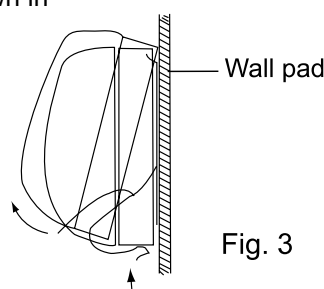


Fig. 3

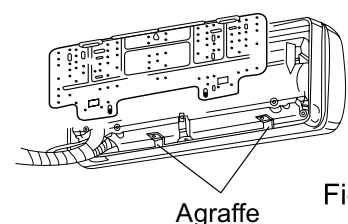


Fig. 4

13.9.7 Electrical wiring

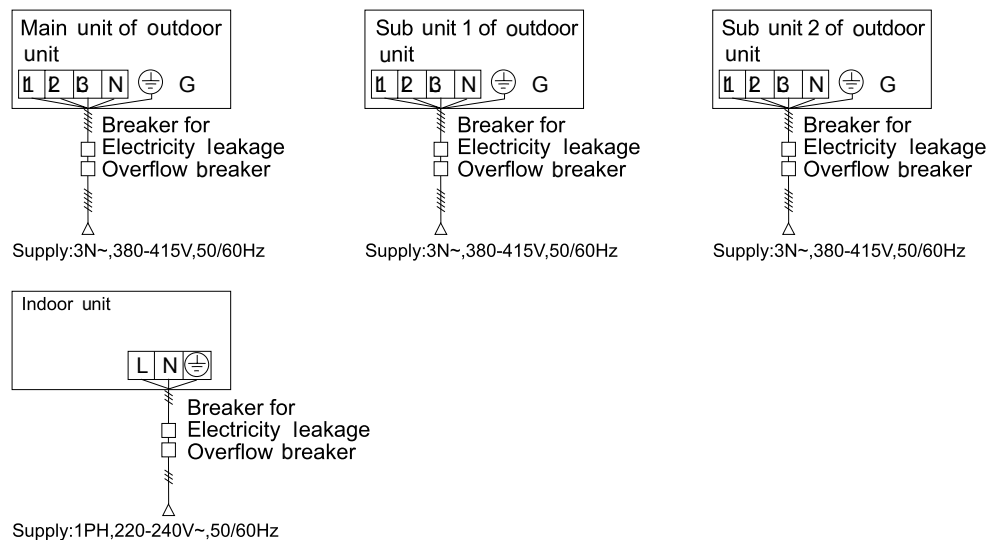
⚠ Warning

- Electrical construction should be made with specific mains circuit by the qualified personnel according to the installation instruction. Electric shock and fire may be caused if the capacity of power supply is not sufficient. **!**
- During arranging the wiring layout, specified cables should be used as the mains line, which accords with the local regulations on wiring. Connecting and fastening should be performed reliably to avoid the external force of cables from transmitting to the terminals. Improper connection or fastness may lead to burning or fire accidents. **!**
- There must be the ground connection according to the criterion. Unreliable grounding may cause electrical shocks. Do not connect the grounding line to the gas pipe, water pipe, lightning rod and telephone line. **!**

⚠ Warning

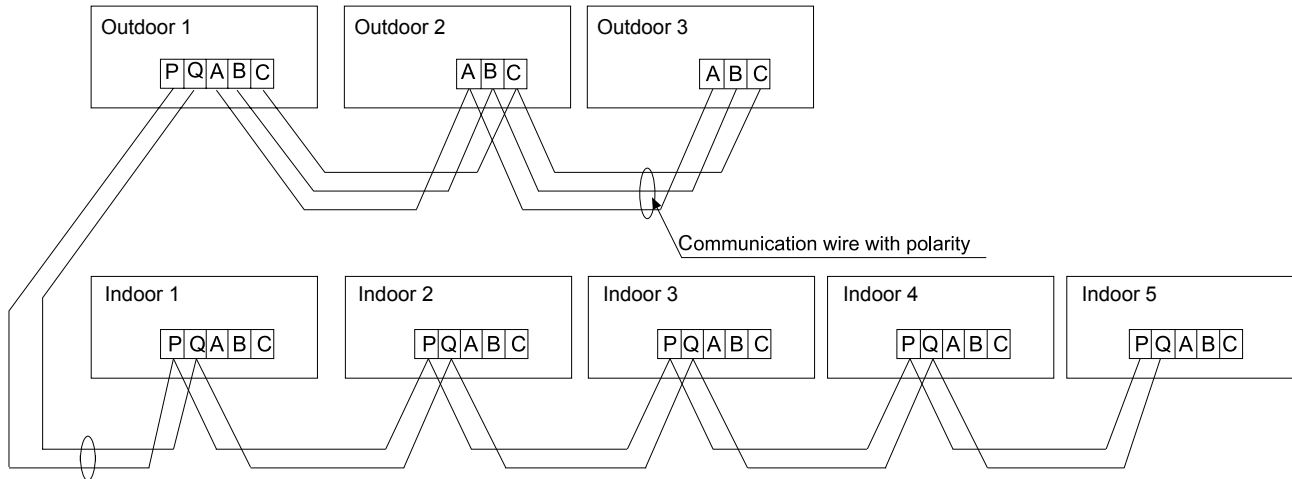
- Only copper wire can be used. Breaker for electric leakage should be provided, or electric shock may occur.
- The wiring of the mains line is of Y type. The power plug L should be connected to the live wire and plug N connected to null wire while ⊕ should be connected to the ground wire. For the type with auxiliary electrically heating function, the live wire and the null wire should not be misconnected, or the surface of electrical heating body will be electrified. If the power line is damaged, replace it by the professional personnel of the manufacturer or service center.
- The power line of indoor units should be arranged according to the installation instruction of indoor units.
- The electrical wiring should be out of contact with the high-temperature sections of tubing as to avoid melting the insulating layer of cables, which may cause accidents.
- After connected to the terminal tier, the tubing should be curved into be a U-type elbow and fastened with the pressing clip.
- Controller wiring and refrigerant tubing can be arranged and fixed together. **!**
- The machine can't be powered on before electrical operation. Maintenance should be done while the power is shut down.
- Seal the thread hole with heat insulating materials to avoid condensation.
- Signal line and power line are separately independent, which can't share one line. [Note: the power line, signal line are provided by users. Parameters for power lines are shown as below: 3*(1.0-1.5) mm²; parameters for signal line: 2*(0.75-1.25)mm²(shielded line)]
- 5 butt lines (1.5mm) are equipped in the machine before delivery, which are used in connection between the valve box and the electrical system of the machine. The detailed connection is displayed in the circuit diagram.

Supply Wiring Drawing



- Indoor units and outdoor units should be connected to the power source separately. Indoor units must share one single electrical source, but its capacity and specifications should be calculated. Indoor & outdoor units should be equipped with the power leakage breaker and the overflow breaker.

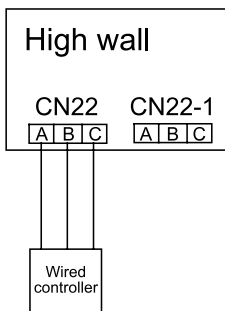
Signal Wiring Drawing



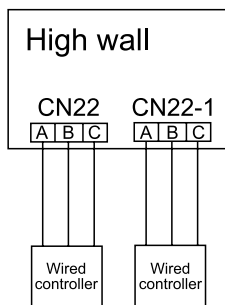
Outdoor units are of parallel connection via three lines with polarity. The master unit, central control and all indoor units are of parallel connection via two lines without polarity. The signal line between wired controller and indoor units are polarity

There are three connecting ways between wired controller and indoor units:

- A. One wired controller controls one indoor unit, the wired controller connects with the ABC terminal of indoor unit.



- B. Two wired controllers control one indoor unit. Either of the wired controls can be set to be the master wired controller while the other is set to be the slave wired controller.

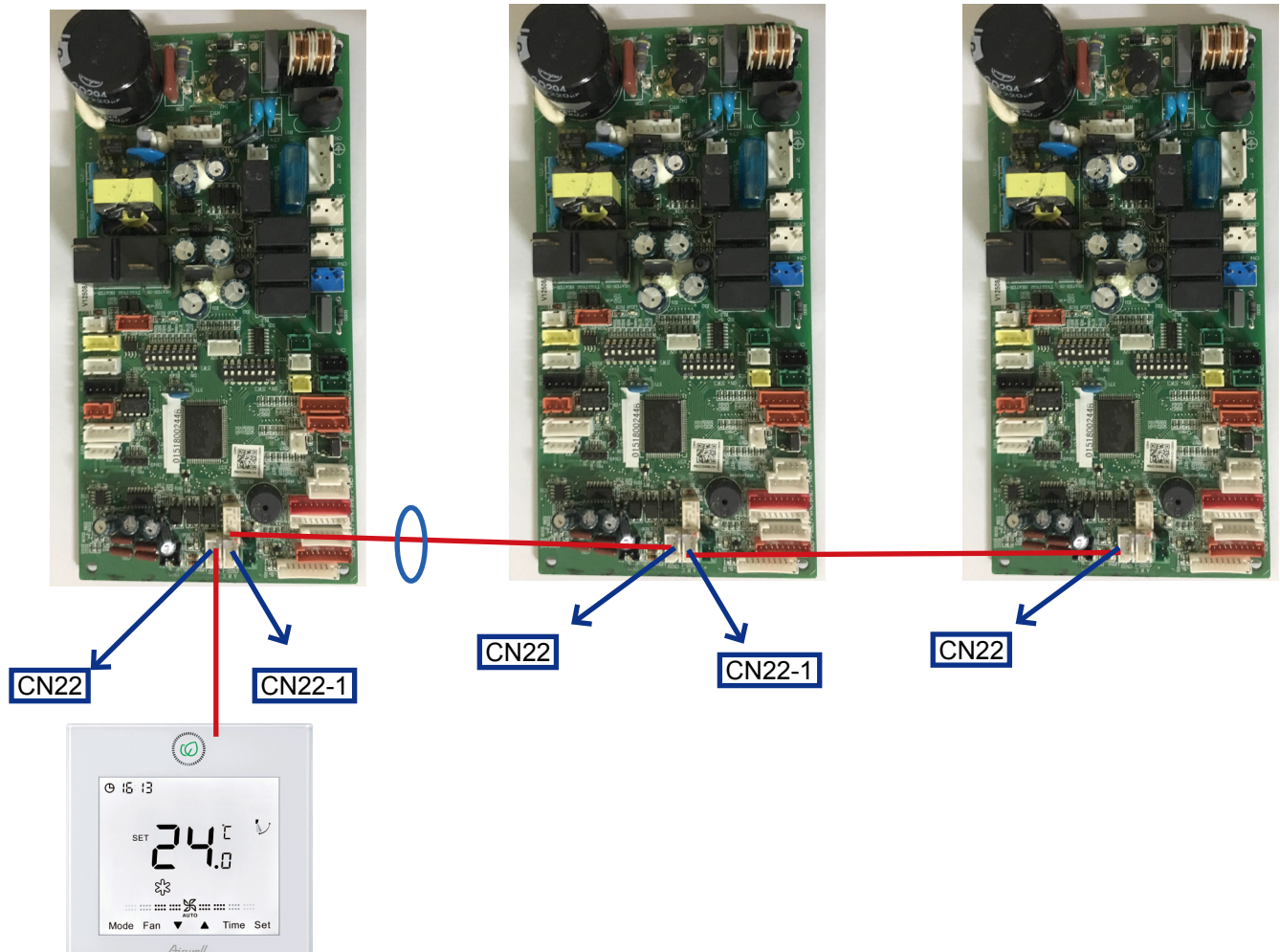


Master and slave controller setting method for RWV05, other controllers' setting method please refer to the controller manual

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Slave controller
		OFF	Master controller

C. One wired controller controls multiple units

0151800244B PCB



Note:

1. Plug the wired controller terminal to the CN22 terminal of master unit which wired address is 0.
2. The CN22-1 terminal of the previous unit is connected to the CN22 terminal of the next unit
3. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	ON	Slave unit 1 in group control
		OFF	OFF	ON	OFF	Slave unit 2 in group control
		OFF	OFF	ON	ON	Slave unit 3 in group control
	
ON	ON	ON	ON	Slave unit 15 in group control		

4. One controller can Max. control 16 indoor units.
5. Hand-in-hand connection method
6. The signal line is polarity
7. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

The combination of multiple indoor units can be controlled by remote controller.

Note: AS*ERA models are set to remote- controlled type.

The wiring for the power line of indoor unit, the wiring between indoor and outdoor units as well as the wiring between indoor units:

Total Current of Indoor Units(A)	Items	Cross Section (mm ²)	Length (m)	Rated Current of Overflow Breaker(A)	Rated Current of Power Leakage Breaker (A) Leaking Current(mA) Operating Period (S)	Cross Sectional Area of Signal Line	
						Outdoor -indoor (mm ²)	Indoor -indoor (mm ²)
(7		2.5	20	10	10 A,30 mA,0.1S or below	2 cores×0.75-2.0 mm ² shielded line	
≥7 and <11		4	20	16	16 A,30 mA,0.1S or below		
≥11 and <16		6	25	20	20 A,30 mA,0.1S or below		
≥16 and <22		8	30	32	32 A,30 mA,0.1S or below		
≥22 and <27		10	40	32	32 A,30 mA,0.1S or below		

- * The electrical power line and signal lines must be fastened tightly.
- * Every indoor unit must have the ground connection.
- * The power line should be enlarged if it exceeds the permissible length.
- * Shielded lays of all the indoor and outdoor units should be connected together, with the shielded lay at the side of signal lines of outdoor units grounded at one point.
- * It is not permissible if the whole length of signal line exceeds 1000m.

14. HRV

14.1 Product introduction

Development background:

Under the background of energy getting more and more shortage and the use's request for the life quality getting more and more high, we develop the heat reclaimed ventilation system to meet the needs.

Comparison between the HRV and the old sensible heat exchanger:

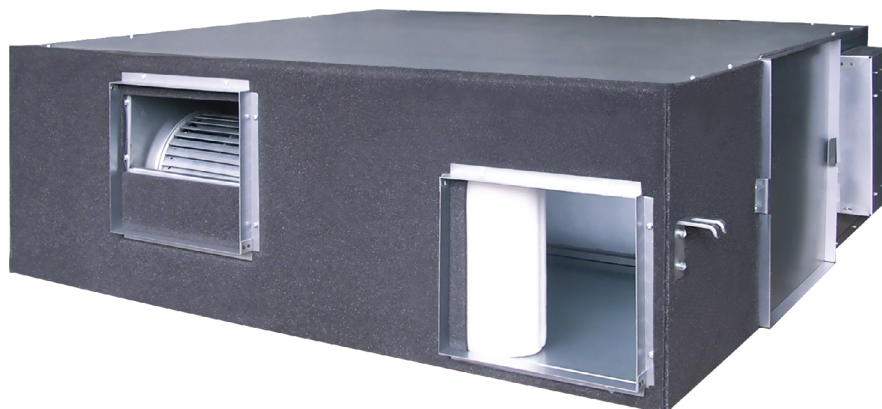
HRV is the changeover of sensible heat exchange and latent heat exchange, thus it can avoid the large number of condensate water being caused when the unit operates in the condition of great humidity, furthermore the condensate water needs the special drainage device, also the water always leaks to cause the unnecessary economic loss.

So Airwell HRV always is used at the coastal area to reduce the indoor humidity and gives the user a much more comfortable space.

Advantage of using air conditioner with HRV comparing to using air conditioner individually:

- The modern people seldom go out for the fresh air because of the busy work, and oppositely we always stay in the airtight office with the unhealthy air. More and more we rely on the air conditioner, less and less we can adapt the surroundings. After installing the HRV system, we can breathe the fresh air directly from outside, and make us more healthier.
- HRV needs not run for a long time such as the air conditioner. You can set ON or OFF in time to adjust the indoor air quality.

Room type	No smoke				Less smoke		Much smoke
	Common room	Building	Office	PC room	Restaurant	Advanced room	Meeting room
Necessary fresh air volume for each person (m ³ /h)	17-42	8.5-21	25-62	40-100	20-50	30-75	50-125
Fresh air exchanging times	1.06-2.65	0.5-2.66	1.56-3.90	2.5-6.25	1.25-3.13	1.88-4.69	3.13-7.81



14.2 Function description

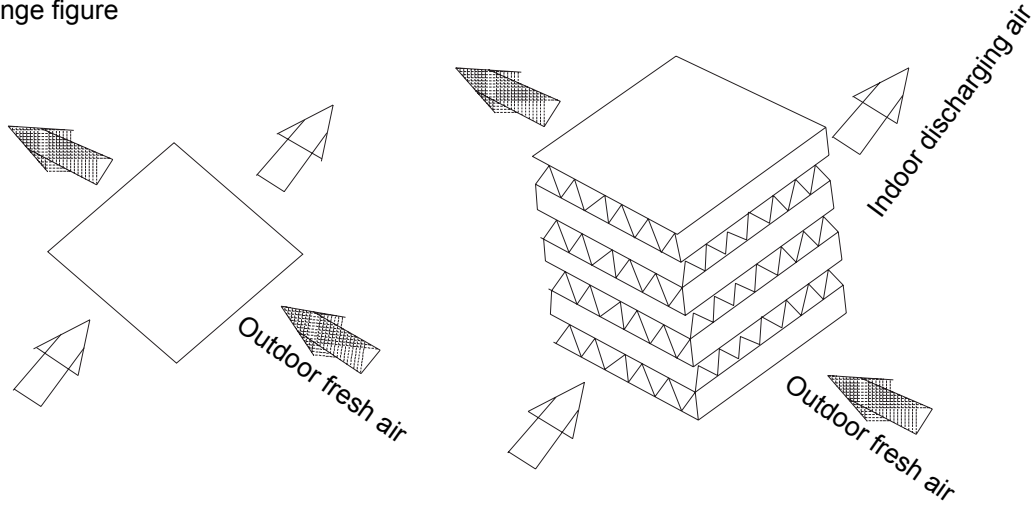
HRV will make the sufficient heat exchange by air inlet and air discharging, and compensate the energy loss in the course of getting fresh air to the max. limit. Meanwhile the latent heat exchanger will perform good efficiency to control the indoor humidity. The HRV can be used individually, also can be used in combination with the indoor unit of MRVII to reach the effect of air adjustment and get fresh air.

Flow volume selection	Air volume selection	Indoor/outdoor motor state	Remarks
Flow volume to indoor =Flow volume to outdoor	Low speed	Indoor motor low speed outdoor motor low speed	Default mode
	High speed	Indoor motor med speed outdoor motor med speed	
Flow volume to indoor >Flow volume to outdoor	Low speed	Indoor motor low speed outdoor motor med speed	The two modes can be set due to the user's request before out of factory.
	High speed	Indoor motor med speed outdoor motor high speed	
Flow volume to indoor <Flow volume to outdoor	Low speed	Indoor motor med speed outdoor motor low speed	
	High speed	Indoor motor high speed outdoor motor med speed	

You can select different operation mode according to the different environment, for example, to avoid the funk or humidity from toilet or kitchen into indoor side, select the mode of "flow volume to indoor>flow volume to outdoor"; to avoid the abnormal smell from the sickroom or the air with virus into the lobby, select the mode of "flow volume to indoor<flow volume to outdoor".

14.3 Operation principle

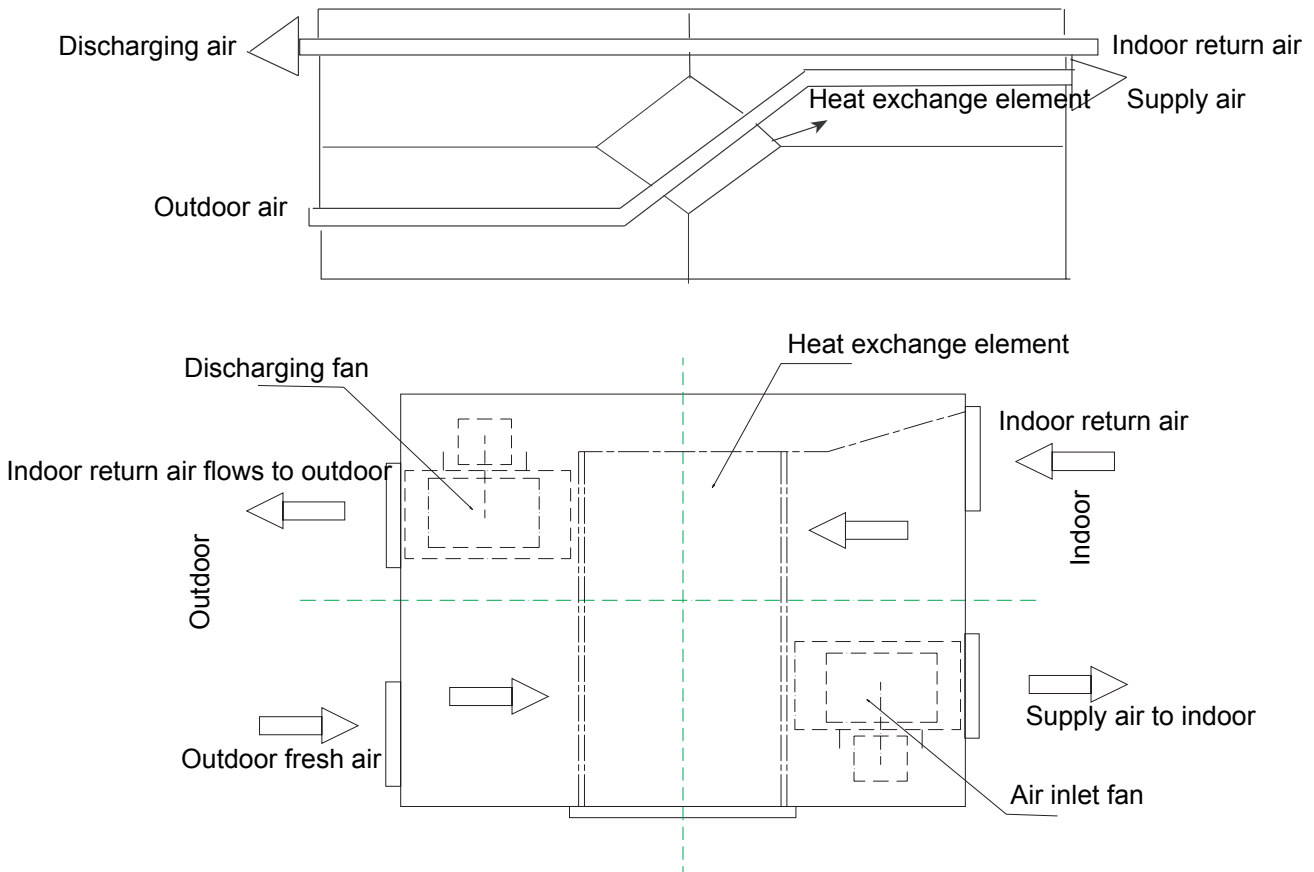
- a. Operation type: forced air inlet—indoor positive pressure—air release
supply air—indoor minus pressure—forced discharging air
- b. Heat exchange figure



c. Operation sketch map

When the heat exchange element is at the position as the figure, the unit is in heat reclaimed ventilation state; when the heat exchange rotates, indoor return air will not pass the heat exchange element, and flow to outside directly, that is bypass state.

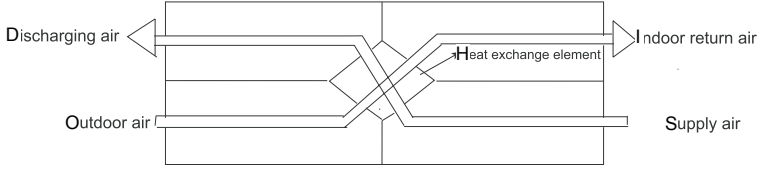
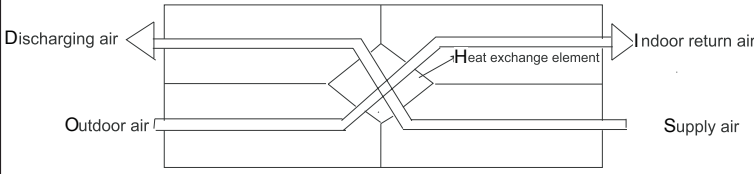
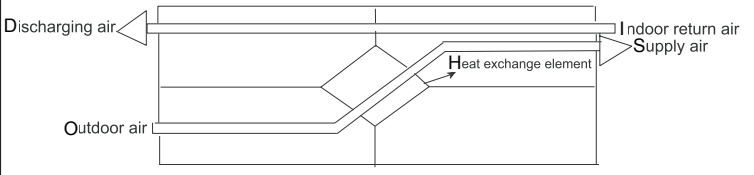
Bypass state:



14.4 Features

1. Automatic ventilation mode changeover: Auto/Heat recovery/ Bypass
2. Fan speed changeover by indoor wired controller
3. Filter icon display when the filter needs to be cleaned
4. Standard HRV wired controller
5. Timer function
6. HRV can be used individually without outdoor unit
7. Auto restart function

Energy saving

<p>Heat recovery mode: Reduce about 20% reduction of heating/cooling load</p>	<p>HRV unit will reclaim the energy in cooling/heating operation of air conditioner. HRV will reduce the cooling/heating load and increase the cooling/heating efficiency.</p> 												
<p>Auto mode: Reduce about 8% reduction of heating/cooling load</p>	<p>Properly select the different operation mode can improve the efficiency. When the cooling operation is required in winter, you'd better use the bypass mode, refer to the below table:</p> <table border="1"> <thead> <tr> <th>Operation</th> <th>Ventilation</th> <th>Higher efficiency mode</th> </tr> </thead> <tbody> <tr> <td></td> <td>Difference between indoor temp. and outdoor temp.</td> <td>Higher efficiency mode</td> </tr> <tr> <td>Cooling</td> <td>Indoor temp.>outdoor temp. Indoor temp.>outdoor temp.</td> <td>Bypass mode Heat recovery mode</td> </tr> <tr> <td>Heating</td> <td>Indoor temp.>outdoor temp. Indoor temp.>outdoor temp</td> <td>Heat recovery mode Bypass mode</td> </tr> </tbody> </table> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Heat recovery mode:</p>  </div> <div style="border: 1px solid black; padding: 5px;"> <p>Bypass mode:</p>  </div> </div>	Operation	Ventilation	Higher efficiency mode		Difference between indoor temp. and outdoor temp.	Higher efficiency mode	Cooling	Indoor temp.>outdoor temp. Indoor temp.>outdoor temp.	Bypass mode Heat recovery mode	Heating	Indoor temp.>outdoor temp. Indoor temp.>outdoor temp	Heat recovery mode Bypass mode
Operation	Ventilation	Higher efficiency mode											
	Difference between indoor temp. and outdoor temp.	Higher efficiency mode											
Cooling	Indoor temp.>outdoor temp. Indoor temp.>outdoor temp.	Bypass mode Heat recovery mode											
Heating	Indoor temp.>outdoor temp. Indoor temp.>outdoor temp	Heat recovery mode Bypass mode											
<p>By rerunning mode: Reduce about 2% reduction of heating/ cooling load</p>	<p>When the unit is in the rerunning mode, HRV will be at standby state. After finishing pre-running mode, HRV will turn into normal mode. Thus the cooling/heating load will be reduced and reach the admired temp. quickly.</p>												

HRV

Heat recovery element



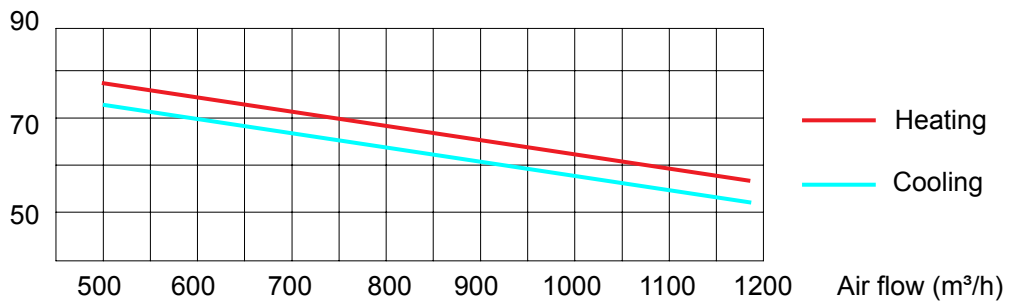
The heat recovery element is composed of flat paper and ripple paper. The thickness of flat paper is 50um. It is non-hole, water permeability but not gas permeability, which will ensure the humidity exchange and prevent the air mixture from indoor and outdoor. Meanwhile the angle between the air discharging passage and the indoor air return passage is 90degree, which can prevent air mixture further.

The ripple paper is with plastic character, and it will not distort even under the great humidity. Therefore it can support the structure firmly.

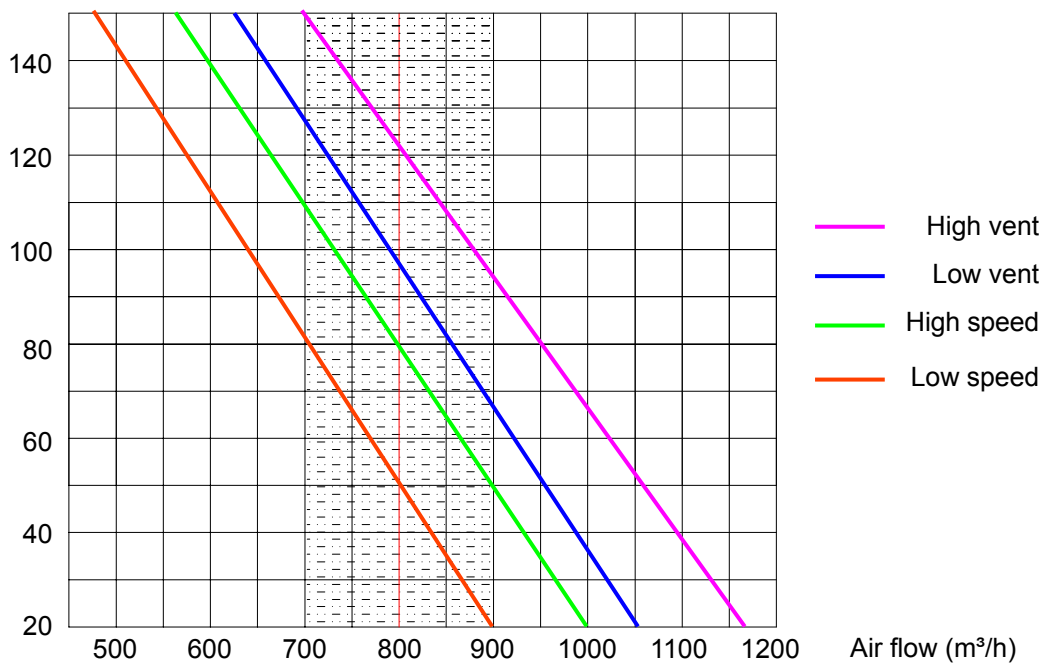
Heat exchange ratio, static pressure and air flow:

AWSI-HRV0800-N11

Heat exchange ratio (%)



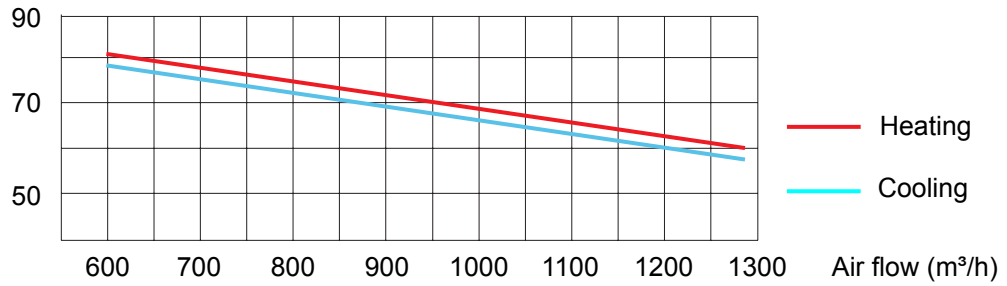
External pressure (Pa)



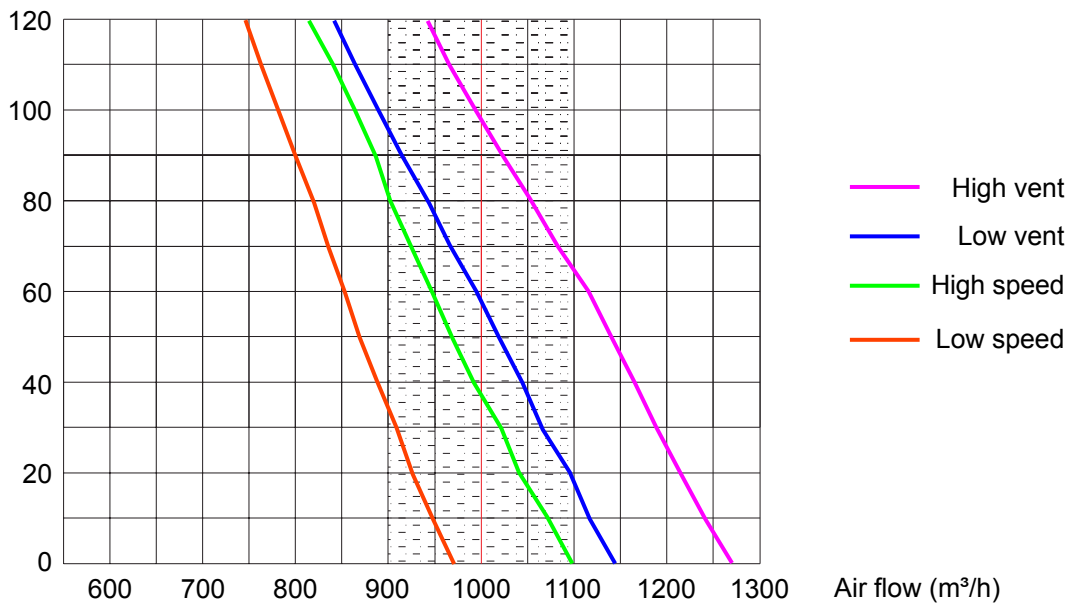
HRV

AWSI-HRV1000-N11

Heat exchange ratio (%)

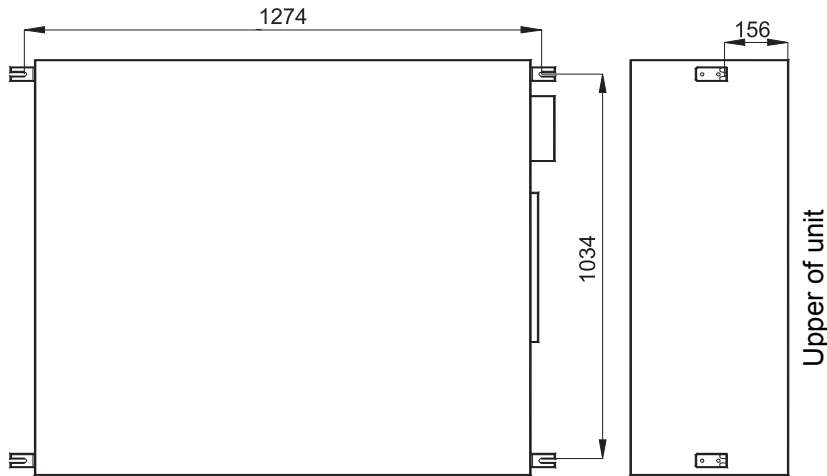


External pressure (Pa)

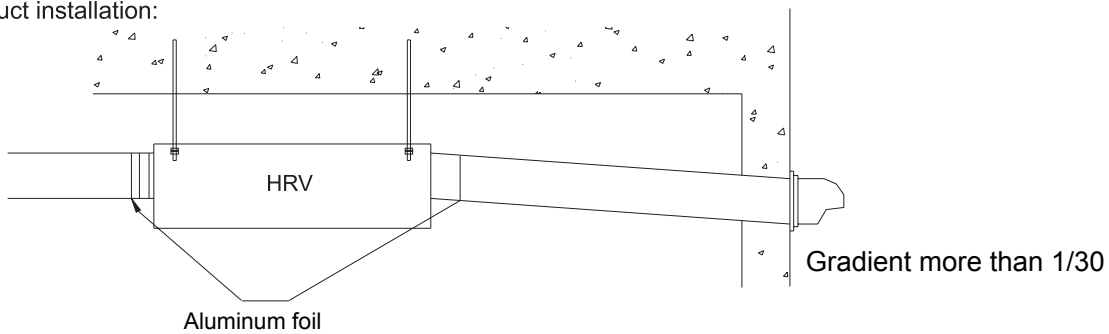


Easy installation and maintenance
Installation dimensions:

AWSI-HRV0800-N11 AWSI-HRV1000-N11

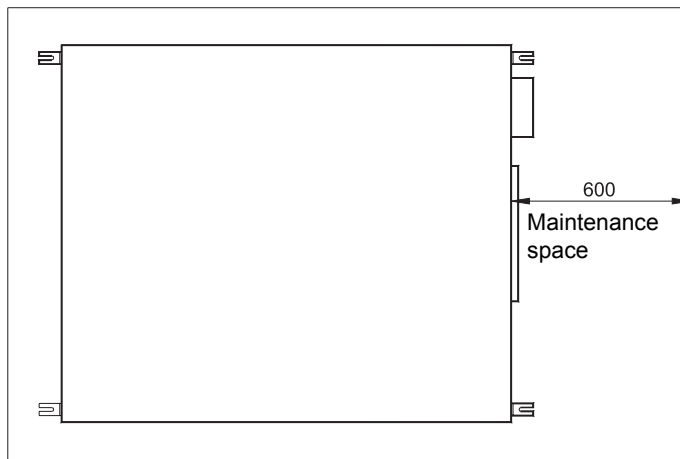


Duct installation:



Install the two outdoor ducts at a certain gradient (no less than 1/30) to avoid the water flowing backward. Meanwhile the three ducts (two outdoor ducts, one indoor duct) all need the heat insulation material against the dew. Installation distance between air discharging hole and air inlet hole should be 3 times longer than duct.

Maintenance space:



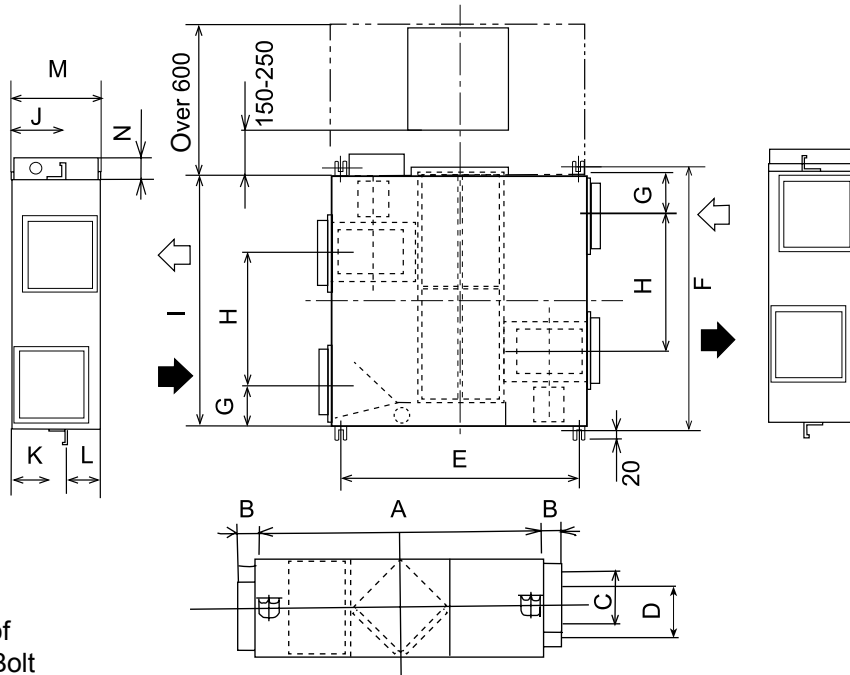
HRV

14.5 Specification

MODEL			AWSI-HRV0800-N11	AWSI-HRV1000-N11
Power supply		Ph-V-Hz	1,220~230,50/60	1,220~230,50/60
Rated power input		kW	0.36	0.36
Rated current		A	1.65	1.65
Indoor fan	Type		Centrifugal	Centrifugal
	Air flow rate	m ³ /h	800	1000
	External static pressure	Pa	120	100
Indoor motor	Brand			
	Model		Y7S423B07	Y7S423B07
	Type		AC FAN MOTOR	AC FAN MOTOR
	Power input	W	270	270
	Power output	W	100	100
	Capacitor	μF	5	5
	Speed (High/Low)	rpm	1240/1100	1240/1100
Dimension (W*H*D)		mm	1227*387*1115	1227*387*1115
Packing (W*H*D)		mm	1465*430*1213	1465*430*1213
Net weight		kg	85.5	85.5
Gross weight		kg	90.6	90.6
Sound pressure level	High	dB (A)	57	57
	Low	dB (A)	55	55
Sound power level	High	dB (A)	68	68
	Low	dB (A)	66	66
Temperature efficiency		%	76	77
Enthalpy efficiency	Heating	%	68	69
	Cooling	%	64	65
Heat exchange element			Heat exchange element is composed of the flat paper and the waved paper with glue. The flat paper is nonporous and 0.05mm depth. It is airtight and nonwatertight. It ensures the humidify exchange and at the same time, it will avoid the mutual infection from indoor and outdoor. The waved paper has the plastic characteristic which can keep the shape even on the condition of heavy humidity. Thus it can support the element steadily.	
Air filter			The filter core is black nonwoven cloth, its frame is PP material, and it is stucked to the nonwoven cloth with glue.	
Water pump			No	
Connection duct diameter			255*235	255*235
Controller	Standard		YR-N07	YR-N07
Operation range		°C	-15~43	-15~43

14.6 Dimension

AWSI-HRV0800-N11, AWSI-HRV1000-N11

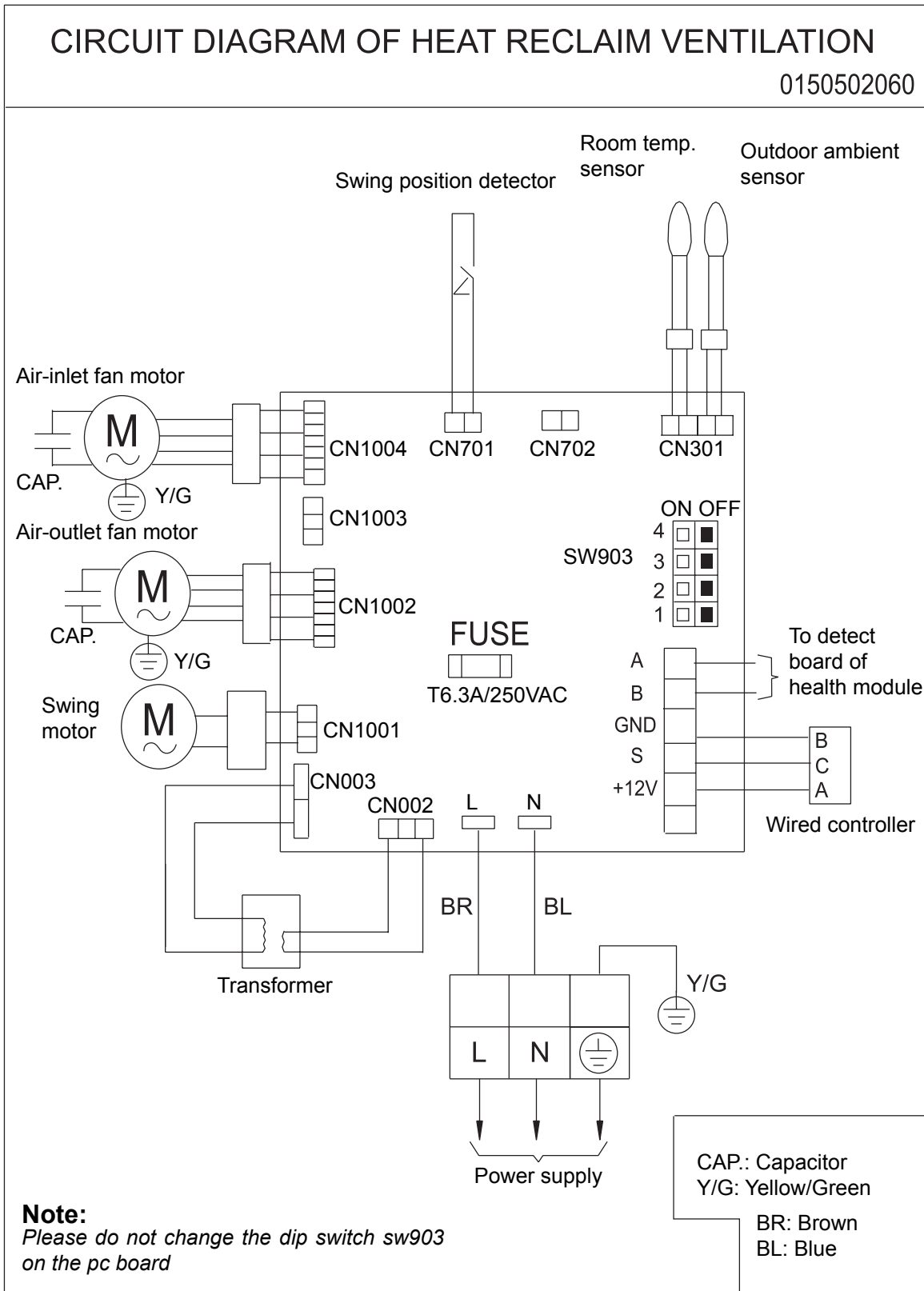


Relative Positions of the Unit and Draw Bolt

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1110	24	235	235	1034	1274	153	622	1216	235	235	155	385	66

HRV

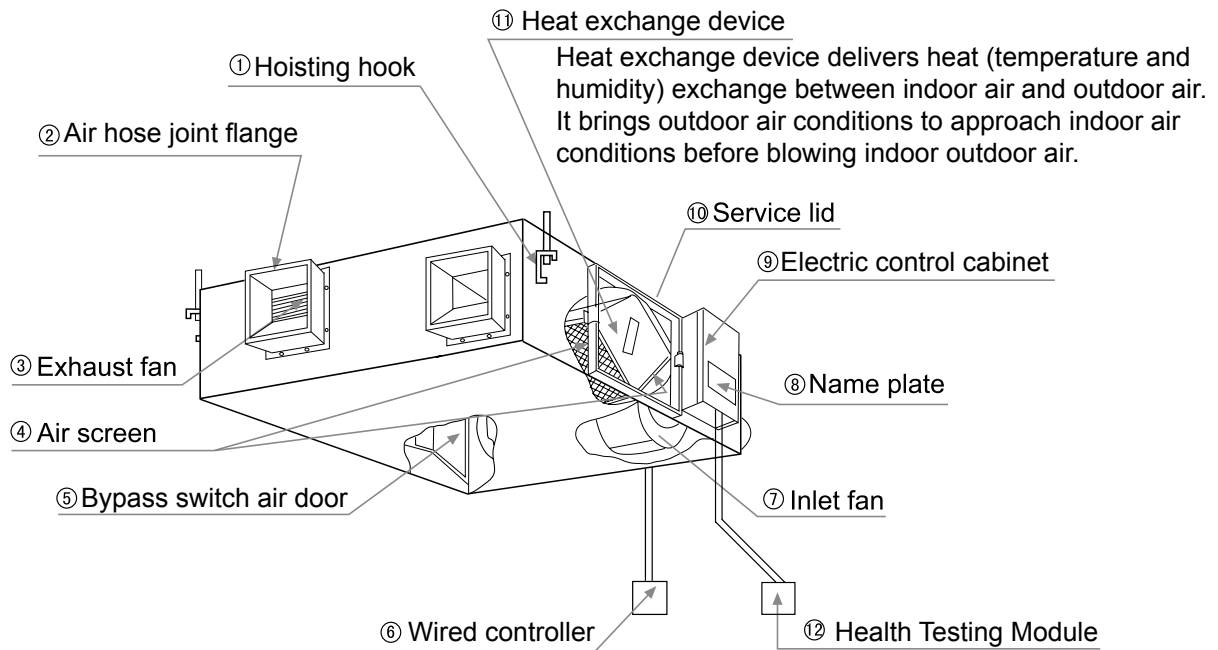
14.7 Wiring diagram



14.8 Installation

14.8.1 Parts and Functions

AWSI-HRV0800-N11, AWSI-HRV1000-N11

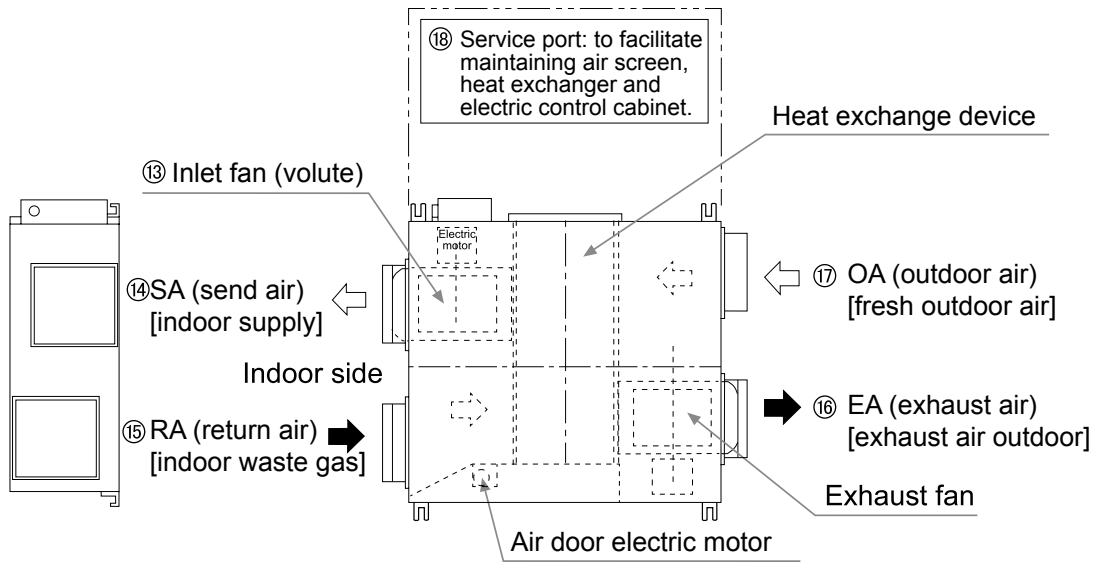


HRV

⚠ CAUTION

Conspicuous but innocuous smell may ensue during first run of the unit. The smell will disappear as the unit is more frequently operated.

AWSI-HRV0800-N11, AWSI-HRV1000-N11



14.8.2 Installing Heat Reclaim Ventilation

Installation Procedures

Do not install the unit in:

- Places close to high temperature locations or naked fires; otherwise, fire accident or overheating may occur.
- Places where oil mist or gasoline exists, such as kitchen; otherwise, fire may occur.
- Places where poisonous gases or corrosive material (acid and alkali solvents) are to be found, such as machine shop and chemical plant. Places where leakage of inflammable gases is possible shall also be avoided.
- Places with high humidity, such as bathroom, where electric shock or creepage and other troubles may take place.
- Places close to machines sending out electromagnetic waves, which may interrupt the operation of control system and cause failure.

CAUTION

Please make sure that temperature and humidity in places where air inlet and outlet grille is installed are controlled within prescribed range under operating conditions. Do not install the grille in refrigerator vehicle, low temperature places or warm water swimming pool; otherwise, short circuit or fire may ensue. Vehicles or vessels shall also be avoided.

Preparation Prior to Installation

Accessories and fittings necessary for installation shall be kept and must not be discarded!

1. Transporting the Unit

Decide on transporting route and do not unpack before arriving at installation site.





When unpacking is compulsory, please use soft rope or adopt the "rope plus angle of protection" approach to lifting devices so that scuffing or damages can be avoided.

When moving unpacked units, lift the unit by hoist hook, and not by any other objects on the unit (air hose joints in particular).

CAUTION

Concerned specialists shall teach users how to correctly operate the unit with aid from the manual (especially air screen service and operation procedures).

2. Accessories: Other parts not shown below shall be prepared by users.

Designation	Air hose joint flange	M4 tapping screw	Lace	Manual
Number	4	16	2	1
Appearance				

3. Special attention shall be given to following issues during installation and following completion of the same

a. Check upon Construction Completion

Item	Possible consequences due to erroneous practices	Results
Unit fixed tight?	Device may fall off, vibrate, or make noises.	
External air hoses tilted downwards and leading outdoor?	Condensed water may enter.	
Adequate heat insulation available for the unit? Valuables placed under air outlet frame?	Heat exchange efficiency may be impaired, and condensed water may occur; in case that condensed water dripping onto valuables, damages may occur.	
Supply voltage conforms to rating on name plate?	Fault may ensue or parts may get burnt out.	
Correct wiring?	Fault may ensue or parts may get burnt out.	
Safe earth connection?	Danger of creepage is possible.	
Air inlet port and outlet port blocked by objects?	Possibly leading to incomplete ventilation or abnormal running noises.	

b. Operating Instruction Essentials

⚠WARNING, ⚠CAUTION and 🚫PROHIBITED in the manual are indications of possible bodily injury and damages to devices, therefore, contents thereof shall be explained to users who shall be asked to read the manual.

Please check against items in "safety Considerations" again.

When moving or unpacking the unit, please hold the hoist hook.

Do not apply force to other parts, joint flange in particular. Please improve heat insulation when temperature and humidity inside ceiling exceed 30°C and RH80%. Glass wool or polyethylene foam shall be used to deliver heat insulation so that insulation thickness does not exceed 10mm, which is fit for the opening space on ceiling.

1. Choose installation site according to installing conditions and users' requirements.

The unit shall be installed in places featuring adequate strength and stability (e.g., crossbeam, ceiling, and other locations capable of bearing unit weight. Insufficient strength is dangerous and may cause vibration and abnormal operating noise).

Do not install the unit directly unto ceiling and wall surface; direct contact may cause vibration.

Install the unit in places where cleaning and service are facilitated.

CAUTION

- The unit, power lines and wires shall be kept at least 1 meter away from TV sets and radios to prevent interruption and noise. Placing of valuables right under the unit is strictly prohibited to prevent condensed water from dripping onto valuables and causing damages.
- Air chest may not be used in certain regions; please consult local authorities and fire department.
- In case that fireproof material is required in certain buildings, common air hose shall be supported with copper tube to exhaust air.

2. Install the unit by hoist hook and check out whether ceiling is strong enough to hold the unit. In case of insufficient strength, reinforce ceiling prior to installation.

Note: All above parts shall be procured in local region.

Preparation Prior to Installation

1. Decide on the relative positions of the unit and hoist hook. (Refer to installation diagram)

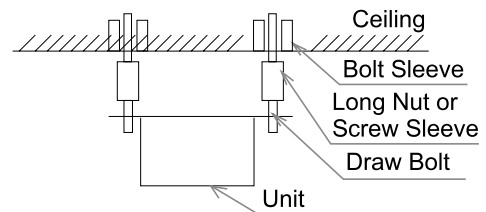
Set aside service space, including service port (open a service port beside electrical cabinet on the ceiling to facilitate checking and maintaining of air screen, heat exchange device and fan).

2. Make sure that External Static Pressure does not exceed range limits.

3. Opening installing port: put signal transmission line and wire control cable through the line hole on the unit after opening installing port on the ceiling.

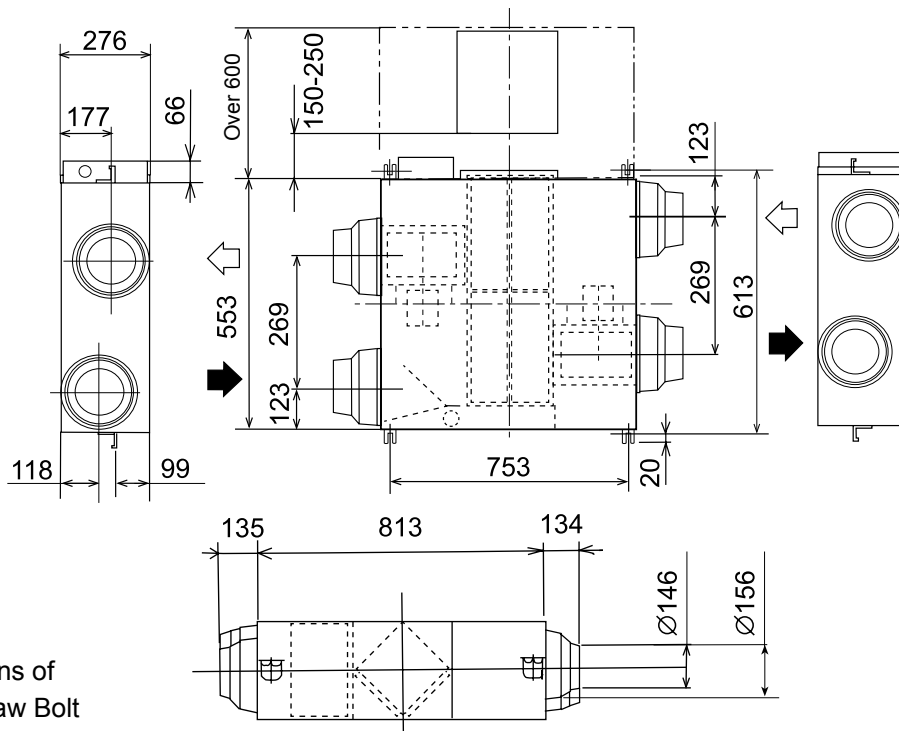
4. Keep ceiling in level position after opening installing port; reinforce ceiling when necessary to prevent vibration. (Concerned architect or carpenter can be consulted).

5. Installing Draw Bolt (Choose from the M10-M12 Range)



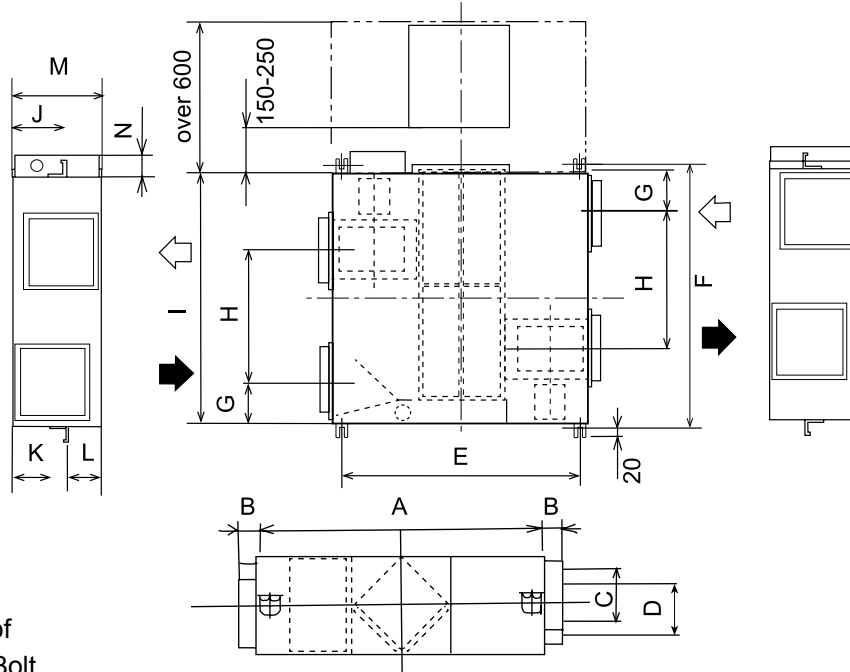
Installation Position

- Please install in places capable of bearing unit weight. Improper installation is dangerous; it not only causes vibration but produces operating noises.
- Set aside service space and access hole. Please make sure that access hole is preset to check air screen, heat exchange device and fan.
- Do not install the unit directly on roof or wall; otherwise, the unit may directly touch roof or vibration will ensue.



Relative Positions of the Unit and Draw Bolt

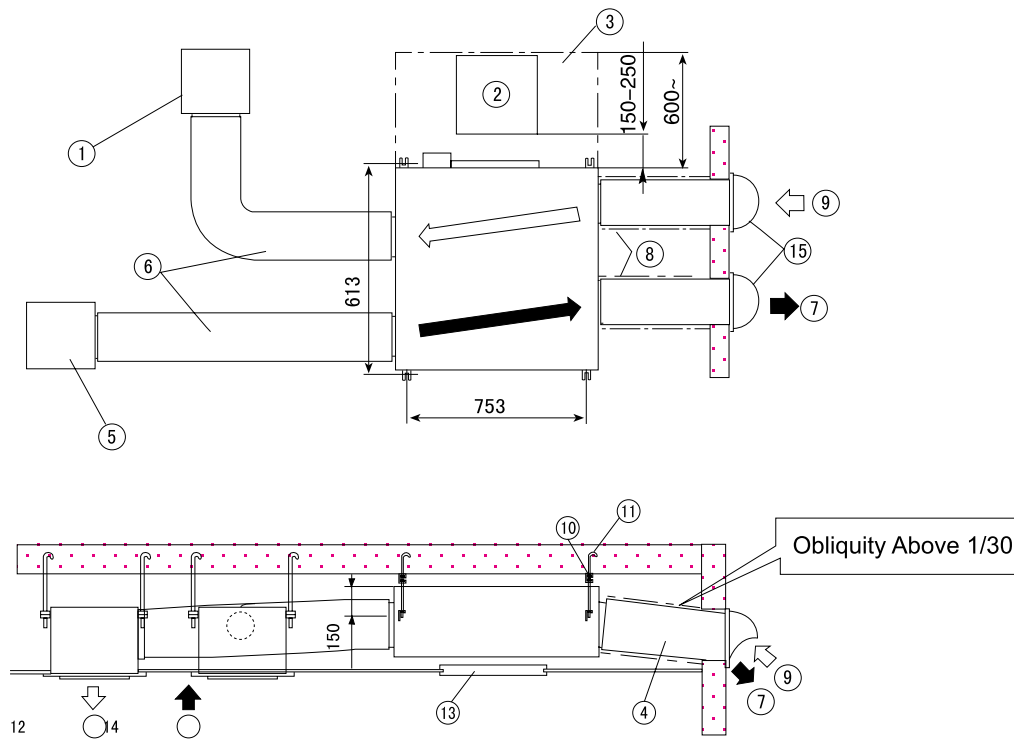
AWSI-HRV0800-N11, AWSI-HRV1000-N11



Relative Positions of
the Unit and Draw Bolt

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1110	24	235	235	1034	1274	153	622	1216	235	235	155	385	66

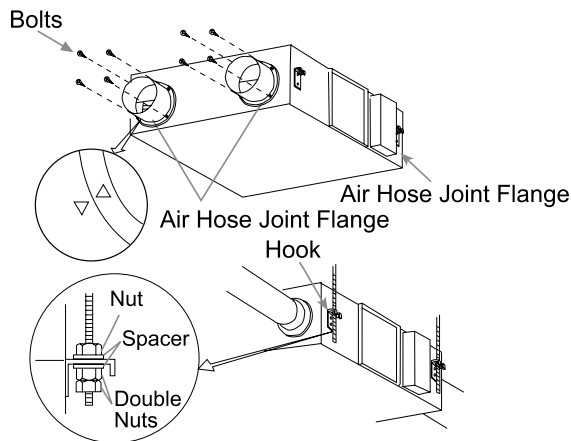
Installation Diagram



- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Outlet Grille—Available on the Site 2. Service Lid (dia.450mm) 3. Service Space for Maintaining Heat Exchange Device, Air Screen, Control Box and Fan. 4. Air Hose (available on the site) 5. Inlet Grille (available on the site) 6. Air Hose or Bourdon Tube (available on the site) 7. EA (exhaust air) | <ol style="list-style-type: none"> 8. Heat Insulant—available on the site 9. OA (outdoor air: fresh outdoor air) 10. Suspending Rack to Reduce Vibration (available on the site) 11. Suspending Bolt (available on the site) 12. SA (sending air) 13. Service Lid (dia.450mm) (available on the site) 14. RA (return air) 15. Dome Shield (available on the site) |
|---|---|

<Air Hose Installation Tips>

- Silencing box and soft hose are recommended when installing the unit in noise sensitive places.
- Airflow volume and noise shall be considered for special places when choosing installing material.
- When outdoor air enters ceiling, the ceiling air temperature shall rise. Therefore, heat insulation shall be handled with the metal parts in the ceiling.



Installing air hose joint flange: fix four joint flanges with bolts.

Installing Heat Recovery Ventilation Device

Fix anchor bolts (M10-M12) in the first place, then, put metal suspending rack through anchor bolts and fix it with spacer and nut.

(Check against residual scraps of vinyl foam and paper inside fan chest; check air hose inside through hose holes.)

When installed aloft, inverted suspension of the unit is needed; please take care to fix the unit tight with long foot bolts.

Connecting air hose: when connecting air hose, remember:

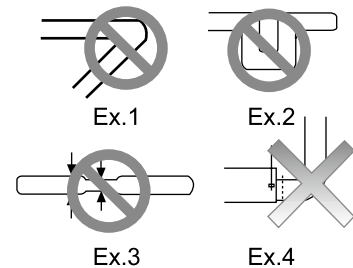
a. Do not connect air hose as shown by diagram on the right.

Ex.1: Avoid over bending, e.g., bend angle above 90°.

Ex.2: Avoid multiple bending.

Ex.3: Avoid reduced hose diameter, e.g., reduced mid-section diameter prohibited.

Ex.4: Avoid bending close to outlet.



b. Air Hose Minimum Bend Radius.

Dia.100mm Hose: 100mm; Dia.150mm Hose: 150mm

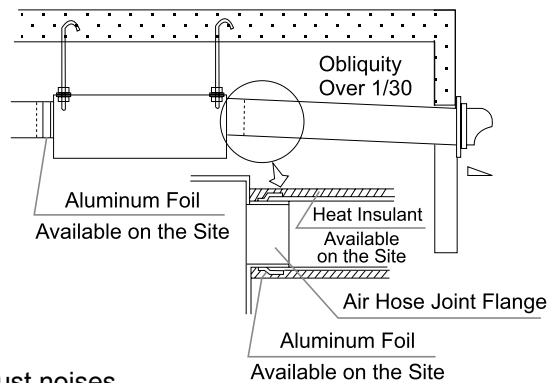
Dia.200mm Hose: 300mm; Dia.250mm Hose: 375mm

c. To prevent air leakage, joint section between flange and air hose shall be wrapped with aluminum foil.

d. To prevent short circuit, indoor air inlet shall be installed as far away from air outlet as possible.

e. Please choose air hoses with specs conforming to unit model.

f. Install two external air hoses with regular obliquity (not below 1/30) to prevent rain water from back-flowing. At the same time, heat insulant shall be available for all three air hoses (two outdoor and one indoor) lest condensed water ensues. (Insulant material: glass wool 25mm thick) (Refer to diagram on the right)



g. In case of constant high temperature and humidity in suspended ceiling, install ventilation device in ceiling.

h. Soft hose and wind softening hose can effectively reduce exhaust noises.

Fan strength and operating noise shall be considered when choosing material. Distributors of products shall be entrusted to choose material.

i. Default distance between air outlet EA and air inlet OA shall be two times longer than hose diameter.

j. Do not use bent service lid or dome shield as external shield; otherwise, rain water will directly enter. (Deepened shield is recommended)

k. Make sure that air hose is at least 1 meter away from shield.

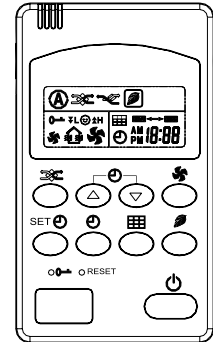
Installing Wire Control

1. Removing Top Cover

Install PC plate on the top cover of wire control.
Take care not to damage PC plate while removing top cover.

2. Indoor Unit Connection

Connect terminals (A, B, C) on bottom of wire control to terminals (+12V, GND, s) on indoor PC panel.



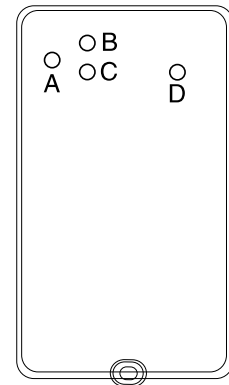
CAUTION

While conducting connection, keep certain distance (over 10mm) between signal line and power line.

Size of Signal Line:

Type	Shield Line (three cores)
Size	0.33mm ²

Wire Control Circuit Board



HRV

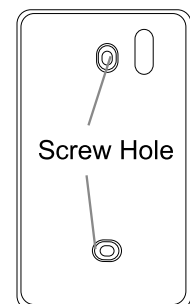
CAUTION

Make sure that terminal joints have been connected tight and no short circuit exists between terminals.

3. Installing Wire Control

Bore two holes on wall according to the positions of two screw holes on the back cover of wire control; fix back cover with bolts and close front cover.

Back Cover



CAUTION

Fix back cover on even wall surface, and do not apply too much force when screwing down bolts lest wire control is damaged.

4. Close top cover and take care not to press on wire.

CAUTION

Do not touch PCB panel with hands

Defining Electric Control System

Air Mode Switch: (delivered only through wire control matched with heat reclaim ventilation)

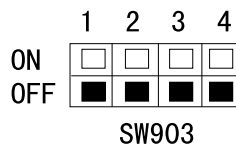
Airflow volume can switch between "high speed" mode and "low speed" mode, "high air change" mode and "low air change" mode.

Switch to Outdoor Fresh Air Mode:

When the unit operates in "high speed" mode and "low speed" mode, air coming indoors and air coming outdoors have the same flow volume.

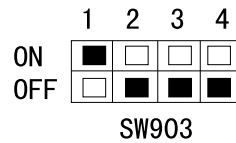
Air change mode is available in two scenarios as follow:

- Air volume coming indoors greater than air volume coming outdoors:
PC Panel Dial Code (SW903) Settings Shown as Below:



Unit operates in "high air change" mode or "low air change" mode and air volume coming indoors is greater than air volume coming outdoors. This mode prevents humidity or unpleasant smell from coming indoors out of lavatory or kitchen.

- Air volume coming outdoors greater than air volume coming indoors:
PC Panel Dial Code (SW903) Settings Shown as Below:



Unit operates in "high air change" mode or "low air change" mode, and air volume coming outdoors is greater than air volume coming indoors. This mode stops unusual smell or air-borne bacteria from coming to hall out of sickroom.

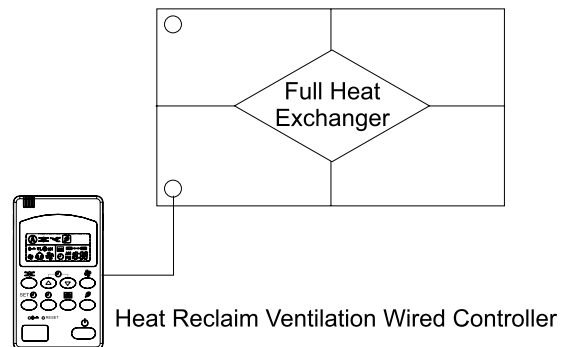
Defining Control System:

- Control operating heat reclaim ventilation with wired controller.
- Operating status and parameter settings are displayed in wired controller.

Independent System:

Controlled independently through wired controller:

- Users shall procure control cable (500m long at most).
- For detailed operating instruction, refer to wired controller operation.



Power Connection Definition

1. Wiring Notice-----Shut off Power Prior to Whatever Job

- Circuit breaker capable of shutting power off the whole system shall be installed. Please make sure that earth connection is available.
- A switch and fuse shall be available for every single power line.
- Circuit or creepage breaker shall be available for whatever wiring job.
- Make sure that ground impedance does not exceed 100 ohms. When creepage breaker is available, ground impeder can be used to accommodate impedance over 500 ohms.
- Power line, connection line, air switch shall be prepared by users.
- Power line model: YZW power line; size must meet local criteria.
- Fuse Spec: 15A.
- Power lines of different specs shall not be connected to the same terminal. Overheating will ensue in case of loose terminal connection.
- Power lines of different specs shall not be connected to the same ground terminal. Protection will be impaired in case of loose connection.
- In case of multiple power connections, please use 2mm² power lines.
- Keep certain distance between power lines and other connection cables to prevent noise.
- For wiring method, refer to circuit diagram. Wiring notice: every cable shall be connected to its corresponding terminal according to its unique polarity, and shall have its sign matched up with terminal sign.

2. Open and Close Electrical Cabinet

- Before opening the cabinet cover, make sure that power connections to unit components are shut off.
- Unscrew bolts fixing the cover and open the cabinet.
- Fix power line with clamp and make sure that earth connection is available.
- Connect control and signal lines to corresponding terminal blocks.
- Please use shield wire as signal line.
- Upon completing wiring job, please mount the cabinet cover in good manner.

Failure Definition

1. Failures and Remedies

Check against following symptoms in case that unit does not run normal.

Symptoms	Causes	Remedies
Total breakdown	Power devices fail?	Restart after service
	Fuse burnt out or breaker cut off?	Replace fuse or reset breaker
	Standby indicator activated?	The unit is right in the prewarming or precooling process prior to running status (refer to Wire Control Button Definition).
Low air displacement and high noise level.	Filter or heat exchange components blocked?	Refer to "Maintenance"
High air displacement and high noise level.	Filter or heat exchange components installed in prescribed positions?	Refer to "Maintenance"

2. In case that any of the following failures occur, please take measures below in the first place and then contact concerned distributors.

When unusual conditions (e.g., burnt smell) happen to heat exchanger, please immediately shut off power and contact concerned distributors.

Under such conditions, continued operation may lead to failure, electric shock and fire accident.

When safety devices, such as fuse, breaker or creepage breaker, frequently jump off, or switch cannot work as usual, do not turn on power.

Remedy: Keep Power Off

When control buttons fail, turn off main power switch.

3. Heat Reclaim Ventilation Failure Codes: (indicated only on wired controller matched with heat reclaim ventilation)

When failure codes below is indicated on wired controller, please immediately stop operation, shut off manual power switch and contact concerned distributors or contact after service staff.

Name	Code	Definition
Indoor Ambient Temperature Sensor Failure	E1	Indoor ambient temperature sensor fails
Outdoor Ambient Temperature Sensor Failure	E2	Outdoor ambient temperature sensor fails
Limit Switch 1 Failure	E3	Air door adjustor 1 or relevant parts fail
Wired Controller and PC Panel Communication Failure	E8	Communication connections improper or control wire control, PC panel damaged

CAUTION

Service job shall be undertaken by specialists. In case of other failures, please stop operation and inform concerned distributors.

Debugging Prior to Operation:

Recheck after completing all installation work. While rechecking, refer to all installing notices in this manual. In case of any inconsistency, please make immediate correction. After normal operation is confirmed, the manual shall be kept carefully by users.

Before operating the unit, users shall carefully read the manual; when the unit is to be resold to other new users, please transfer novice and manual to new users to facilitate future service.

15. Dip Switch Setting

15.1 0151800113 PCB dip switch setting

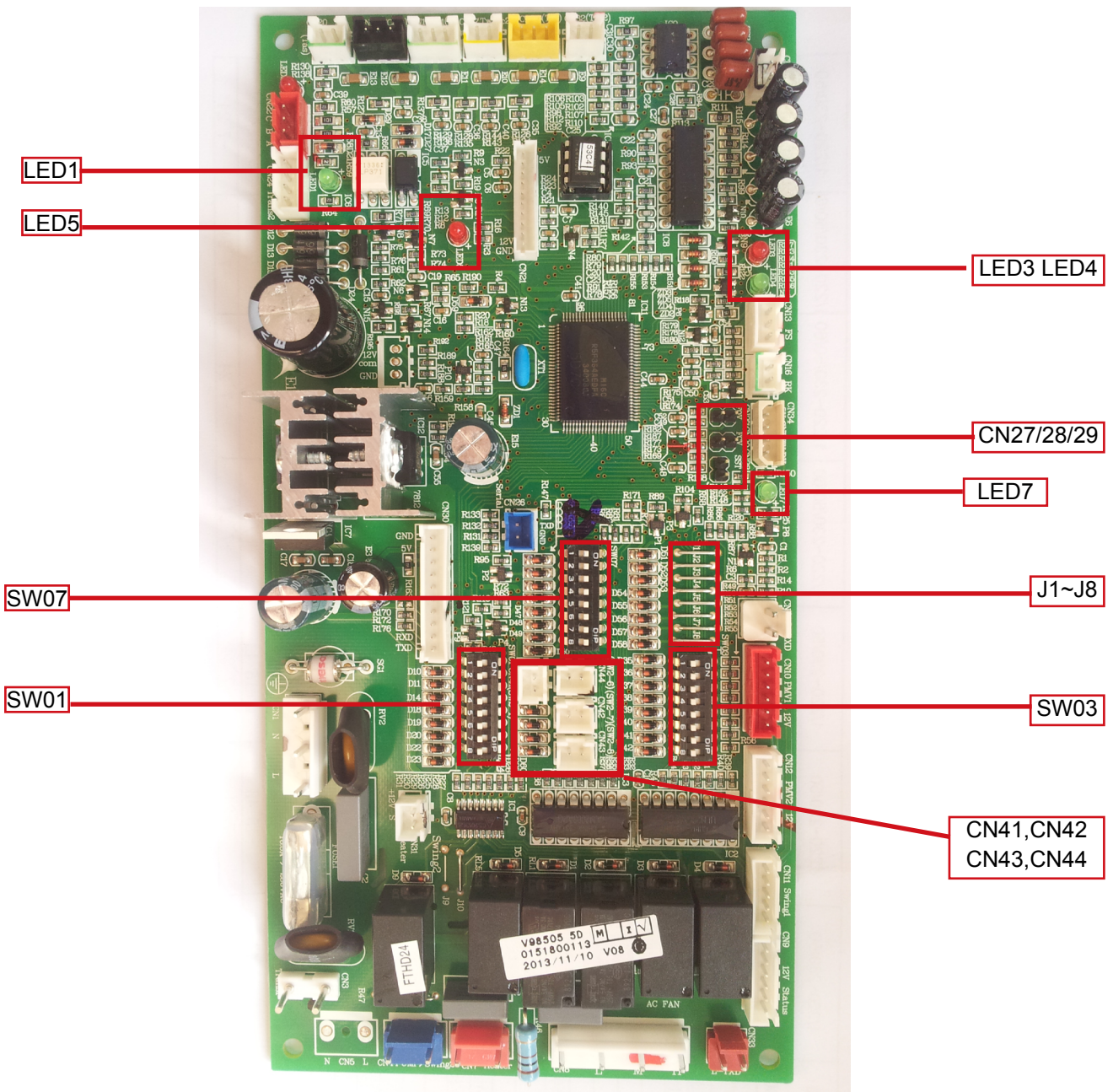
Used for:

4-way cassette type indoor units: AWSI-CCV*-N11

Convertible type indoor units: AWSI-FAV*-N11, AWSI-FAV*-N11

Med ESP duct type indoor units: AWSI-DBV*-N11,

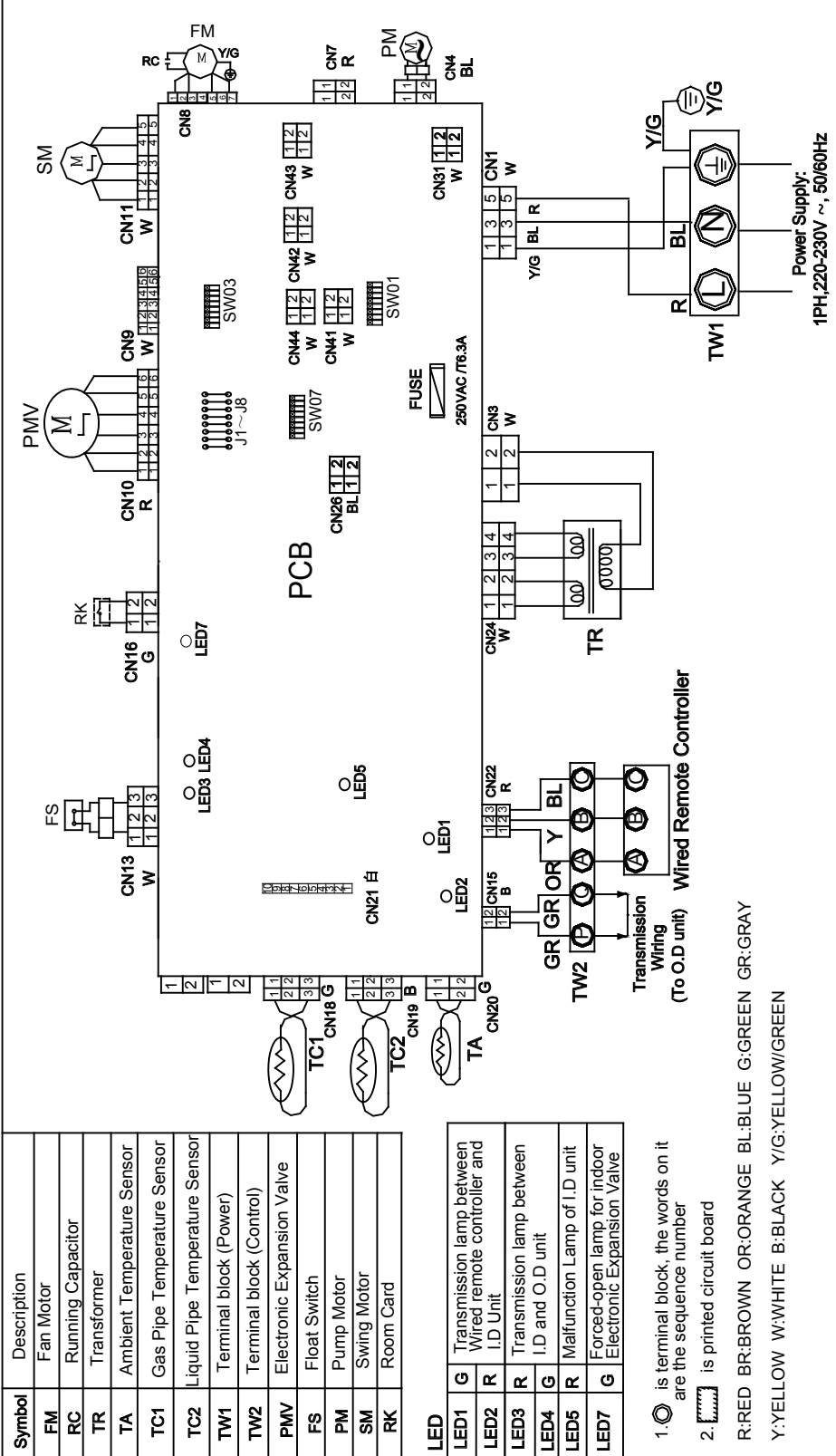
High ESP duct type indoor units: AWSI-DCV*-N11



Dip Switch Setting

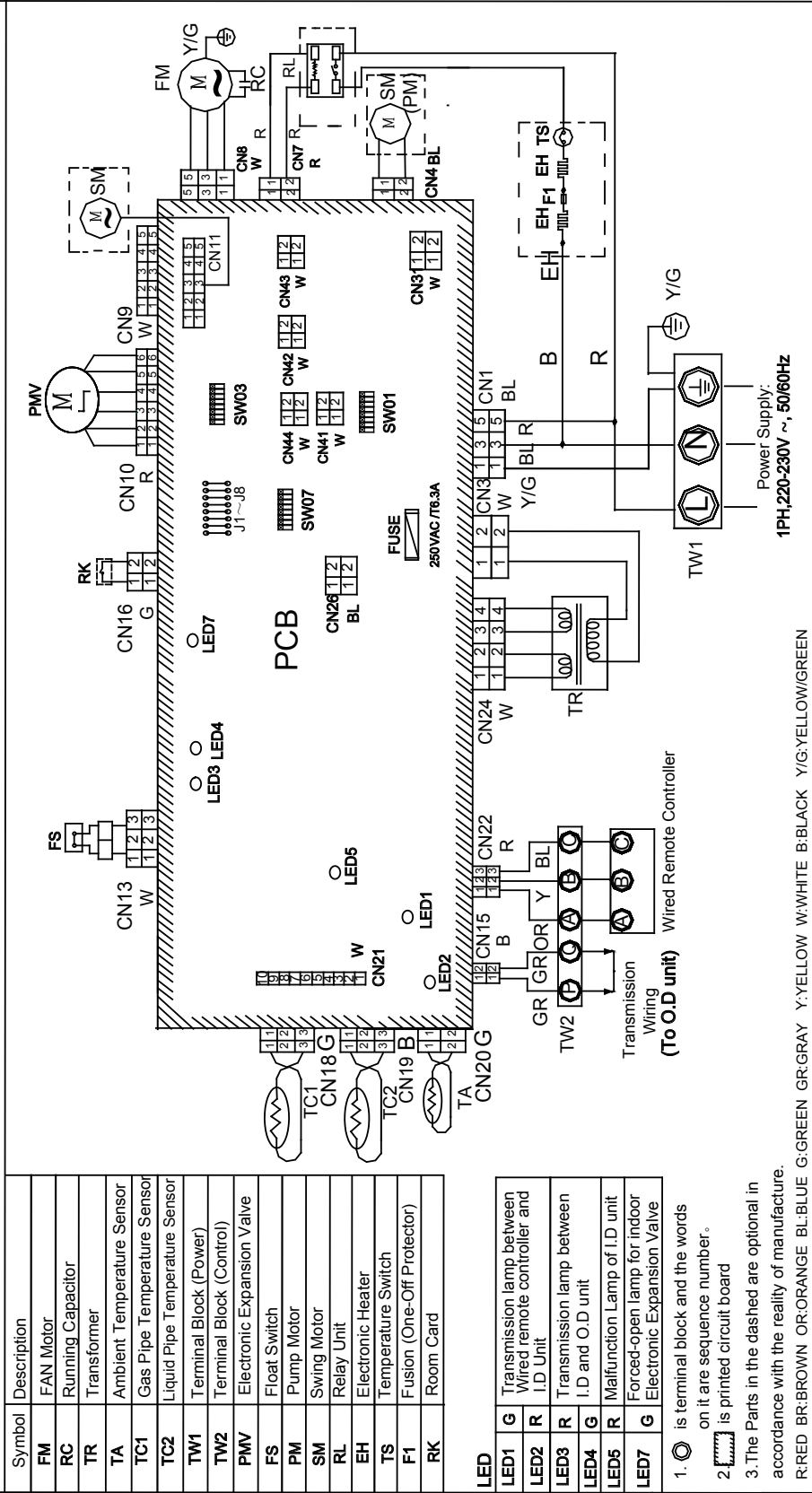
4-way cassette

AWSI-CBV016-N11 AWSI-CCV018-N11 PCB code: 0151800113



AWSI-CCV018/24/30/38/42-N11

PCB code:



Symbol	Description
FM	FAN Motor
RC	Running Capacitor
TR	Transformer
TA	Ambient Temperature Sensor
TC1	Gas Pipe Temperature Sensor
TC2	Liquid Pipe Temperature Sensor
TW1	Terminal Block (Power)
TW2	Terminal Block (Control)
PMV	Electronic Expansion Valve
FS	Float Switch
PM	Pump Motor
SM	Swing Motor
RL	Relay Unit
EH	Electronic Heater
TS	Temperature Switch
F1	Fusion (One-Off Protector)
RK	Room Card

LED	Description
LED1	Transmission lamp between Wired remote controller and I.D Unit
LED2	Transmission lamp between I.D and O.D unit
LED3	Malfunction Lamp of I.D unit
LED4	Forced-open lamp for indoor Electronic Expansion Valve
LED5	
LED6	
LED7	

- ① is terminal block and the words on it are sequence number.
- ② is printed circuit board
- The Parts in the dashed are optional in accordance with the reality of manufacture.

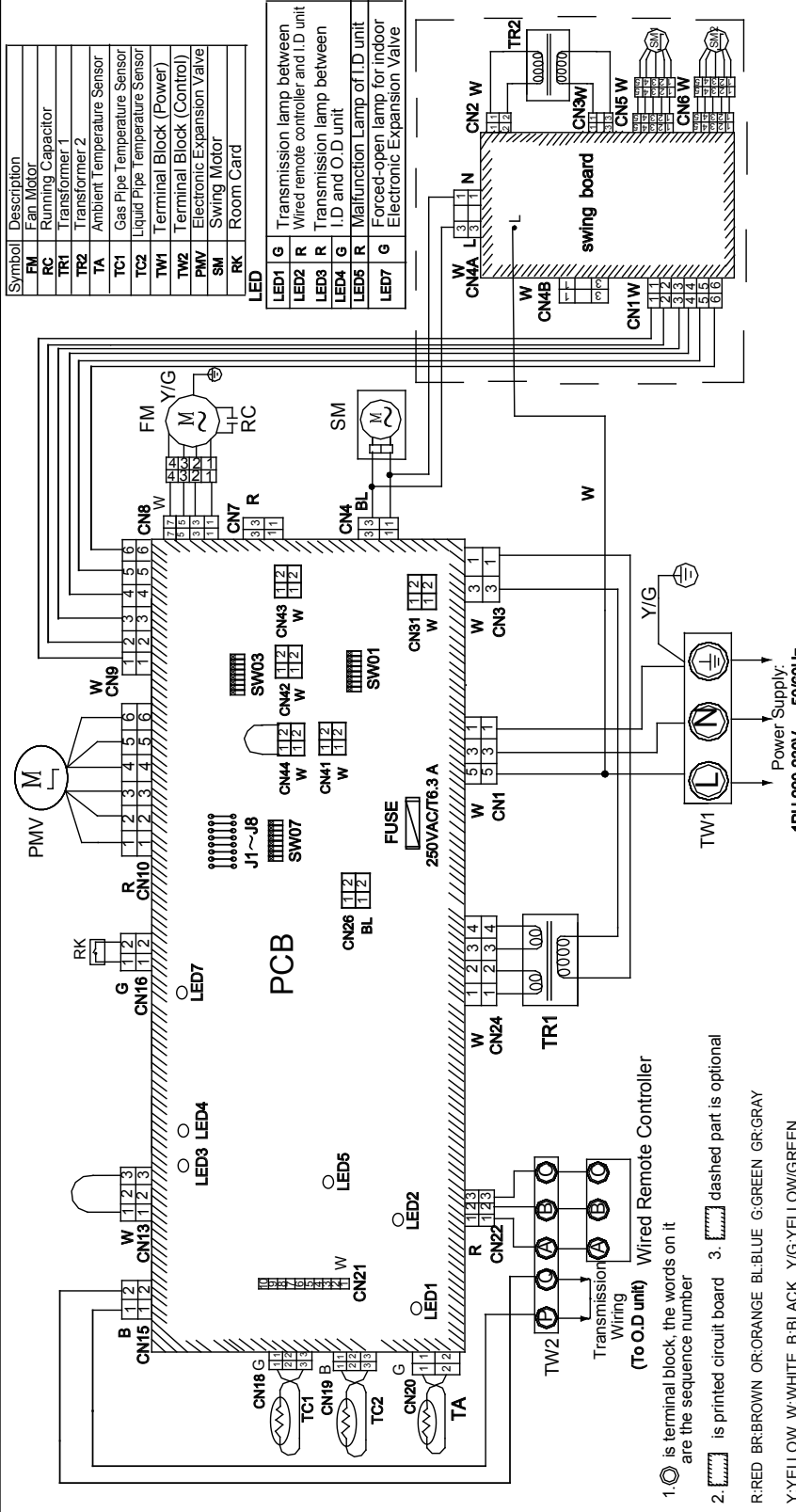
R:RED BR:BROWN OR:ORANGE BL:BLUE G:GREEN GR:GRAY Y:YELLOW W:WHITE B:BLACK Y/G:YELLOW/GREEN

Dip Switch Setting

Convertible

PCB code: 0151800113

AWSI-*-N11



1. is terminal block, the words on it are the sequence number
 2. is printed circuit board 3. dashed part is optional
- R: RED BR: BROWN OR: ORANGE BL: BLUE G: GREEN GR: GRAY
 Y: YEL L: LW W: WHITE R: RI ACK Y/G: YEL L: LW/GREEN

Med ESP duct

AWSI-DBV*-N11

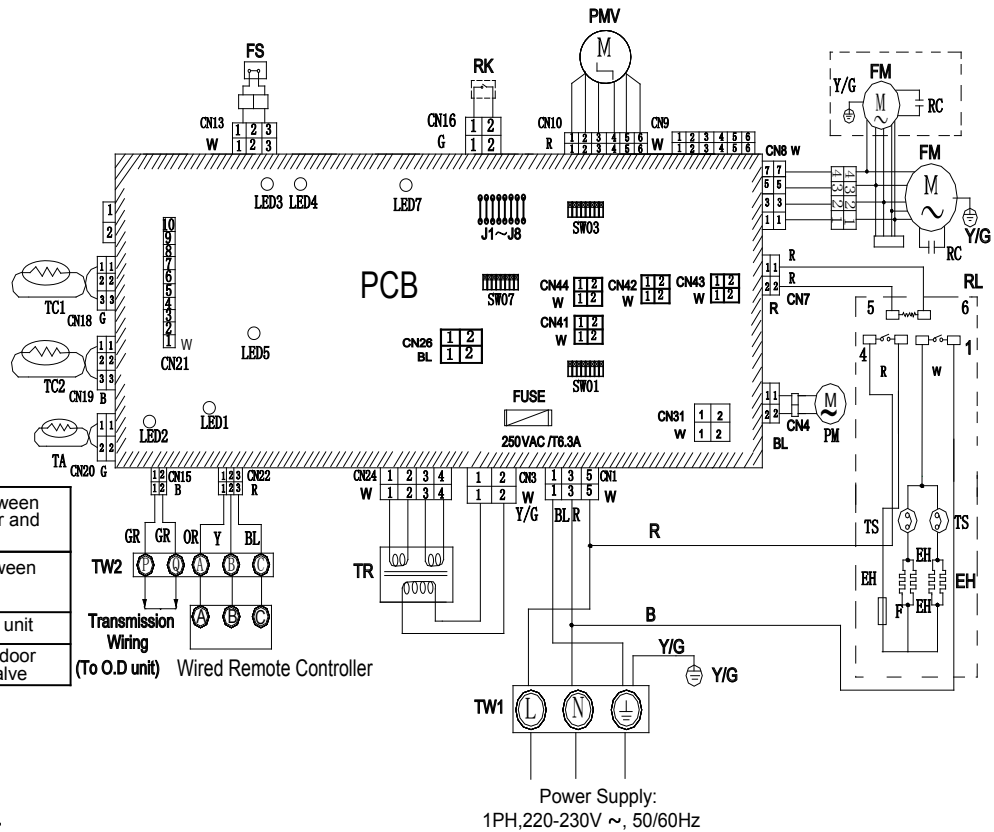
PCB code: 0151800113

Symbol	Description
FM	Fan Motor
RC	Running Capacitor
TR	Transformer
TA	Ambient Temperature Sensor
TC1	Gas Pipe Temperature Sensor
TC2	Liquid Pipe Temperature Sensor
TW1	Terminal block (Power)
TW2	Terminal block (Control)
PMV	Electronic Expansion Valve
FS	Float Switch
PM	Pump Motor
RL	Relay
RK	Room Card

LED		
LED1	G	Transmission lamp between Wired remote controller and I.D Unit
LED2	R	Transmission lamp between I.D and O.D unit
LED3	R	Transmission lamp between I.D and O.D unit
LED5	R	Malfunction Lamp of I.D unit
LED7	G	Forced-open lamp for indoor Electronic Expansion Valve

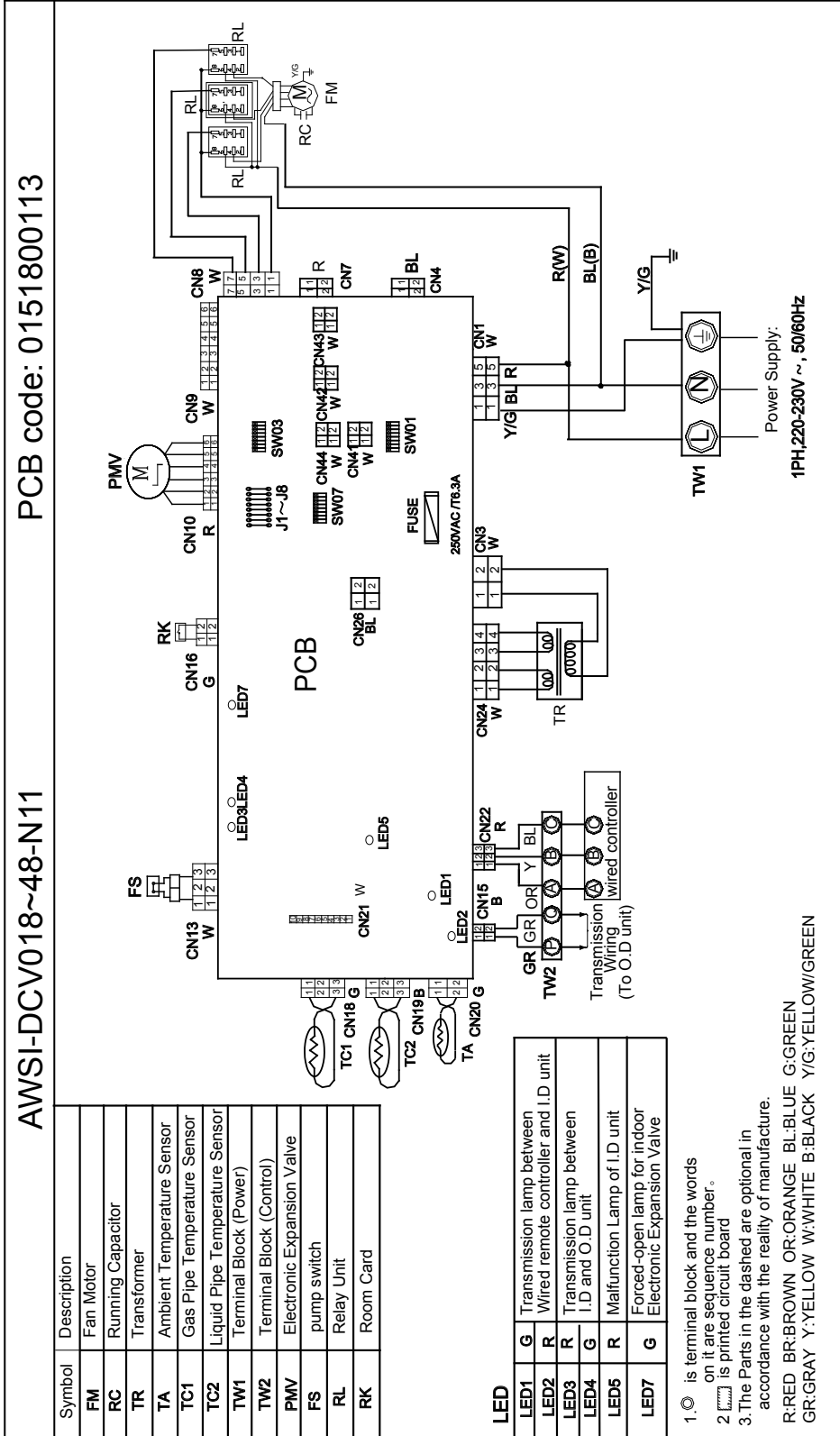
- ① is terminal block, the words on it are the sequence number
- is printed circuit board
- The Parts in the dashed are optional in accordance with the reality of the manufacture.

R:RED BR:BROWN OR:ORANGE BL:BLUE G:GREEN GR:GRAY
Y:YELLOW W:WHITE B:BLACK Y/G:YELLOW/GREEN



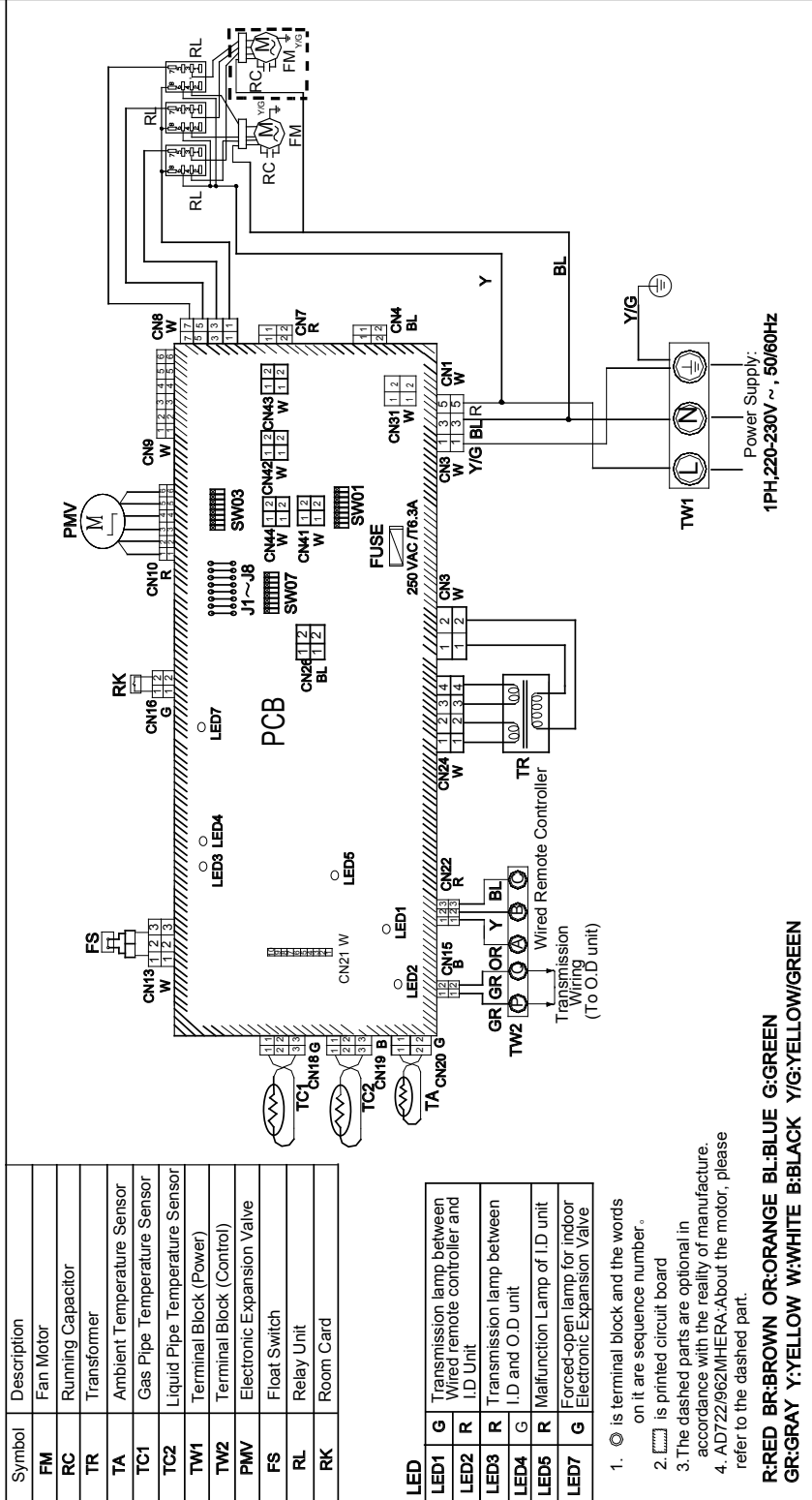
Dip Switch Setting

High ESP duct



PCB code: 0151800113

AWSI-DCV072-N11



Dip Switch Setting

LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.
- LED7: forced-open lamp for indoor electronic expansion valve.
This lamp not light under normal condition; during adjusting the electronic expansion valve by hand this lamp will flicker.

Dip switch introduction

SW01 is used for indoor unit group control address setting and capacity selection. CN44, CN42, CN43 are used for indoor unit type selection. CN41 is used for address setting by wired controller. SW03 is used for indoor unit address setting (including physical address and central address). SW07 is used for running mode setting.

(1) Description of SW01

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
SW01_5 SW01_6 SW01_7 SW01_8	Indoor unit capacity	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control
		[5]	[6]	[7]	[8]	Indoor unit capacity
		OFF	OFF	OFF	OFF	0.6HP
		OFF	OFF	OFF	<u>ON</u>	0.8HP
		OFF	OFF	<u>ON</u>	OFF	1.0HP
		OFF	OFF	<u>ON</u>	<u>ON</u>	1.2HP
		OFF	<u>ON</u>	OFF	OFF	1.5HP
		OFF	<u>ON</u>	OFF	<u>ON</u>	1.7HP
		OFF	<u>ON</u>	<u>ON</u>	OFF	2.0HP
		OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	2.5HP
		<u>ON</u>	OFF	OFF	OFF	3.0HP
		<u>ON</u>	OFF	OFF	<u>ON</u>	3.2HP
		<u>ON</u>	OFF	<u>ON</u>	OFF	4.0HP
		<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	5.0HP
		<u>ON</u>	<u>ON</u>	OFF	OFF	6.0HP
<u>ON</u>	<u>ON</u>	OFF	<u>ON</u>	8.0HP		
<u>ON</u>	<u>ON</u>	<u>ON</u>	OFF	10.0HP		
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	15.0HP		

Type	Model	0.6HP	0.8HP	1.0HP	1.2HP	1.7HP	2.0HP	2.5HP	3.0HP	3.2HP	4HP	5HP	8HP	10HP
4-way cassette type	AWSI-CCV*-N11	05	07	09	12	16	18	24	28	30	38	48		
Convertible type	AWSI-FAV*-N11			09	12	16	18	24						
	AWSI-FAV*-N11								28	30	38	48		
Med ESP duct type(50/96Pa)	AWSI-DBV*-N11						18	24	28	30	38	48		
High ESP duct type (100/196Pa)	AWSI-DCV*-N11						18	24	28	30	38	48	72	96

(2) CN41,CN42,CN43,CN44 plug explanation

CN41	Set address by wired controller or automatically (when SW03_1 is OFF)	OFF	Allow the wired controller to set the indoor address, after restart, the indoor address need to reset		
		ON	Allow the wired controller to set the indoor address, after restart, the indoor address which is set by wired control is same as before and needn't to reset		
CN42 CN43 CN44	Indoor type	CN44	CN42	CN43	Indoor type
		OFF	OFF	OFF	Normal indoor (default)
		OFF	OFF	ON	Wall mounted
		OFF	ON	OFF	Fresh air unit
		OFF	ON	ON	OEM(HRV)
		ON	OFF	OFF	Convertible
		ON	OFF	ON	Reserve (general indoor unit)
		ON	ON	OFF	Reserve (general indoor unit)
ON	ON	ON	Reserve (general indoor unit)		

Note:

- OFF: the plug is open circuit
- ON: the plug is short circuit
- Using wired controller modifying physical address or central control address, the other corresponding address can change automatically.

(3) Description of SW03

SW03	Set the communication and central control address by dip switch (*Note 2)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address	
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0 (default)	0 (default)
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	1
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	OFF	2	2
	
		<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	65
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	66
	
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127		
		OFF	...	...	...	...	...	...	...	Set the address by wired controller or automatically (default)		

Note 2

- The address must be set by dip switch if central control is used.
- SW03-2=OFF, central control address = physical address +0
- SW03-2=ON, central control address=physical address +64
- The address must be set by dip switch if 0151800113 and 0010451181A or 0151800086 are used together.

(4) Description of SW07

SW07_1 SW07_2	Tdiff correction valve in AUTO mode	[1]	[2]	Tdiff correction valve in AUTO mode
		OFF	OFF	Tdiff: 0
		OFF	<u>ON</u>	Tdiff: 1
		<u>ON</u>	OFF	Tdiff: 2
		ON	ON	Tdiff: 3 (default)
SW07_3	WIFI control mode	ON		One by one (defaulted)
		OFF		One by multi
SW07_4 SW07_5	In heating, inlet air temp. Tai correction valve Tcomp2	[4]	[5]	Inlet air temp. Tai correction valve Tcomp2 (EEPROM)
		OFF	OFF	Tai correction valve= 12°C
		OFF	<u>ON</u>	Tai correction valve= 5°C
		<u>ON</u>	OFF	Tai correction valve= 8°C
		ON	ON	Tai correction valve=3°C (default)
SW07_6	Room card. OEM HRV linkage	ON		Room card is unavailable, HRV linkage is unavailable (default)
		OFF		Room card is available, HRV linkage is available
SW07_7 SW07_8	Operation mode changeover of wired controller	[7]	[8]	Function
		OFF	OFF	[FAN] [COOL] [DRY] [HEAT]
		OFF	<u>ON</u>	[FAN] [COOL] [DRY]
		<u>ON</u>	OFF	[FAN] [COOL] [DRY] [HEAT] [ELECTRIC-HEAT]
		ON	ON	[AUTO] [FAN] [COOL] [DRY] [HEAT](default)

(5) Description of jump wire:SW08 (1:ON, 2:OFF)

J1	Fix air volume	ON	Normal mode (default)
		OFF	Air volume is fixed at high speed(for duct type)
J2	Run at Mid speed when Hi Speed is selected in heating	ON	Normal mode (default)
		OFF	Run at Mid speed when Hi Speed is selected in heating
J3	Quiet running mode	ON	Normal mode (default)
		OFF	Quiet running mode
J4	This indoor has highest priority	ON	Normal mode (default)
		OFF	This Indoor has highest priority
J5	Indoor and outdoor 90 meters drop selection	ON	Normal mode (default)
		OFF	High drop
J6	Reserved	ON	Reserved
J7	Indoor installation height selection	ON	Normal mode (default)
		OFF	Above 2.7m, uses next higher fan speed(indoor fan speed improve 1 grade)
J8	Dual heat source	ON	No dual heat source control (default)
		OFF	Dual heat source control (it doesn't apply to oversea products)

Note:

- *Default position:*
- *SW01: Depend on unit capacity*
- *CN41, CN42, CN43: open circuit.*
- *CN44: Open circuit except of floor ceiling unit*
- *SW07: All ON*
- *J1-J8: All ON (connection status), cut the jump wire can change it to OFF.*

(6) Jumper explanation

a) EEV operation manually (CN27, CN29)

CN27: short circuit CN27 2 seconds continuously, EEV is opened fully.

CN29: short circuit CN29 2 seconds continuously, EEV is closed fully.

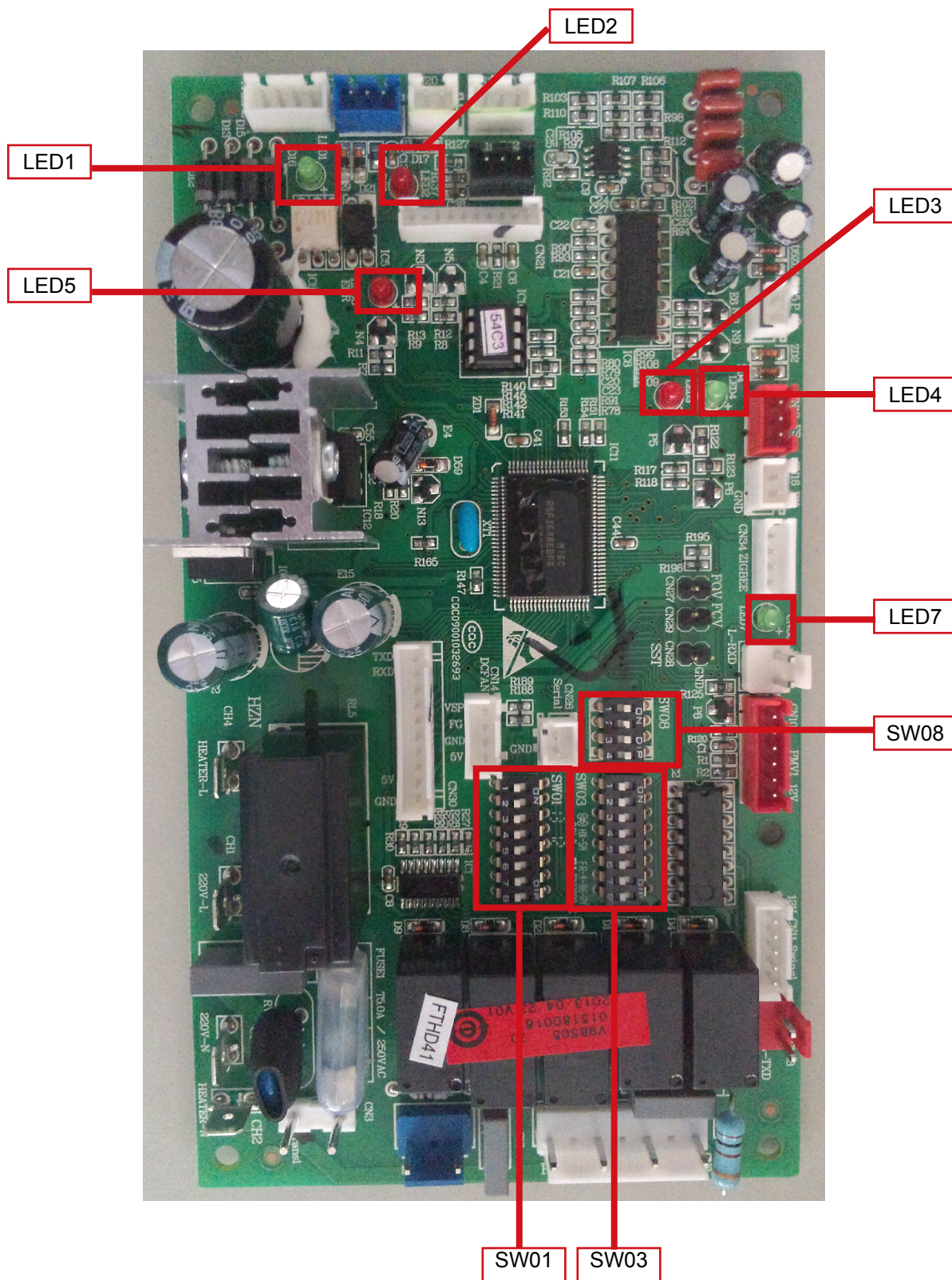
b) time-short and self-check (CN28)

Short circuit CN28 2 seconds after power ON, process into time-short (factory use).

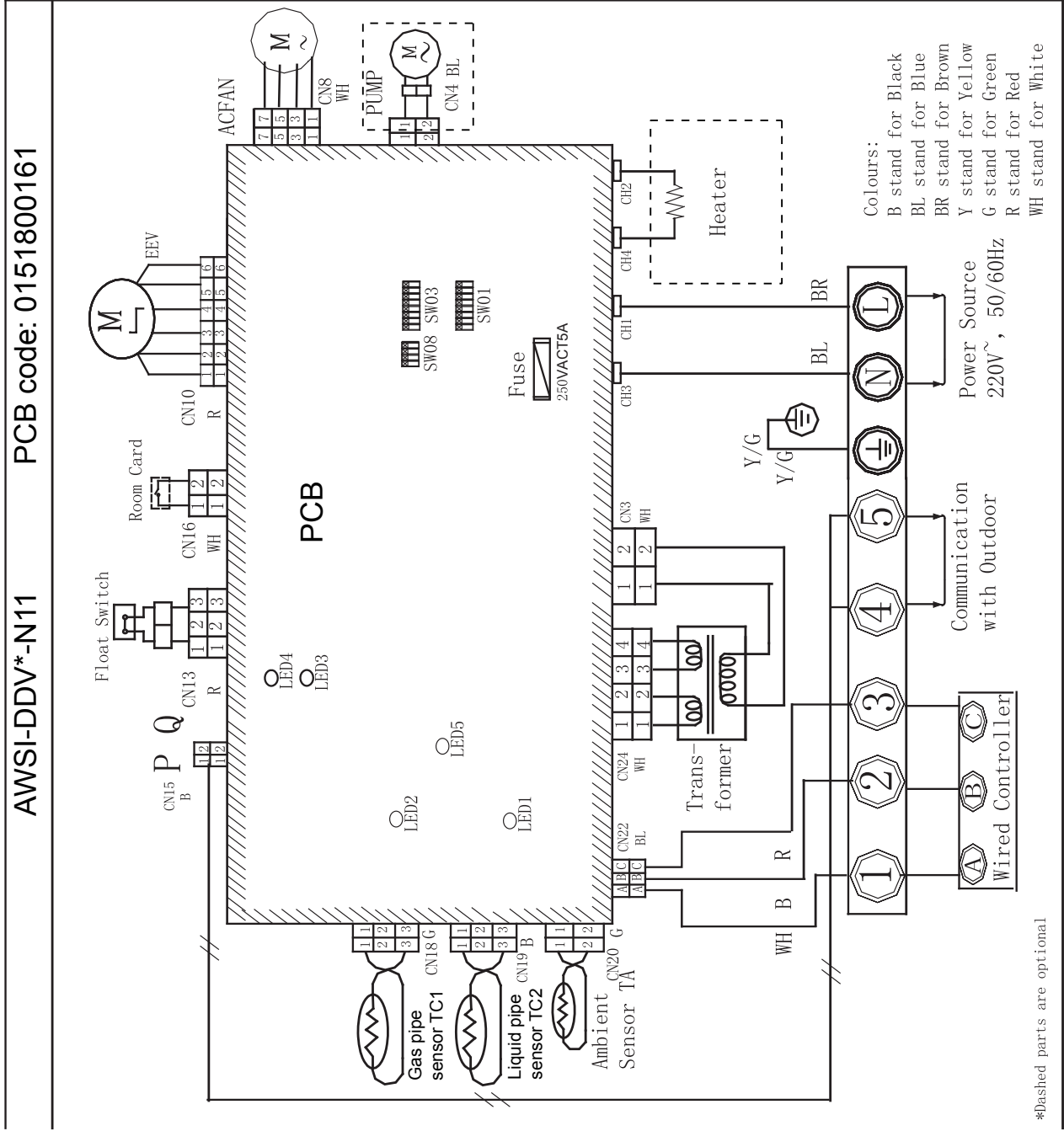
Short circuit CN28 before power ON, process into self-check (factory use).

15.2 0151800161 PCB dip switch setting

Used for the old slim low ESP duct type indoor units: AWSI-DDV*-N11



AWSI-DDV*-N11 PCB code: 0151800161



Dip Switch Setting

LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.
- LED7: forced-open lamp for indoor electronic expansion valve.
This lamp not light under normal condition; during adjusting the electronic expansion valve by hand this lamp will flicker.

Dip switch introduction

SW01 is used to set capabilities of master and slave indoor units as well as indoor unit; SW03 is used to set indoor unit address (combine original communication address and address of centralized controller);

(1) Definition and description of SW01

SW01_1	Operation mode displayed on wired controller	<u>ON</u>	[fan] [cooling] [dehumidification]			
		<u>OFF</u>	[auto] [fan] [cooling] [dehumidification] [heating]			
SW01_2 SW01_3 SW01_4	Address of wire controlled indoor unit (Note 1)	[2]	[3]	[4]	Address of wire controlled indoor unit (group address)	
		<u>OFF</u>	<u>OFF</u>	<u>OFF</u>	1# (wire controlled master unit) (default)	
		<u>OFF</u>	<u>OFF</u>	<u>ON</u>	2# (wire controlled slave unit)	
		<u>OFF</u>	<u>ON</u>	<u>OFF</u>	3# (wire controlled slave unit)	
		<u>OFF</u>	<u>ON</u>	<u>ON</u>	4# (wire controlled slave unit)	
		<u>ON</u>	<u>OFF</u>	<u>OFF</u>	5# (wire controlled slave unit)	
		<u>ON</u>	<u>OFF</u>	<u>ON</u>	6# (wire controlled slave unit)	
		<u>ON</u>	<u>ON</u>	<u>OFF</u>	7# (wire controlled slave unit)	
SW01_5 SW01_6 SW01_7 SW01_8	Capability of indoor unit	[5]	[6]	[7]	[8]	Capability of indoor unit
		<u>OFF</u>	<u>OFF</u>	<u>OFF</u>	<u>OFF</u>	0.6HP(AD052MSERA)
		<u>OFF</u>	<u>OFF</u>	<u>OFF</u>	<u>ON</u>	0.8HP(AWSI-DDV007-N11)
		<u>OFF</u>	<u>OFF</u>	<u>ON</u>	<u>OFF</u>	1.0HP(AWSI-DDV009-N11)
		<u>OFF</u>	<u>OFF</u>	<u>ON</u>	<u>ON</u>	1.2HP(AWSI-DDV012-N11)
		<u>OFF</u>	<u>ON</u>	<u>OFF</u>	<u>OFF</u>	1.5HP
		<u>OFF</u>	<u>ON</u>	<u>OFF</u>	<u>ON</u>	1.7HP(AWSI-DDV016-N11)
		<u>OFF</u>	<u>ON</u>	<u>ON</u>	<u>OFF</u>	2.0HP
		<u>OFF</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	2.5HP
		<u>ON</u>	<u>OFF</u>	<u>OFF</u>	<u>OFF</u>	3.0HP
		<u>ON</u>	<u>OFF</u>	<u>OFF</u>	<u>ON</u>	3.2HP
		<u>ON</u>	<u>OFF</u>	<u>ON</u>	<u>OFF</u>	4.0HP
		<u>ON</u>	<u>OFF</u>	<u>ON</u>	<u>ON</u>	5.0HP
		<u>ON</u>	<u>ON</u>	<u>OFF</u>	<u>OFF</u>	6.0HP
		<u>ON</u>	<u>ON</u>	<u>OFF</u>	<u>ON</u>	8.0HP
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>OFF</u>	10.0HP		
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	15.0HP		

Note 1: One wired controller can control Max. eight slim duct indoor units.

(2) Definition and description of SW03

SW03	Set the communication and central control address by dip switch(note 2)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address	
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0 (default)	0 (default)
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	1
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	2
	
		<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	65
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	66
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127
	OFF	...	...	...	...	...	...	...	Set the address automatically (default)			

Note 2:

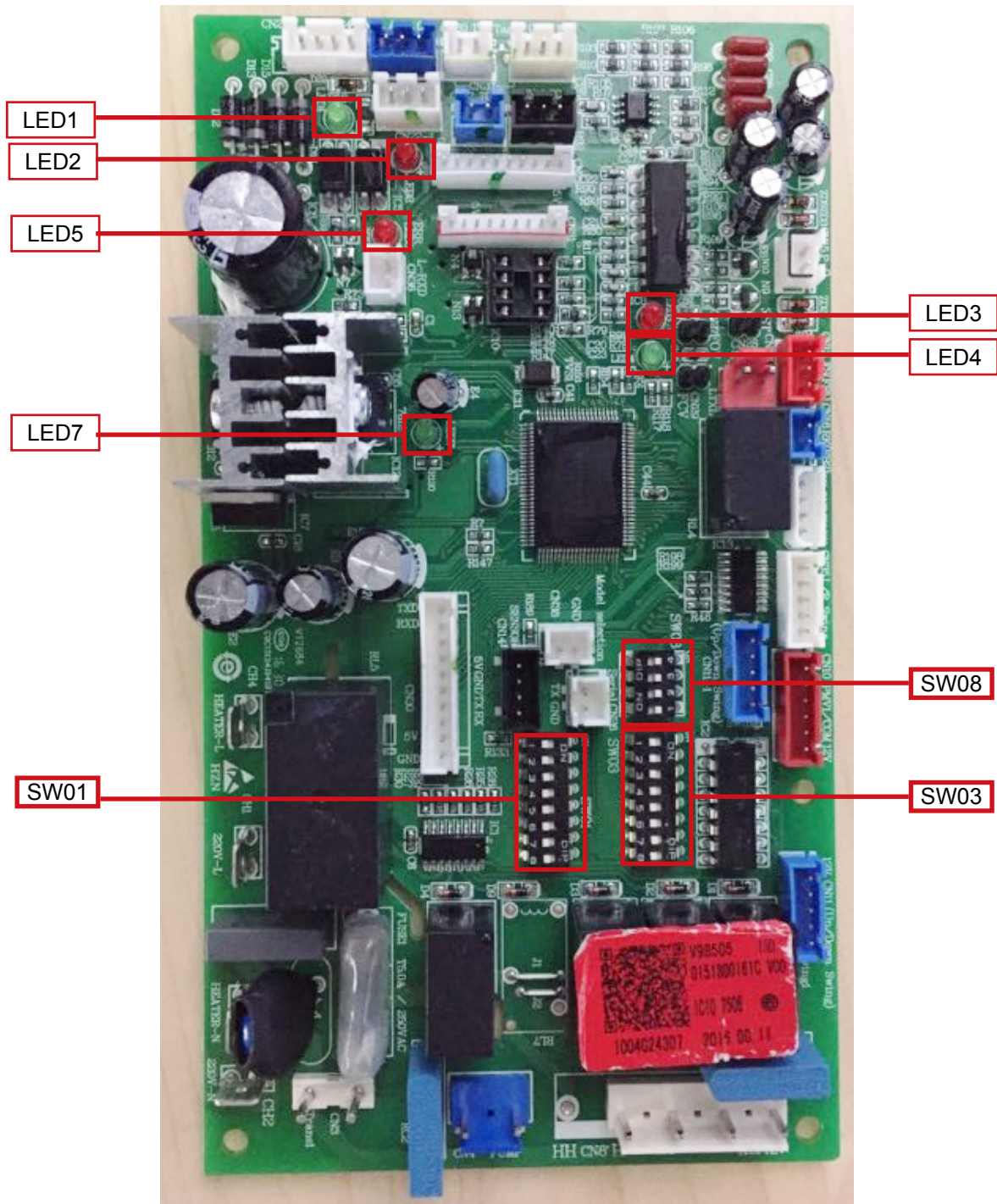
- Set the address by dip switch when connecting the centralized controller or gateway or charge system.
- Central control address = communication address + 0 or +64.
- SW03_2=OFF, Central control address = communication address+0=communication address.
- SW03_2=ON, Central control address = communication address+64 (applies when central controller is used and there are more than 64 indoor units).
- When the 0151800161 and 0010451181A PCB in one system, address must be set by dip switch. Set SW03_1=ON and SW03_2=OFF; SW03_3, SW03_4, SW03_5, SW03_6, SW03_7 and SW03_8 are address codes which are set according to actual address.
- Address setting function of wired controller for slim duct is unavailable.

(3) Definition and description of SW08

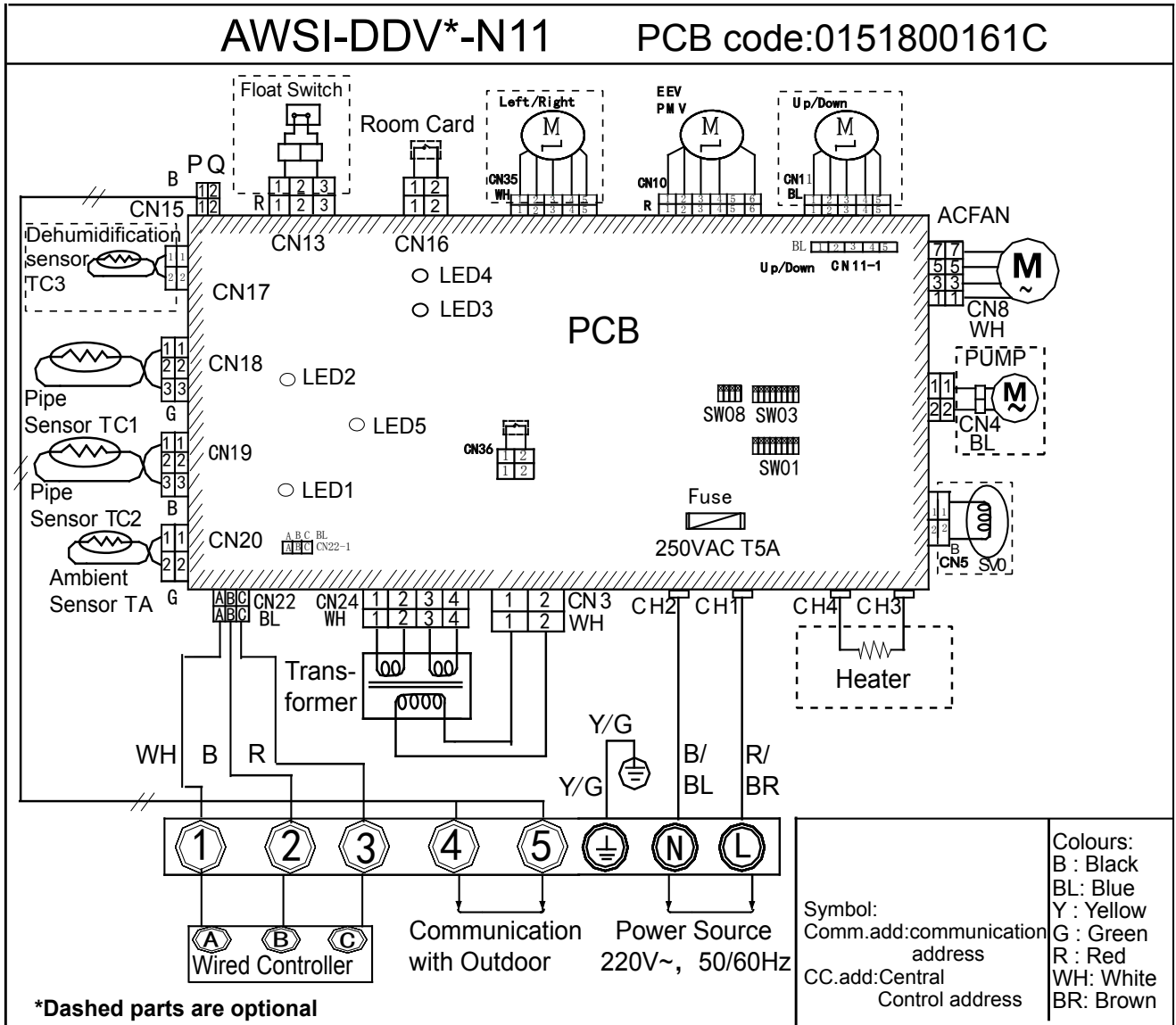
SW08_1	<u>ON</u>	One by one	WIFI control mode
	OFF	One by multi	
SW08_2	<u>ON</u>	Generally room card is disabled and there is no linkage control in the unit with total heat exchanger	Room card contact, total heat exchanger linkage
	OFF	Room card is enabled, there is linkage control in the unit with total heat exchanger	
SW08_3	<u>ON</u>	General (default)	Selection of indoor unit priority
	OFF	High priority	
SW08_4	<u>ON</u>	Ordinary unit	Isothermal dehumidification type indoor units selection
	OFF	Isothermal dehumidification unit	

15.3 0151800161C PCB dip switch setting

Used for
Slim low ESP duct type indoor units: AWSI-DDV*-N11(0151800161C replace 0151800161 PCB)



Slim low ESP duct



Dip Switch Setting

LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.
- LED7: forced-open lamp for indoor electronic expansion valve.
This lamp not light under normal condition; during adjusting the electronic expansion valve by hand this lamp will flicker.

Dip switch introduction:

SW01

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	1# (wired control master unit) (default)
		OFF	OFF	OFF	<u>ON</u>	2# (wired control slave unit)
		OFF	OFF	<u>ON</u>	OFF	3# (wired control slave unit)
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	16# (wired control slave unit)
SW01_5 SW01_6 SW01_7 SW01_8	Capacity of indoor unit	[5]	[6]	[7]	[8]	Capacity of indoor unit
		OFF	OFF	OFF	<u>ON</u>	0.8HP(AWSI-DDV007-N11)
		OFF	OFF	<u>ON</u>	OFF	1.0HP(AWSI-DDV009-N11)
		OFF	OFF	<u>ON</u>	<u>ON</u>	1.2HP(AWSI-DDV012-N11)
		OFF	<u>ON</u>	OFF	<u>ON</u>	1.7HP(AWSI-DDV016-N11)

SW03 is used to set indoor unit address

SW03	Set the communication and central control address by dip switch	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address	
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0(default)	0(default)
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	1
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	2
	
		<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	65
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	66
	
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127		
		OFF	...	...	...	...	...	...	Set the address automatically (default)			

SW08

SW08_1	WIFI control mode	<u>ON</u>	One by one (default)
		OFF	One by multi
SW08_2	Room card	<u>ON</u>	Room card is unavailable (default)
		OFF	Room card is available
SW08_3	Dual heat source	<u>ON</u>	No dual heat source control (default)
		OFF	Dual heat source control
SW08_4	Operation mode displayed on wired controller	<u>ON</u>	[auto] [fan] [cooling] [dehumidification] [heating]
		OFF	[fan] [cooling] [dehumidification]

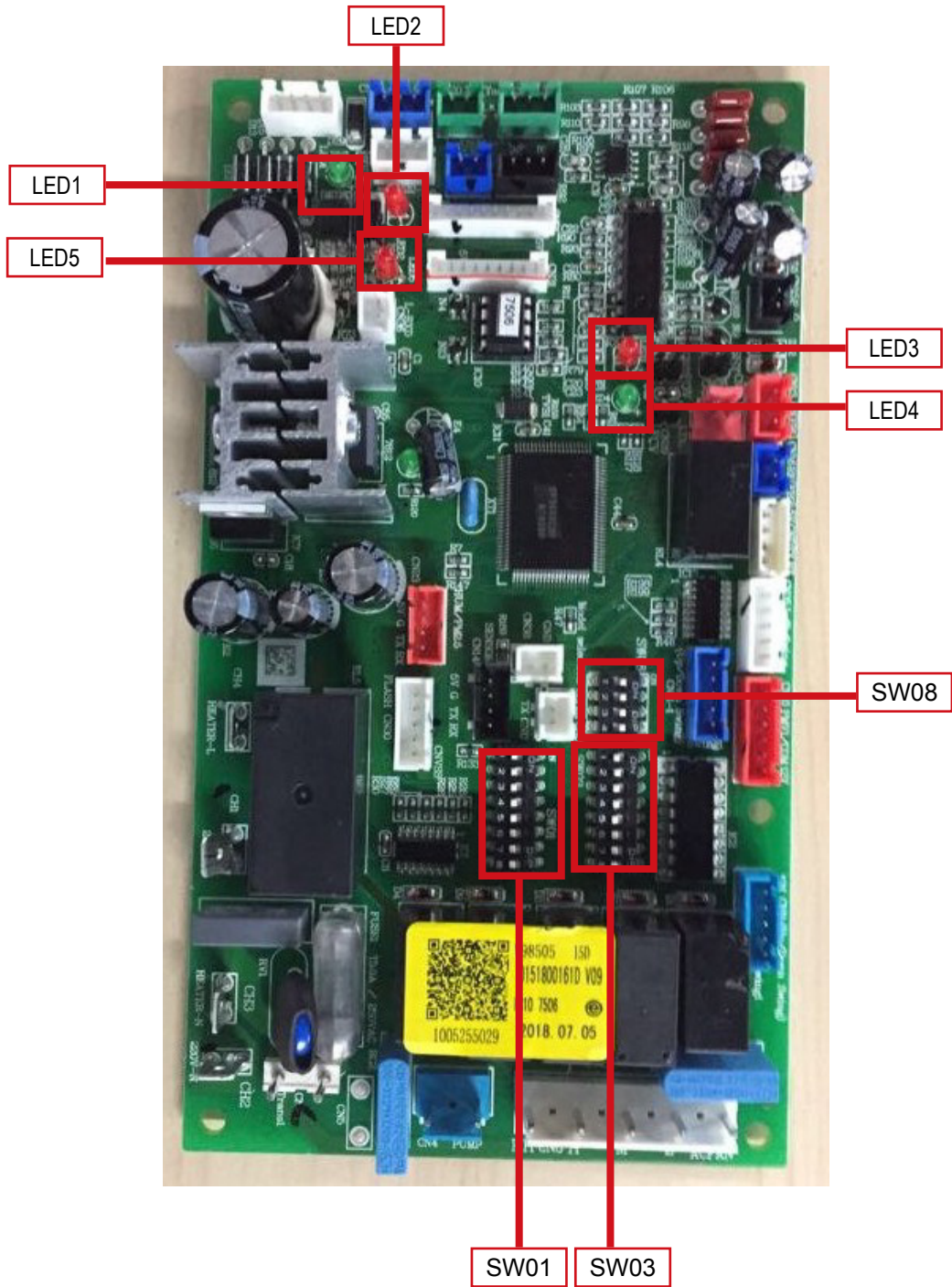
Special terminal setting

CN36	CN38	Light board type	Remarks
Short circuit	Open circuit	Not connected to the light board	Default (Factory setting)
Open circuit	Short circuit	10 pin light board	When the slim duct is connected to the panel without digital display light board
Open circuit	Open circuit	Digital display light board	When the slim duct is connected to the panel with the digital display light board

TC3	Remarks
Short circuit	Linkage output
Open circuit	Fault output

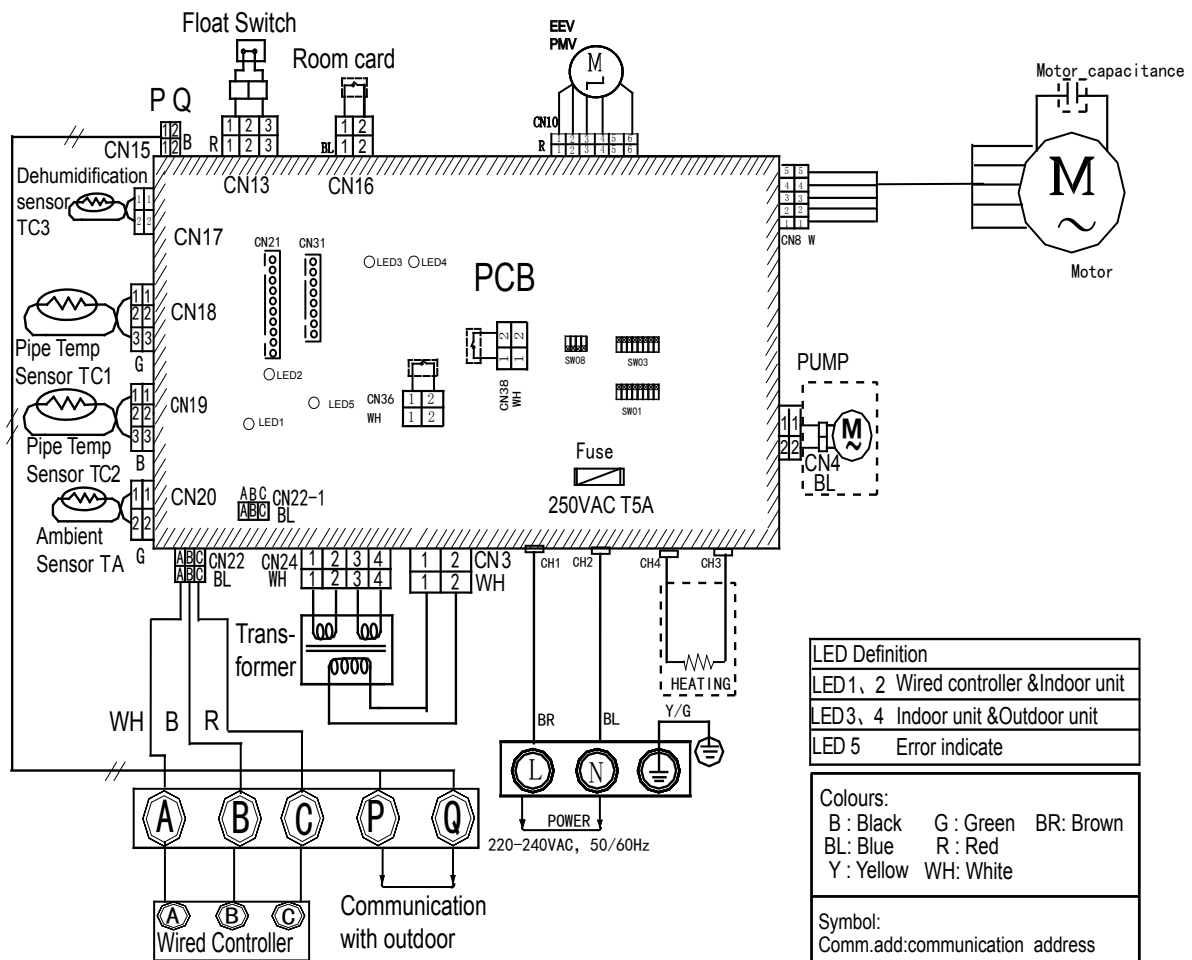
15.4 0151800161D PCB dip switch setting

Used for Med ESP duct type indoor units: AW-DBV005~028-N11



AW-DBV005~018-N11

PCB code: 0151800161D



LED Definition	
LED1, 2	Wired controller & Indoor unit
LED3, 4	Indoor unit & Outdoor unit
LED 5	Error indicate

Colours:	
B : Black	G : Green
BL: Blue	R : Red
Y : Yellow	WH: White

Symbol:
Comm.add:communication address

CC.add:
CentralControl address

*Dashed parts are optional

LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.

Dip switch introduction:

SW01

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	1# (wired control master unit) (default)
		OFF	OFF	OFF	<u>ON</u>	2# (wired control slave unit)
		OFF	OFF	<u>ON</u>	OFF	3# (wired control slave unit)
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	16# (wired control slave unit)
SW01_5 SW01_6 SW01_7 SW01_8	Capacity of indoor unit	[5]	[6]	[7]	[8]	Capacity of indoor unit
		OFF	OFF	OFF	OFF	0.6HP(AW-DBV005-N11)
		OFF	OFF	OFF	<u>ON</u>	0.8HP(AW-DBV007-N11)
		OFF	OFF	<u>ON</u>	OFF	1.0HP(AW-DBV009-N11)
		OFF	OFF	<u>ON</u>	<u>ON</u>	1.2HP(AW-DBV012-N11)
		OFF	<u>ON</u>	OFF	<u>ON</u>	1.7HP(AW-DBV016-N11)
		OFF	<u>ON</u>	<u>ON</u>	OFF	2.0HP(AW-DBV018-N11)
		OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	2.5HP(AW-DBV024-N11)
<u>ON</u>	OFF	OFF	OFF	3.0HP(AW-DBV028-N11)		

SW03 is used to set indoor unit address

SW03	Set the communication and central control address by dip switch	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address	
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0(default)	0(default)
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	1
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	2
	
		<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	65
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	66
	
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127		
		OFF	...	...	...	...	...	...	...	Set the address automatically (default)		

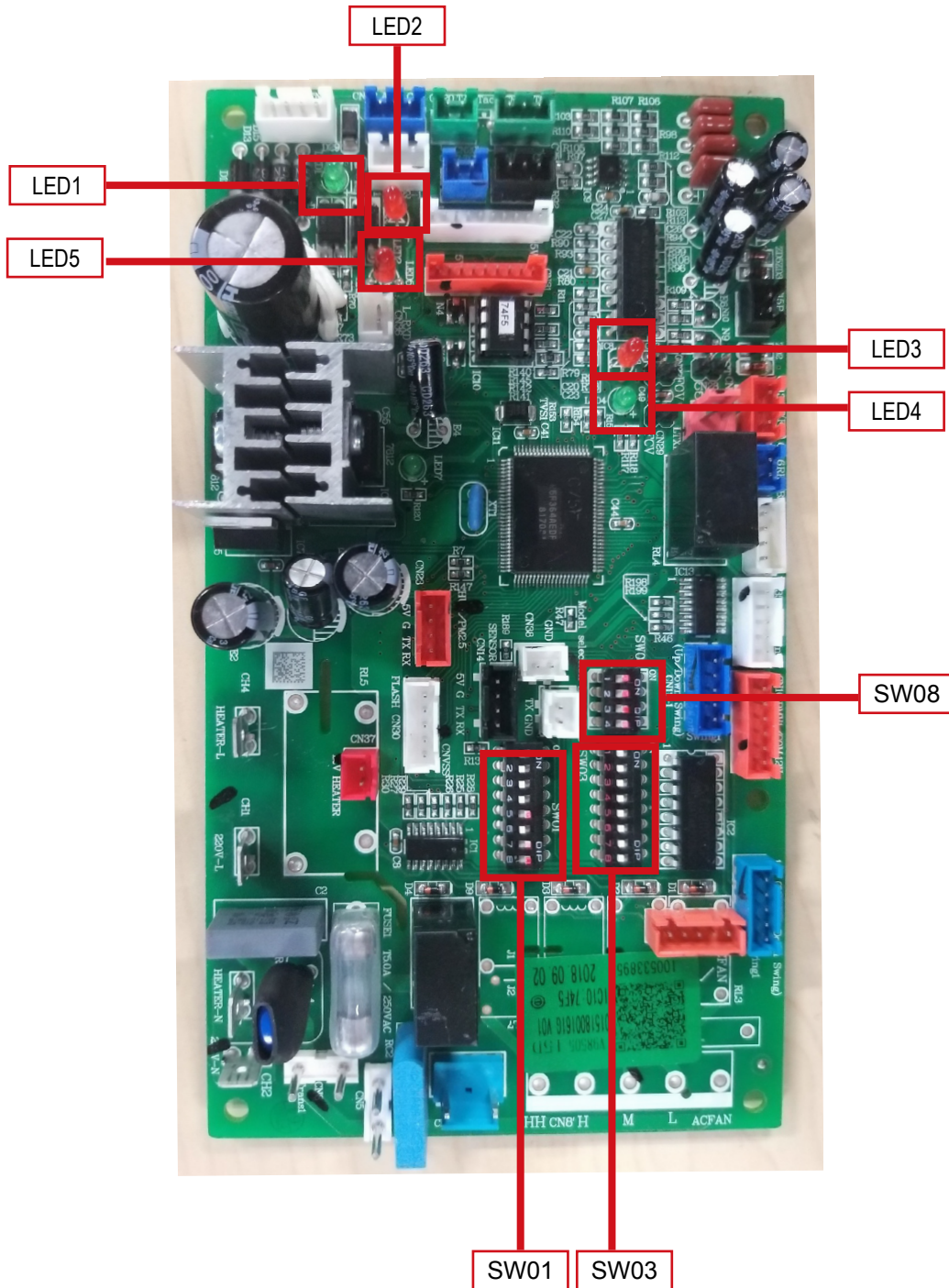
SW08

SW08_1	WIFI control mode	ON	One by one (default)
		OFF	One by multi
SW08_2	Room card	ON	Room card is unavailable (default)
		OFF	Room card is available
SW08_3	Dual heat source	ON	No dual heat source control (default)
		OFF	Dual heat source control
SW08_4	Operation mode displayed on wired controller	ON	[auto] [fan] [cooling] [dehumidification] [heating]
		OFF	[fan] [cooling] [dehumidification]

15.5 0151800161G PCB dip switch setting

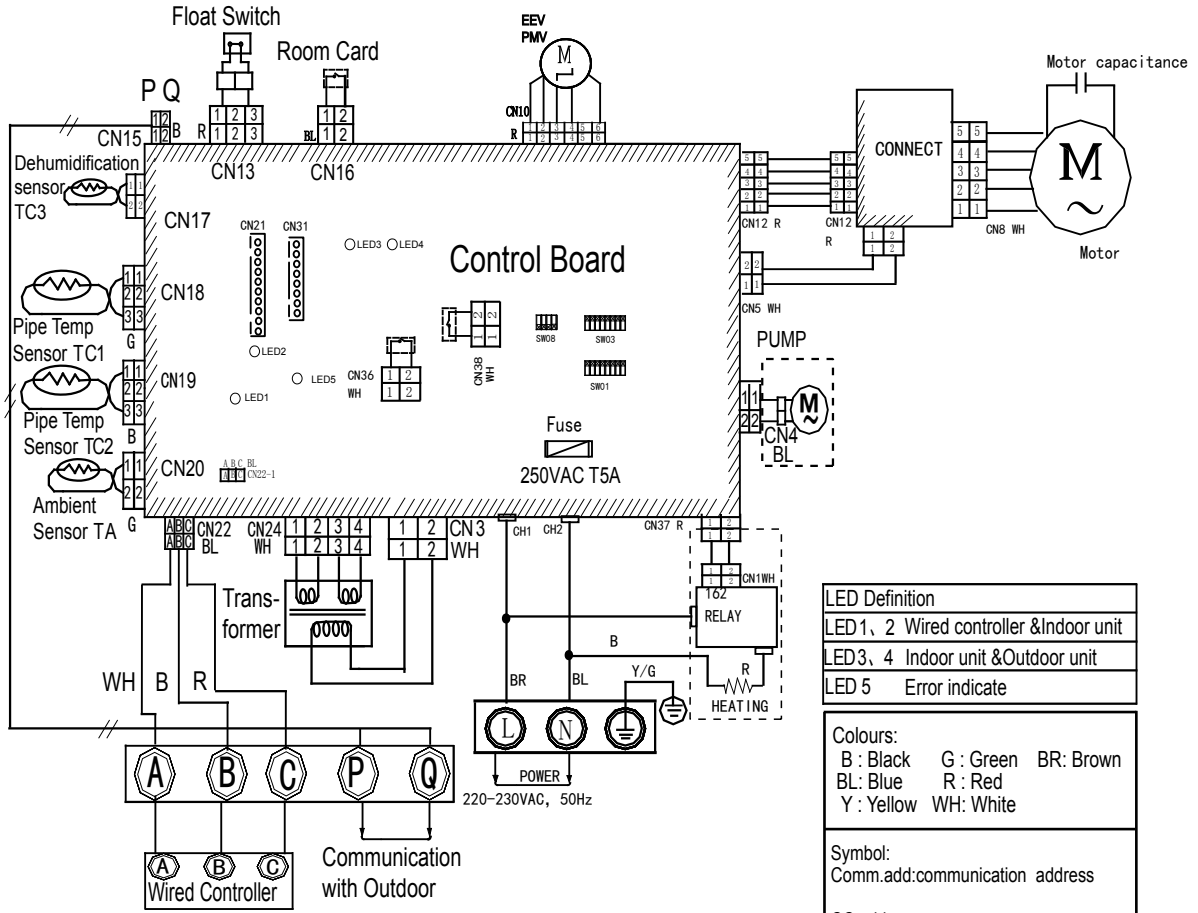
Used for

Med ESP duct type indoor units: AWSI-DBV030-N11/AWSI-DBV038-N11/AWSI-DBV048-N11



AWSI-DBV030~048-N11

PCB code: 0151800161G



*Dashed parts are optional

LED Definition	
LED 1, 2	Wired controller & Indoor unit
LED 3, 4	Indoor unit & Outdoor unit
LED 5	Error indicate
Colours:	
B	Black
BL	Blue
G	Green
BR	Brown
R	Red
Y	Yellow
WH	White
Symbol:	
Comm.add:	communication address
CC.add:	CentralControl address

Dip Switch Setting

LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.

Dip switch introduction:

SW01

		[1]	[2]	[3]	[4]	Wired control address
SW01_1	Wired control address	OFF	OFF	OFF	OFF	1# (wired control master unit) (default)
SW01_2		OFF	OFF	OFF	<u>ON</u>	2# (wired control slave unit)
SW01_3		OFF	OFF	<u>ON</u>	OFF	3# (wired control slave unit)
SW01_4		...	...	...	...	...
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	16# (wired control slave unit)
SW01_5	Capacity of indoor unit	[5]	[6]	[7]	[8]	Capacity of indoor unit
SW01_6		<u>ON</u>	OFF	OFF	<u>ON</u>	3.2HP(AW-DBV030-N)
SW01_7		<u>ON</u>	OFF	<u>ON</u>	OFF	4.0HP(AW-DBV038-N)
SW01_8		<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	5.0HP(AW-DBV048-N)

SW03 is used to set indoor unit address

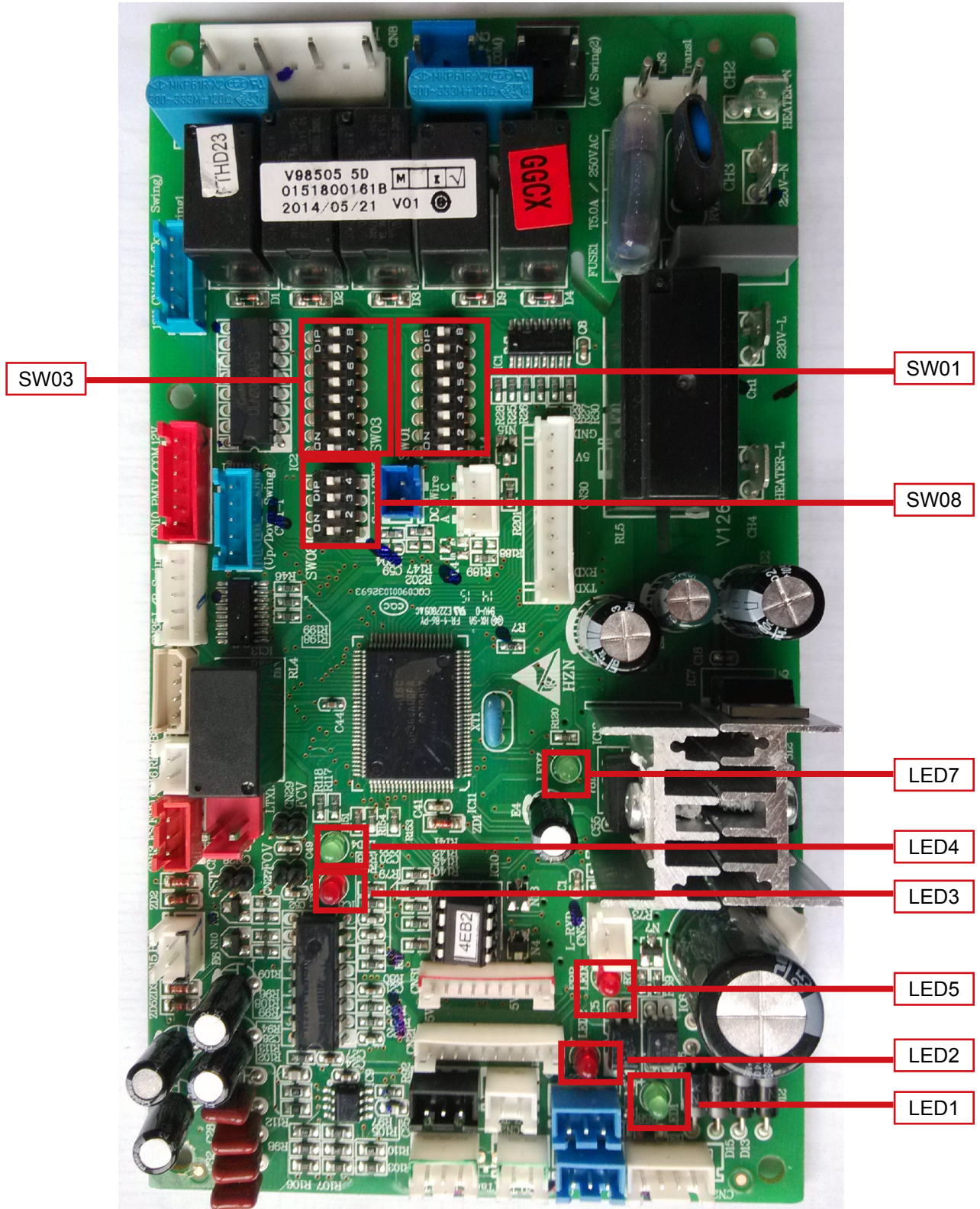
SW03	Set the communication and central control address by dip switch	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address	
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0(default)	0(default)
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	1
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	2
	
		<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	65
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	66
	
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127		
		OFF	...	...	...	...	...	...	...	Set the address automatically (default)		

SW08

SW08_1	WIFI control mode	ON	One by one (default)
		OFF	One by multi
SW08_2	Room card	ON	Room card is unavailable (default)
		OFF	Room card is available
SW08_3	Dual heat source	ON	No dual heat source control (default)
		OFF	Dual heat source control
SW08_4	Operation mode displayed on wired controller	ON	[auto] [fan] [cooling] [dehumidification] [heating]
		OFF	[fan] [cooling] [dehumidification]

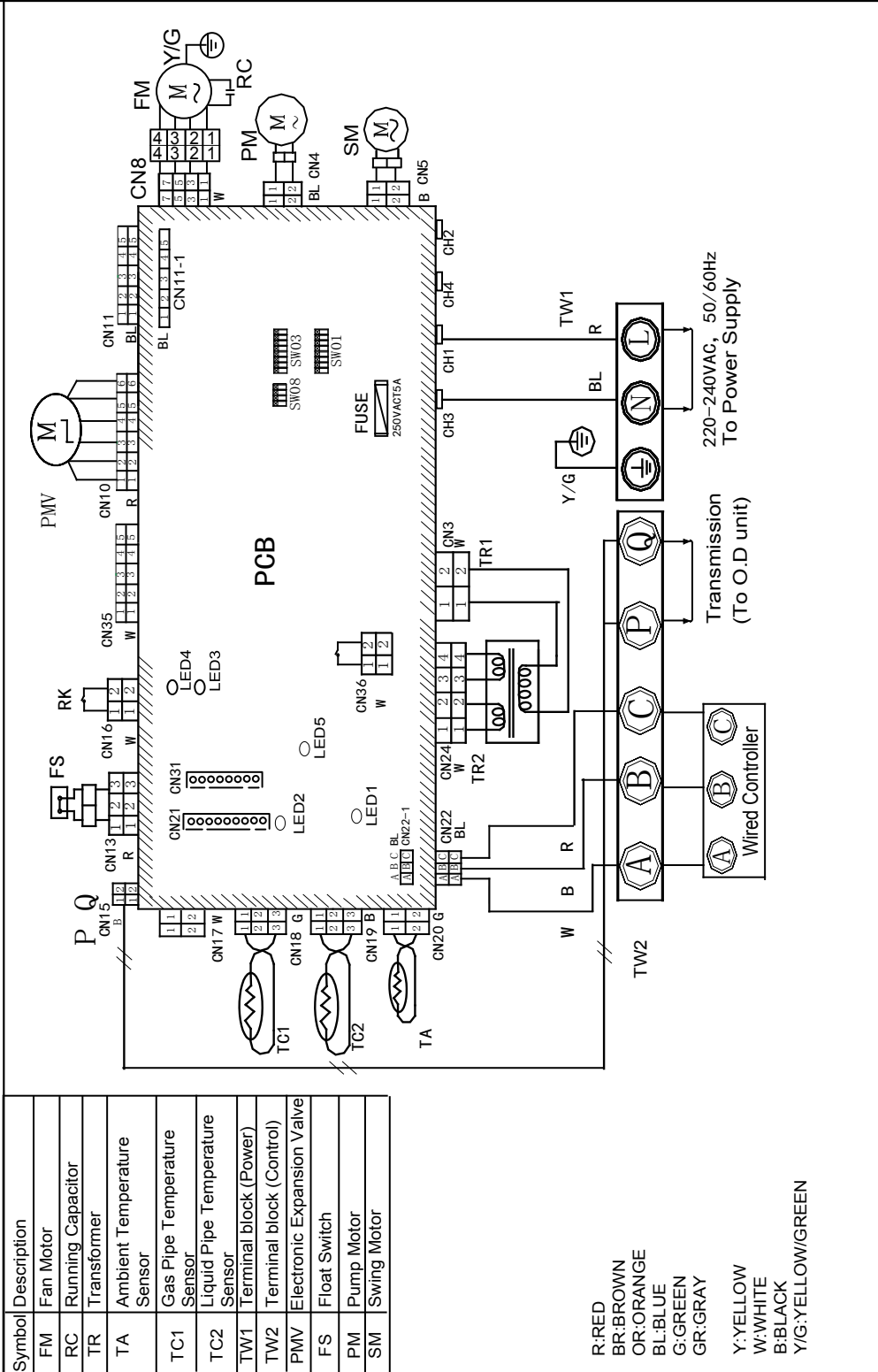
15.6 0151800161B PCB dip switch setting

Used for 2-way cassette type indoor units:AWSI-CEV*-N11 0151800161B replaces the 0010451181A PCB)



PCB code: 0151800161B

AWSI-CEV*-N11



Symbol	Description
FM	Fan Motor
RC	Running Capacitor
TR	Transformer
TA	Ambient Temperature Sensor
TC1	Gas Pipe Temperature Sensor
TC2	Liquid Pipe Temperature Sensor
TW1	Terminal block (Power)
TW2	Terminal block (Control)
PMV	Electronic Expansion Valve
FS	Float Switch
PM	Pump Motor
SM	Swing Motor

- R:RED
- BR:BROWN
- OR:ORANGE
- BL:BLUE
- G:GREEN
- GR:GRAY
- Y:YELLOW
- W:WHITE
- B:BLACK
- Y/G:YELLOW/GREEN

Dip Switch Setting

LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.
- LED7: forced-open lamp for indoor electronic expansion valve.
This lamp not light under normal condition; during adjusting the electronic expansion valve by hand this lamp will flicker.

Dip switch introduction

(1) Description of SW01

SW01-1	Mode selection	OFF			[AUTO][FAN][COOL][DEHUMIDIFY][HEAT]	
		ON			[FAN] [COOL] [DEHUMIDIFY]	
SW01-2~ SW01-4	Wired control address	OFF	OFF	OFF	0# master unit (default)	
		OFF	OFF	ON	1# slave unit	
		OFF	ON	OFF	2# slave unit	
		OFF	ON	ON	3# slave unit	
		ON	OFF	OFF	4# slave unit	
		ON	OFF	ON	5# slave unit	
		ON	ON	OFF	6# slave unit	
		ON	ON	ON	7# slave unit	
		OFF	OFF	ON	OFF	1.0HP (AWSI-CEV009-N11)
		OFF	OFF	ON	ON	1.2HP (AWSI-CEV012-N11)
		OFF	ON	OFF	ON	1.7HP (AWSI-CEV016-N11)
		OFF	ON	ON	OFF	2.0HP (AWSI-CEV018-N11)

(2) Description of SW03

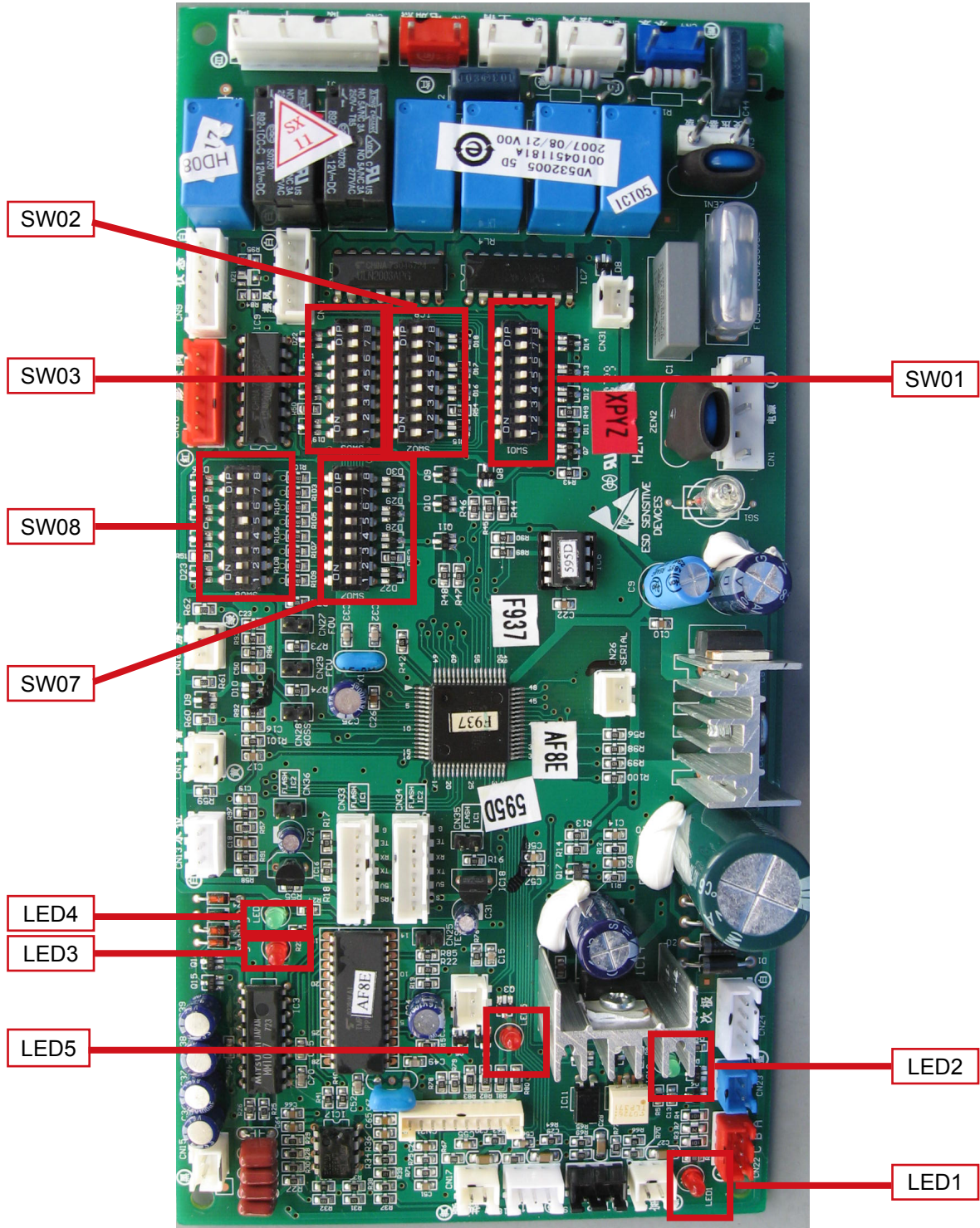
SW03	Set the communication and central control address by dip switch	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address	
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0 (default)	0 (default)
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	1
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	2
	
		<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	65
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	66
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127
	OFF	...	...	...	...	...	...	...	Set the address automatically (default)			

(3) Description of SW08

SW08-1	WIFI mode selection	OFF	One by multi
		<u>ON</u>	One by one
SW08-2	Rome card	OFF	Available
		<u>ON</u>	Unavailable (default)
SW08-3	Reserved	<u>ON</u>	Default
SW08-4	Reserved	<u>ON</u>	Default

15.7 0010451181A PCB dip switch setting

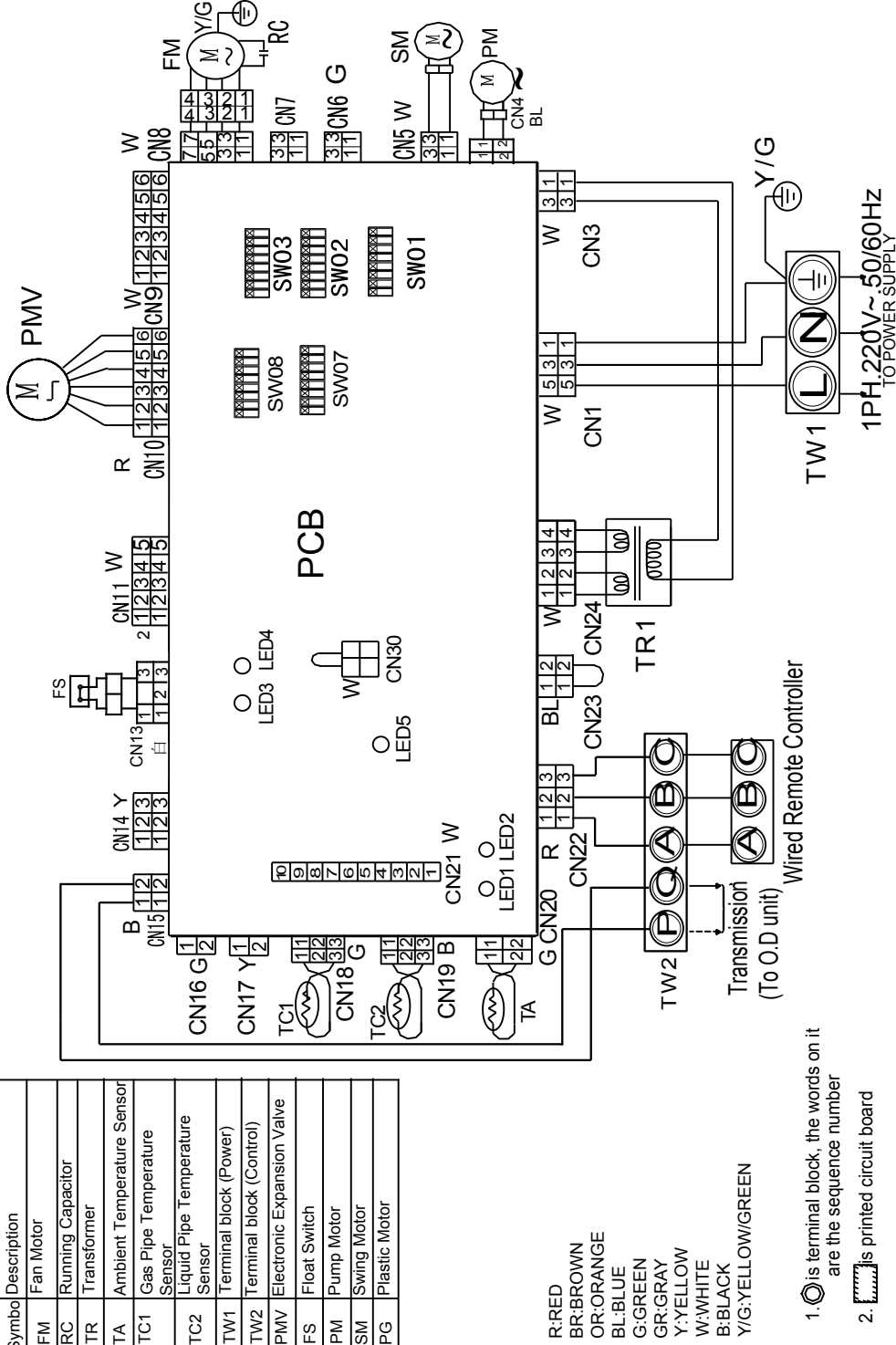
Used for old 2-way cassette type indoor units: AWSI-CEV*-N11



PCB code: 0010451181A

AWSI-CEV*-N11

Symbol	Description
FM	Fan Motor
RC	Running Capacitor
TR	Transformer
TA	Ambient Temperature Sensor
TC1	Gas Pipe Temperature Sensor
TC2	Liquid Pipe Temperature Sensor
TW1	Terminal block (Power)
TW2	Terminal block (Control)
PMV	Electronic Expansion Valve
FS	Float Switch
PM	Pump Motor
SM	Swing Motor
PG	Plastic Motor



1. is terminal block, the words on it are the sequence number
2. is printed circuit board

LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.

Dip switch introduction

(1) Indoor address setting when in group control by wired controller: SW01

SW01								Description
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
OFF	OFF	OFF	OFF	—	—	—	—	Wired controller address=1
OFF	OFF	OFF	<u>ON</u>	—	—	—	—	Wired controller address=2
—	—	—	—	—	—	—	—	—
<u>ON</u>	<u>ON</u>	OFF	<u>ON</u>	—	—	—	—	Wired controller address=15
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	—	—	—	—	Wired controller address=16
—	—	—	—	OFF	OFF	OFF	OFF	Indoor horse power=0.6HP
—	—	—	—	OFF	OFF	<u>ON</u>	OFF	Indoor horse power=1.0HP (AWSI-CEV009-N11)
—	—	—	—	OFF	OFF	<u>ON</u>	<u>ON</u>	Indoor horse power=1.2HP(AWSI-CEV012-N11)
—	—	—	—	OFF	<u>ON</u>	OFF	OFF	Indoor horse power=1.5HP
—	—	—	—	OFF	<u>ON</u>	OFF	<u>ON</u>	Indoor horse power=1.7HP (AWSI-CEV016-N11)
—	—	—	—	OFF	<u>ON</u>	<u>ON</u>	OFF	Indoor horse power=2.0HP (AWSI-CEV018-N11)
—	—	—	—	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	Indoor horse power=2.5HP
—	—	—	—	<u>ON</u>	OFF	OFF	OFF	Indoor horse power=3.0HP
—	—	—	—	<u>ON</u>	OFF	OFF	<u>ON</u>	Indoor horse power=3.2HP
—	—	—	—	<u>ON</u>	OFF	<u>ON</u>	OFF	Indoor horse power=4.0HP
—	—	—	—	<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	Indoor horse power=5.0HP
—	—	—	—	<u>ON</u>	<u>ON</u>	OFF	OFF	Indoor horse power=6.0HP
—	—	—	—	<u>ON</u>	<u>ON</u>	OFF	<u>ON</u>	Indoor horse power=8.0HP
—	—	—	—	<u>ON</u>	<u>ON</u>	<u>ON</u>	OFF	Indoor horse power=10.0HP
—	—	—	—	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Indoor horse power=15.0HP

(2) Indoor address setting when in central control by central controller: SW02 (only on the master unit).

SW02								Description
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
—	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Central control address=0
—	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	Central control address=1
—	—	—	—	—	—	—	—	—
—	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	OFF	Central control address=26
—	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Central control address=27
OFF								Set central control address by wired controller
<u>ON</u>								Forbidden to set address by wired controller

(3) Indoor communication address

SW03								Indoor communication address
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	
<u>ON</u>	—	OFF	OFF	OFF	OFF	OFF	OFF	0
<u>ON</u>	—	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1
<u>ON</u>	—	—	—	—	—	—	—	—
<u>ON</u>	—	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	OFF	62
<u>ON</u>	—	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63
	OFF							Set central control address by wired controller
	<u>ON</u>							Forbidden to set address by wired controller
OFF								Set address automatically

There are three kinds of address setting method for indoor units: automatically address setting, manual address setting, and wired controller setting. Any one of them can set the address and wired controller setting type has the highest priority.

(4) TA correction value in AUTO mode and Tdif: SW07-1 SW07-2 (written in EEPROM)

When out of factory, SW05 has been set and cannot be changed at random.

SW07-1	Function
<u>ON</u>	TA correction value is available in AUTO mode
OFF	TA correction value is unavailable in AUTO mode
SW07-2	Function
<u>ON</u>	Tdif =3°C
OFF	Tdif =2°C

Note:

- Mode changeover condition: when $TA < \text{set temp.} - 1 - Tdif$, running mode is HEAT; when $TA \geq \text{set temp.} + TA \text{ correction value} + 1 + Tdif$, running mode is COOL

(5) Indoor temp. sensor selection:SW07-3

SW07-3	Function
OFF	Indoor ambient temp. and heating set temp. correction value be controlled simultaneously
<u>ON</u>	Indoor ambient temp. and heating set temp. correction value be controlled individually

Note:

- "Indoor ambient temp. and heating set temp. correction value be controlled simultaneously" is that when in group control (wired controller: 1 to x), the indoor ambient temp. and heating set temp. correction value of slave unit are as the same as that of the master unit; "indoor ambient temp. and heating set temp. correction value is controlled individually" is that the two values of slave unit and master unit are controlled by the individual indoor unit.

(6) Inlet air temp. TA correction value: (SW07-4,SW07-5, be written in EEPROM)

When out of factory, SW05 has been set and cannot be changed at random.

SW07-5	SW07-4	Function
OFF	OFF	TA correction value=12°C
OFF	<u>ON</u>	TA correction value=8°C
<u>ON</u>	OFF	TA correction value=4°C
<u>ON</u>	<u>ON</u>	TA correction value=0°C

(7) Filter cleaning time selection:SW07-6

SW07-6	Function
ON	2500 hrs
OFF	120 hrs

(8) Operation mode changeover of wired controller (SW07-7, SW07-8)

SW07-8	SW07-7	Function
OFF	OFF	[AUTO] [FAN] [COOL] [DRY] [HEAT]
OFF	ON	[FAN] [COOL] [DRY] [HEAT] [ELECTRIC HEAT]
ON	OFF	[FAN] [COOL] [DRY]
ON	ON	[FAN] [COOL] [DRY] [HEAT]

(9) Air volume: SW08-1

SW08-1	Function
ON	Normal operation
OFF	Air volume is fixed (for duct unit)

(10) In heating, fan speed selection:SW08-2

SW08-2	Function
ON	Normal operation
OFF	Run at mid. speed when in heating high speed

(11) 26°C lock function (SW08 3): in heating mode, though set temp. exceeds 20°C, count as 20°C; in cooling mode, though set temp. is below 26°C, count as 26°C.

SW08-3	Function
ON	Normal mode
OFF	26°C lock is available

(12) Indoor priority selection (SW08-4)

SW08-4	Function
ON	Normal mode
OFF	Indoor priority is higher

(13) Room card function selection (SW08-5)

SW08-5	Function
ON	Room card is available
OFF	Room card is unavailable

(14) Wired control/remote control selection: SW08-6

SW08-6	Function
ON	Wired control type
OFF	Remote control type

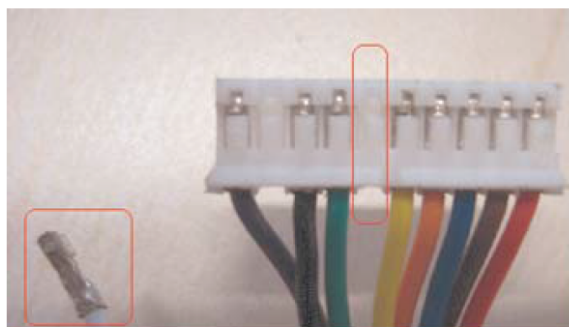
(15) Indoor installation height selection (SW08-7)	
SW08-7	Function
ON	normal mode
OFF	When height is over 2.7m, indoor motor speed will be increased one class: in low speed, unit will run at med speed; in med speed, unit will run at high speed; in high speed, unit will run at high speed (not increased)
(16) For twin energy source or not be used (SW08-8)	
SW08-8	Function
ON	TES is not available
OFF	TES is available
(17) EEV open angle setting manually (CN27, CN29)	
When being electrified, short connect CN27, EEV will open fully for 2 minutes; short connect CN29, EEV will open fully for 2 minutes.	
(18) Time shorting input (CN28)	
	Function
OFF	Normal
ON	1. Short connected after being electrified, enter time shorting function 2. Short connected when being electrified and reset, enter auto check function
(19) Float switch input	
	Function
ON	Normal
OFF	Float switch is close (full of water)
(20) Room card input	
	Function
ON	Room card is disconnected
OFF	Room card is connected

Indoor control type selection (only for 0010451181A PCB)

Indoor PCB	Wired control master unit	Wired control slave unit	Remote control	Remarks
CN23	Short connected	Disconnected	Disconnected	1. The communication address between master/slave wired controller and the outdoor is different. 2. If central control is necessary, all indoor central control addresses in one group are identical, while the indoor address in different groups is different too.
CN30	Short connected	Short connected	Disconnected	
CN21	Blank	Blank	To remote receiver	
SW08-[6]	ON	ON	OFF	
SW01-1 2 3 4	"0"	1-15 (different dialing setting on SW01 for the slave units in one group)	"0"	
Signal terminal block	A, B, C to wired controller	B, C to wired controller	A, B, C not to wired controller	

Note:

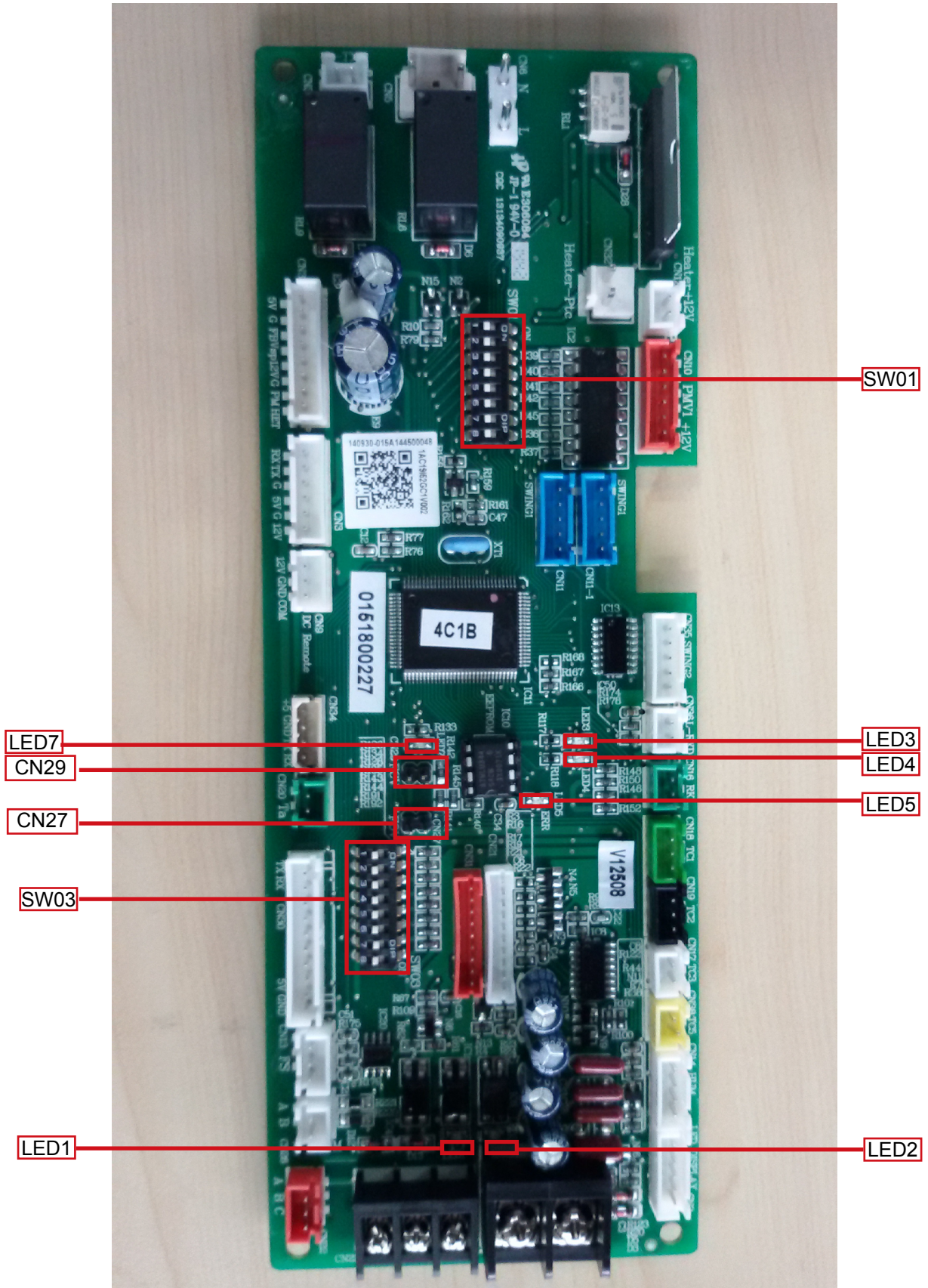
1. In the above figure, the state in the frame is set when out of factory.
2. The indoor controlled by master/slave wired controller and the indoor controlled by individual wired controller are all wired controlled master indoor.
3. The remote receiver is equipped with a multi-wire which can be inserted in CN21.
4. For the indoor unit controlled by wired controller, if indoor unit is with the remote receiver, MU5T pull out the white wire from the remote receiver connector.



5. Correct procedure to shut off the unit: switch off the unit by the controller, then cut off the power source. FORBIDDEN to cut off the power directly!
6. All the indoor EEVs are at open state which are set out of factory.

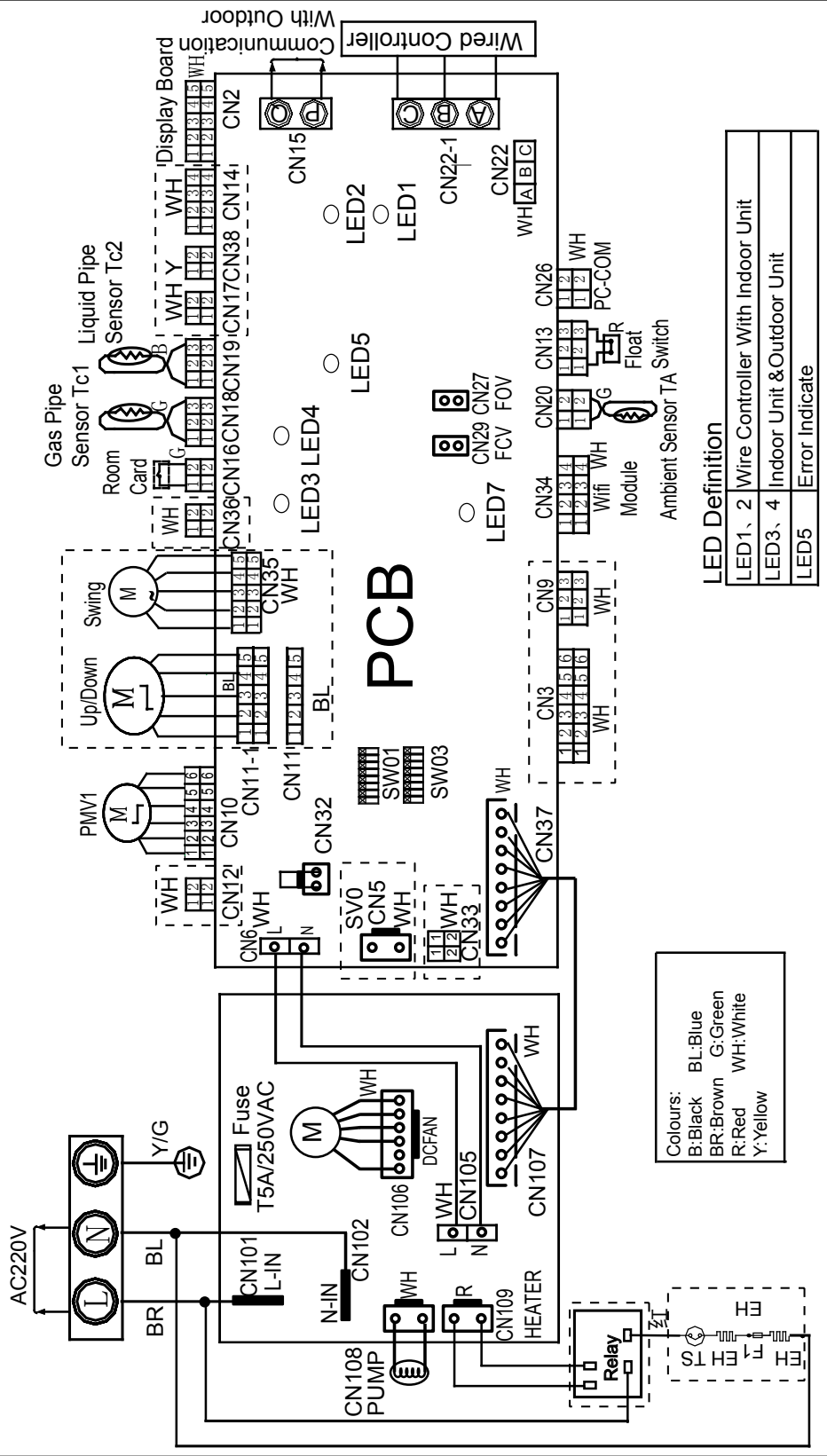
15.8 0151800227 PCB dip switch setting

Used for round-way smart air flow cassette type indoor units: AWSI-CFV*-N11



Dip Switch Setting

AWSI-CCV***-N11 PCB code: 0151800227



Colours:

- B:Black
- BL:Blue
- BR:Brown
- G:Green
- R:Red
- WH:White
- Y:Yellow

LED Definition

LED1, 2	Wire Controller With Indoor Unit
LED3, 4	Indoor Unit & Outdoor Unit
LED5	Error Indicate

LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.
- LED7: for factory testing.

Dip switch introduction

SW01 is used for indoor unit group control address setting and capacity selection. SW03 is used for indoor unit address setting (including physical address and central address).

(1) Description of SW01

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	ON	Slave unit 1 in group control
		OFF	OFF	ON	OFF	Slave unit 2 in group control
		OFF	OFF	ON	ON	Slave unit 3 in group control
	
ON	ON	ON	ON	Slave unit 15 in group control		
SW01_5 SW01_6 SW01_7 SW01_8	Indoor unit capacity	[5]	[6]	[7]	[8]	Indoor unit capacity
		OFF	OFF	OFF	OFF	0.6HP
		OFF	OFF	OFF	ON	0.8HP (AWSI-CFV007-N11)
		OFF	OFF	ON	OFF	1.0HP (AWSI-CFV009-N11)
		OFF	OFF	ON	ON	1.2HP (AWSI-CFV012-N11)
		OFF	ON	OFF	OFF	1.5HP
		OFF	ON	OFF	ON	1.7HP (AWSI-CFV016-N11)
		OFF	ON	ON	OFF	2.0HP (AWSI-CFV018-N11)
		OFF	ON	ON	ON	2.5HP (AWSI-CFV024-N11)
		ON	OFF	OFF	ON	3.2HP (AWSI-CFV030-N11)
		ON	OFF	ON	OFF	4.0HP (AWSI-CFV038-N11)
		ON	OFF	ON	ON	5.0HP (AWSI-CFV048-N11)
		ON	ON	OFF	OFF	6.0HP (AWSI-CFV060-N11)
		ON	ON	OFF	ON	8.0HP
ON	ON	ON	OFF	10.0HP		
ON	ON	ON	ON	15.0HP		

(2) Description of SW03

SW03	Set the communication and central control address by dip switch (*Note 1)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0 (default)	0 (default)
<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	1
<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	2
...
<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	65
<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	66
...
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127
		OFF	...	...	...	...	...	...	...	Set the address by wired controller or automatically (default)	

Note 1

- The address must be set by dip switch if central control is used.
- SW03-2=OFF, central control address = physical address+0
- SW03-2=ON, central control address=physical address+64

(3) CN27, CN29 plug explanation

a) Electronic expansion valve PMV manual control setting (CN27, CN29)

Manual control open fully CN27: After power on, short CN27 for 2 seconds, PMV open fully;

Manual control close fully CN29: After power on, short CN29 for 2 seconds, PMV close fully.

b) Shorten time running and self-inspection

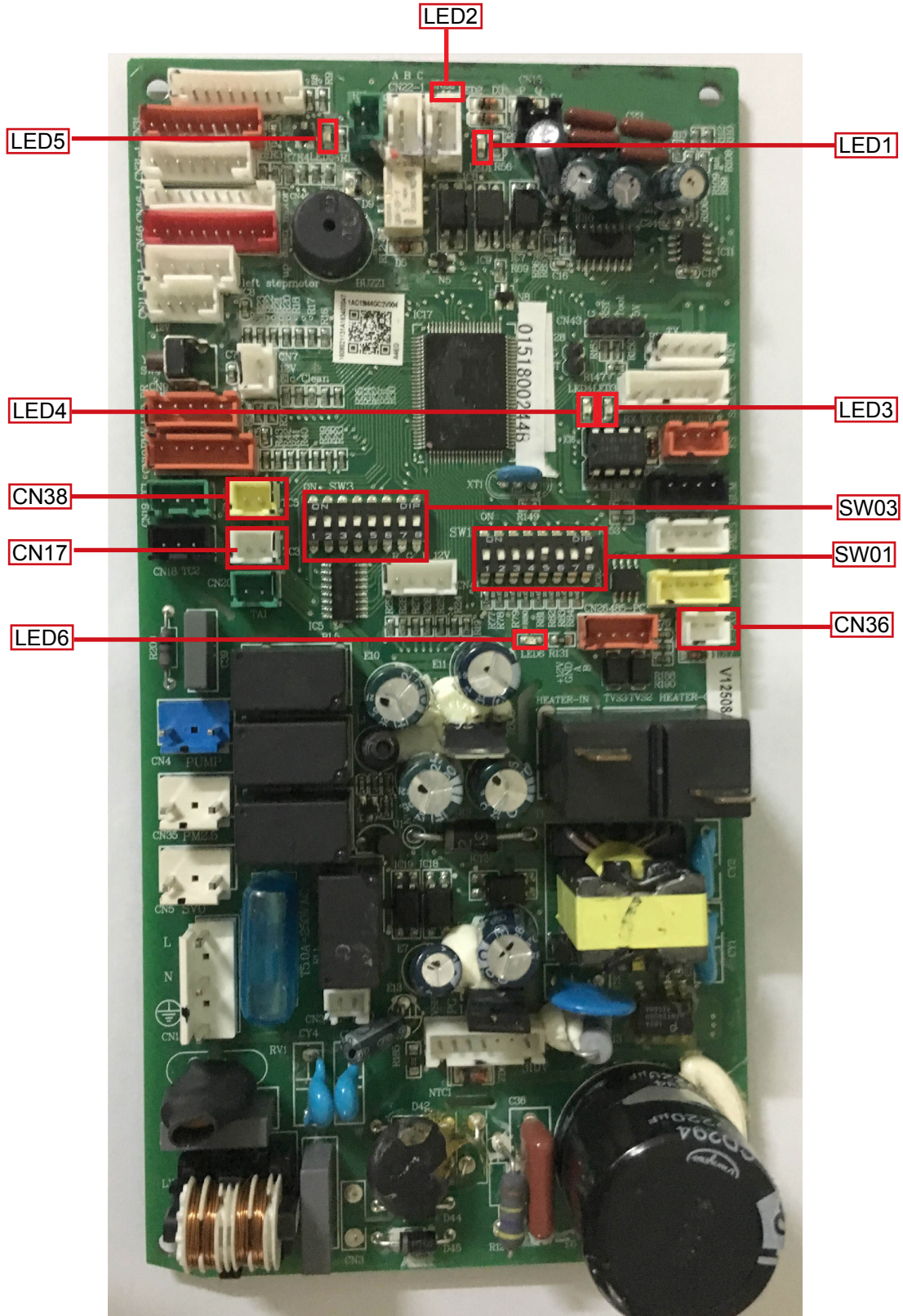
After power on, short CN27 and CN29 for 2 seconds at the same time, enter shorten time running the running time;

Before power on, short CN27, after power on the unit enter self-inspection;

Before power on, short CN 27 and CN29, enter the production line test.

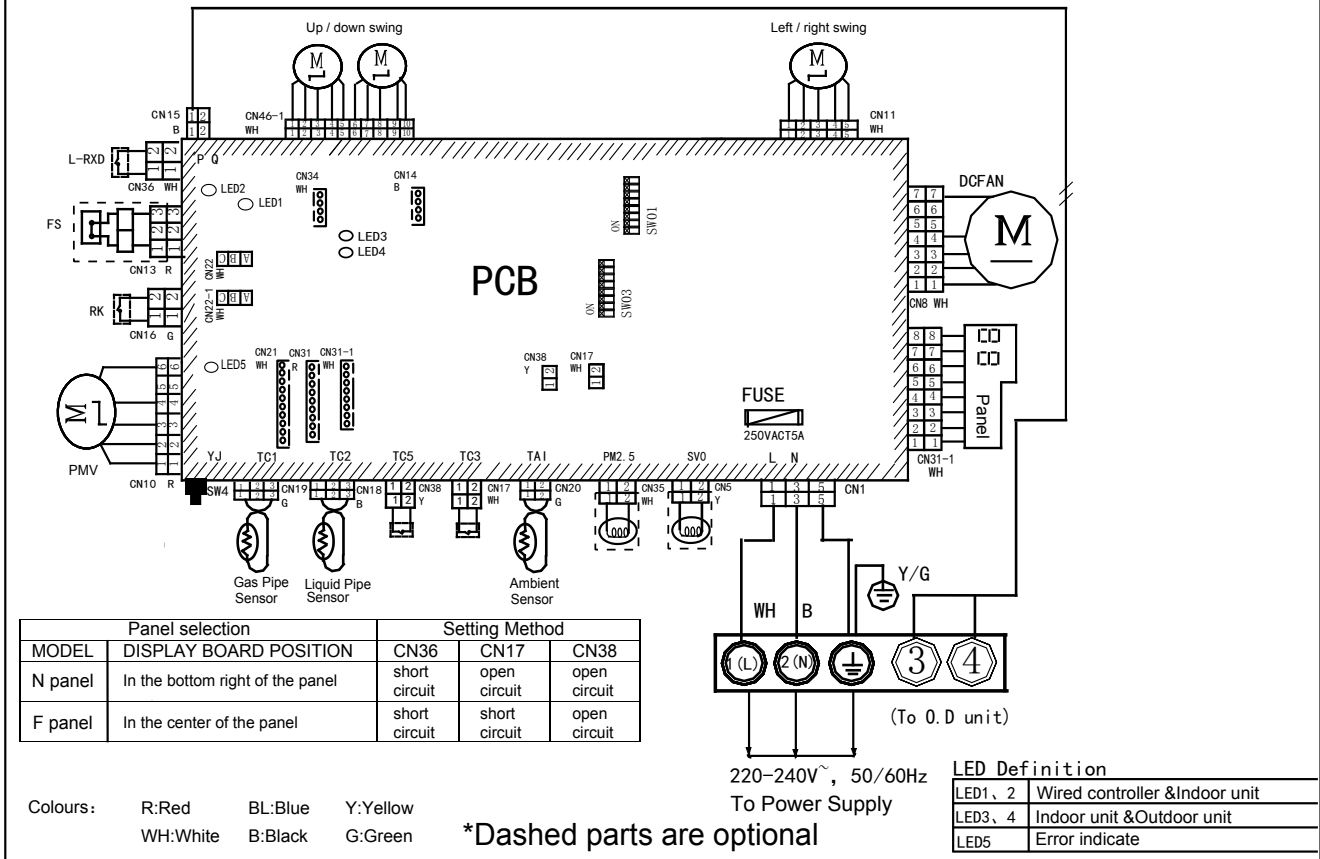
15.9 0151800244B PCB dip switch setting

Used for N platform high wall type indoor units: AWSI-HBV*-N11



AWSI-HBV*-N11

PCB code: 0151800244B



Panel selection		Setting Method		
MODEL	DISPLAY BOARD POSITION	CN36	CN17	CN38
N panel	In the bottom right of the panel	short circuit	open circuit	open circuit
F panel	In the center of the panel	short circuit	short circuit	open circuit

Colours: R:Red BL:Blue Y:Yellow
WH:White B:Black G:Green

*Dashed parts are optional

220-240V~, 50/60Hz
To Power Supply

LED Definition

LED1, 2	Wired controller & Indoor unit
LED3, 4	Indoor unit & Outdoor unit
LED5	Error indicate

LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.
- LED6: power light

Dip switch instruction:

SW01 is used to set wire controlled address of and set capabilities of master; SW03 is used to set indoor unit address (combine original communication address and address of centralized controller).

(A) Definition and description of SW01

SW01_1 SW01_2 SW01_3 SW01_4	Address of wire controlled indoor unit (group address)	[1]	[2]	[3]	[4]	Address of wire controlled indoor unit (group address)
		OFF	OFF	OFF	OFF	OFF	0#(wire controlled master unit)(default)
		OFF	OFF	OFF	<u>ON</u>	1#(wire controlled slave unit)
		OFF	OFF	<u>ON</u>	OFF	2#(wire controlled slave unit)
		OFF	OFF	<u>ON</u>	<u>ON</u>	3#(wire controlled slave unit)
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	15#(wire controlled slave unit)
SW01_5 SW01_6 SW01_7 SW01_8	Capability of indoor unit	[5]	[6]	[7]	[8]	Capability of indoor unit
		OFF	OFF	OFF	<u>ON</u>	0.8HP(AWSI-HBV007-N11)
		OFF	OFF	<u>ON</u>	OFF	1.0HP(AWSI-HBV009-N11)
		OFF	OFF	<u>ON</u>	<u>ON</u>	1.2HP(AWSI-HBV012-N11)
		OFF	<u>ON</u>	OFF	<u>ON</u>	1.7HP(AWSI-HBV016-N11)
		OFF	<u>ON</u>	<u>ON</u>	OFF	2.0HP(AWSI-HBV018-N11)
		OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	2.5HP(AWSI-HBV024-N11)
		<u>ON</u>	OFF	OFF	<u>ON</u>	3.2HP(AWSI-HBV030-N11)

Note: A wired controller can connected to at most sixteen ultrathin indoor units.

(B) Definition and description of SW03

SW03	Set the communication and central control address by dip switch (*Note 2)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address	
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0 (default)	0 (default)
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	1
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	2
	
		<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	65
		<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	66
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127
	OFF	...	...	...	...	...	...	...	Set the address by wired controller or automatically (default)			

(C) Light board selection setting

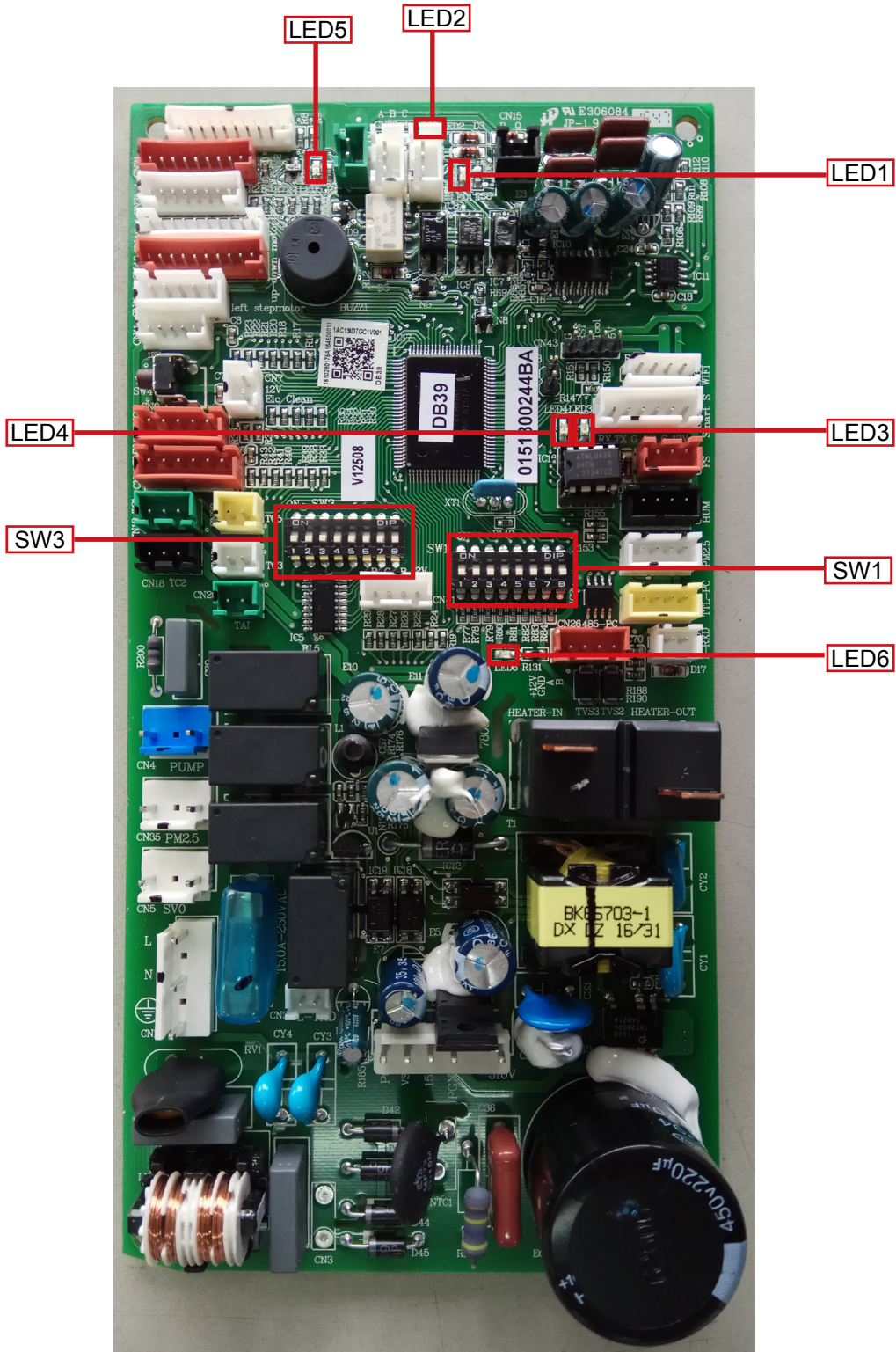
Model	CN36	CN17	CN38
AWSI-HBV*-N11	Short circuit	Short circuit	Open circuit

Note:

- Set the address by code when connecting the centralized controller or gateway or charge system.
- Address of centralized controller = communication address + 0 or +64.
SW03_2=OFF, address of centralized controller = communication address + 0 = communication address
SW03_2=ON, address of centralized controller = communication address + 64 (applies when centralized controller is used and there are more than 64 indoor units)
- The address must be set by dip switch if 0151800244B and 0010451181A are used together. Set SW03_1=ON and SW03_2=OFF; SW03_3, SW04, SW03_05, SW03_06, SW03_07 and SW03_08 are address codes which are set according to actual address.
- When connecting central controller, gateway or counting system, set address by dip switch.

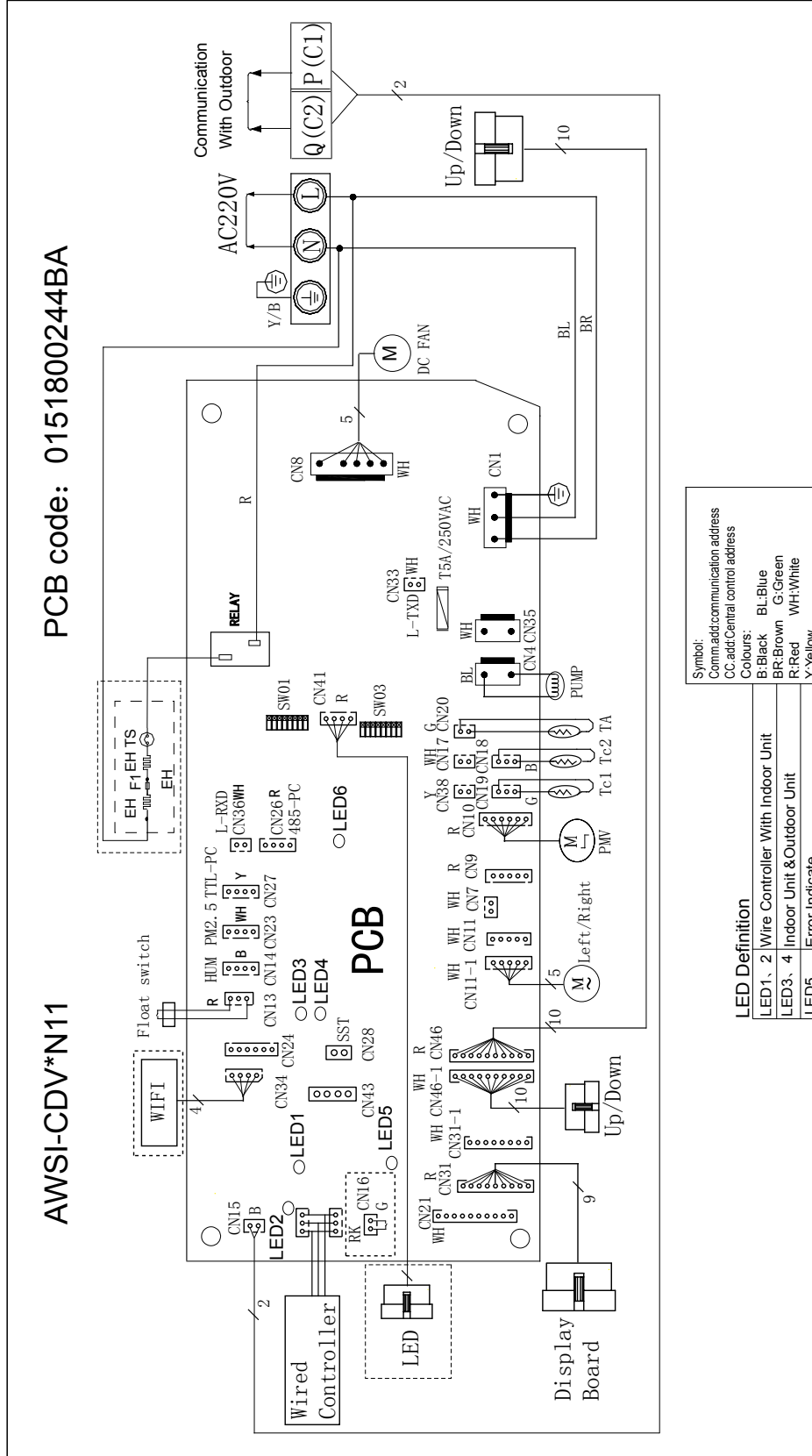
15.10 0151800244BA PCB dip switch setting

Used for one-way cassette type indoor units: and AWSI-CDV*-N11



Dip Switch Setting

One-way cassette



LED light introduction:

- LED1, LED2: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED3, LED4: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED5: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.
- LED6: power light

Dip switch instruction:

SW1 is used to set wire controlled address of and set capabilities of master; SW03 is used to set indoor unit address (combine original communication address and address of centralized controller).

(A) Definition and description of SW1

SW1_1 SW1_2 SW1_3 SW1_4	Address of wire controlled indoor unit	[1]	[2]	[2]	[2]	Address of wire controlled indoor unit (group address)
		<u>OFF</u>	<u>OFF</u>	<u>OFF</u>	<u>OFF</u>	0#(wire controlled master unit) (default)
		OFF	OFF	OFF	<u>ON</u>	1# (wire controlled slave unit)
		OFF	OFF	<u>ON</u>	OFF	2# (wire controlled slave unit)
		OFF	OFF	<u>ON</u>	<u>ON</u>	3# (wire controlled slave unit)
		OFF	<u>ON</u>	OFF	OFF	4# (wire controlled slave unit)
		OFF	<u>ON</u>	OFF	<u>ON</u>	5# (wire controlled slave unit)
	
SW1_5 SW1_6 SW1_7 SW1_8	Capability of indoor unit	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	15# (wire controlled slave unit)
		[5]	[6]	[6]	[6]	Capability of indoor unit
		OFF	OFF	OFF	OFF	0.6HP (AWSI-CBV005-N11(M))
		OFF	OFF	OFF	<u>ON</u>	0.8HP (AWSI-CDV007-N11)
		OFF	OFF	<u>ON</u>	OFF	1.0HP (AWSI-CBV009-N11(M) / AWSI-CDV009-N11)
		OFF	OFF	<u>ON</u>	<u>ON</u>	1.2HP (AWSI-CBV012-N11(M) / AWSI-CDV012-N11)
		OFF	<u>ON</u>	OFF	<u>ON</u>	1.7HP (AWSI-CBV016-N11(M))
OFF	<u>ON</u>	<u>ON</u>	OFF	2.0HP (AWSI-CBV018-N11(M))		

(B) Definition and description of SW3

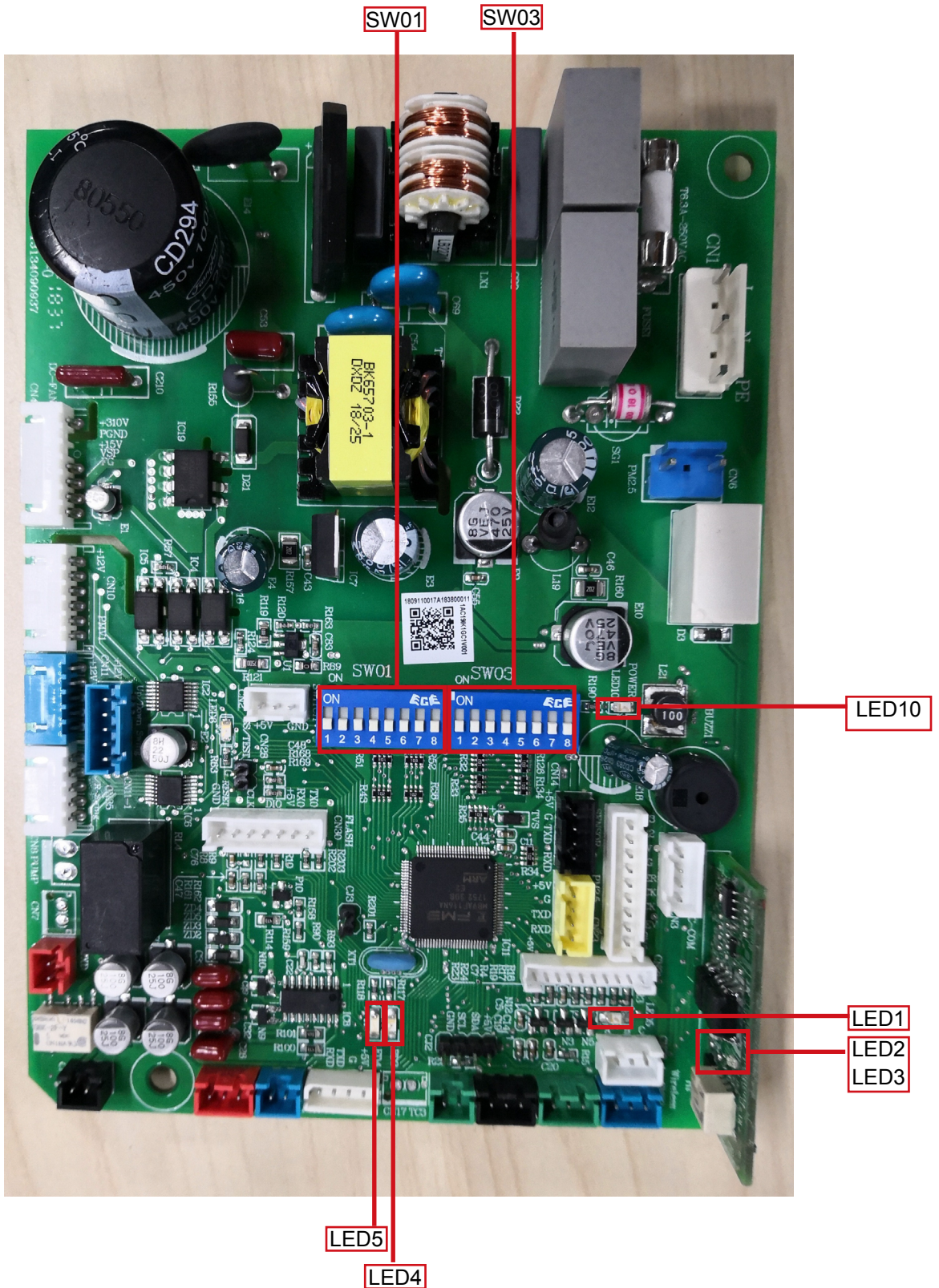
SW03	Set the communication and central control address by dip switch (*Note 2)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0 (default)	0 (default)
<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	1
<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	2
...
<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	1	65
<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	2	66
...
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127
		OFF	...	...	...	...	...	...	...	Set the address by wired controller or automatically (default)	

Note *:

- Set the address by code when connecting the centralized controller or gateway or charge system.
- Address of centralized controller=communication address+0 or+64.
SW3_2=OFF, address of centralized controller=communication address+0=communication address
SW3_2=ON, address of centralized controller=communication address+64 (applies when centralized controller is used and there are more than 64 indoor units)
- To use with 0010451181A in use, it is required to use code for address setting. Set SW3_1=ON and SW3_2=OFF; SW3_3, SW3_4, SW3_5, SW3_6, SW3_7 and SW3_8 are address codes which are set according to actual address.
- Address setting function of wired controller for ultrathin card machine is disabled.

15.11 0151800452 PCB dip switch setting

Used for the new console type indoor units: AW-EAV*-N11

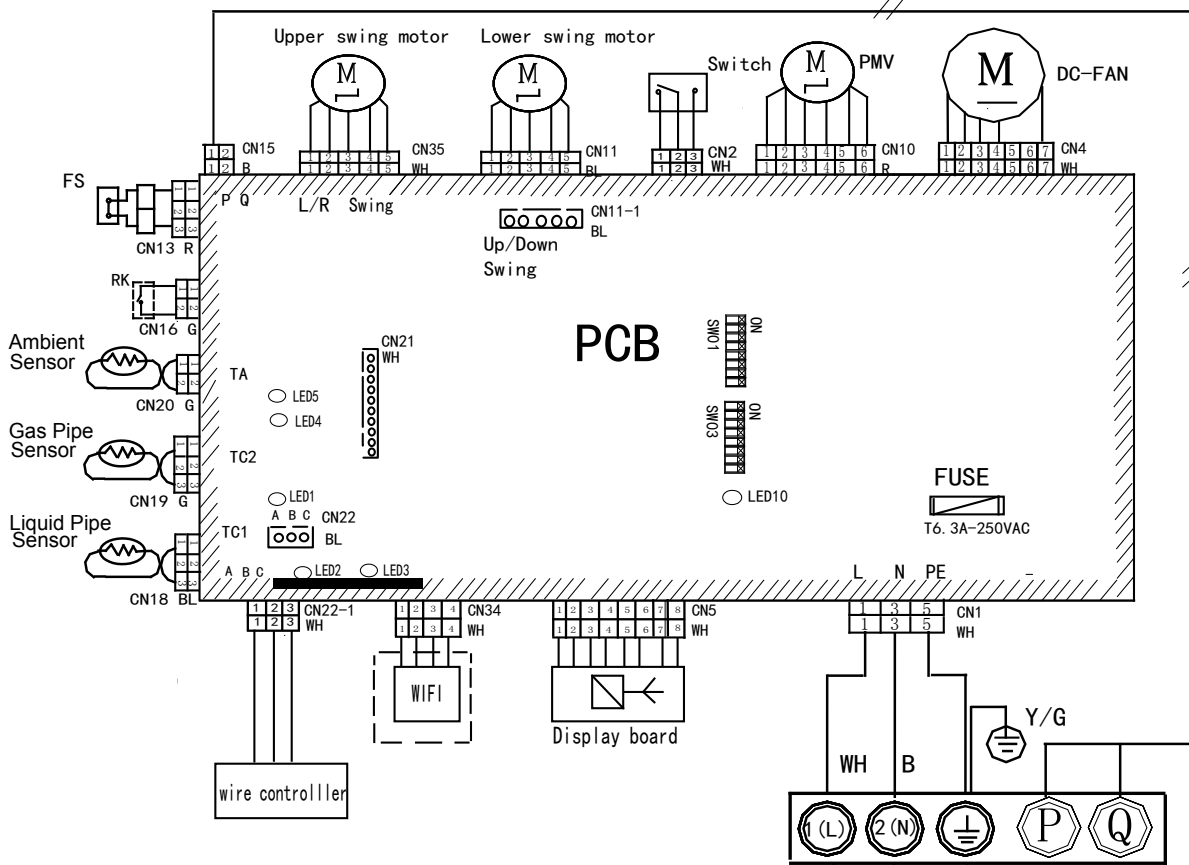


Dip Switch Setting

AW-EAV*-N11

PCB code:0151800452

*Dashed parts are optional



LED Definition

LED2, 3	Wired controller & Indoor unit
LED4, 5	Indoor unit & Outdoor unit
LED1	Error indicate
LED10	Power indicate

Colours:

B :Black G :Green
 BL:Blue R :Red
 Y :Yellow WH:White

220-230VAC, 50/60Hz
 To Power Supply

LED light introduction:

- LED2, LED3: communication lamp between indoor unit and wired controller.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED4, LED5: communication lamp between indoor unit and outdoor unit.
These two lamps flicker alternately under normal condition; once occurs the communication faulty, these two lamps will light or not light at the same time.
- LED1: malfunction lamp of indoor unit.
This lamp not light under normal condition; once indoor unit occurs malfunction this lamp will flicker, flicker times indicate the corresponding failure code.
- LED10: power light

Dip switch introduction

SW01 is used to set wire controlled address of and set capabilities of master; SW03 is used to set indoor unit address (combine original communication address and address of centralized controller)

(A) Definition and description of SW01

SW01_1 SW01_2 SW01_3 SW01_4	Address of wire controlled indoor unit (group address)	[1]	[2]	[3]	[4]	Address of wire controlled indoor unit (group address)
		OFF	OFF	OFF	OFF	0# (wire controlled master unit) (default)
		OFF	OFF	OFF	<u>ON</u>	1# (wire controlled slave unit)
		OFF	OFF	<u>ON</u>	<u>ON</u>	2# (wire controlled slave unit)
		OFF	OFF	<u>ON</u>	<u>ON</u>	3# (wire controlled slave unit)
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	15# (wire controlled slave unit)
SW01_5 SW01_6 SW01_7 SW01_8	Capability of indoor unit	[5]	[6]	[7]	[8]	Capability of indoor unit
		OFF	OFF	<u>ON</u>	OFF	1.0HP (AW-EAV009-N11)
		OFF	OFF	<u>ON</u>	<u>ON</u>	1.2HP(AW-EAV012-N11)
		OFF	<u>ON</u>	OFF	OFF	1.5HP
		OFF	<u>ON</u>	<u>ON</u>	OFF	2.0HP (AW-EAV018-N11)

(B) Definition and description of SW03

SW03	Set the communication and central control address by dip switch (*Note 2)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Communication address	Central control address
		<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0 (default)	0 (default)
<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	1	1
<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	<u>ON</u>	OFF	2	2
...
<u>ON</u>	OFF	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	63
<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	0	64
<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	1	65
<u>ON</u>	<u>ON</u>	OFF	OFF	OFF	OFF	OFF	<u>ON</u>	OFF	OFF	2	66
...
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	63	127
		OFF	...	...	...	...	...	...	...	Set the address by wired controller or automatically (default)	

Note 2:

- Set the address by dip switch when connecting the centralized controller or gateway or charge system.
- Address of centralized controller =communication address + 0 or +64.
 SW03_2=OFF, address of centralized controller =communication address+0=communication address SW03_2=ON, address of centralized controller=communication address+64 (applies when centralized controller is used and there are more than 64 indoor units)
- To use with 0010451181A in use, it is required to use code for address setting. Set SW03_1=ON and SW03_2=OFF; SW03_3, SW03_4, SW03_5, SW03_6, SW03_7 and SW03_8 are address codes which are set according to actual address.

16. Indoor Unit Control

16.1 Cooling operation

Set temp. in cooling: $T_s = \text{set temp. wired controller}$;

After startup, indoor unit will send the request to outdoor according to the temp. difference between the set temp. and the room temp.

16.2 Heating operation

Set temp. in heating: $T_s = \text{set temp. wired controller} + \text{TA correcting value}$.

After startup, indoor unit will send the request to outdoor according to the temp. difference between the set temp. and the room temp.

16.3 Dry operation

Room temp. - set temp. $> 2^\circ\text{C}$ indoor operation is identical with the cooling operation, and send the cooling mode to outdoor;

Room temp. - set temp. $\leq 2^\circ\text{C}$ indoor will send the dry signal to outdoor, and indoor fan motor will run at low speed compulsorily when compressor is running; when room temp. $< 16^\circ\text{C}$ indoor stops and sends stop signal to outdoor. In dry operation, the auto mode of indoor fan motor is identical with the cooling mode; EEV control mode is identical with the cooling operation.

16.4 Fan operation

Indoor fan motor will run at the speed set on the wired controller and sends stop signal to outdoor.

16.5 Abnormal operation

When the requested mode collides with the outdoor mode, the entering earlier will be in prior. After indoor receives the startup command from wired controller (remote controller), firstly judge the outdoor current mode. If it is normal mode, the indoor will run as the request of wired controller; if it is abnormal mode, the command can not be executed, and indoor keeps stop; wired controller displays standby mode (if in remote control type, the buzzer will sound twice and the remote controller can not receive the signal). Until the outdoor stops or the outdoor mode is accordant with the requested mode of wired controller (remote controller), the outdoor will work. COOL (including AUTO COOL), DRY, RECOVERY are regarded as the same mode; HEAT, RECOVERY are as abnormal mode.

16.6 Fan speed control of indoor fan motor

a. Adjustment by hand

Set high/ mid/ low fan speed as the request.

b. Auto fan speed

Confirm the fan speed as the temp. difference between room temp. TA and the set temp.

c. Anti-cool air control

In heating mode, after compressor startup, the unit will control indoor fan motor state due to the indoor coil temp.

In anti-cool air period, indoor sends pre-heat signal to wired controller; in outdoor defrosting period, indoor fan motor will stop, and sends defrost signal to wired controller;

After being switched off in heating mode, indoor fan motor will run at low speed and 30 seconds later will stop.

16.7 Set EEV open angle by hand

When being switched off, short connect CN27 to open the valve fully compulsorily for 2 minutes; When being switched off, short connect CN29 to close the valve fully compulsorily for 2 minutes.

16.8 Swing motor control

Indoor will control swing motor ON/OFF due to the swing signal from wired controller.

16.9 Filter cleaning

Check and memorize the running time of indoor fan motor, once arriving the requested time (set by SW07-6), indoor will send filter cleaning signal to wired controller; when indoor receives the filter reset signal from wired controller, if the time exceeds the requested time, the filter will reset.

16.10 Anti-freezed protection

In cooling mode, execute the anti-freezed protection due to the measured indoor coil temp. to avoid the indoor heat exchanger causing frost or ice.

The enter conditions:

Before 2018.6: $TC2 \leq 3^{\circ}C$ and last for 40min or $\leq -6^{\circ}C$ last for 10min.

After 2018.6: $TC2 \leq -1^{\circ}C$,and last for 40min or $\leq -6^{\circ}C$ last for 10min.

When $TC2 > 3^{\circ}C$ and last for 5min, the timing clear.

The exit conditions:

Before 2018.6: $TC2 \geq 11^{\circ}C$ and last for 10min.

After 2018.6: $TC2 \geq 7^{\circ}C$ and last for 10min.or $TC1 > Ta - 5^{\circ}C$ last for 5min.

16.11 Compulsory defrosting

After indoor receives the compulsory defrosting signal from wired controller, it will send compulsory defrosting signal to outdoor continuously for 10 times. In the sending period, indoor will execute the normal defrost.

16.12 Trial operation

Set the mode as cooling (heating), press ON/OFF for 5 seconds to enter compulsory cooling (heating).

In compulsory cooling, display "LL" and COOL will flash;

In compulsory heating, display "HH" and HEAT will flash, fan speed is AUTO. At this time, only ON/OFF, TEMP +/- are valid.

16.13 Autorestart

The autorestart function is apply to all the MRV indoor units and the factory setting it is available.

Memory contents: ON/OFF state, running mode, fan speed, setting temperature, swing position and temperature type displayed on panel.

Note:

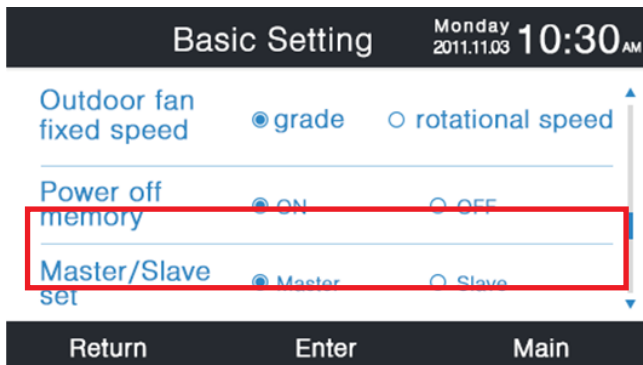
- (1) Temperature type displayed on panel is only used for slim duct, one way cassette and N platform high wall.
- (2) If the timer and sleeping function are set, when the units power-on again, the unit is OFF state.
- (3) The wired controller setting has the highest priority.

Setting method by controller:

(1) Wired controller cancel method:

For RWV05 setting the autorestart function by dip switch SW4

For RWV07 setting the autorestart function by basic setting interface



(2) Remote controller cancel method:

Press the "SLEEP" button 10 times in 5s, buzzer echoes 4 times, the autorestart function is available; repeat above operations, buzzer echoes 2 times, the autorestart function is unavailable.

16.14 26°C lock function

Factory default the 26°C lock function is unavailable.

Setting method by remote controller: (apply to all indoor units except Round-way cassette:CCV)

Power on the unit, in cooling mode, low speed, setting the temperature 26°C. Press the "HEALTH" button of the remote controller 8 times in 5s, buzzer echoes 4 times, the 26°C lock function is available; repeat above operations, buzzer echoes 2 times, the 26°C lock function is unavailable.

Setting method for Round-way cassette: AB*MRERA by remote controller:

Power on the unit, press the "LIGHT" button 12 times, buzzer echoes 4 times, the unit panel will display "A", then press the "LIGHT" button again, the unit panel will display "A0", press the temp. adjusting key, until the panel display "Ab", press the "LIGHT" button to confirm, then the panel will display "00" or "01" (00: 26°C lock function is unavailable; 01:26°C lock function is available), press the temp. adjusting key to select the "00" or "01", then press the "LIGHT" button to confirm. After 60s, the unit will exit the setting mode automatically.

16.15 Room card

1. If the room card available: (the room card is priority)

Insert the room card: the unit no action, the unit can be controlled by remote controller or wired controller.

Take away the room card: the running unit will standby,, the unit can't be controlled by remote controller or wired controller.

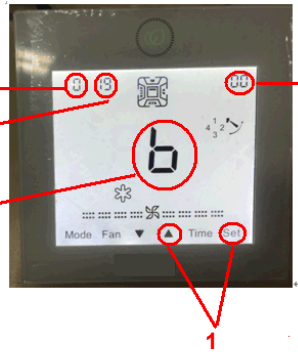

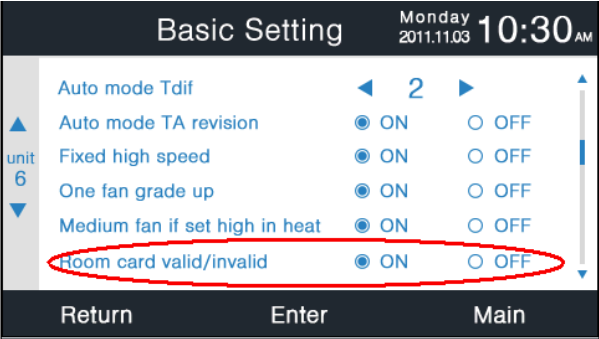
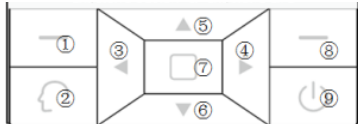
2. If the room card unavailable: (last setting is priority)

Insert the room card: the unit open and run automatically (the running mode is the last memory mode), the unit can be controlled by remote controller or wired controller.

Take away the room card: the running unit will standby, the unit can be controlled by remote controller or wired controller.

PCB code	Indoor series	Model	Setting by dip switch	Dip switch No.	Setting by remote controller	Setting by wired controller
0151800113	4-way cassette	AWSI-CCV*-N11	Yes	SW07-6	No	No
	Convertible	AWSI-FAV*-N11 AWSI-FAV*-N11				
	Medium ESP duct	AWSI-DBV*-N11				
	High ESP duct	AWSI-DCV*-N11				
0151800161	Slim low ESP duct (old)	AWSI-DDV*-N11	Yes	SW08-2	No	No
0151800161B	2-way cassette	AWSI-CEV*-N11	Yes	SW08-2	No	No
0151800161C	Slim low ESP duct	AWSI-DDV*-N11	Yes	SW08-2	No	No
	Medium ESP duct	AW-DBV*-N11				
0151800161D	Medium ESP duct	AW-DBV*-N11	Yes	SW08-2	No	No
0151800161G	Medium ESP duct	AW-DBV0*-N11	Yes	SW08-2	No	No
0151800227	Round flow 4-way cassette	AWSI-CFV*-N11	No	/	Yes	Yes
0151800244B	N plate high wall	AWSI-HBV*-N11	No	/	Yes	Yes
0151800244BA	One way cassette	AWSI-CDV*-N11	No	/	Yes	Yes

Wired controller setting method

<p>YR-E17</p>	<ol style="list-style-type: none"> 1. Press the “Set” and “▲” button (position 1) simultaneously for 5s to enter advanced settings, temperature zone (position 2) display A. 2. Press the “Fan” button to change the temperature zone display b. <p>(Position 4 display unit number, it can be adjusted by “Time” button; Position 3 display function code, it can be adjusted by “▼” or “▲” button and press “Set” to confirm; Position 5 display the function detail information, it can be adjusted by “▼” or “▲” button and press “Set” to confirm)</p> <p>Under the condition that position 2 displays b & position 3 displays 19, if position 5 is “00”, it means room card function is invalid while “01” means the room card function is valid.</p>	
<p>YR-E16A YR-E16B</p>	<ol style="list-style-type: none"> 1. In main interface press menu key ⑦ 2. Press the key ④, move the cursor to the icon  position. Press ⑦ to enter. 3. Press ③ or ④, ⑤, ⑥ to move the cursor to the icon “Basic setting” position. Press ⑦ to enter the setting interface. 4. Press ③ or ④ switch to the following picture  <p>Set room card function in the red oval.</p>	

Remote controller setting method

Setting method: (apply to all indoor units except Round-way cassette: AB*MRERA)

In the running state, press the “LIGHT” button of the remote controller 12 times, buzzer echoes 4 times, room card function is valid.

In the running state, press the “LIGHT” button of the remote controller 12 times, buzzer echoes 2 times, room card function is invalid.

Setting method for Round-way cassette: AB*MRERA :

Power on the unit, press the "LIGHT" button 12 times, buzzer echoes 4 times, the unit panel will display "A", then press the "LIGHT" button to confirm, the unit panel will display "A0", press the temp. adjusting key, until the panel display "A3", press the "LIGHT" button to confirm, then the panel will display "00" or "01" (00: room card function is unavailable; 01:room card function is available), press the temp. adjusting key to select the "00" or "01" , then press the "LIGHT" button to confirm. After 60s, the unit will exit the setting mode automatically.

17. Failure Code

Indoor unit failure code

Indication on wired controller	Flash times of LED on indoor PCB/ timer LED on remote receiver	Failure code definition	Remark
1	1	Indoor ambient temp. sensor TA failure	Resumable
2	2	Indoor coil pipe temp. sensor TC1 failure	
3	3	Indoor coil pipe temp. sensor TC2 failure	
4	4	Dual heat source sensor TW failure	
5	5	Indoor EEPROM failure	Unresumable
6	6	Communication between indoor and outdoor failure	Resumable
7	7	Communication between indoor and wired controller failure	Resumable
8	8	Indoor float switch failure	Resumable
9	9	Indoor address repeated failure	Resumable
0C	12	No 50Hz zero passage signal	Resumable
12	18	The 4-way valve of 3-pipe valve box reversing failure	Unresumable
Outdoor failure code	20	Outdoor failure code	Resumable

Round-way smart air flow (AWSI-CFV*-N11) failure code

Failure code on wired controller (hex)	PCB LED5 (Indoor units) / receiver timer lamp (remote controller)	Panel display	Fault Descriptions
01	1	01	Indoor ambient temp. sensor TA failure
02	2	02	Indoor coil pipe temp. sensor TC1 failure
03	3	03	Indoor coil pipe temp. sensor TC2 failure
04	4	04	Dual heat source sensor TW failure
05	5	05	Indoor EEPROM failure
06	6	06	Communication between indoor and outdoor failure
07	7	07	Communication between indoor and wired controller failure
08	8	08	Indoor float switch failure
09	9	09	Indoor address repeated failure
0A	10	10	Communication between indoor and display board failure
0C	12	12	Indoor unit 50Hz Zero-crossing failure
0E	14	14	DC motor failure
12	18	18	The 4-way valve of 3-pipe valve box reversing failure
14	20	20	Outdoor failure code

N platform high wall (AWSI-HBV*-N11) failure code

Failure code on wired controller (hex)	Indoor panel display failure code	Indoor PCB LED5 flashes times	Fault Descriptions
01	E01	1	Indoor ambient temp. sensor TA failure
02	E02	2	Indoor gas pipe temp. sensor TC1 failure
03	E03	3	Indoor liquid pipe temp. sensor TC2 failure
04	E04	4	Dual heat source sensor TW failure
05	E05	5	Indoor EEPROM failure
06	E06	6	Communication between indoor and outdoor failure
07	E07	7	Communication between indoor and wired controller failure
08	E08	8	Indoor float switch failure
09	E09	9	Indoor address repeated failure
0C	E12	12	Indoor unit 50Hz Zero-crossing failure
0E	E14	14	DC motor failure
12	E18	18	The 4-way valve of 3-pipe valve box reversing failure
14	E20	20	Outdoor failure code

One-way cassette (AWSI-CDV*-N11) failure code

Failure code on wired controller (hex)	PCB LED5(Indoor Units)/ Receiver Timer Lamp(Remote Controller)	Panel display	Fault Descriptions
01	1	01	Fault of indoor unit ambient temp. transducer TA
02	2	02	Fault of indoor unit pipe temp. transducer TC1
03	3	03	Fault of indoor unit pipe temp. transducer TC2
04	4	04	Fault of indoor unit dual heat source temp. transducer
05	5	05	Fault of indoor unit EEPROM
06	6	06	Fault of communication between indoor & outdoor units
07	7	07	Fault of communication between indoor unit and wired control
08	8	08	Fault of indoor unit water drainage
09	9	09	Fault of duplicate indoor unit address
0C	12	12	Indoor unit 50Hz Zero-crossing failure
0E	14	14	Fault of DC fan
12	18	18	The 4-way valve of 3-pipe valve box reversing failure
14	20	20	Outdoor failure code

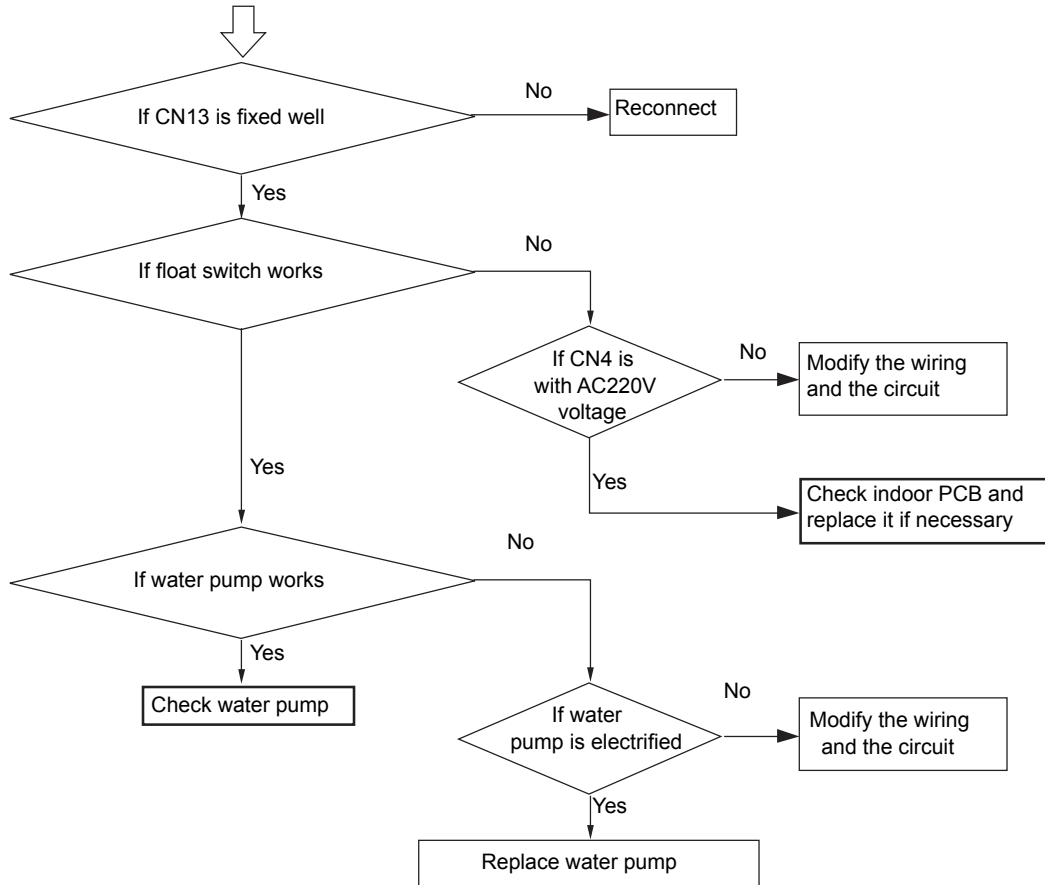
New Console (AW-EAV*-N11) failure code

Failure code on wired controller (hex)	PCB LED5(Indoor Units)/ Receiver Timer Lamp(Remote Controller)	Fault Descriptions
01	1	Indoor ambient temp. sensor TA failure
02	2	Indoor coil pipe temp. sensor TC1 failure
03	3	Indoor coil pipe temp. sensor TC2 failure
05	5	Indoor EEPROM failure
06	6	Communication between indoor and outdoor failure
07	7	Communication between indoor and wired controller failure
08	8	Indoor float switch failure
09	9	Indoor address repeated failure
0C	12	Indoor unit 50Hz Zero-crossing failure
0E	14	DC motor failure
12	18	The 4-way valve of 3-pipe valve box reversing failure
14	20	Outdoor failure code

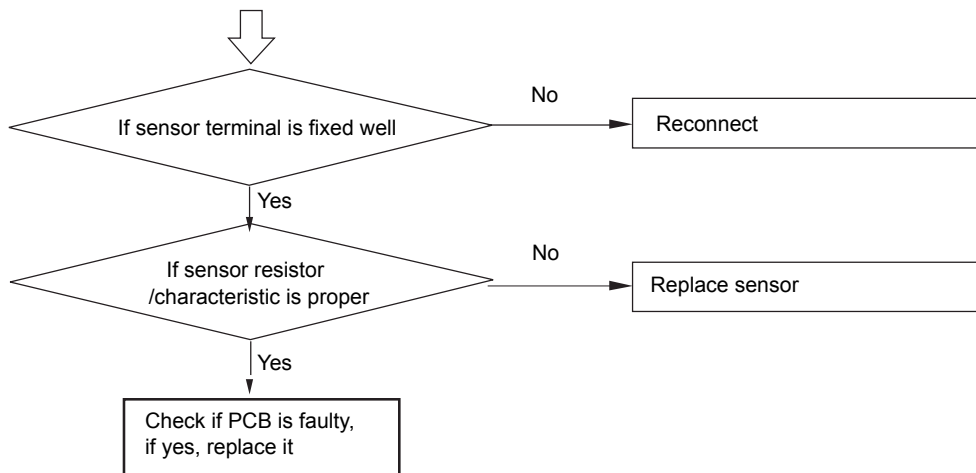
18. Troubleshooting

Indoor failure diagnose

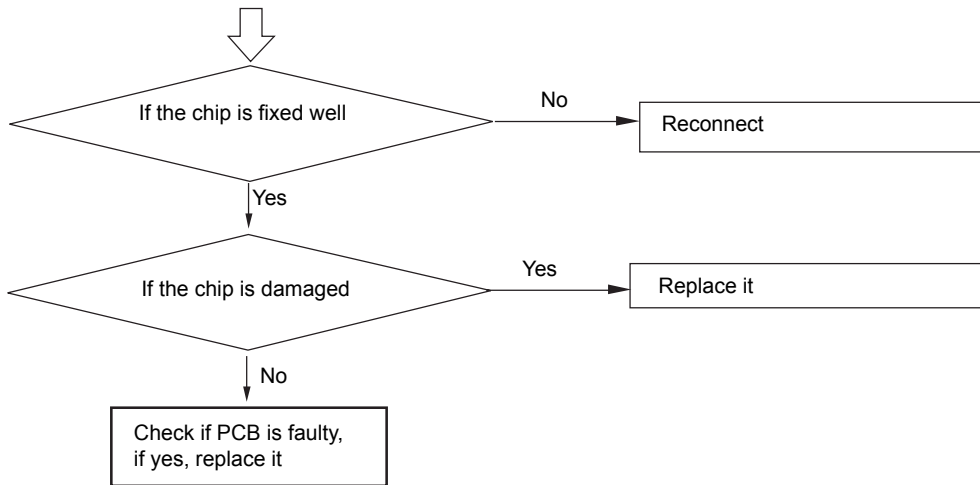
[08] Indoor drainage system failure/float switch circuit on indoor PCB failure



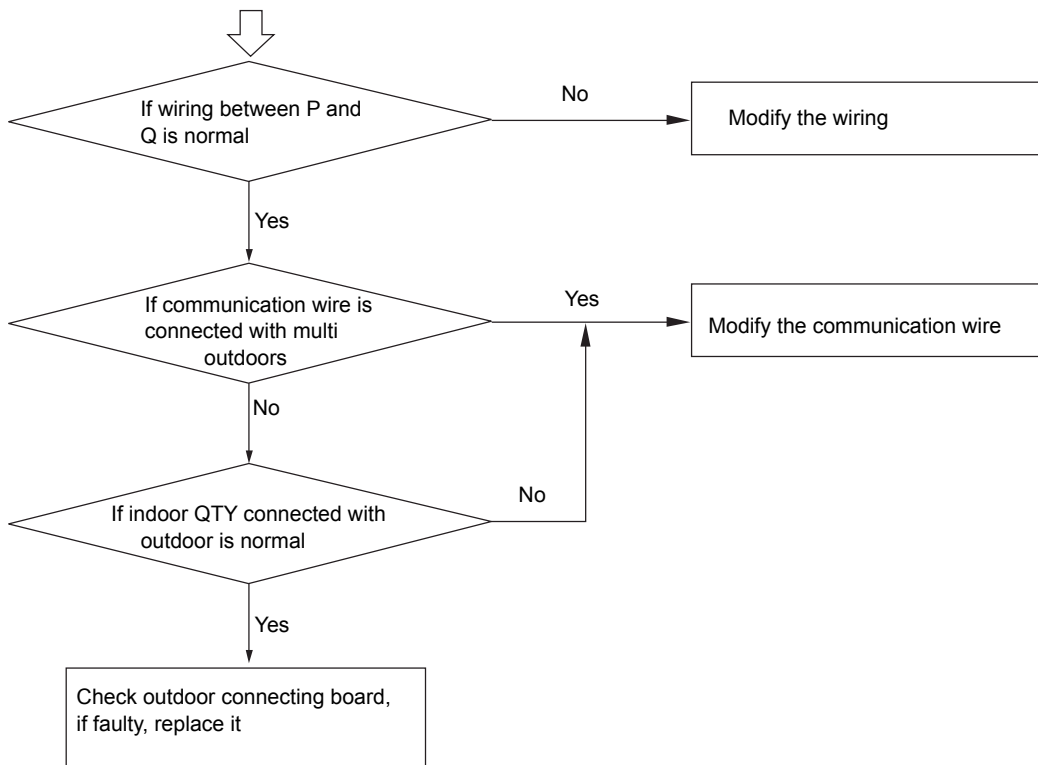
[1/2/3/4/15] Indoor sensor failure



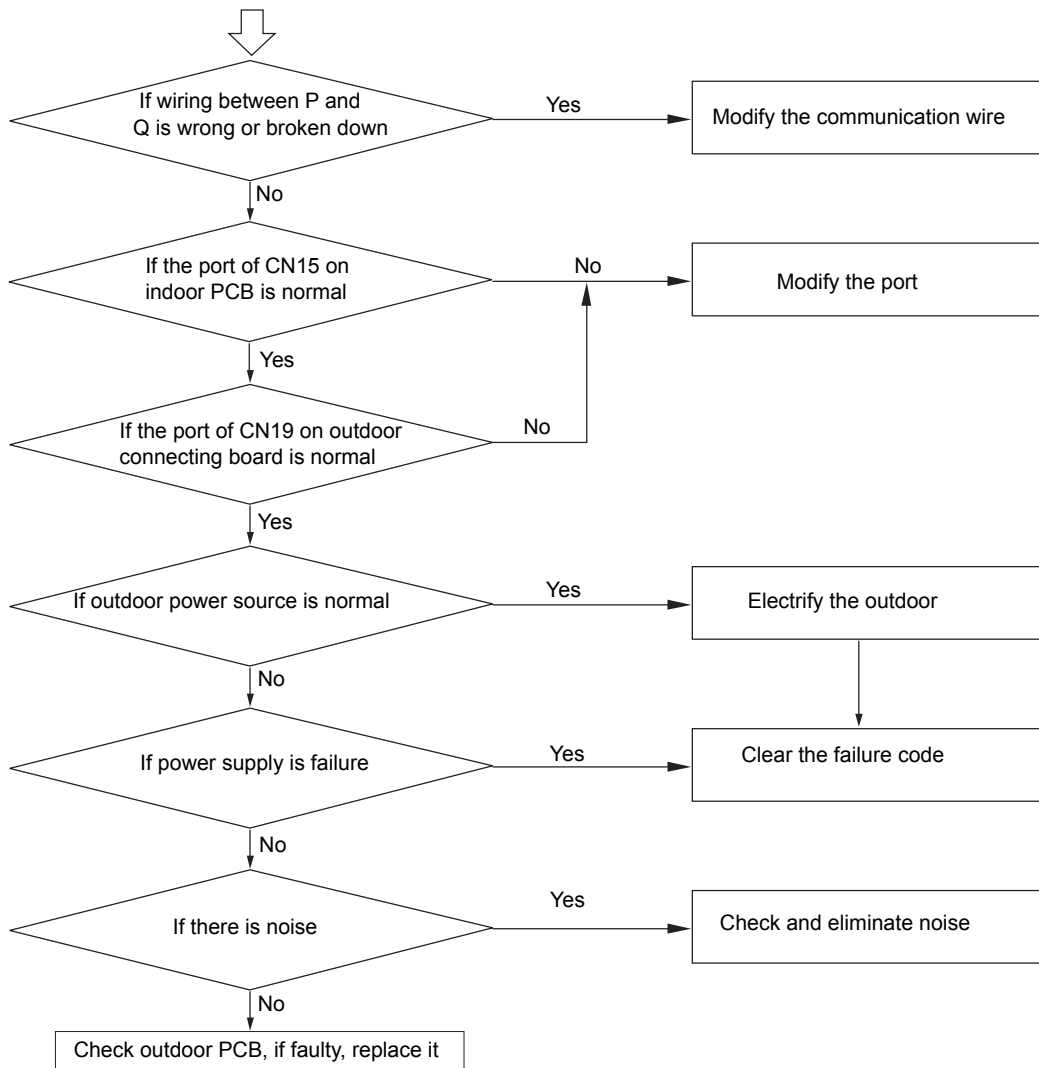
[05] EEPROM failure



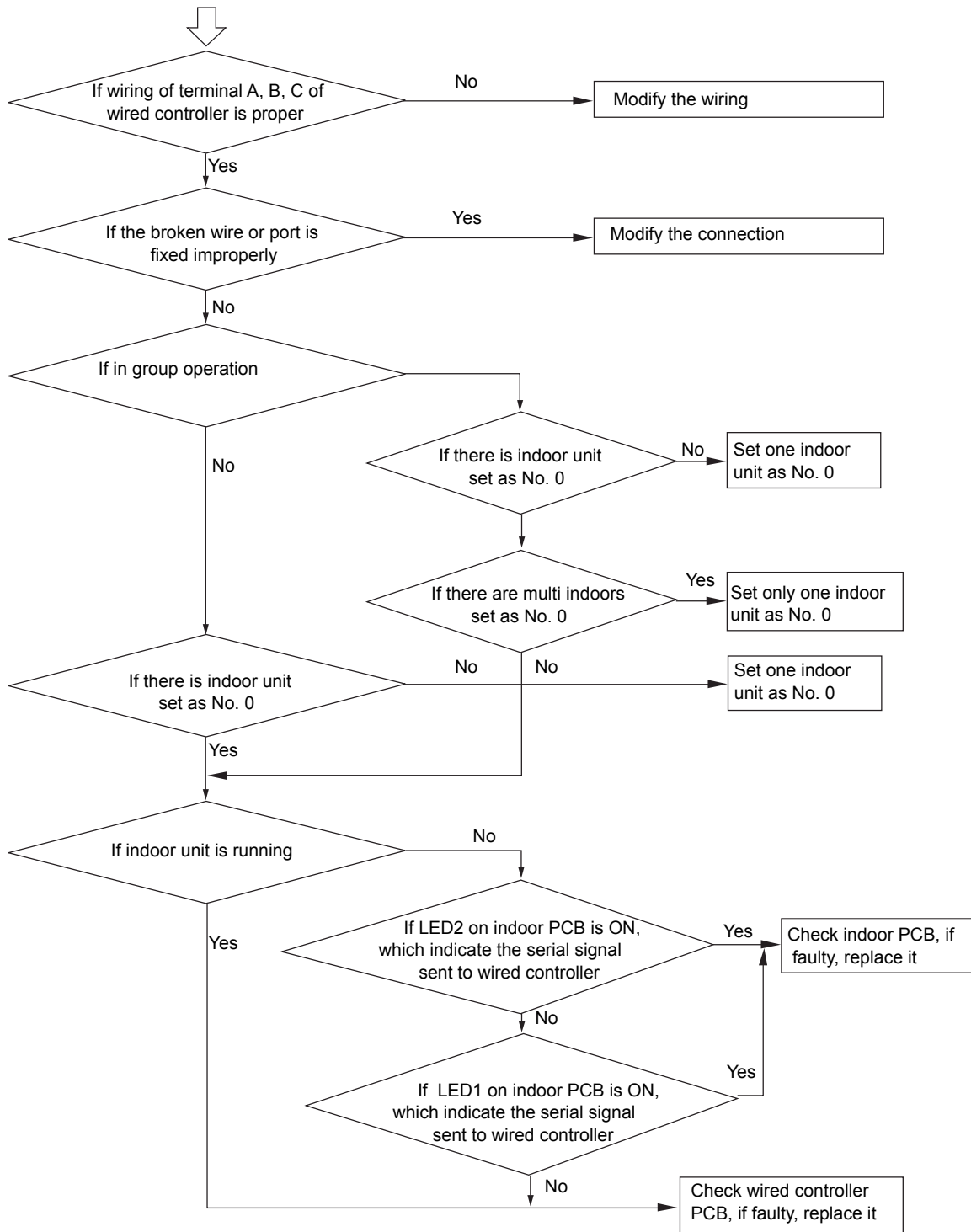
[09] Indoor address repeated



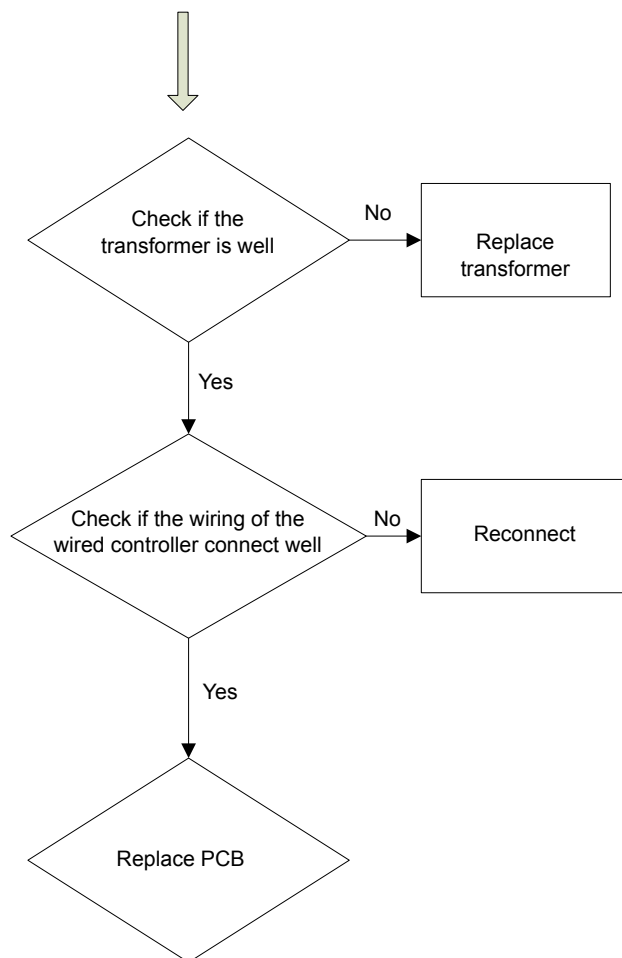
[06] Communication circuit between indoor and outdoor



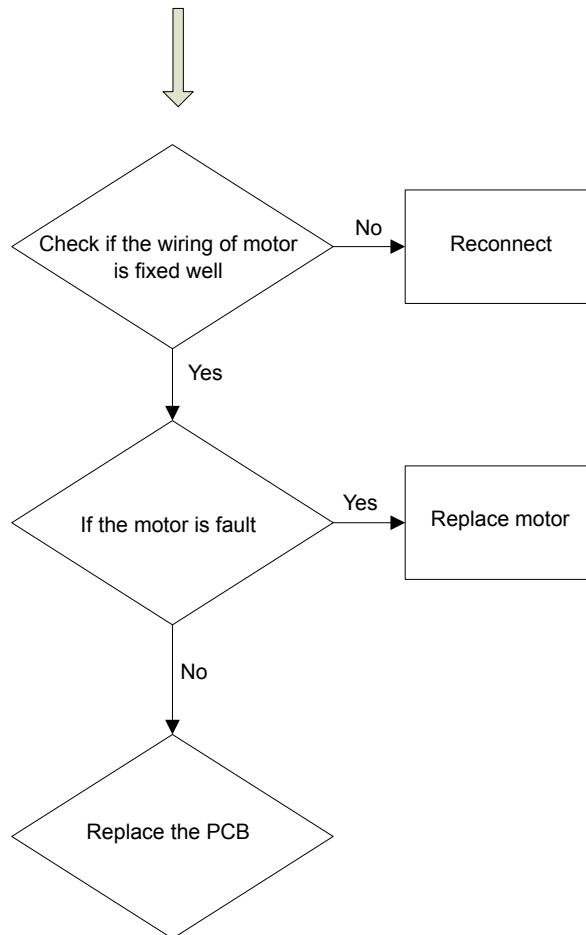
[07] Communication abnormal between indoor and wired controller



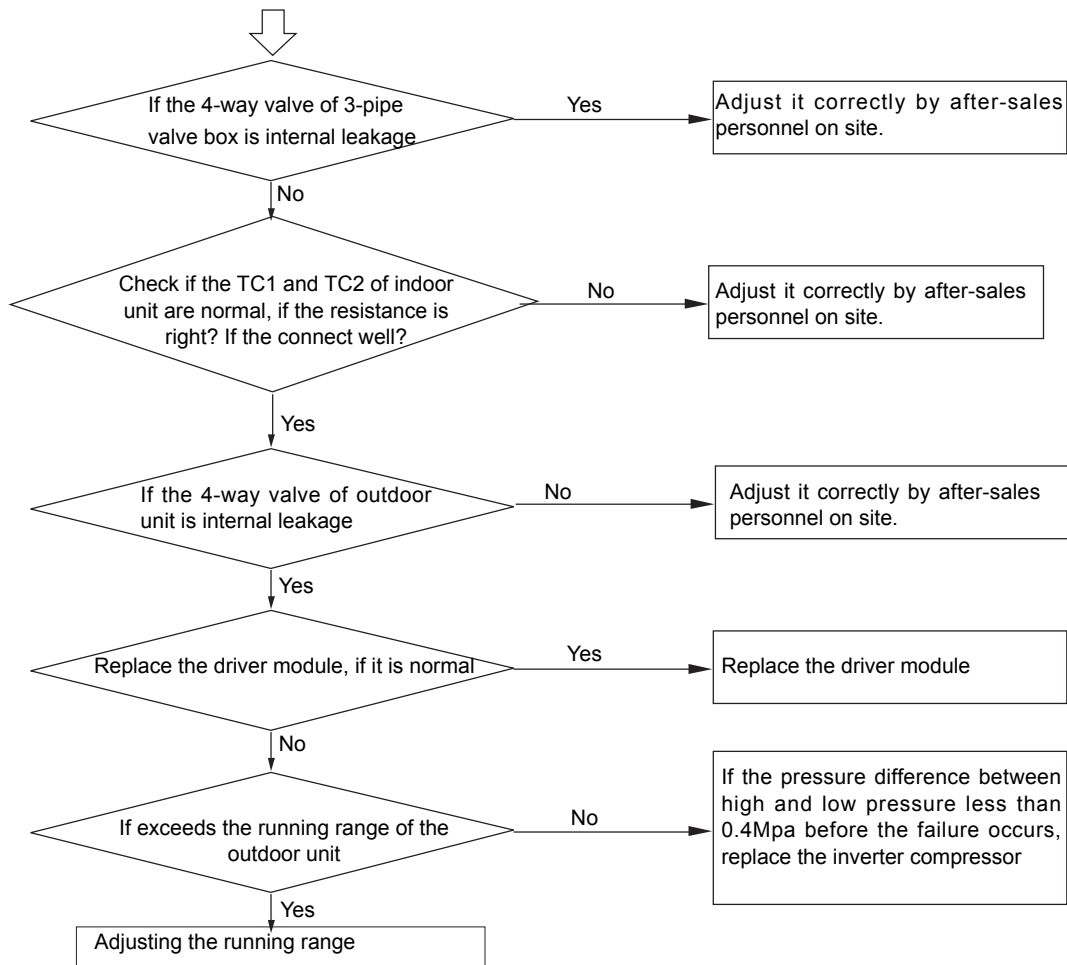
[12] No 50Hz zero passage signal



[14] DC motor failure



[18] The 4-way valve of 3-pipe valve box reversing failure







Note: abnormality confirmation conditions

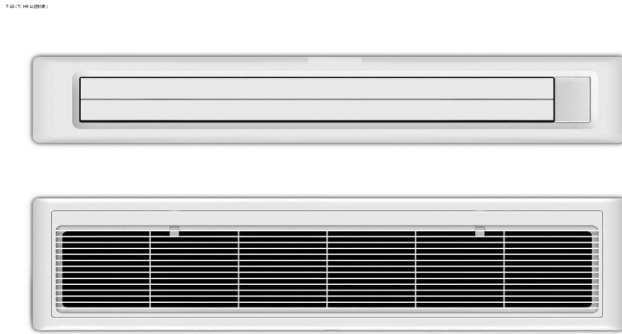
For MRVIII-RC system, the outdoor unit is running normally, when the 4-way valve of valve box is power on and its connected heating indoor unit's parameter satisfy following conditions

- &
 - When 4-way valve of valve box is ON
 - $TC2 \leq CT - 20^{\circ}C$ lasts for 5min
- or
 - $TC1 \leq 0^{\circ}C$ lasts for 5min
 - $TC1 \leq \text{master unit } P_s_temp + 10^{\circ}C$ lasts for 5min

19. Controller match table

No.	Series	Model					
			RCV02	RWV03	RWV05	RWV07	
1	Round-way Cassette	AWSI-CFV*-N11			▲	▲	
2	Four-way Cassette	AWSI-CBV*-N11	▲	▲	▲	▲	
3	MINI Four-way Cassette	AWSI-CBV*-N11		▲	▲	▲	
4	Two-way Cassette	AWSI-CEV*-N11	▲	▲	▲	▲	
5	One way Cassette	AWSI-CDV*-N11	▲	▲	▲	▲	
6	Convertible	AWSI-FAV*-N11 AWSI-FAV*-N11	▲	▲	▲	▲	
7	Duct Slim Low ESP (DC)	AWSI-DDV*-N11	▲		▲	▲	
8	Duct Slim Low ESP (AC)	AWSI-DDV*-N11	▲	▲	▲	▲	
10	Duct Medium ESP (50/96 Pa)	AWSI-DBV*-N11	▲	▲	▲	▲	
11	Duct Medium ESP (50/100 Pa)	AW-DBV*-N11	▲	▲	▲	▲	
13	Duct High ESP (100/196 Pa)	AWSI-DCV*-N11	▲	▲	▲	▲	
16	High Wall (N platform)	AWSI-HBV*-N11	▲	▲	▲	▲	
18	Console	AW-EAV*-N11	▲		▲	▲	
21	HRV	AWSI-HRV*-N11		▲ Linkage control	▲ Linkage control	▲ Linkage control	
▲	Controllers can match with the indoor unit						

20. Slim duct panel

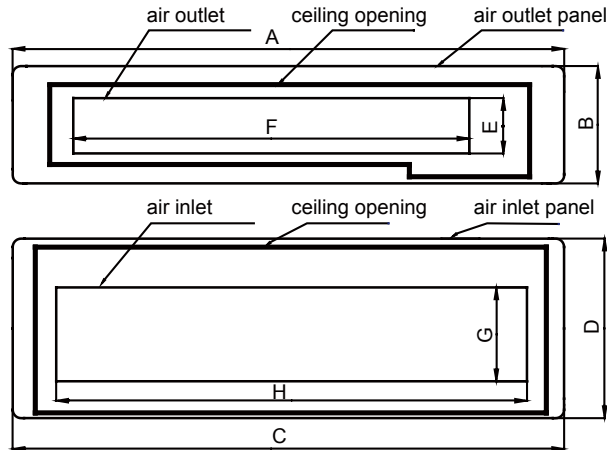


Panel model		DDV PANEL 07-16
External dimensions(W/D/H)	mm	890/190/100 (outlet panel)
		890/290.5/32.4 (inlet panel)
Shipping dimensions(W/D/H)	mm	938/335/220
Net weight	Kg	4
Shipping weight	Kg	5
Connectable indoor units		AWSI-DDV007-N11 AWSI-DDV009-N11 AWSI-DDV012-N11 AWSI-DDV016-N11

The air inlet & outlet panel of slim duct Installation instructions

① The hole on the ceiling (Separation type panel):

The dimension of air outlet and inlet panel: (facing the panels)

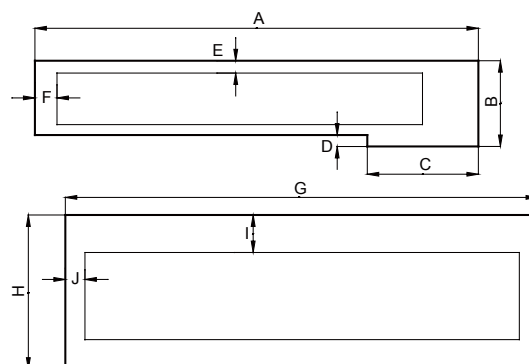


Model	A	B	C	D	E	F	G	H
AWSI-DDV007-N11 AWSI-DDV009-N11 AWSI-DDV012-N11	890	190	890	291	90	640	152	760
AWSI-DDV016-N11	1210	190	1210	291	90	960	152	1080

Slim duct panel

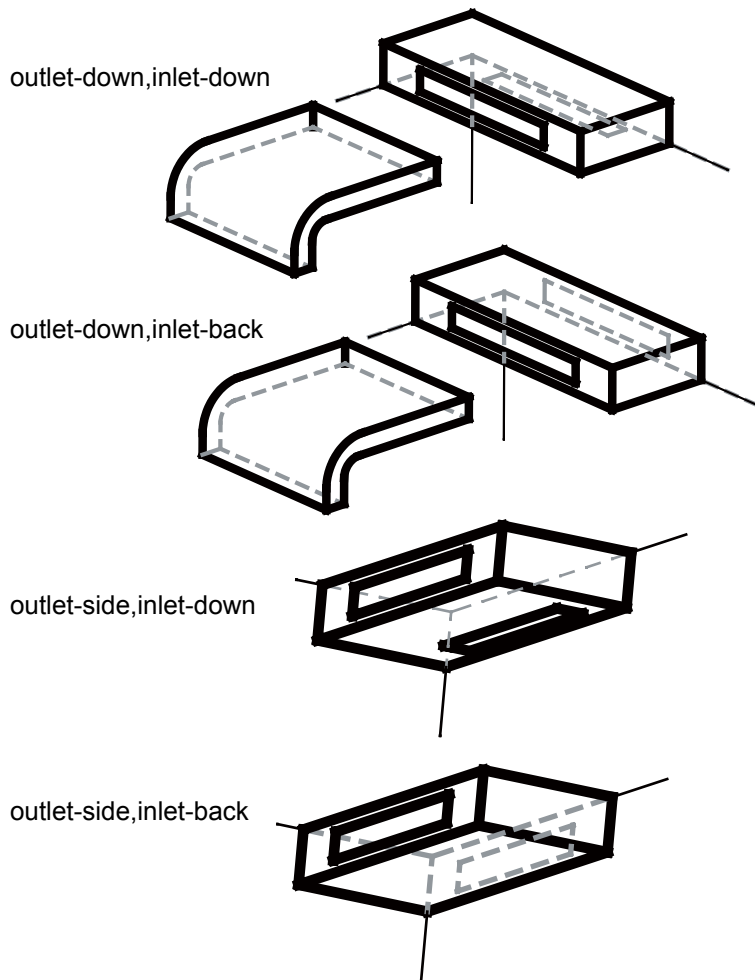
② The hole dimension on ceiling:

Regarding the air outlet hole: facing the air outlet of indoor unit, open the hole on the side of ceiling basing on this air outlet, the hole size should be 40mm far away from left side of panel, 21mm far away from stop side of panel.
Regarding the air inlet hole: basing on air inlet of indoor unit, the hole size should be 31mm far away from left side of panel, 60mm far away top side of panle.



Model	A	B	C	D	E	F	G	H	I	J
AWSI-DDV007-N11 AWSI-DDV009-N11 AWSI-DDV012-N11	776	150	194	20	21	40	820	260	60	31
AWSI-DDV016-N11	1096	150	194	20	21	40	1140	260	60	31

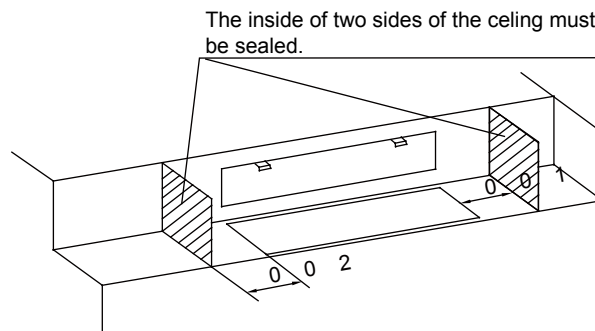
③ Usually there are four types of inlet and outlet :



Attention:

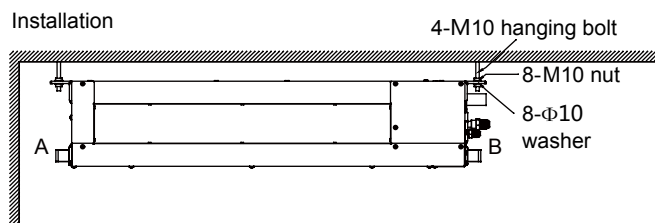
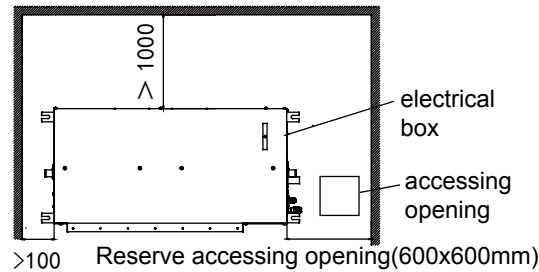
- a. When inlet-down, the minimum distance between the air outlet and the air inlet is 800mm.
- b. When outlet-side, don't make the air outlet and the inlet in the same level.
- c. Between the air outlet, air inlet and unit must be sealed by air duct.

④ Set the blocking in the ceiling to protect the indoor unit.



⑤ Reserve service hole

The installation space requirements:



Please use the level meter, make sure the unit level be within 5mm; If drainage from A, ensure that B is slightly higher than A, in order to facilitate drainage; If drainage from B, ensure that A is slightly higher than B.

⑥ The Installation of the air inlet&oulet panel can be divided into the following two types: with out air duct and with air duct.

A. Without air duct

Fix the air outlet panel with M4*9 Screw, fix the inlet panel on the machine or the frame with M4*16 Screw. If the panel is not directly connected with the unit, the middle connecting part and machine and panel must be sealed.

B. With air duct

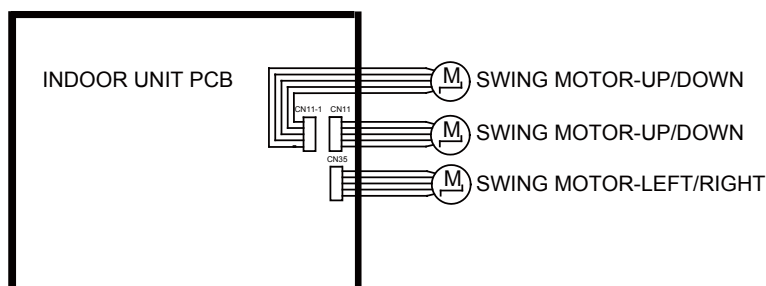
The air duct is connected with the air outlet of the indoor machine by rivets. Connect the air duct with the outlet of the unit with rivets, and connect the other side of the air duct with the air outlet panel. the air duct must be Insulated.

⑦ Electrical parts connection of super slim (MRV series)

There are 2 UP/DOWN swing motors and 1 LEFT/RIGHT swing motor in the breeze grid pannel. The UP/DOWN swing motor is the one with a blue connector, the LEFT/RIGHT swing motoris the one with a white connector.

Connect the UP/DOWN swing motors to indoor unit PCB port CN11 and CN11-1, and connect the LEFT/RIGHT swing motor to indoor unit PCB port CN35.

- Both CN11 and CN11-1 can connect with any UP/DOWN swing motors.
- If the Infrared remote receiver is needed, please connect the Infrared remote receiver to indoor unit PCB port CN31 and remove the short connection wire on CN36.

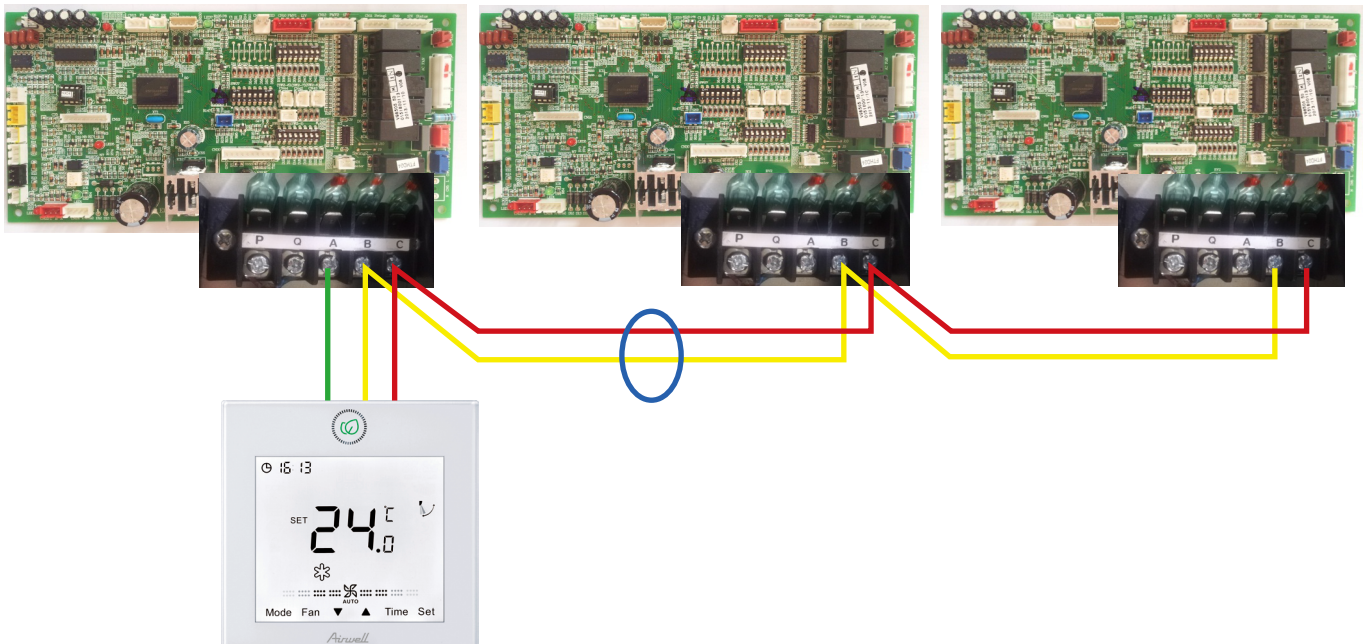


21. Wiring connection method for wired controller group control

Type	Series	Model	PCB Code	Schematic diagram
AC fan motor	4-way Cassette	AWSI-CBV*-N11	0151800113	<p>The slave unit only connects BC terminal</p>
	2-way Cassette	AWSI-CEV*-N11	0151800161B	
	Convertible	AWSI-FAV*-N11 AWSI-FAV*-N11	0151800113	
	Slim Low ESP Duct	AWSI-DDV*-N11	0151800161C	
	Medium ESP Duct	AWSI-DBV*-N11	0151800113	
		AW-DBV*-N11	0151800161C 0151800161G	
		AW-DBV*-N11	0151800161D	
High ESP Duct	AWSI-DCV*-N11	0151800113		
DC fan motor	Round Flow 4-Way Cassette	AWSI-CFV*-N11	0151800227	<p>The slave unit connects ABC terminal</p>
	Mini 4-Way Cassette	AWSI-CCV*-N11	0151800244BA	
	One Way Cassette	AWSI-CDV*-N11	0151800244BA	
	DC Slim Low ESP Duct	AWSI-DDV*-N11	0151800244	
	Console	AW-EAV*-N11	0151800452	
	N Plate High Wall	AWSI-HBV*-N11	0151800244B	

21.1 The same indoor PCB connection

0151800113 PCB



Note:

1. The wired controller connects with the ABC terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

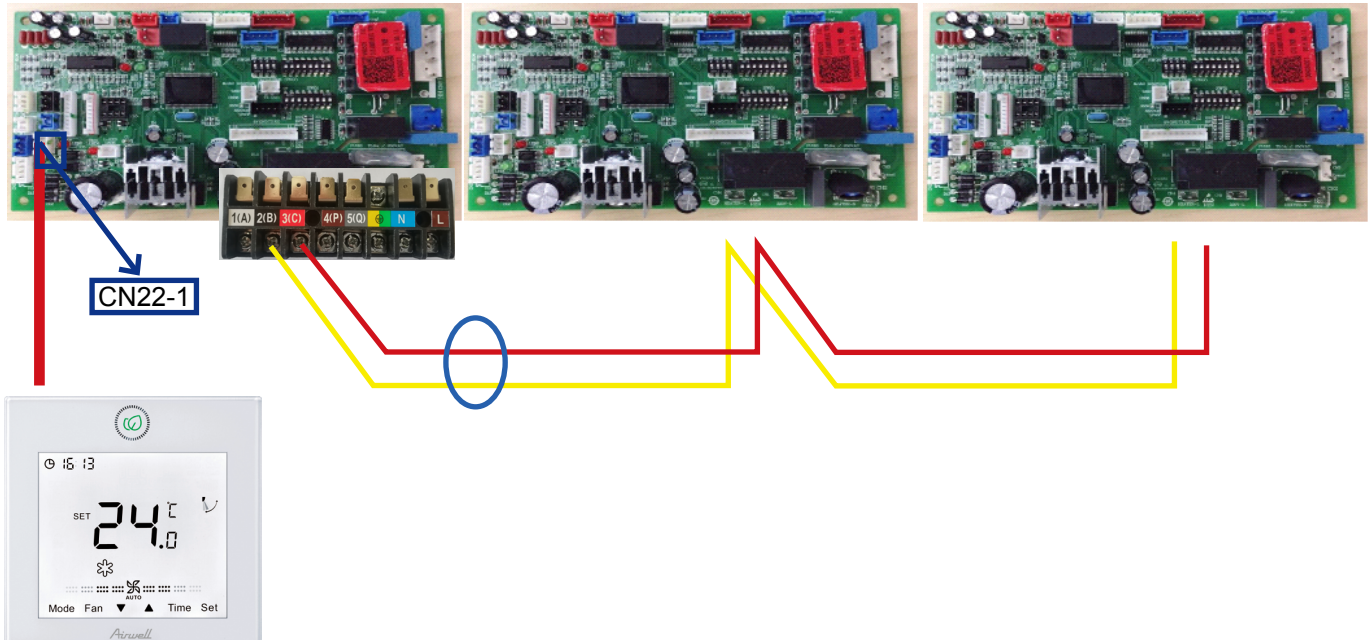
SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity
6. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

0151800161C PCB



Note:

1. Plug the wired controller terminal to the CN22-1 terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

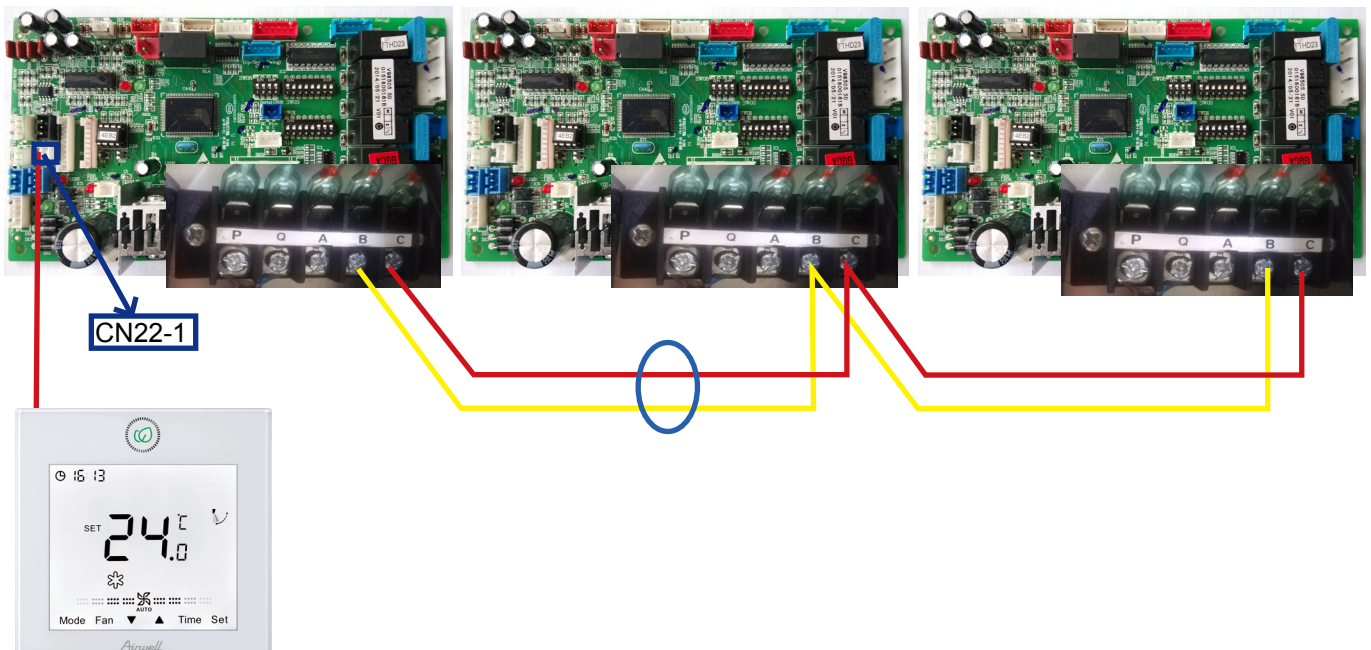
SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity
6. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

0151800161B PCB



Note:

1. Plug the wired controller terminal to the CN22-1 terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting

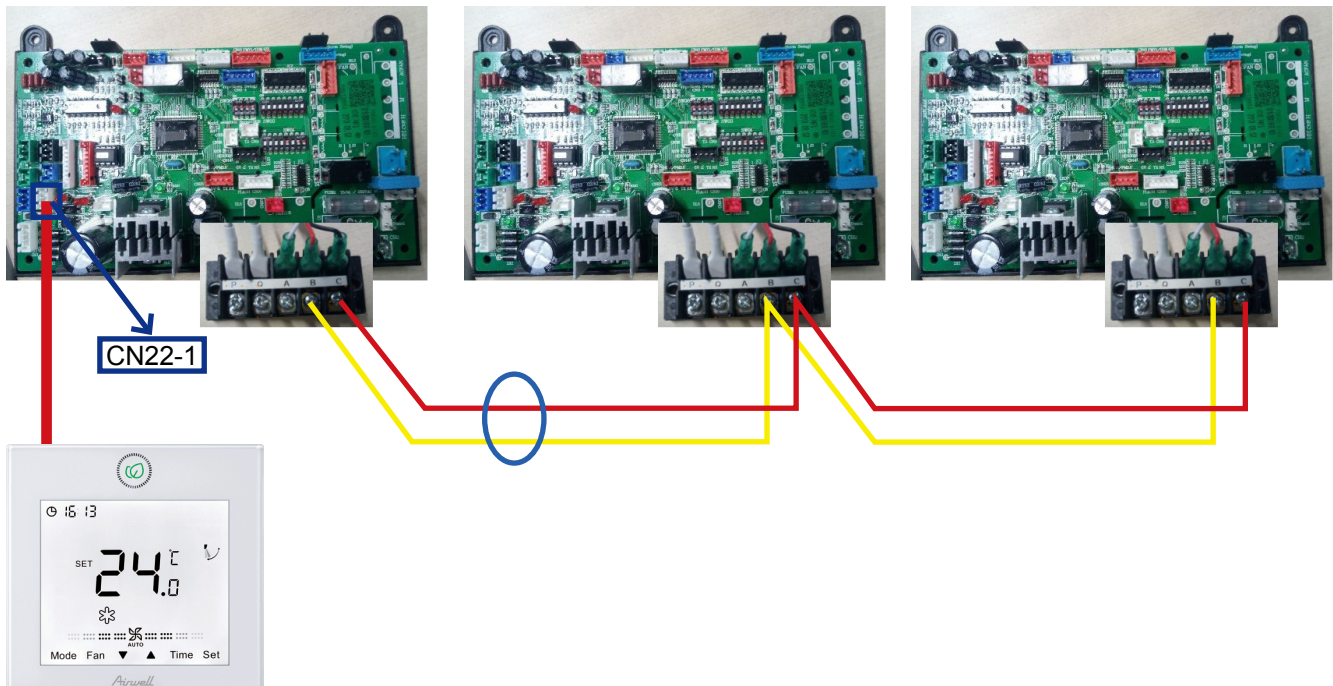
SW01-2~ SW01-4	Wired control address	OFF	OFF	OFF	0# master unit (default)
		OFF	OFF	<u>ON</u>	1# slave unit
		OFF	<u>ON</u>	OFF	2# slave unit
		OFF	<u>ON</u>	<u>ON</u>	3# slave unit
		<u>ON</u>	OFF	OFF	4# slave unit
		<u>ON</u>	OFF	<u>ON</u>	5# slave unit
		<u>ON</u>	<u>ON</u>	OFF	6# slave unit
		<u>ON</u>	<u>ON</u>	<u>ON</u>	7# slave unit

3. One controller can Max. control 8 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity
6. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

0151800161G PCB



Note:

1. Plug the wired controller terminal to the CN22-1 terminal of master unit which wired address is 0, the slave unit only connects BC terminal.
2. Wired address setting
3. 0151800161G and 0151800161D have the same connection method

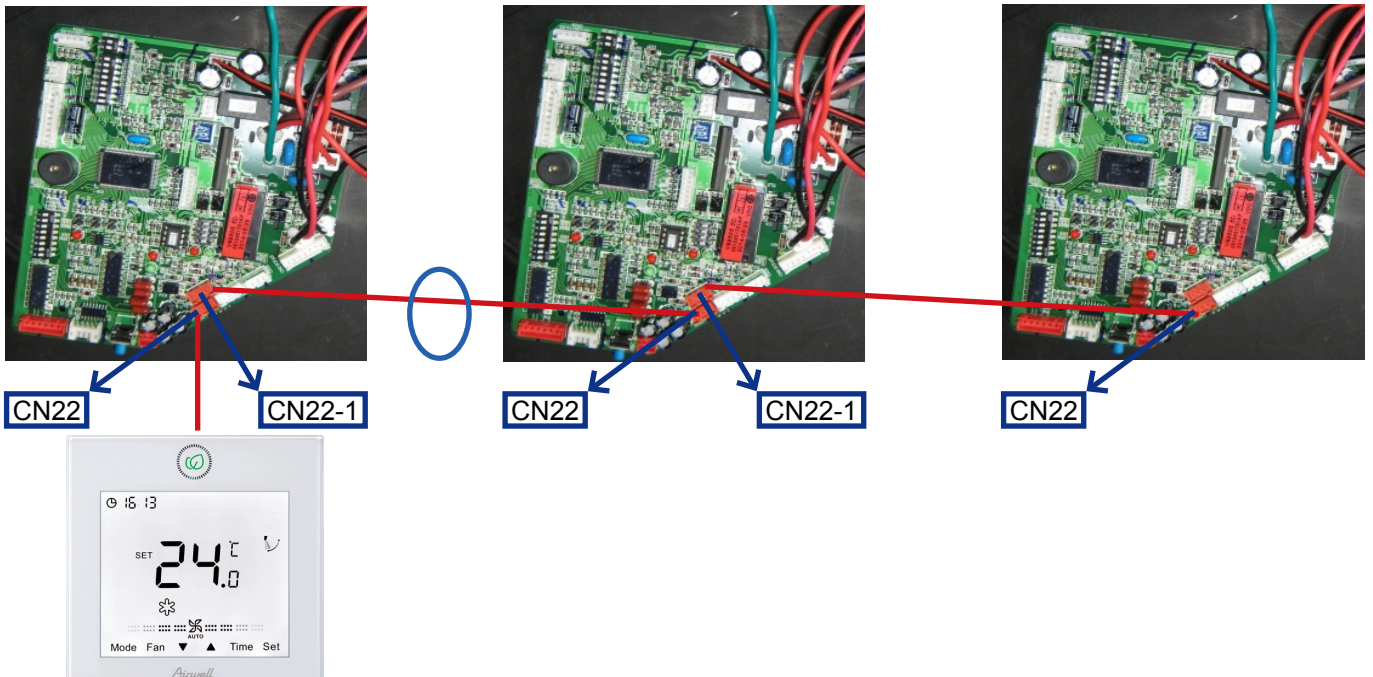
		[1]	[2]	[3]	[4]	Wired control address
SW01_1	Wired control address	OFF	OFF	OFF	OFF	1# (wired control master unit) (default)
SW01_2		OFF	OFF	OFF	<u>ON</u>	2# (wired control slave unit)
SW01_3		OFF	OFF	<u>ON</u>	OFF	3# (wired control slave unit)
SW01_4		...	...	...	...	...
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	16# (wired control slave unit)

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity
6. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

0010451751AF PCB



Note:

1. Plug the wired controller terminal to the CN22 terminal of master unit which wired address is 0.
2. The CN22-1 terminal of the previous unit is connected to the CN22 terminal of the next unit
3. 0151800086A, 0151800244B, 0010451751AF, 0151800141A and 0151800244BA have the same connection method
4. Wired address setting
0010451751AF and 0151800141A PCB

SW02_1 SW02_2 SW02_3 SW02_4	Wired controller address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	0# (wired controller master) (default)
		OFF	OFF	OFF	<u>ON</u>	1# (wired controller slave)
		OFF	OFF	<u>ON</u>	OFF	2# (wired controller slave)
		OFF	OFF	<u>ON</u>	<u>ON</u>	3# (wired controller slave)
		--	--	--	--	--
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	15# (wired controller slave)		

0151800086A, 0151800244B, 0151800244BA and 0151800452 PCB

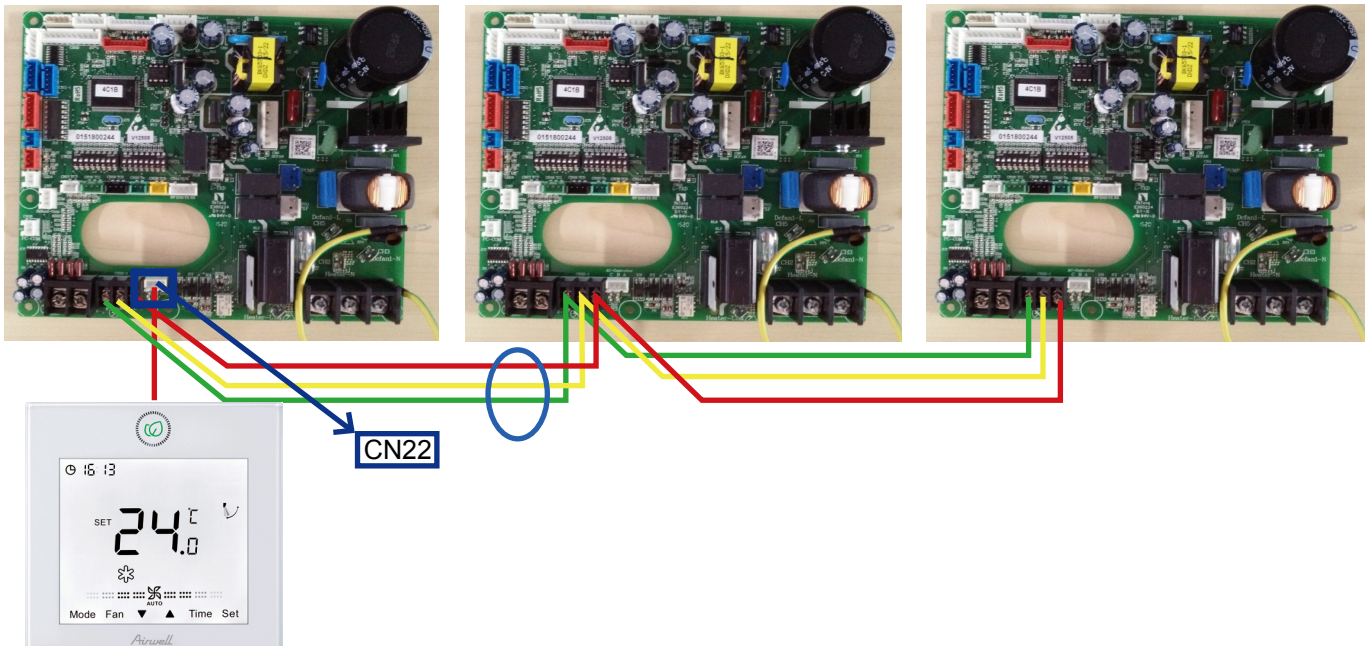
SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control		

5. One controller can Max. control 16 indoor units.
6. Hand-in-hand connection method
7. The signal line is polarity
8. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

0151800244 PCB



Note:

1. Plug the wired controller terminal to the CN22 terminal of master unit which wired address is 0, the slave unit also connects ABC terminal.
2. 0151800227 and 0151800244 have the same connection method
3. Wired address setting
0151800227 and 0151800244 PCB

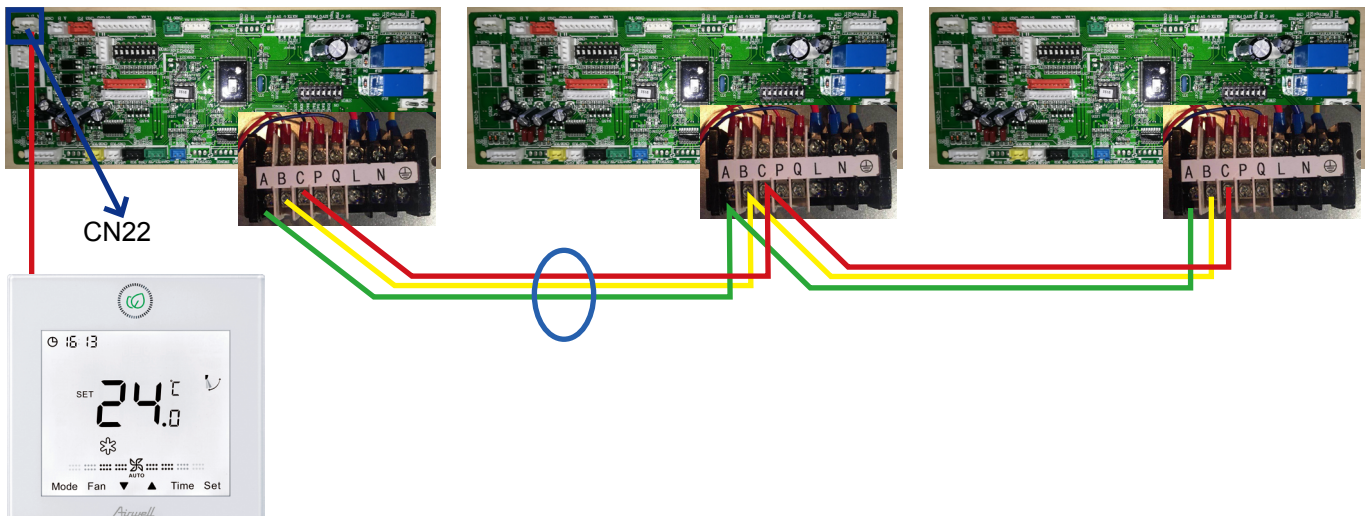
SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

4. One controller can Max. control 16 indoor units.
5. Hand-in-hand connection method
6. The signal line is polarity
7. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

0151800227A PCB



Note:

1. Plug the wired controller terminal to the CN22 terminal of master unit which wired address is 0, the slave unit also connects ABC terminal.
2. Wired address setting

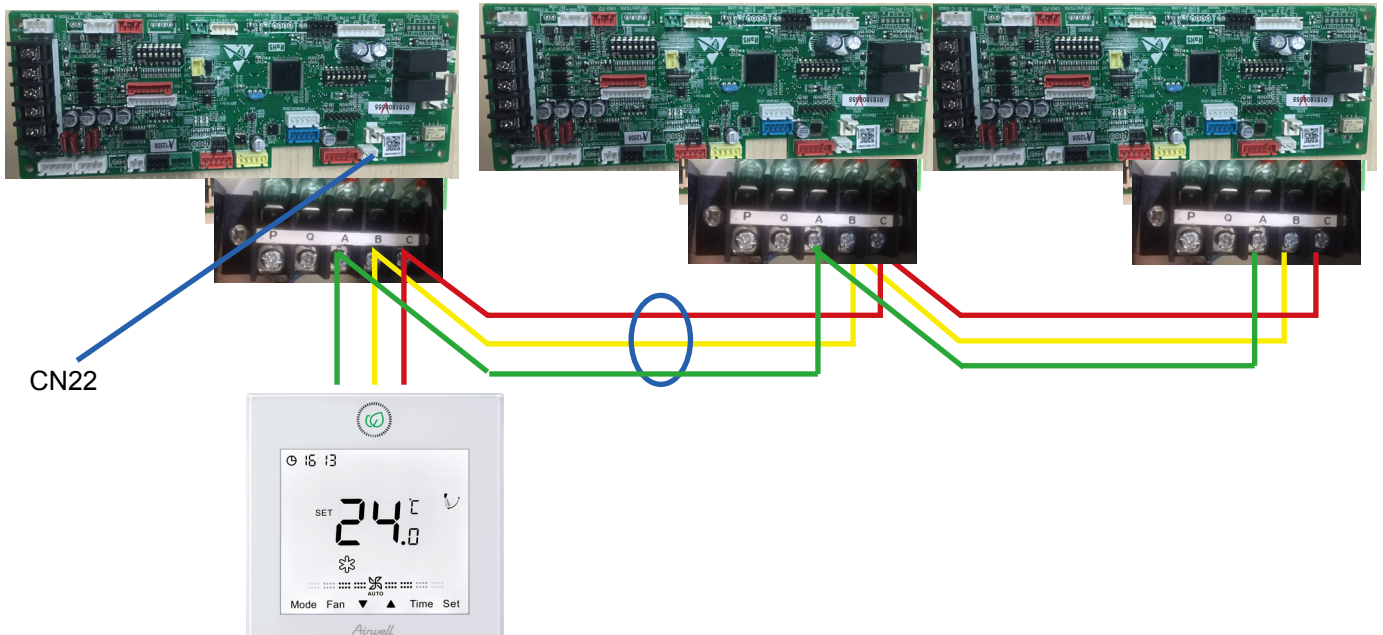
SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity
6. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

00151800555 PCB



Note:

1. Plug the wired controller terminal to the CN22 terminal of master unit which wired address is 0, the slave unit also connects ABC terminal.
2. Wired address setting

SW01_1 SW01_2 SW01_3 SW01_4	Wired control address	[1]	[2]	[3]	[4]	Wired control address
		OFF	OFF	OFF	OFF	OFF	Master unit in group control
		OFF	OFF	OFF	<u>ON</u>	Slave unit 1 in group control
		OFF	OFF	<u>ON</u>	OFF	Slave unit 2 in group control
		OFF	OFF	<u>ON</u>	<u>ON</u>	Slave unit 3 in group control
	
		<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>ON</u>	Slave unit 15 in group control

3. One controller can Max. control 16 indoor units.
4. Hand-in-hand connection method
5. The signal line is polarity
6. The signal line diameter and length

Length of signal line (m)	Wiring dimensions
≤ 250	0.75mm ² ×3 core shielded line

- ※ The shielding lay of the signal line must be grounded at one end.
- ※ The total length of the signal line shall not be more than 250m.

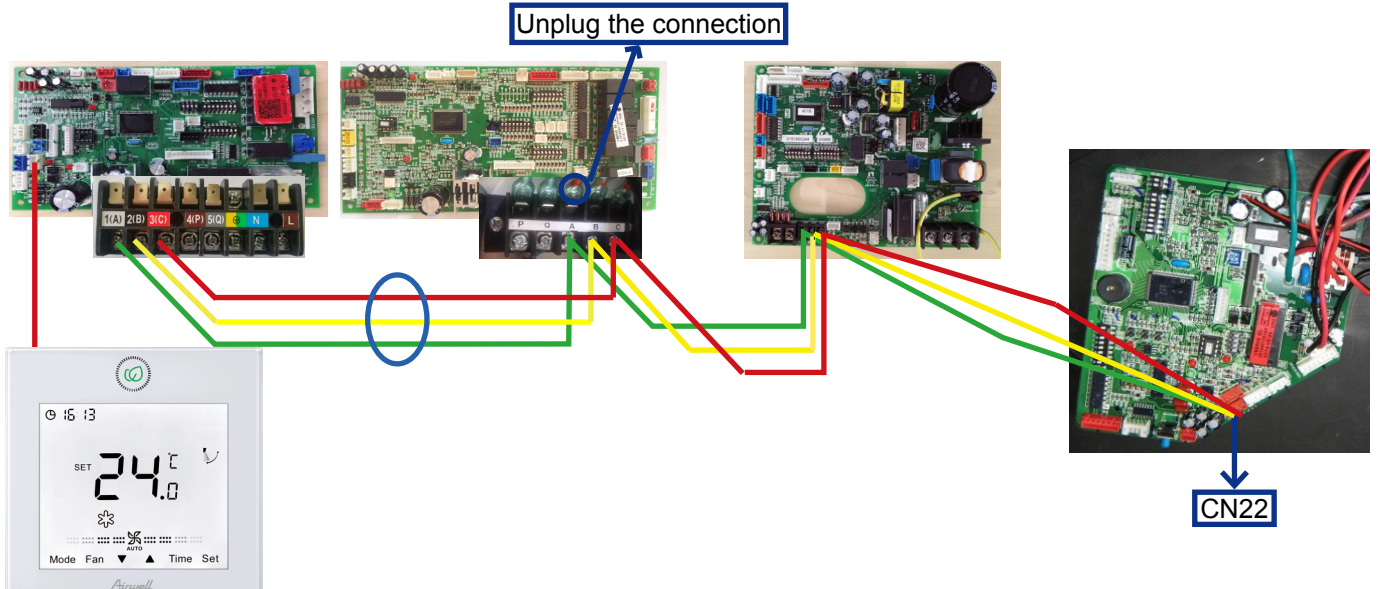
21.2 The different indoor PCB connection

0151800161C PCB

0151800113 PCB

0151800244 PCB

0010451751AF PCB



Note:

Disconnect the connection between terminal A and indoor PCB for the slave unit which PCB is 0151800113 or 0151800161B or 0151800161C

22. Filter and water pump configuration

Series	Model	Filter	Pump
4-way cassette	AWSI-CCV*-N11	Standard	Standard
Round flow 4-way cassette	AWSI-CFV*-N11	Standard	Standard
MINI 4-way cassette	AWSI-CBV*-N11	Standard	Standard
2-way cassette	AWSI-CEV*-N11	Standard	Standard
One way cassette	AWSI-CDV*-N11	Standard	Standard
Convertible	AWSI-FAV*-N11 AWSI-FAV*-N11	Standard	No
DC Slim low ESP duct	AWSI-DDV*-N11	Standard	Standard
Slim low ESP duct	AWSI-DDV*-N11	Standard	Standard
Medium ESP duct	AWSI-DBV*-N11	Standard	Standard
	AW-DBV*-N11	Standard	Standard
	AW-DBV*-N11	Standard	Standard
High ESP duct	AWSI-DCV*-N11	Standard	No
Console	AW-EAV*-N11	Standard	No
N high wall	AWSI-HBV*-N11	Standard	No
HRV	AWSI-HRV*-N11	Standard	No

23. Temperature sensor resistance table

Code	Resistance	Description
0010400885	R25=23kΩ±3% B25/50=4200K±3%	Ambient temp. sensor
0150402351		
0010451327		
001A3900005		
0010403671		
0010450192	R25=10kΩ±3% B25/50=3700K±3%	Liquid pipe temp. sensor
0010401922		
0010451305		
0010451329		
0010451591		
0150402353		
0010452099		
0010452298	Gas pipe temp. sensor	
0150402352		

R25=10kΩ±3% B25/50=3700K±3%					
Temp	Resistance (kΩ)			% (Resist. Tol)	
(°C)	Rmax	R (t) Normal	Rmin	MAX (+)	MIN (-)
-30	145.819	135.018	124.217	7	7
-29	138.071	129.126	120.181	6.93	6.93
-28	131.793	123.339	114.885	6.85	6.85
-27	125.665	117.684	109.703	6.78	6.78
-26	119.706	112.18	104.654	6.71	6.71
-25	113.933	106.843	99.753	6.64	6.64
-24	108.361	101.687	95.013	6.56	6.56
-23	102.997	96.719	90.441	6.49	6.49
-22	97.847	91.946	86.045	6.42	6.42
-21	92.915	87.371	81.827	6.35	6.35
-20	88.2	82.994	77.788	6.27	6.27
-19	83.702	78.815	73.928	6.2	6.2
-18	79.417	74.832	70.247	6.13	6.13
-17	75.342	71.041	66.74	6.05	6.05
-16	71.471	67.437	63.403	5.98	5.98
-15	67.798	64.015	60.232	5.91	5.91
-14	64.316	60.769	57.222	5.84	5.84
-13	61.017	57.692	54.367	5.76	5.76
-12	57.895	54.778	51.661	5.69	5.69
-11	54.942	52.019	49.096	5.62	5.62
-10	52.149	49.409	46.669	5.55	5.55
-9	49.51	46.941	44.372	5.47	5.47
-8	47.016	44.607	42.198	5.4	5.4
-7	44.659	42.4	40.141	5.33	5.33
-6	42.433	40.315	38.197	5.25	5.25
-5	40.332	38.345	36.358	5.18	5.18
-4	38.346	36.482	34.618	5.11	5.11
-3	36.472	34.723	32.974	5.04	5.04
-2	34.7	33.059	31.418	4.96	4.96
-1	33.027	31.487	29.947	4.89	4.89
0	31.445	30	28.555	4.82	4.82
1	29.951	28.594	27.237	4.75	4.75
2	28.538	27.264	25.99	4.67	4.67
3	27.202	26.006	24.81	4.6	4.6
4	25.938	24.815	23.692	4.53	4.53

R25=10kΩ±3% B25/50=3700K±3%					
Temp	Resistance (kΩ)			% (Resist. Tol)	
(°C)	Rmax	R (t) Normal	Rmin	MAX (+)	MIN (-)
5	24.742	23.687	22.632	4.45	4.45
6	23.61	22.619	21.628	4.38	4.38
7	22.538	21.607	20.676	4.31	4.31
8	21.522	20.647	19.772	4.24	4.24
9	20.559	19.737	18.915	4.16	4.16
10	19.646	18.874	18.102	4.09	4.09
11	18.779	18.054	17.329	4.02	4.02
12	17.958	17.276	16.594	3.95	3.95
13	17.177	16.537	15.897	3.87	3.87
14	16.436	15.834	15.232	3.8	3.8
15	15.731	15.166	14.601	3.73	3.73
16	15.061	14.53	13.999	3.65	3.65
17	14.424	13.925	13.426	3.58	3.58
18	13.817	13.349	12.881	3.51	3.51
19	13.24	12.8	12.36	3.44	3.44
20	12.69	12.277	11.864	3.36	3.36
21	12.166	11.778	11.39	3.29	3.29
22	11.666	11.302	10.938	3.22	3.22
23	11.189	10.848	10.507	3.15	3.15
24	10.734	10.414	10.094	3.07	3.07
25	10.3	10	9.7	3	3
26	9.898	9.604	9.31	3.06	3.06
27	9.514	9.226	8.938	3.13	3.13
28	9.147	8.864	8.581	3.19	3.19
29	8.796	8.519	8.242	3.25	3.25
30	8.459	8.188	7.917	3.31	3.31
31	8.137	7.871	7.605	3.38	3.38
32	7.828	7.568	7.308	3.44	3.44
33	7.532	7.277	7.022	3.5	3.5
34	7.248	6.999	6.75	3.56	3.56
35	6.977	6.733	6.489	3.63	3.63
36	6.716	6.477	6.238	3.69	3.69
37	6.466	6.232	5.998	3.75	3.75
38	6.227	5.998	5.769	3.81	3.81
39	5.997	5.773	5.549	3.88	3.88
40	5.776	5.557	5.338	3.94	3.94
41	5.564	5.35	5.136	4	4

R25=10kΩ±3% B25/50=3700K±3%					
Temp	Resistance (kΩ)			% (Resist. Tol)	
(°C)	Rmax	R (t) Normal	Rmin	MAX (+)	MIN (-)
42	5.36	5.151	4.942	4.06	4.06
43	5.166	4.961	4.756	4.13	4.13
44	4.978	4.778	4.578	4.19	4.19
45	4.799	4.603	4.407	4.25	4.25
46	4.625	4.434	4.243	4.31	4.31
47	4.46	4.273	4.086	4.38	4.38
48	4.301	4.118	3.935	4.44	4.44
49	4.148	3.969	3.79	4.5	4.5
50	4.001	3.826	3.651	4.56	4.56
51	3.86	3.689	3.518	4.63	4.63
52	3.724	3.557	3.39	4.69	4.69
53	3.594	3.431	3.268	4.75	4.75
54	3.468	3.309	3.15	4.81	4.81
55	3.349	3.193	3.037	4.88	4.88
56	3.233	3.081	2.929	4.94	4.94
57	3.123	2.974	2.825	5	5
58	3.015	2.87	2.725	5.06	5.06
59	2.913	2.771	2.629	5.13	5.13
60	2.815	2.676	2.537	5.19	5.19
61	2.721	2.585	2.449	5.25	5.25
62	2.63	2.497	2.364	5.31	5.31
63	2.543	2.413	2.283	5.38	5.38
64	2.459	2.332	2.205	5.44	5.44
65	2.379	2.255	2.131	5.5	5.5
66	2.301	2.18	2.059	5.56	5.56
67	2.228	2.109	1.99	5.63	5.63
68	2.156	2.04	1.924	5.69	5.69
69	2.088	1.974	1.86	5.75	5.75
70	2.021	1.91	1.799	5.81	5.81
71	1.958	1.849	1.74	5.88	5.88
72	1.897	1.791	1.685	5.94	5.94
73	1.839	1.735	1.631	6	6
74	1.782	1.68	1.578	6.06	6.06
75	1.728	1.628	1.528	6.13	6.13

R25=10kΩ±3% B25/50=3700K±3%					
Temp	Resistance (kΩ)			% (Resist. Tol)	
(°C)	Rmax	R (t) Normal	Rmin	MAX (+)	MIN (-)
76	1.676	1.578	1.48	6.19	6.19
77	1.626	1.53	1.434	6.25	6.25
78	1.578	1.484	1.39	6.31	6.31
79	1.531	1.439	1.347	6.38	6.38
80	1.486	1.396	1.306	6.44	6.44
81	1.443	1.355	1.267	6.5	6.5
82	1.401	1.315	1.229	6.56	6.56
83	1.362	1.277	1.192	6.63	6.63
84	1.323	1.24	1.157	6.69	6.69
85	1.285	1.204	1.123	6.75	6.75
86	1.249	1.169	1.089	6.81	6.81
87	1.214	1.136	1.058	6.88	6.88
88	1.181	1.104	1.027	6.94	6.94
89	1.148	1.073	0.998	7	7
90	1.116	1.042	0.968	7.06	7.06
91	1.085	1.013	0.941	7.13	7.13
92	1.056	0.985	0.914	7.19	7.19
93	1.026	0.957	0.888	7.25	7.25
94	0.998	0.93	0.862	7.31	7.31
95	0.971	0.904	0.837	7.38	7.38
96	0.944	0.879	0.814	7.44	7.44
97	0.918	0.854	0.79	7.5	7.5
98	0.893	0.83	0.767	7.56	7.56
99	0.867	0.806	0.745	7.63	7.63
100	0.843	0.783	0.723	7.69	7.69
101	0.819	0.76	0.701	7.75	7.75
102	0.796	0.738	0.68	7.81	7.81
103	0.772	0.716	0.66	7.88	7.88
104	0.749	0.694	0.639	7.94	7.94
105	0.727	0.673	0.619	8	8

R25=23kΩ±3% B25/50=4200K±3%					
Temp	Resistance (kΩ)			% (Resist. Tol)	
(°C)	Rmax	R (t) Normal	Rmin	MAX (+)	MIN (-)
-30	538.771	513.115	487.459	5	5
-29	502.577	478.894	455.211	4.95	4.95
-28	469.29	447.408	425.526	4.89	4.89
-27	438.613	418.379	398.145	4.84	4.84
-26	410.288	391.564	372.84	4.78	4.78
-25	384.088	366.751	349.414	4.73	4.73
-24	359.817	343.754	327.691	4.67	4.67
-23	337.296	322.407	307.518	4.62	4.62
-22	316.375	302.567	288.759	4.56	4.56
-21	296.916	284.105	271.294	4.51	4.51
-20	278.794	266.905	255.016	4.45	4.45
-19	261.904	250.866	239.828	4.4	4.4
-18	246.146	235.895	225.644	4.35	4.35
-17	231.433	221.911	212.389	4.29	4.29
-16	217.685	208.838	199.991	4.24	4.24
-15	204.831	196.609	188.387	4.18	4.18
-14	192.805	185.163	177.521	4.13	4.13
-13	181.548	174.443	167.338	4.07	4.07
-12	171.005	164.399	157.793	4.02	4.02
-11	161.126	154.983	148.84	3.96	3.96
-10	151.866	146.153	140.44	3.91	3.91
-9	143.184	137.87	132.556	3.85	3.85
-8	135.04	130.096	125.152	3.8	3.8
-7	127.398	122.799	118.2	3.75	3.75
-6	120.225	115.946	111.667	3.69	3.69
-5	113.492	109.51	105.528	3.64	3.64
-4	107.168	103.462	99.756	3.58	3.58
-3	101.228	97.779	94.33	3.53	3.53
-2	95.647	92.437	89.227	3.47	3.47
-1	90.403	87.415	84.427	3.42	3.42
0	85.472	82.691	79.91	3.36	3.36
1	80.837	78.248	75.659	3.31	3.31
2	76.478	74.067	71.656	3.25	3.25
3	72.377	70.133	67.889	3.2	3.2

R25=23kΩ±3% B25/50=4200K±3%					
Temp	Resistance (kΩ)			% (Resist. Tol)	
(°C)	Rmax	R (t) Normal	Rmin	MAX (+)	MIN (-)
4	68.52	66.43	64.34	3.15	3.15
5	64.889	62.943	60.997	3.09	3.09
6	61.47	59.659	57.848	3.04	3.04
7	58.253	56.566	54.879	2.98	2.98
8	55.222	53.651	52.08	2.93	2.93
9	52.366	50.904	49.442	2.87	2.87
10	49.676	48.314	46.952	2.82	2.82
11	47.14	45.872	44.604	2.76	2.76
12	44.749	43.569	42.389	2.71	2.71
13	42.494	41.395	40.296	2.65	2.65
14	40.366	39.343	38.32	2.6	2.6
15	38.358	37.406	36.454	2.55	2.55
16	36.463	35.577	34.691	2.49	2.49
17	34.673	33.848	33.023	2.44	2.44
18	32.982	32.215	31.448	2.38	2.38
19	31.385	30.671	29.957	2.33	2.33
20	29.874	29.21	28.546	2.27	2.27
21	28.445	27.828	27.211	2.22	2.22
22	27.095	26.521	25.947	2.16	2.16
23	25.816	25.283	24.75	2.11	2.11
24	24.606	24.111	23.616	2.05	2.05
25	23.46	23	22.54	2	2
26	22.396	21.947	21.498	2.04	2.04
27	21.386	20.949	20.512	2.09	2.09
28	20.429	20.003	19.577	2.13	2.13
29	19.52	19.104	18.688	2.18	2.18
30	18.657	18.252	17.847	2.22	2.22
31	17.837	17.442	17.047	2.26	2.26
32	17.059	16.674	16.289	2.31	2.31
33	16.318	15.943	15.568	2.35	2.35
34	15.614	15.249	14.884	2.39	2.39
35	14.944	14.588	14.232	2.44	2.44
36	14.306	13.96	13.614	2.48	2.48
37	13.699	13.362	13.025	2.53	2.53
38	13.123	12.794	12.465	2.57	2.57

R25=23kΩ±3% B25/50=4200K±3%					
Temp	Resistance (kΩ)			% (Resist. Tol)	
(°C)	Rmax	R (t) Normal	Rmin	MAX (+)	MIN (-)
39	12.57	12.25	11.93	2.61	2.61
40	12.05	11.74	11.42	2.66	2.66
41	11.55	11.24	10.94	2.70	2.70
42	11.072	10.776	10.48	2.74	2.74
43	10.617	10.329	10.041	2.79	2.79
44	10.184	9.904	9.624	2.83	2.83
45	9.77	9.497	9.224	2.88	2.88
46	9.376	9.11	8.844	2.92	2.92
47	8.999	8.74	8.481	2.96	2.96
48	8.639	8.387	8.135	3.01	3.01
49	8.296	8.05	7.804	3.05	3.05
50	7.967	7.728	7.489	3.09	3.09
51	7.654	7.421	7.188	3.14	3.14
52	7.354	7.127	6.9	3.18	3.18
53	7.067	6.846	6.625	3.23	3.23
54	6.793	6.578	6.363	3.27	3.27
55	6.531	6.322	6.113	3.31	3.31
56	6.281	6.077	5.873	3.36	3.36
57	6.041	5.842	5.643	3.4	3.4
58	5.811	5.618	5.425	3.44	3.44
59	5.592	5.404	5.216	3.49	3.49
60	5.383	5.199	5.015	3.53	3.53
61	5.182	5.003	4.824	3.58	3.58
62	4.989	4.815	4.641	3.62	3.62
63	4.806	4.636	4.466	3.66	3.66
64	4.629	4.464	4.299	3.71	3.71
65	4.461	4.3	4.139	3.75	3.75
66	4.3	4.143	3.986	3.79	3.79
67	4.145	3.992	3.839	3.84	3.84
68	3.997	3.848	3.699	3.88	3.88
69	3.856	3.71	3.564	3.93	3.93
70	3.72	3.578	3.436	3.97	3.97

R25=23kΩ±3% B25/50=4200K±3%					
Temp	Resistance (kΩ)			% (Resist. Tol)	
(°C)	Rmax	R (t) Normal	Rmin	MAX (+)	MIN (-)
71	3.591	3.452	3.313	4.01	4.01
72	3.466	3.331	3.196	4.06	4.06
73	3.347	3.215	3.083	4.1	4.1
74	3.233	3.104	2.975	4.14	4.14
75	3.122	2.997	2.872	4.19	4.19
76	3.017	2.895	2.773	4.23	4.23
77	2.918	2.798	2.678	4.28	4.28
78	2.821	2.704	2.587	4.32	4.32
79	2.728	2.614	2.5	4.36	4.36
80	2.639	2.528	2.417	4.41	4.41
81	2.555	2.446	2.337	4.45	4.45
82	2.472	2.366	2.26	4.49	4.49
83	2.394	2.29	2.186	4.54	4.54
84	2.319	2.217	2.115	4.58	4.58
85	2.246	2.147	2.048	4.63	4.63
86	2.177	2.08	1.983	4.67	4.67
87	2.11	2.015	1.92	4.71	4.71
88	2.045	1.952	1.859	4.76	4.76
89	1.983	1.892	1.801	4.8	4.8
90	1.923	1.834	1.745	4.84	4.84
91	1.865	1.778	1.691	4.89	4.89
92	1.809	1.724	1.639	4.93	4.93
93	1.755	1.672	1.589	4.98	4.98
94	1.702	1.621	1.54	5.02	5.02
95	1.652	1.572	1.492	5.06	5.06
96	1.602	1.524	1.446	5.11	5.11
97	1.554	1.478	1.402	5.15	5.15
98	1.507	1.433	1.359	5.19	5.19
99	1.462	1.389	1.316	5.24	5.24
100	1.418	1.347	1.276	5.28	5.28
101	1.374	1.305	1.236	5.33	5.33
102	1.332	1.264	1.196	5.37	5.37
103	1.29	1.22	1.16	5.41	5.41
104	1.25	1.18	1.12	5.46	5.46
105	1.21	1.15	1.08	5.50	5.50

Airwell

CLIMATISATION ET CHAUFFAGE

WARNING :

The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details.

ATTENTION :

Le design et les données techniques sont donnés à titre indicatif et peuvent être modifiés sans préavis.



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