SAMSUNG

FCU Technical Data Book

Fan Coil Unit Wind-Free Cassette for Global (Water, 50/60Hz)

Model : AG***TN1DKH(1Way Cassette)

History

Version	Modification	Date	Remark
Ver.1.0	Release FCU Wind-Free 1Way Cassette for Global TDB	20.07.21	
Ver.1.1	Updated the Appendix : Capacity Table pages	21.05.14	

Nomenclature

Indoor Unit

Model Name

AG	042	T	N	1	D	K	H	/	EU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		Buyer

(1) Classification

AG	Chiller / FAN COIL UNIT

(2) Capacity

X 1/10 kW (3 digits)

(3) Version

N	2018
R	2019
T	2020

(4) Product Type

N	Indoor Unit
X	Outdoor Unit

(5) Product Notation

1	1 Way Cassette
N	4 Way Cassette (600x600)
4	4 Way Cassette, 360 Cassette
L	LSP Duct
M	MSP Duct
C	Ceiling
J	Console
Q	RAC (with EEV)
T	RAC (without EEV)
A	A3050 (Wall Mounted)

(6) Feature

F	Flagship
S	Standard
D	Deluxe
P	Premium

(7) Rating Voltage

E	1Φ, 220~240V, 50Hz
K	1Φ, 220~240V, 50/60Hz
C	1Φ, 208~230V, 60Hz

(8) Mode

H	Heat Pump

Features & Benefits

Simply fits into a small ceiling space. Efficiently cools with no cold wind.

Create a comfortably cool environment in every corner. The Samsung 1Way Cassette air conditioner's Wind-Free™ Cooling cools effectively without the unpleasant feeling of cold wind being blown directly onto your skin. It's energy-efficient operation also means that the outdoor unit uses less electricity compared to the normal mode*. And a 100mm big blade with a wider operating angle delivers cool air longer and maintains an even temperature everywhere.

10,000
Micro Air Holes

01

Stay comfortably cool without feeling cold

Wind-Free™ Cooling*

Stay feeling comfortable cool with Wind-Free™ Cooling. It cools effectively without the unpleasant sensation of cold wind being blown directly onto your skin. Cool air is gently dispersed across the room through 10,000 micro air holes, which creates a "Still Air" environment** with a very low air speed of 0.15m/s. There are no drafts to disturb you and you don't feel too hot or too cold. So if your children kick off the blanket at night you don't have to worry about them feeling cold in the room. * Available only on the Wind-Free™ models.** ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) defines "Still Air" as when the velocity of air is below 0.15m/s, so people cannot feel any cold drafts.

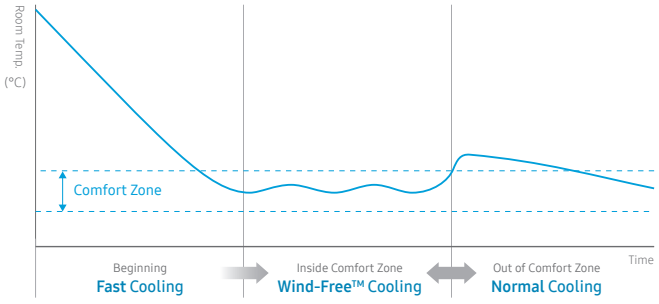
02

Enjoy a more intelligent way of working

Smart Comfort Operation*

Experience an intelligent way of creating the ideal room conditions. The 1Way Cassette continually monitors both the temperature and relative humidity and analyzes the room conditions. It then automatically switches between operating modes to keep everyone feeling really comfortable without the need for any manual control.

* Available only on the Wind-Free™ models.

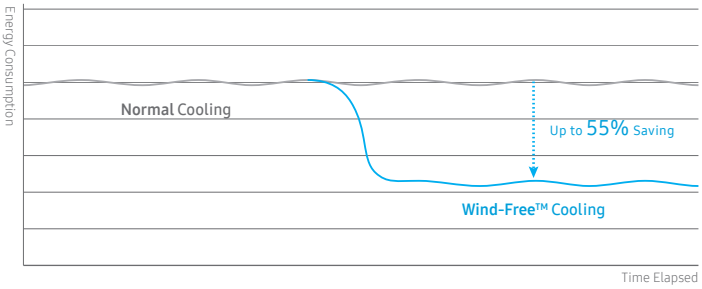


03

Reduces energy use by 55%** to save money

Wind-Free™ Cooling* (Energy Saving)

Save money every day by optimizing power usage with the 1Way Cassette's highly energy-efficient Wind-Free™ cooling. When operating in Wind-Free™ mode, the outdoor unit consumes only minimal power – using up to 55% less electricity compared to the normal mode**. But it still provides sufficient cool air to maintain the desired temperature. So you can stay comfortably cool without worrying about your electricity bills.



* Available only on the Wind-Free™ models.

** Based on internal testing: Outdoor unit AM050FXMDEH running simultaneously with Indoor units AM056NN1DEH, AM036NN1DEH, AM022NN1DEH. Temperature conditions: Outdoor 35°C DB / 24°C WB, Indoor 27°C DB / 19°C WB. Results may vary depending on environmental factors and individual use.

Contents

1. Line-up

Fan Coil Unit

(kW)

Model Type	Image	2.6	3.2	4.2
Wind Free 1Way Cassette		●	●	●

2. Specification

Wind Free 1Way Cassette

Model				AG026TN1DKH/EU	AG032TN1DKH/EU	AG042TN1DKH/EU
Power Supply			**Φ, #, V, Hz**	1,2,220~240,50/60	1,2,220~240,50/60	1,2,220~240,50/60
Mode			-	HP	HP	HP
Performance	**Capacity (Nominal)**	**Cooling**	**kW**	2.60	3.00	4.15
		Heating		2.90	3.35	5.00
Power	**Power Input (Nominal)**	**Cooling**	**W**	27.0	35.0	55.0
		Heating		27.0	35.0	55.0
	Current Input (Nominal)	**Cooling**	A	0.14	0.19	0.29
		Heating		0.14	0.19	0.29
Heat exchanger	**Type**		-	Fin & Tube	Fin & Tube	Fin & Tube
	Material	**Fin**	-	Al	Al	Al
		Tube	-	Cu	Cu	Cu
	Fin Treatment		-	Green Hydrophile	Green Hydrophile	Green Hydrophile
Fan	**Type**		-	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Quantity		**EA**	1	1	1
	Air Flow Rate	**High / Mid / Low**	**CMM**	6.8 / 5.8 / 4.9	7.8 / 6.8 / 5.8	14.6 / 12.6 / 10.7
			l/s	-	-	-
Fan Motor	**Type**		-	BLDC	BLDC	BLDC
	Output x n		**W**	27 x 1	27 x 1	65 x 1
Water	**Water Flow Rate**	**Cooling**	**LPM**	7.5	9.6	11.9
	Water Flow Rate	**Heating**	**LPM**	8.4	9.7	14.4
	Loss of Head	**Cooling**	**kPa**	23.0	34.5	45.0
	Loss of Head	**Heating**	**kPa**	28.0	35.8	64.6
Piping Connections	**Liquid Pipe (IN)**		**Type**	PF MALE	PF MALE	PF MALE
			ø, mm (inch)	20A (3/4)	20A (3/4)	20A (3/4)
	Liquid Pipe (OUT)		**Type**	PF MALE	PF MALE	PF MALE
			ø, mm (inch)	20A (3/4)	20A (3/4)	20A (3/4)
	Heat insulation		-	Both inlet/outlet pipes	Both inlet/outlet pipes	Both inlet/outlet pipes
	Drain Pipe		**Φ,mm**	VP20 (OD 26, ID 20)	VP20 (OD 26, ID 20)	VP25 (OD 32, ID 25)
Wiring connections	**Communication**	**Min.**	mm²	0.75	0.75	0.75
		Remark	-	F1, F2	F1, F2	F1, F2
Sound	**Sound Pressure**	**High / Mid / Low**	**dB(A)**	33/31/29	38/35/31	40/37/33
	Sound Power	**Cooling**		50	53	59
Dimensions	**Net Weight**		**kg**	10.1	10.1	14.0
	Shipping Weight		**kg**	13.0	13.0	17.5
	Net Dimensions (W×H×D)		mm	970 × 135 × 410	970 × 135 × 410	1,200 × 138 × 450
	Shipping Dimensions (W×H×D)		mm	1,173 × 231 × 487	1,173 × 231 × 487	1,435 × 224 × 525
Casing	**Material**		-	Plastic	Plastic	Plastic
Panel 1	**Panel model**		-	PC1NWSMAN	PC1NWSMAN	PC1BWSMAN
	Panel Net Weight		**kg**	5.5	5.5	6.6
	Shipping Weight		**kg**	7.2	7.2	8.3
	Net Dimensions (W×H×D)		mm	1198 × 25 × 500	1198 × 25 × 500	1410 × 23 × 500
	Shipping Dimensions (W×H×D)		mm	1262 × 122 × 566	1262 × 122 × 566	1474 × 122 × 566
Panel 2	**Panel model**		-	PC1NWFMBN	PC1NWFMBN	PC1BWFMBN
	Panel Net Weight		**kg**	4.3	4.3	5.0
	Shipping Weight		**kg**	6.6	6.6	7.5
	Net Dimensions (W×H×D)		mm	1198 × 35 × 500	1198 × 35 × 500	1410 × 35 × 500
	Shipping Dimensions (W×H×D)		mm	1262 × 122 × 566	1262 × 122 × 566	1474 × 122 × 566
Additional Accessories	**Drain pump**	**Type**	-	Built In	Built In	Built In
		Max. lifting Height / Displacement	**mm / (cc/min)**	750 / 400	750 / 400	750 / 400
	Filter		-	-	-	-

2. Specification

Wind Free 1Way Cassette

Model				AG026TN1DKH/TK	AG032TN1DKH/TK	AG042TN1DKH/TK
Power Supply			**Φ, #, V, Hz**	1,2,220~240,50/60	1,2,220~240,50/60	1,2,220~240,50/60
Mode			-	HP	HP	HP
Performance	**Capacity (Nominal)**	**Cooling**	**kW**	2.60	3.00	4.15
		Heating		2.90	3.35	5.00
Power	**Power Input (Nominal)**	**Cooling**	**W**	27.0	35.0	55.0
		Heating		27.0	35.0	55.0
	Current Input (Nominal)	**Cooling**	A	0.14	0.19	0.29
		Heating		0.14	0.19	0.29
Heat exchanger	**Type**		-	Fin & Tube	Fin & Tube	Fin & Tube
	Material	**Fin**	-	Al	Al	Al
		Tube	-	Cu	Cu	Cu
	Fin Treatment		-	Green Hydrophile	Green Hydrophile	Green Hydrophile
Fan	**Type**		-	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Quantity		**EA**	1	1	1
	Air Flow Rate	**High / Mid / Low**	**CMM**	6.8 / 5.8 / 4.9	7.8 / 6.8 / 5.8	14.6 / 12.6 / 10.7
			l/s	-	-	-
Fan Motor	**Type**		-	BLDC	BLDC	BLDC
	Output x n		**W**	27 x 1	27 x 1	65 x 1
Water	**Water Flow Rate**	**Cooling**	**LPM**	7.5	9.6	11.9
	Water Flow Rate	**Heating**	**LPM**	8.4	9.7	14.4
	Loss of Head	**Cooling**	**kPa**	23.0	34.5	45.0
	Loss of Head	**Heating**	**kPa**	28.0	35.8	64.6
Piping Connections	**Liquid Pipe (IN)**		**Type**	PF MALE	PF MALE	PF MALE
			ø, mm (inch)	20A (3/4)	20A (3/4)	20A (3/4)
	Liquid Pipe (OUT)		**Type**	PF MALE	PF MALE	PF MALE
			ø, mm (inch)	20A (3/4)	20A (3/4)	20A (3/4)
	Heat insulation		-	Both inlet/outlet pipes	Both inlet/outlet pipes	Both inlet/outlet pipes
	Drain Pipe		**Φ,mm**	VP20 (OD 26, ID 20)	VP20 (OD 26, ID 20)	VP25 (OD 32, ID 25)
Wiring connections	**Communication**	**Min.**	mm^2	0.75	0.75	0.75
		Remark	-	F1, F2	F1, F2	F1, F2
Sound	**Sound Pressure**	**High / Mid / Low**	**dB(A)**	33/31/29	38/35/31	40/37/33
	Sound Power	**Cooling**		50	53	59
Dimensions	**Net Weight**		**kg**	10.1	10.1	14.0
	Shipping Weight		**kg**	12.7	12.7	17.0
	Net Dimensions (W×H×D)		mm	970 × 135 × 410	970 × 135 × 410	1,200 × 138 × 450
	Shipping Dimensions (W×H×D)		mm	1,173 × 231 × 487	1,173 × 231 × 487	1,435 × 224 × 525
Casing	**Material**		-	Plastic	Plastic	Plastic
Panel 1	**Panel model**		-	PC1NWSMAN	PC1NWSMAN	PC1BWSMAN
	Panel Net Weight		**kg**	5.5	5.5	6.6
	Shipping Weight		**kg**	7.2	7.2	8.3
	Net Dimensions (W×H×D)		mm	1198 × 25 × 500	1198 × 25 × 500	1410 × 23 × 500
	Shipping Dimensions (W×H×D)		mm	1262 × 122 × 566	1262 × 122 × 566	1474 × 122 × 566
Panel 2	**Panel model**		-	PC1NWFMBN	PC1NWFMBN	PC1BWFMBN
	Panel Net Weight		**kg**	4.3	4.3	5.0
	Shipping Weight		**kg**	6.6	6.6	7.5
	Net Dimensions (W×H×D)		mm	1198 × 35 × 500	1198 × 35 × 500	1410 × 35 × 500
	Shipping Dimensions (W×H×D)		mm	1262 × 122 × 566	1262 × 122 × 566	1474 × 122 × 566
Additional Accessories	**Drain pump**	**Type**	-	Built In	Built In	Built In
		Max. lifting Height / Displacement	**mm / (cc/min)**	750 / 400	750 / 400	750 / 400
	Filter		-	-	-	-

2. Specification

Wind Free 1Way Cassette

Model				AG026TN1DKH/TS	AG032TN1DKH/TS	AG042TN1DKH/TS
Power Supply			**Φ, #, V, Hz**	1,2,220~240,50/60	1,2,220~240,50/60	1,2,220~240,50/60
Mode			-	HP	HP	HP
Performance	**Capacity (Nominal)**	**Cooling**	**kW**	2.60	3.00	4.15
		Heating		2.90	3.35	5.00
Power	**Power Input (Nominal)**	**Cooling**	**W**	27.0	35.0	55.0
		Heating		27.0	35.0	55.0
	Current Input (Nominal)	**Cooling**	A	0.14	0.19	0.29
		Heating		0.14	0.19	0.29
Heat exchanger	**Type**		-	Fin & Tube	Fin & Tube	Fin & Tube
	Material	**Fin**	-	Al	Al	Al
		Tube	-	Cu	Cu	Cu
	Fin Treatment		-	Green Hydrophile	Green Hydrophile	Green Hydrophile
Fan	**Type**		-	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Quantity		**EA**	1	1	1
	Air Flow Rate	**High / Mid / Low**	**CMM**	6.8 / 5.8 / 4.9	7.8 / 6.8 / 5.8	14.6 / 12.6 / 10.7
			l/s	-	-	-
Fan Motor	**Type**		-	BLDC	BLDC	BLDC
	Output x n		**W**	27 x 1	27 x 1	65 x 1
Water	**Water Flow Rate**	**Cooling**	**LPM**	7.5	9.6	11.9
	Water Flow Rate	**Heating**	**LPM**	8.4	9.7	14.4
	Loss of Head	**Cooling**	**kPa**	23.0	34.5	45.0
	Loss of Head	**Heating**	**kPa**	28.0	35.8	64.6
Piping Connections	**Liquid Pipe (IN)**		**Type**	PF MALE	PF MALE	PF MALE
			ø, mm (inch)	20A (3/4)	20A (3/4)	20A (3/4)
	Liquid Pipe (OUT)		**Type**	PF MALE	PF MALE	PF MALE
			ø, mm (inch)	20A (3/4)	20A (3/4)	20A (3/4)
	Heat insulation		-	Both inlet/outlet pipes	Both inlet/outlet pipes	Both inlet/outlet pipes
	Drain Pipe		**Φ,mm**	VP20 (OD 26, ID 20)	VP20 (OD 26, ID 20)	VP25 (OD 32, ID 25)
Wiring connections	**Communication**	**Min.**	mm²	0.75	0.75	0.75
		Remark	-	F1, F2	F1, F2	F1, F2
Sound	**Sound Pressure**	**High / Mid / Low**	**dB(A)**	33/31/29	38/35/31	40/37/33
	Sound Power	**Cooling**		50	53	59
Dimensions	**Net Weight**		**kg**	10.1	10.1	14.0
	Shipping Weight		**kg**	12.7	12.7	17.0
	Net Dimensions (W×H×D)		mm	970 × 135 × 410	970 × 135 × 410	1,200 × 138 × 450
	Shipping Dimensions (W×H×D)		mm	1,173 × 231 × 487	1,173 × 231 × 487	1,435 × 224 × 525
Casing	**Material**		-	Plastic	Plastic	Plastic
Panel 1	**Panel model**		-	PC1NWSMAN	PC1NWSMAN	PC1BWSMAN
	Panel Net Weight		**kg**	5.5	5.5	6.6
	Shipping Weight		**kg**	7.2	7.2	8.3
	Net Dimensions (W×H×D)		mm	1198 × 25 × 500	1198 × 25 × 500	1410 × 23 × 500
	Shipping Dimensions (W×H×D)		mm	1262 × 122 × 566	1262 × 122 × 566	1474 × 122 × 566
Panel 2	**Panel model**		-	PC1NWFMBN	PC1NWFMBN	PC1BWFMBN
	Panel Net Weight		**kg**	4.3	4.3	5.0
	Shipping Weight		**kg**	6.6	6.6	7.5
	Net Dimensions (W×H×D)		mm	1198 × 35 × 500	1198 × 35 × 500	1410 × 35 × 500
	Shipping Dimensions (W×H×D)		mm	1262 × 122 × 566	1262 × 122 × 566	1474 × 122 × 566
Additional Accessories	**Drain pump**	**Type**	-	Built In	Built In	Built In
		Max. lifting Height / Displacement	**mm / (cc/min)**	750 / 400	750 / 400	750 / 400
	Filter		-	-	-	-

2. Specification

Wind Free 1Way Cassette

NOTE

- Cooling : Indoor temperature 27°C DB, 19°C WB / Water In/Out temperature 7°C, 12°C
  Heating : Indoor temperature 20°C DB, 15°C WB / Water In/Out temperature 45°C, 40°C
- Sound level was acquired in an anechoic room. Thus actual noise level may be different depending on the installation conditions.
- Specifications may be subject to change without prior notice.
- Select wire size based on the value of MCA

3. Summary Table

Fan Coil Unit

Model		Capacity (kW)			Airflow		Sound Pressure Level [dBA]	Sound Power Level [dBA]
		Cooling	Sensible	Heating	Fan Speed	CMM		
Wind Free 1Way Cassette	AG026TN1DKH/EU	2.6	2.1	2.9	High	6.8	33	50
					Mid	5.8	31	-
					Low	4.9	29	-
	AG032TN1DKH/EU	3	2.4	3.4	High	7.8	38	53
					Mid	6.8	35	-
					Low	4.9	31	-
	AG042TN1DKH/EU	4.15	3.3	5	High	14.6	40	59
					Mid	12.6	37	-
					Low	10.7	33	-
	AG026TN1DKH/TK	2.6	2.1	2.9	High	6.8	33	50
					Mid	5.8	31	-
					Low	4.9	29	-
	AG032TN1DKH/TK	3	2.4	3.4	High	7.8	38	53
					Mid	6.8	35	-
					Low	4.9	31	-
	AG042TN1DKH/TK	4.15	3.3	5	High	14.6	40	59
					Mid	12.6	37	-
					Low	10.7	33	-
	AG026TN1DKH/TS	2.6	2.1	2.9	High	6.8	33	50
					Mid	5.8	31	-
					Low	4.9	29	-
	AG032TN1DKH/TS	3	2.4	3.4	High	7.8	38	53
					Mid	6.8	35	-
					Low	4.9	31	-
	AG042TN1DKH/TS	4.15	3.3	5	High	14.6	40	59
					Mid	12.6	37	-
					Low	10.7	33	-

NOTE

- Sound data is based on cooling operation.

3. Summary Table

Fan Coil Unit

Electrical Characteristics

Model		Power Supply (Φ, #, V, Hz)	Power Input (W)	Current Input (A)	MCA (A)	MFA (A)	FLA (A)
Wind Free 1Way Cassette	AG026TN1DKH/EU	1, 2, 220~240, 50/60	27	0.14	0.2	15	0.14
	AG032TN1DKH/EU		35	0.19	0.3	15	0.19
	AG042TN1DKH/EU		55	0.29	0.4	15	0.29
	AG026TN1DKH/TK		27	0.14	0.2	15	0.14
	AG032TN1DKH/TK		35	0.19	0.3	15	0.19
	AG042TN1DKH/TK		55	0.29	0.4	15	0.29
	AG026TN1DKH/TS		27	0.14	0.2	15	0.14
	AG032TN1DKH/TS		35	0.19	0.3	15	0.19
	AG042TN1DKH/TS		55	0.29	0.4	15	0.29

NOTE

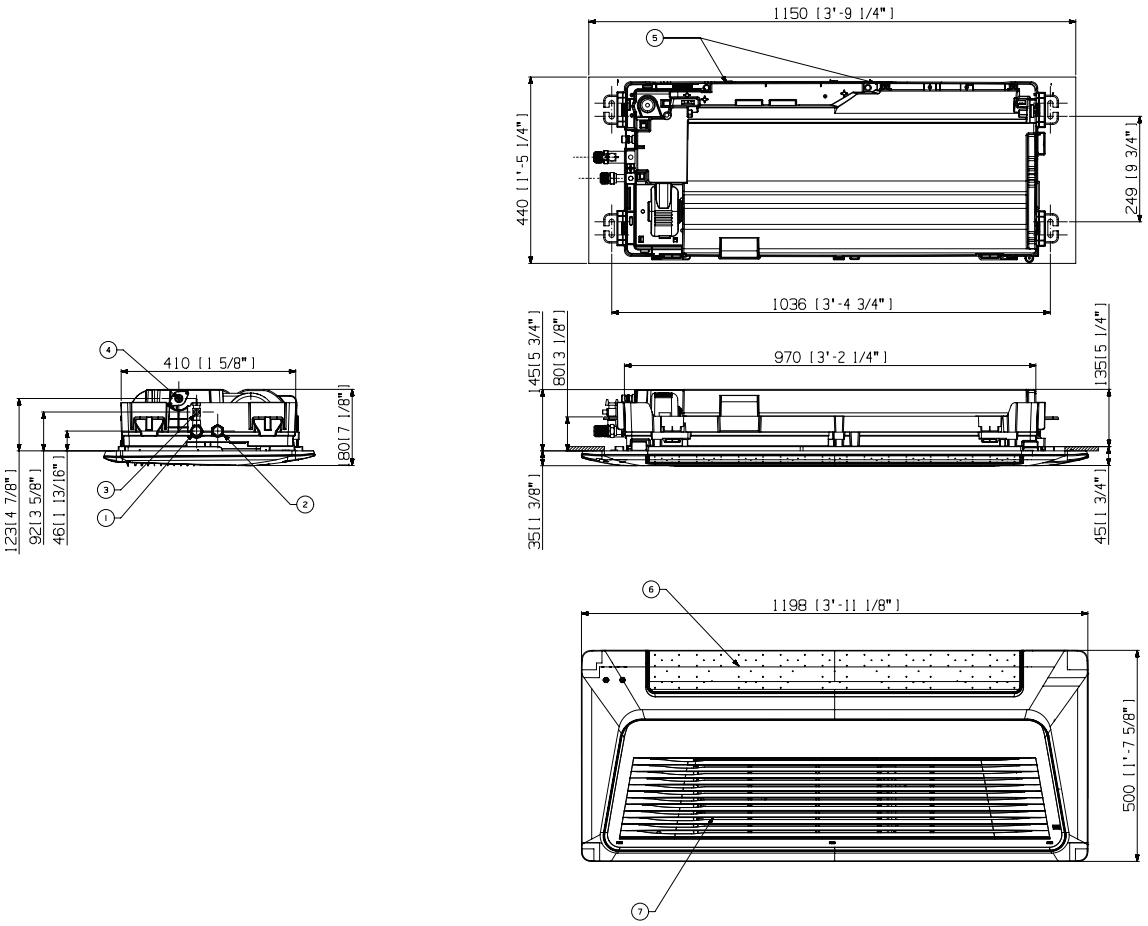
- MCA : Minimum circuit amperes
- MFA : Maximum fuse amperes
- FLA : Full load amperes
- Select wire size based on the value of MCA

4. Dimensional Drawing

Wind Free 1Way Cassette

AG026/032TN1DKH/**

단위 : mm [inch]



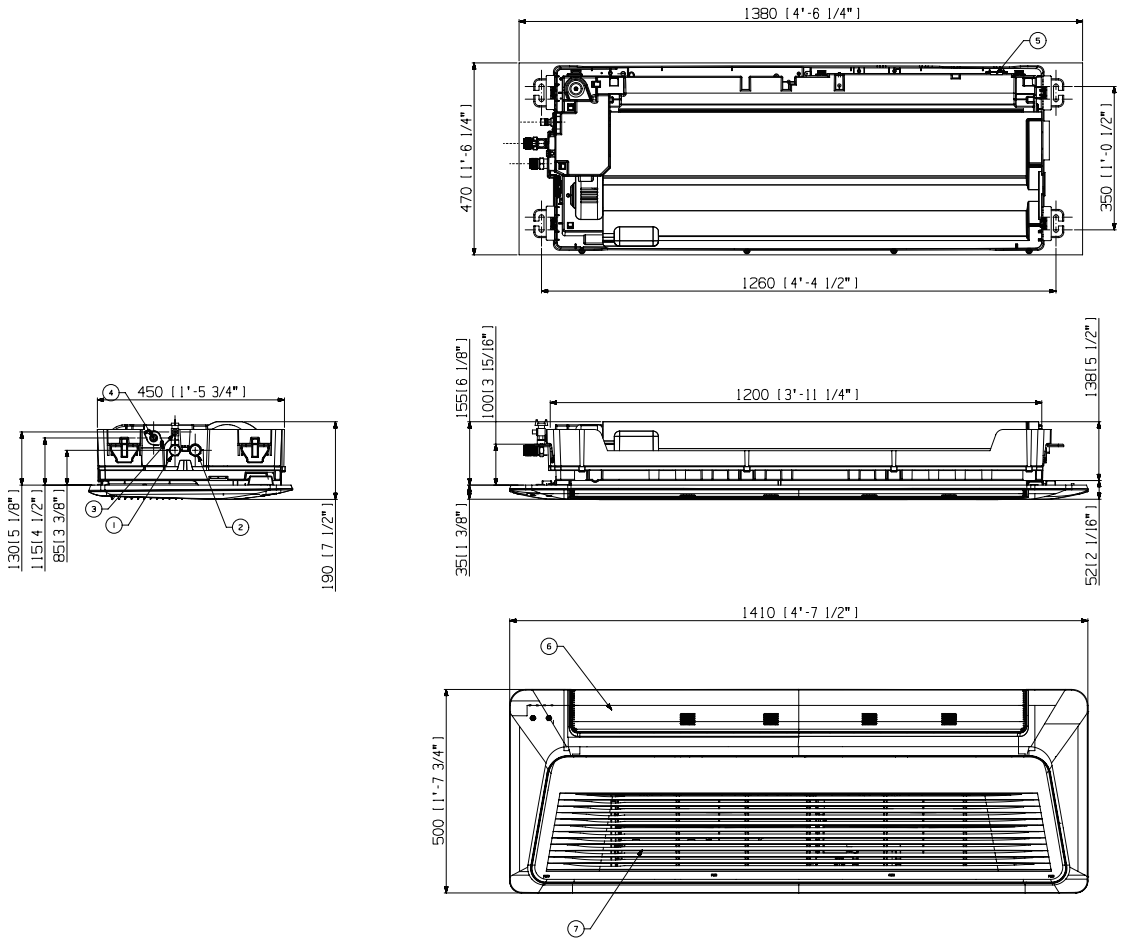
No	Name	Description
1	Water pipe connection out	PF Male 3/4" (20A)
2	Water pipe connection in	PF Male 3/4" (20A)
3	Air vent valve	-
4	Drain hose	VP20 (OD26, ID20)
5	Power supply & Communication wiring conduit	-
6	Air discharge part	-
7	Air suction part	-

4. Dimensional Drawing

Wind Free 1Way Cassette

AG042TN1DKH/**

단위 : mm [inch]

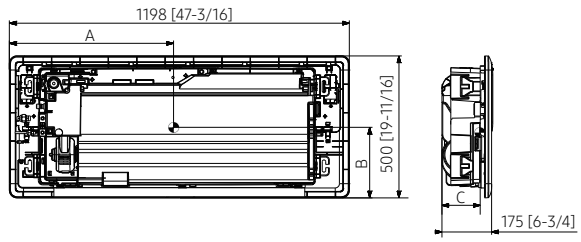


No	Name	Description
1	Water pipe connection out	PF Male 3/4" (20A)
2	Water pipe connection in	PF Male 3/4" (20A)
3	Air vent valve	-
4	Drain hose	VP25 (OD32, ID25)
5	Power supply & Communication wiring conduit	-
6	Air discharge part	-
7	Air suction part	-

5. Center of Gravity

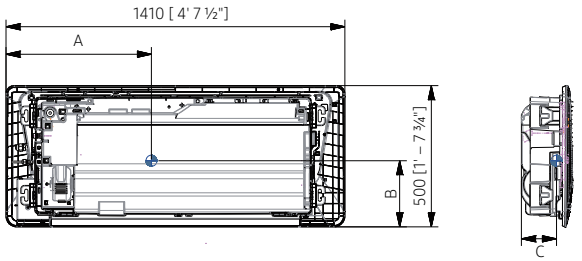
Wind Free 1Way Cassette

AG026TN1DKH/**, AG032TN1DKH/**



AG042TN1DKH/**

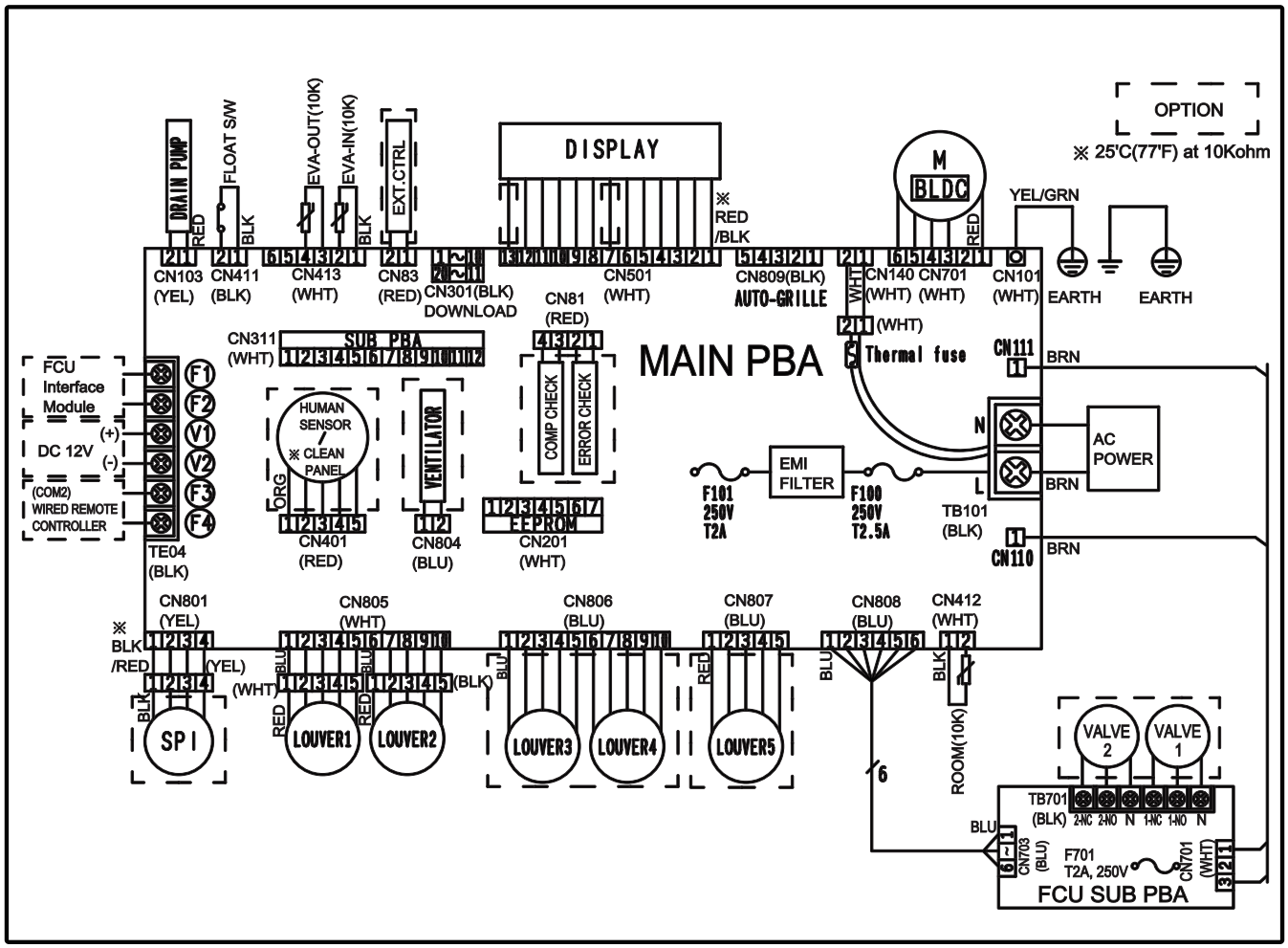
Units : mm [inches]



Model	A	B	C
AG026TN1DKH/**	555 [21-7/8]	220 [8-5/8]	108 [4-1/4]
AG032TN1DKH/**	555 [21-7/8]	220 [8-5/8]	108 [4-1/4]
AG042TN1DKH/**	755 [29-5/8]	200 [7-7/8]	108 [4-1/4]

6. Electrical Wiring Diagram

Wind Free 1Way Cassette



MAIN PCB	Printed circuit board (Main)	FLOAT S/W	Float Switch	EXT.CTRL	External Control
SUB PCB	Printed circuit board (Sub)	DRAIN PUMP	Drain Pump	EVA-IN	Thermistor (Eva-In) 25℃ at 10Kohm
EEPROM	EEPROM Sub PBA	LOUVER	Up/Down, Left/Right Blade	EVA-OUT	Thermistor (Eva-Out) 25℃ at 10Kohm
M (BLDC)	BLDC Motor (Indoor Fan)	SPI	Samsung Plasma Ion	ROOM	Thermistor (Air) 25℃ at 10Kohm
DISPLAY	LED Lamp Display	250V T2.5A	FUSE		

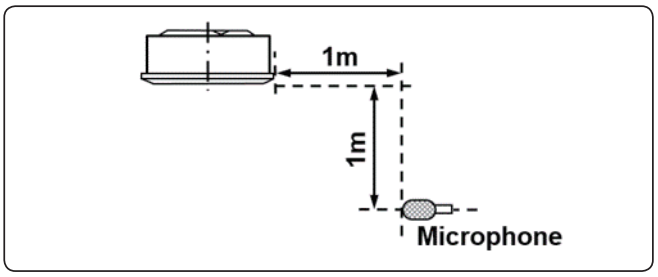
NOTE

- This wiring diagram applies only to the Fan Coil Unit.
- Colors blk: black, red: red, blu: blue, wht: white, yel: yellow, brn: brown, sky: skyblue
- For connection wiring indoor-outdoor transmission F1-F2, outdoor-outdoor transmission F3-F4, refer to the installation manual.
- ⏚ Protective earth(SCREW), ▭▭ : connector, N : The wire quantity

7. Sound Data

Wind Free 1Way Cassette

Sound Pressure level

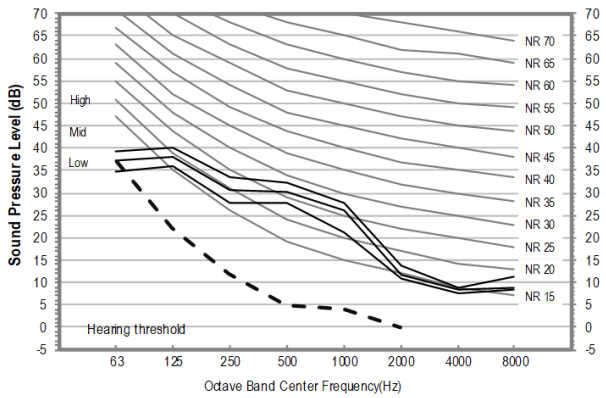


Unit: dB(A)

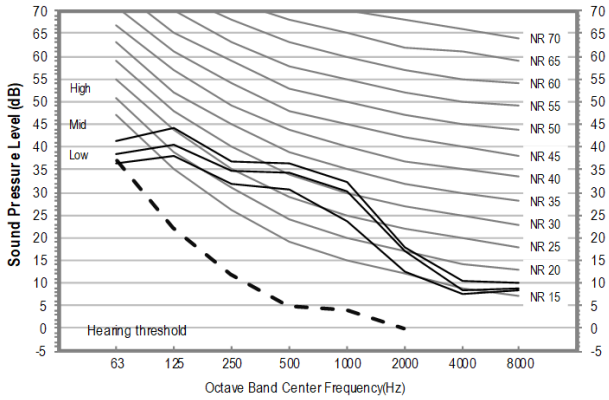
Model	HIGH	MID	LOW
AG026TN1DKH/**	33	31	29
AG032TN1DKH/**	38	35	31
AG042TN1DKH/**	40	37	33

- NR Curve

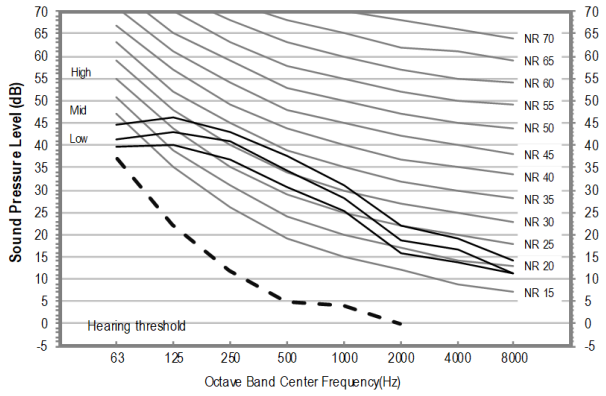
1) AG026TN1DKH/**



2) AG032TN1DKH/**



3) AG042TN1DKH/**



NOTE

- Specifications may be subject to change without prior notice.
- Sound Pressure Level
  - Sound pressure level is obtained in an anechoic room.
  - Sound pressure level is a relative value, depending on the distance and acoustic environment.
  - Sound pressure level may differ depending on operation condition.
  - dBA = A-weighted sound pressure level
  - Reference acoustic pressure 0dB = 20μPa

7. Sound Data

Wind Free 1Way Cassette

Sound Power level

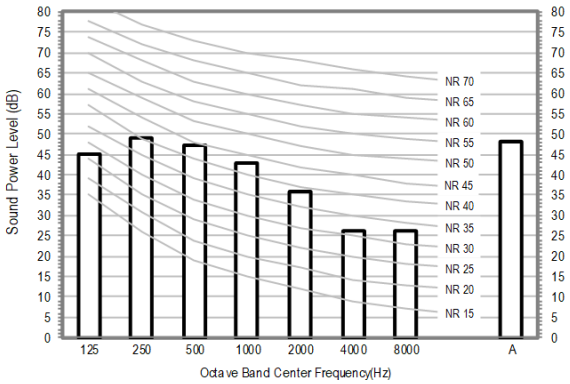
NOTE

- Specifications may be subject to change without prior notice.
  - Sound power level is an absolute value that a sound source generates
  - dBA = A weighted sound power level
  - Reference power : 1pW
  - Measured according to ISO

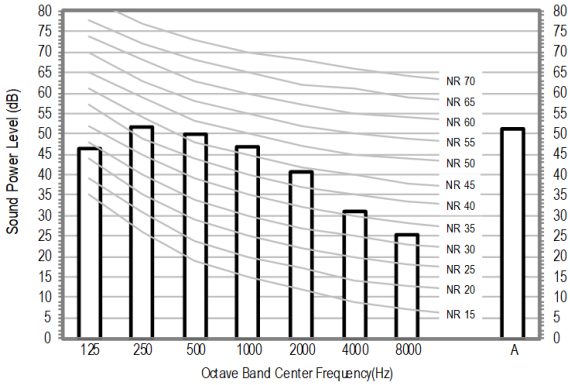
Unit: dB(A)

Model	Cooling
AG026TN1DKH/**	50
AG032TN1DKH/**	53
AG042TN1DKH/**	59

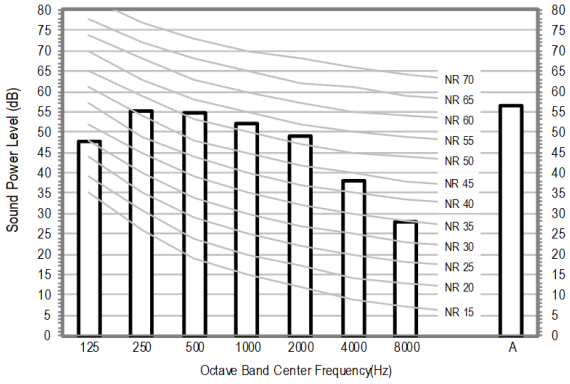
1) AG026TN1DKH/**



2) AG032TN1DKH/**



3) AG042TN1DKH/**



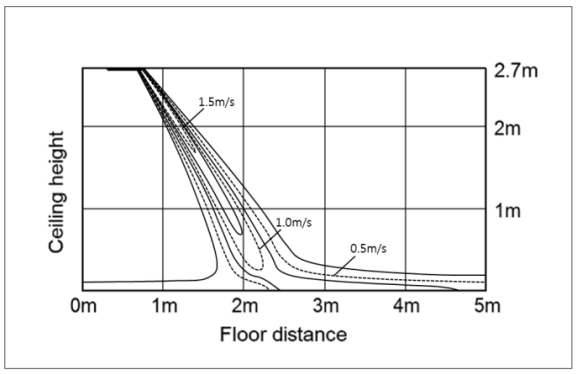
8. Temperature and Airflow Distribution

Wind Free 1Way Cassette

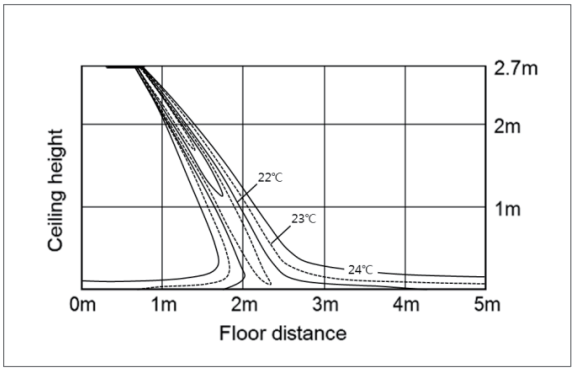
• AG026TN1DKH/**

Discharge angle : 60

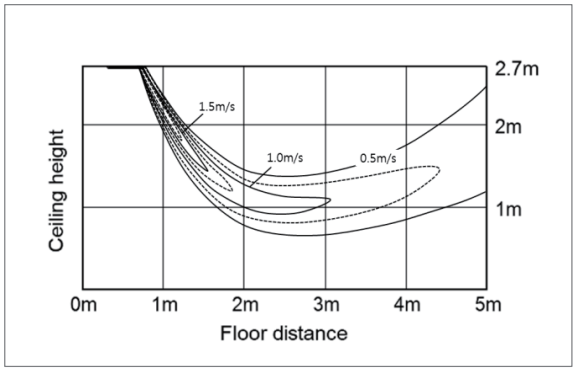
Cooling Air Velocity distribution



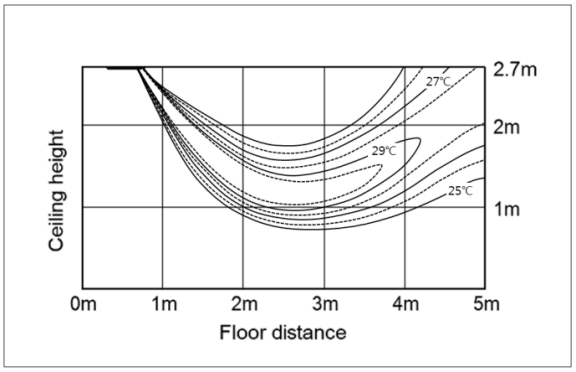
Cooling temperature distribution



Heating Air Velocity distribution



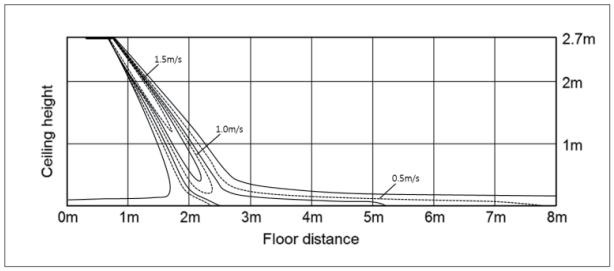
Heating temperature distribution



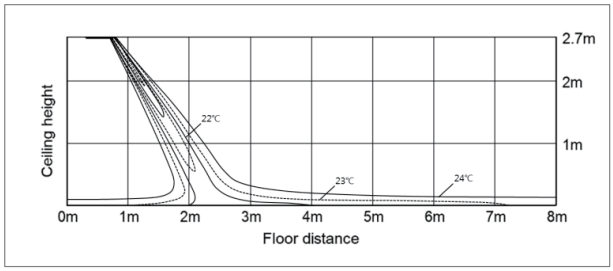
• AG032TN1DKH/**

Discharge angle : 60

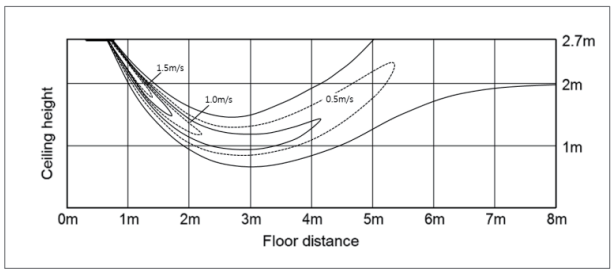
Cooling Air Velocity distribution



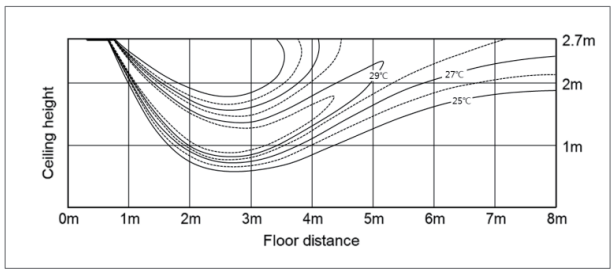
Cooling temperature distribution



Heating Air Velocity distribution



Heating temperature distribution



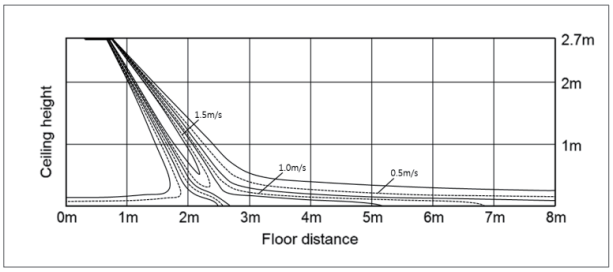
8. Temperature and Airflow Distribution

Wind Free 1Way Cassette

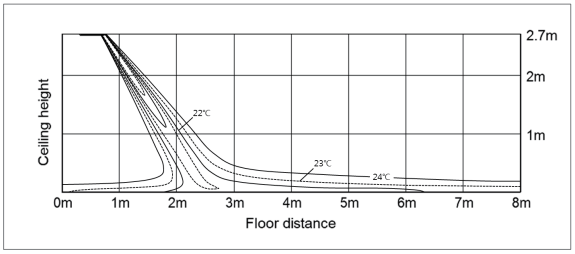
• AG042TN1DKH/**

Discharge angle : 60

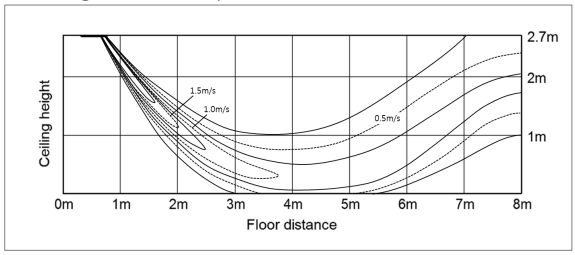
Cooling Air Velocity distribution



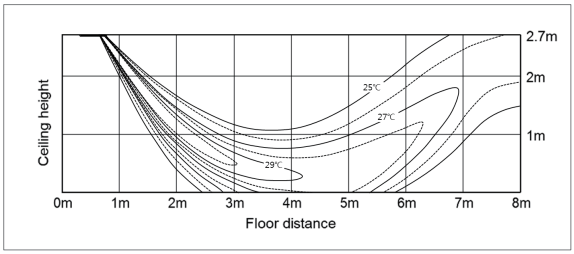
Cooling temperature distribution



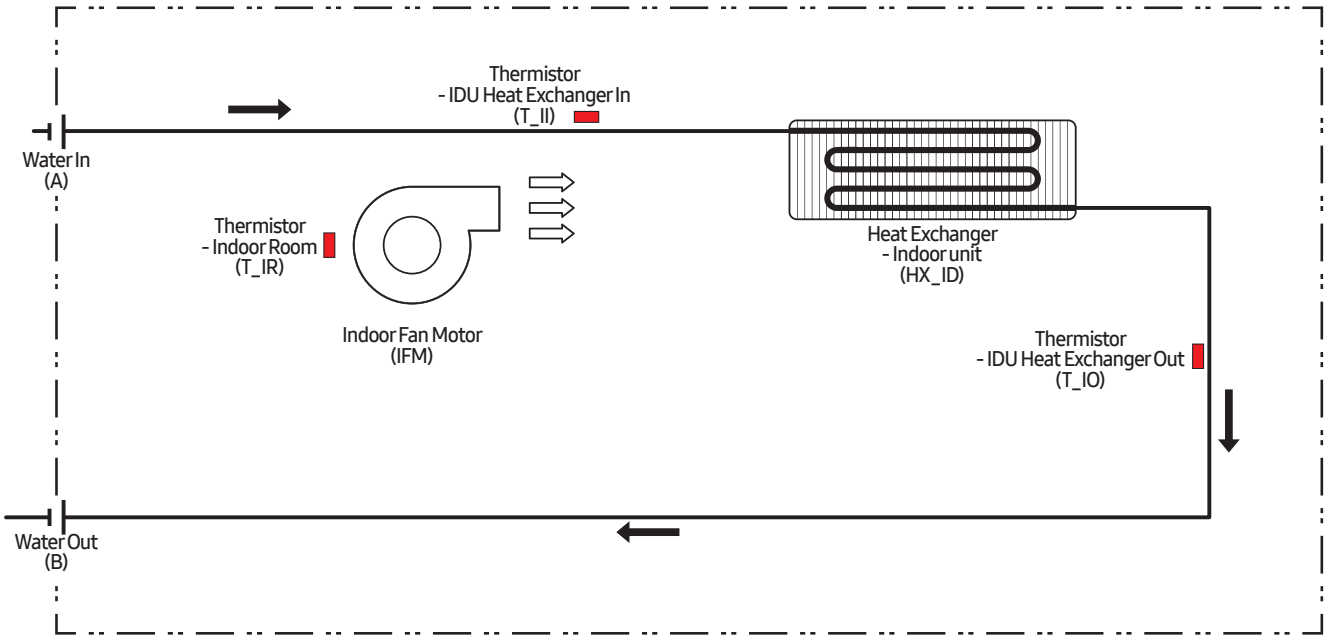
Heating Air Velocity distribution



Heating temperature distribution



9. Piping Diagram



Water Flow
Cooling/Heating
→

Units : mm (Inches)

Medel		Water pipe	
		A	B
Wind Free 1Way Cassette	AG026TN1DKH/**	20A(3/4")	20A(3/4")
	AG032TN1DKH/**	20A(3/4")	20A(3/4")
	AG042TN1DKH/**	20A(3/4")	20A(3/4")

10. Installation

Choosing the installation location

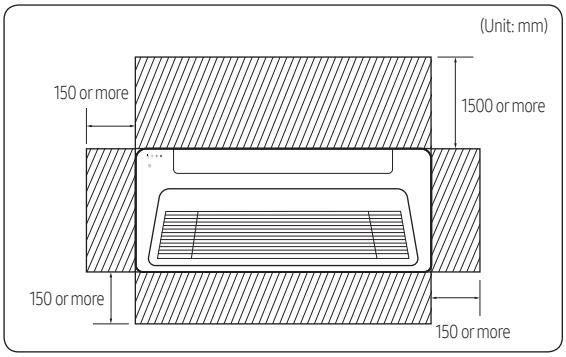
Installation location requirements

- Air must be distributed optimally.
- The passage of air must not be disturbed.
- Condensation water must be drained easily.
- The support structure must be strong enough to support the weight of the fan coil unit. (If the structure is not strong, the fan coil unit may fall off, leading to personal injury.)
- The ceiling must not be significantly sloped.
- There must be a sufficient space for maintenance and service.
- The power and communication cables of the fan coil unit must be at least 1 m away from electronic appliances such as televisions. (Occasionally, more distance may be required.)

Reinforcing the ceiling

Make sure that the ceiling is sufficient to support the weight of the fan coil unit. If dangerous, reinforce the ceiling with foundation bolts before installing the fan coil unit.

Spacing requirements



Optional: Insulating the body of the fan coil unit

Insulation guide

- For the pipe inlet and outlet and some bent parts, cut out and shape the insulation material in accordance with their shape.
- Be sure to insulate the air inlet and outlet (front and rear) together when insulating the connecting ducts.

Installing the fan coil unit

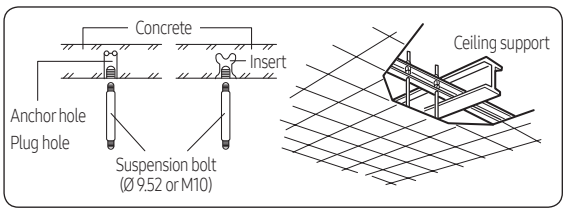
Preparations for installation

The piping that will be connected to the fan coil unit must be completed before installation.

1 Check the product to install and its installation location.

2 Check the following installation requirements:
   - When the product is installed on the ceiling, check the strength of the ceiling first.
   - When the product is installed on the ceiling, use the pattern sheet.
   - After making the mounting hole on the ceiling, keep the ceiling surface level.
   - You may need to reinforce the ceiling to prevent the product from causing the upper floor to vibrate.

3 Drill holes on the ceiling or the ceiling support, and then insert the foundation bolts, as shown in the following figure:
   - Use bolts of Ø 9.52 or M10 size and of 1.5 m or less length.
   - Install at least four foundation bolts so that the fan coil unit can be fixed firmly.
   - When the existing ceilings require reinforcement, use anchor holes.
   - For new ceilings, use sunken inserts, sunken anchors, or other commercially available parts.



⚠ CAUTION

- Purchase all the needed parts from the market.
- Because the pattern sheet is made of paper, it may shrink or stretch slightly due to temperature or humidity. Therefore, before drilling holes on the ceiling, be sure to check the correct dimensions.
- Be sure to secure a sufficient space that allows for access for maintenance or repairs.

10. Installation

Installing on a new ceiling

1 Place the pattern sheet on the ceiling at the spot where you want to install the fan coil unit.

NOTE

- Because the pattern sheet is made of paper, it may shrink or stretch slightly due to temperature or humidity.

Take the following steps to install one or more inspection holes according to the panel type.

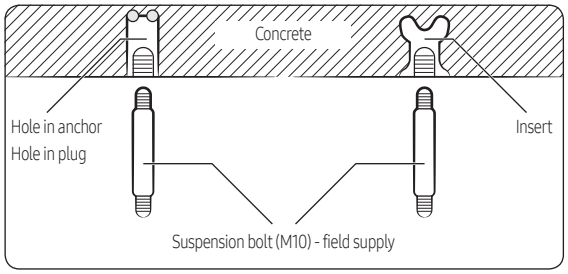
- **For installing a ceiling type square panel**

Install an inspection hole along the direction of connection parts of the water pipe and the drain hose. (1 point)

- **For installing a ceiling type circular panel**

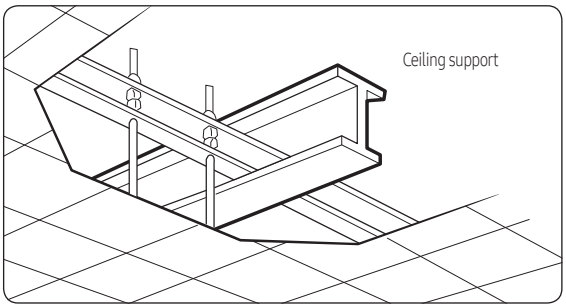
Install an inspection hole along direction of the connection parts of the water pipe and the drain hose and another along the direction of the fan coil unit display. (2 points)

2 Drill holes on the ceiling or the ceiling support, and then insert the foundation bolts, as shown in the following figure:



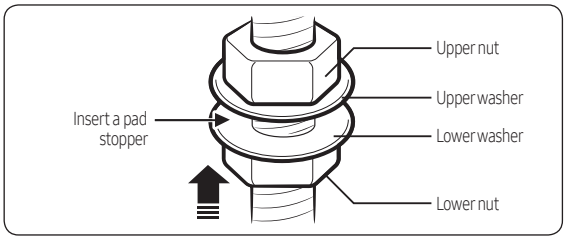
3 Install suspension bolts, depending on the ceiling conditions.

- Before hanging the fan coil unit, make sure that the ceiling is strong enough to support the weight of the unit. Test the strength of each suspension bolt installed.
- Install the suspension bolts in various ways suitable for the type and material of the ceiling. Anti-vibration treatment is required when the ceiling fixing bolt is 1.5 m or more.



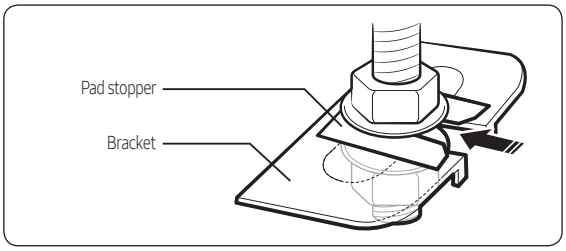
4 Secure a total of 8 nuts and washers to each suspension bolt. However, leave a little space between the nuts into which the hanger bracket of the fan coil unit will be inserted.

- At this time, if you cut the stopper pad and insert it under the upper washer, the washer will not flow down, making the installation easier.
- For installation of the fan coil unit, be sure to install at least four suspension bolts.



5 Insert a hanger bracket between the nuts fixed to each suspension bolt to hang the fan coil unit.

- When installing the product, be sure to install the piping inside the ceiling. When an existing ceiling is used, install the piping inside the ceiling before installing the fan coil unit.



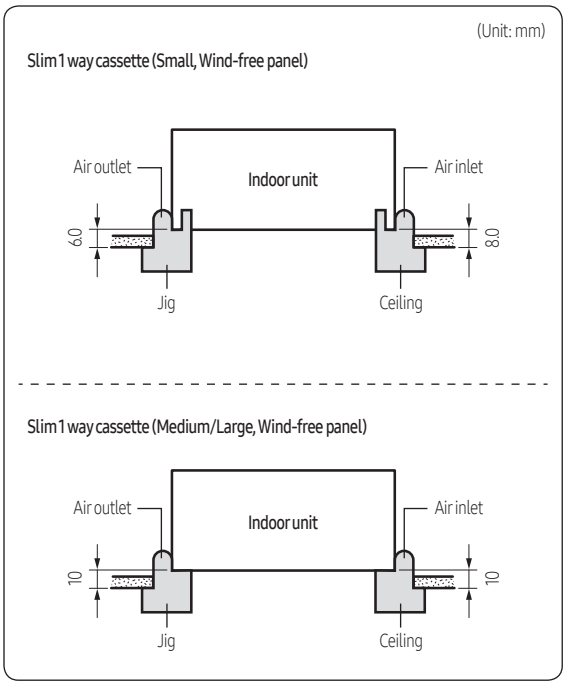
6 Tighten the nuts to firmly fasten the fan coil unit.

7 Adjust the position of the fan coil unit while considering the space for installing the front panel.

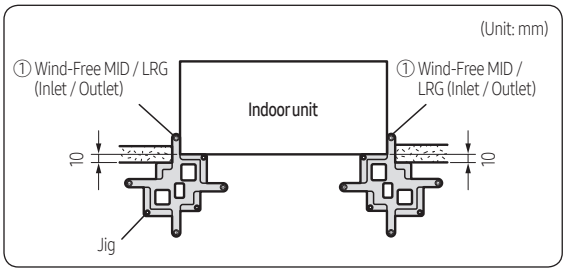
- Remove the jig made in the pattern sheet, and then use the jig to adjust the space between the ceiling and the fan coil unit, as shown in the figure below.
- If not installed in alignment with the jig, noise may occur.
- Adjust the position of the fan coil unit in alignment with the jig.
- Adjust the level of the fan coil unit by using a leveler, and then fix the unit securely.
- First, fix the front panel with the panel fixing bolts, and then install the front panel so that it comes in close contact with the fan coil unit body.

10. Installation

When the installation template is made of paper



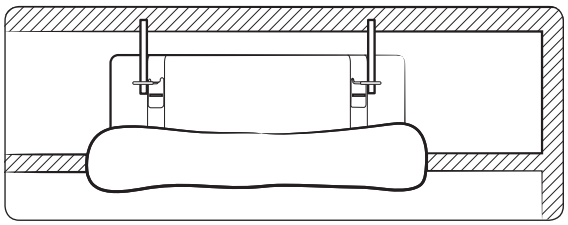
When the installation template is made of plastic



8 After installing the fan coil unit, be sure to cover it with the fan coil unit protection vinyl to prevent any paint or dust from entering the unit until the panel is fixed.

⚠ CAUTION

- If dust or paint enters the unit, it may degrade the product performance or cause product malfunction.



Connecting the water pipes

1 Purge inert gas.
- The fan coil unit comes with nitrogen gas (inert gas) charged at the factory for protection of the unit during transportation.
  Remove the protective caps from the piping to purge inert gas.

⚠ CAUTION

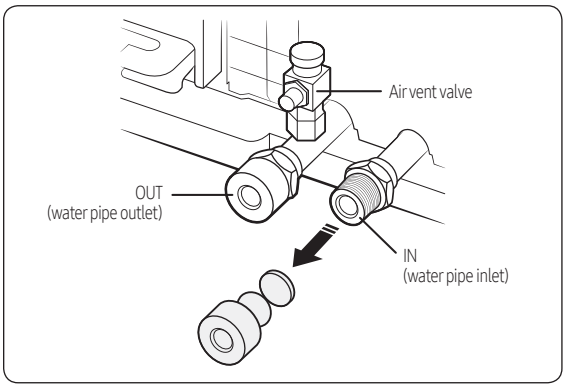
- To prevent foreign objects from entering the piping, do not remove the cap until the piping connection is ready.

2 Connect the pipes.
- Be sure to use a metal pipe for the piping outlet.
- Be careful not to erroneously change the piping inlet and outlet connections.
  (Outlet: air vent valve)
- Be sure to attach a valve to each of the piping inlet and outlet.
- Be sure to insulate all of the water pipes and the drain pipe.
- The maximum operating water pressure of the fan coil is 1.0 MPa. Design your air conditioning system so that the operating water pressure becomes 1.0 MPa or less.
- Design the piping so that air clogging does not occur.
- Use Teflon tape on the T-type screws to prevent water leakage.

10. Installation

Installing the water pipes

1 Remove the caps from the water pipe inlet and outlet.



2 Be sure to check the positions of the water pipe inlet and outlet of the fan coil unit by finding their labels (IN and OUT) attached.

- The water pipe inlet label is printed with IN and the water pipe outlet label with OUT.
- Note that the air vent valve is attached to the side where you can find the water pipe outlet.

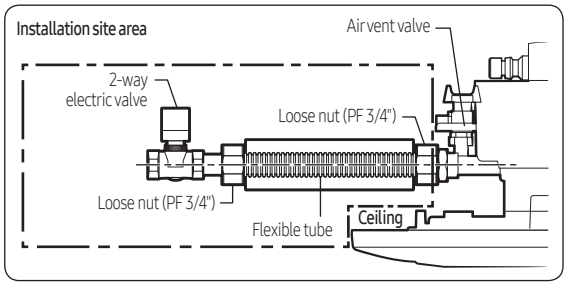
Appearance


⚠ CAUTION

- Failure to connect the water pipes may cause performance degradation.
- Be sure to insulate both the inlet and outlet pipings.

3 Before connecting the water pipes, be sure to install a 2-way electric valve.

- Be sure to install the 2-way electric valve on the inlet side pipe.
- When circulating cold/hot water, open the air vent valve and use a tube to receive water so that the air inside the pipe and coil is sufficiently removed, and then close the valve. Failure to do so may cause performance degradation and noise.
- Before connecting the water pipes., check if the water pipe Flexible tube (loose nut PF 3/4") specification is correct. After connecting the water pipes, remove foreign objects from them, and then circulate water to check for water leakage.



⚠ CAUTION

- Be sure to install a 2-way electric valve on the water pipe inlet of the fan coil unit.
  Failure to do so may cause condensation and product malfunction.
- Attach a 40 mesh strainer to the inlet piping (Installation site area)
- If there is no strainer installed, foreign objects may enter the pipe, causing malfunction and performance degradation to the 2-way electric valve, condensation, or water leakage, etc.
- When the temperature of intake water is higher than 65 °C, the protection control of the product may be activated.
- If the outside temperature is lower than 0 °C during winter, the inside of the heat exchanger may freeze and burst. To prevent this, operate a water pump and operate the product to open the 2-way electric valve.
- When the product is not used for a long period of time in winter, drain all the water from the heat exchanger and the entire water piping system.
- If both the room temperature and the piping temperature are 5°C or less, the 2-way electric valve automatically opens to prevent freezing and bursting.
- Use frost preventive additives to prevent the circulating water from freezing in winter.
- Check if the rated flow rate is being supplied.
  Low flow rates may cause performance degradation or product malfunction.

4 Wind Teflon tape (10 to 15 times) around the threads of the water pipe inlet/outlet Flexible tube of the fan coil unit in the thread direction.

⚠ CAUTION

- When connecting the pipes, tighten sufficiently with a monkey wrench and a torque wrench as shown in the figure above. Failure to do so may cause water leakage.
- When operating the product for the first time or restarting it after a long period of stoppage, open the air vent valve of the heat exchanger and use a tube to receive water so that the air inside the pipe and coil is sufficiently removed, and then close the valve.

10. Installation

5 Manage water quality in accordance with the following water quality standards for refrigeration equipment:

⚠ CAUTION

- If water quality is not managed in accordance with the water quality standards, corrosion and scales may develop, which may shorten the life of the product and cause performance degradation and lead to a serious product malfunction.

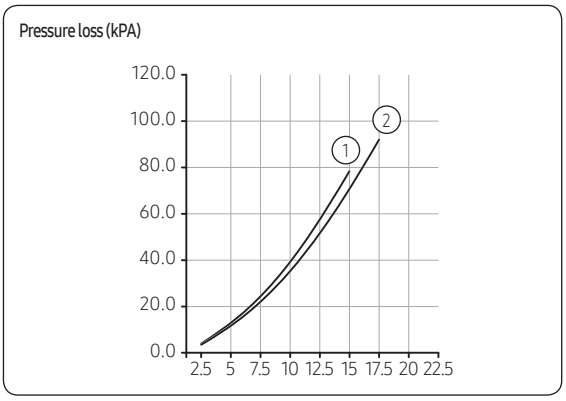
Item		Cold water	Corrosion	Scales
Reference value	PH(25°C)	6.5-8.0	O	-
	Conductivity (25 °C, µS/cm)	200 or less	O	-
	Alkalinity (PPM)	50 or less	-	O
	Hardness (PPM)	50 or less	-	O
	Chlorine ion (PPM)	50 or less	O	-
	Sulfate ion (PPM)	50 or less	O	-
	Iron (PPM)	0.3 or less	O	-
	Sulfur ion (PPM)	Not detected	O	-
	Ammonium ion (PPM)	0.2 or less	O	-
	Silica (PPM)	30 or less	-	O

6 Check the rated flow rate of cold / hot water and the pressure loss inside the heat exchanger.

⚠ CAUTION

- If the rated flow rate is not supplied, it may cause performance degradation and product malfunction.

Category	Mode	Rated flow (LPM)	Pressure drop (kPa)
Slim 1 way cassette	AG026TN1DKH*	7.5	23.0
	AG032TN1DKH*	9.6	34.5
	AG042TN1DKH*	11.9	45.0



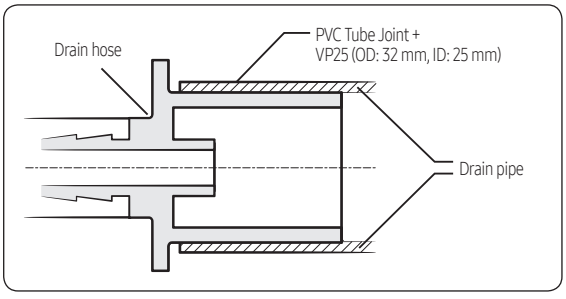
1	Slim 1 way cassette	AG026/032TN1DKH*
2	Slim 1 way cassette	AG042TN1DKH*

Connecting the drain hose

- Drain hoses and PVC pipes are sold separately.
- Before installing the drain pipe, be sure to check if drainage is good.

1 Connect the flexible hose to the drain port of the fan coil unit.
   - Make sure that a rubber ring is assembled at the connection port.
   - Securely fasten the flexible hose until you hear "click."
   - The position of the connection port may differ depending on the fan coil unit model.

2 Fix the drain pipe to the opposite end of the flexible hose.
   - Fix the connection port of the flexible hose and the drain pipe (PVC) with adhesive for PVC.
   - After the adhesive for PVC is completely hardened, check whether water leaks from the connection part.
   - Water pipe specifications
     – Slim 1 way cassette (Small): VP20 (OD: ø 26, ID: ø 20)
     – Slim 1 way cassette (Large)/ 4 way cassette / 360 cassette: VP25 (OD: ø 32, ID: ø 25)



3 Shorten the connection length of the drain pipe as much as possible.
   - Install the drain pipe so that it is sloped downward (3 mm or more) for proper drainage of condensation water.
   - Use a cable tie to secure the connection part so that the flexible hose and tje drain pipe are not separated.
   - Be sure to insulate the piping, contact area, and drain pipe.

⚠ CAUTION

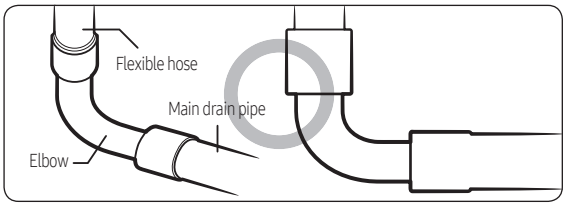
- After installing the fan coil unit, be sure to insulate the pipe, piping connections, and drain pipe.

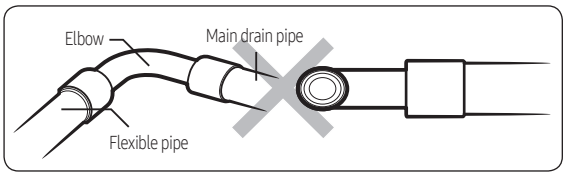
10. Installation

4 Fully insulate the drain pipe inside the building (on site). If the drain pipe is sloped insufficiently, install the drain pipe vertically from the hose connection port (on site).

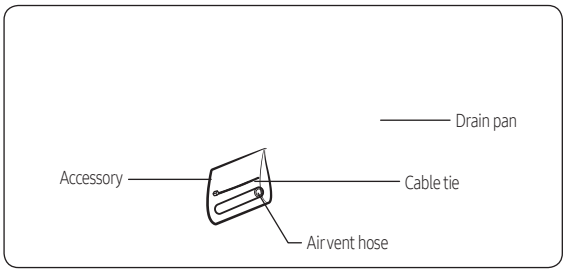
⚠ CAUTION

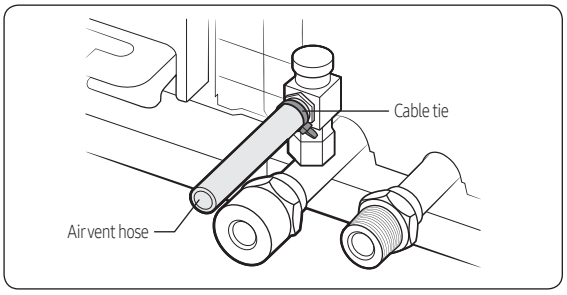
- When connecting the flexible hose to the main drain pipe, make sure that the elbow is installed vertically. (Horizontal installation is prohibited.)





5 Remove the accessory vinyl attached to the drain pan. Connect the air vent hose, and then secure it with a cable tie so that it does not come out.





Individual drainage

Use a leveler to check that the fan coil unit is parallel to the ceiling.

1 If the slope of the drain pipe is less than 1/100, be sure to install an air vent at the inlet of each drain hole to smooth the flow of condensation water.

2 If the drain pipe is installed higher than the connection port, install the drain pipe vertically within a distance of 300 mm from the flexible hose connection port. (Slim 1 way cassette)

- However, because the water may leak, the height of the drain pipe should not exceed 550 mm.

3 Install the drain pipe at a slope of 1/100 or more.

4 Make sure that the distance between the supports is 1 to 1.5 m.

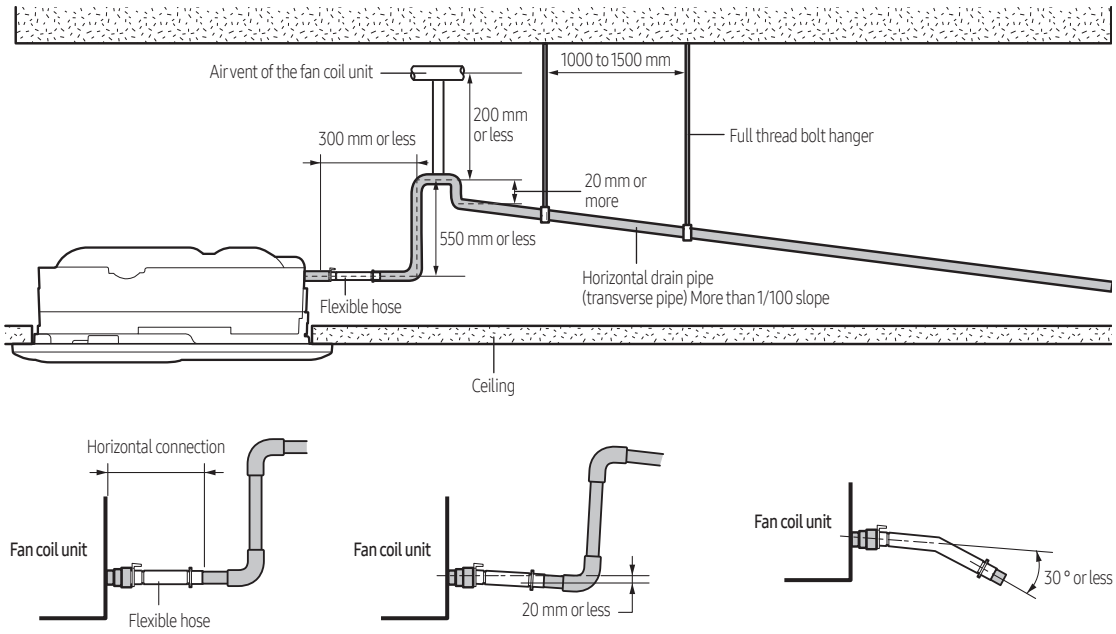
5 In order to prevent odor from the outlet of the drain pipe, install a trap at the end of the drain pipe or install an indirect drain.

6 Do not apply force to the hose when connecting the drain pipe.

- Make sure that the hose connection is not loosened and as close as possible to the wall or other support, as shown in the figure.

10. Installation

Slim 1 way cassette

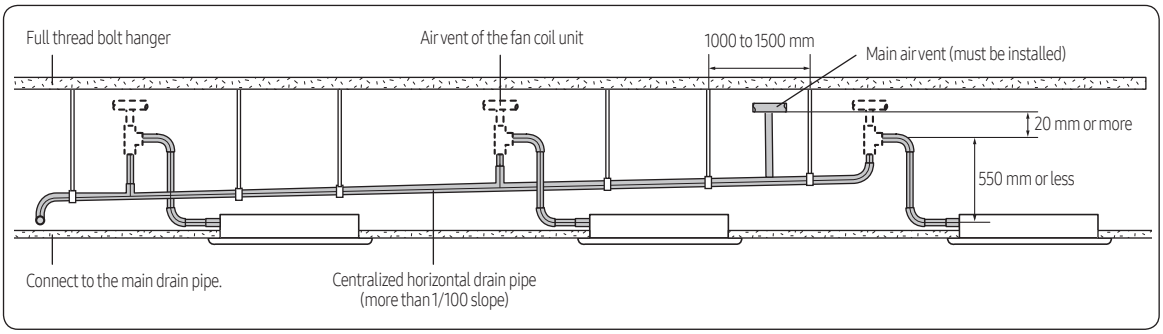


- Connect the flexible hose horizontally.

- Make sure that the maximum axis gap does not exceed 20 mm. (Upward axis gap is prohibited.)

- Make sure that the maximum bending angle does not exceed 30°. (Upward slope is prohibited.)

Concentrated drainage



1 If 3 or more fan coil units are installed, install the main air vent at the front of the farthest fan coil unit from the main drain pipe.

2 If the slope of the centralized horizontal drain pipe is less than 1/100, be sure to install an air vent at the top of each fan coil unit to prevent water from flowing back to the unit.

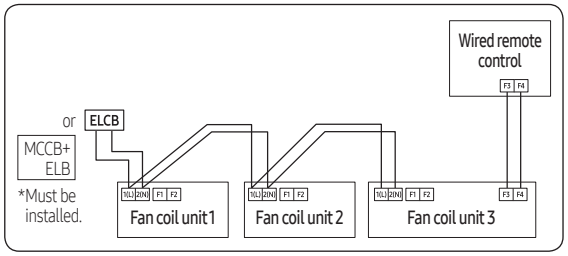
10. Installation

Connecting the power and communication cables

1 Power and communication cable connection

- Before wiring work, you must turn off all power source.
- Connect the power and communication cables between the fan coil units in the electrical panel within maximum length so that the voltage drop is under 10%.
- Install an auxiliary circuit breaker (ELCB, MCCB, ELB) with sufficient capacity by considering the number of fan coil units to be connected to it.
- Connect F3 and F4 of the fan coil unit terminal block to the communication cable of the wired remote control.
- Tighten the electric wires with a proper tool within the torque limit to connect and fix them firmly, and then organize the wires to prevent outside pressure being exerted on the covers and other parts. Failure to do so may result in overheating, electric shock, and fire.
- To protect the product from water and possible shock, you should keep the power and the communication cables in an iron pipe.
- Connect the power cable to the auxiliary circuit breaker (ELCB, MCCB, ELB).
- Keep a distance of 50 mm or more mm between the power cable and the communication cable.

Torque limit (N•m)	
M3	0.5~0.75
M3.5	0.8~1.2
M4	1.2~1.8

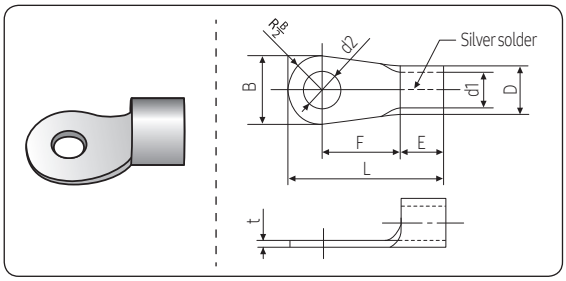


⚠ CAUTION

- The circuit diagram given above shows only wiring schematic, and the details of the actual installation are not presented.
- The standard specification is that the power supply for the fan coil unit should be separate from that for a heat source such as a chiller.
- Never branch the terminal block power supply cable from one fan coil unit to two fan coil units.
- When peeling the power cable, use a special tool for it to prevent damage to the inner sheaths.
- Make sure that more than 20 mm of the outer sheaths of the fan coil unit's power and communication cables are inserted inside the electrical part.
- Separate each communication cable from the power cable and other communication cables.
- When wiring, make sure that the connecting wire is loosened properly.

2 Selecting the crimping terminal lug

- Select the crimping terminal lug based on the nominal cross-sectional size of the power cable.
- Cover the connection part of the power cable and the crimping terminal lug to insulate it.



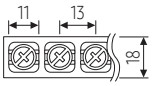
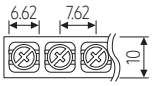
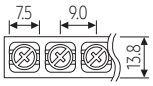
(Unit: mm)

Nominal cross-sectional size (㎟)	Nominal diameter of thread (㎟)	B		D		d1		E	F	L	d2		t
		Basic size	Tolerance	Basic size	Tolerance	Basic size	Tolerance	Min.	Min.	Max.	Basic size	Tolerance	Min.
1.5	4	6.6	±0.2	3.4	+0.3 -0.2	1.7	±0.2	4.1	6	16	4.3	+0.2 0	0.7
	4	8											
2.5	4	6.6	±0.2	4.2	+0.3 -0.2	2.3	±0.2	6	6	17.5	4.3	+0.2 0	0.8
	4	8.5											
4	4	9.5	±0.2	5.6	+0.3 -0.2	3.4	±0.2	6	5	20	4.3	+0.2 0	0.9

10. Installation

3 Specifications of the terminal blocks

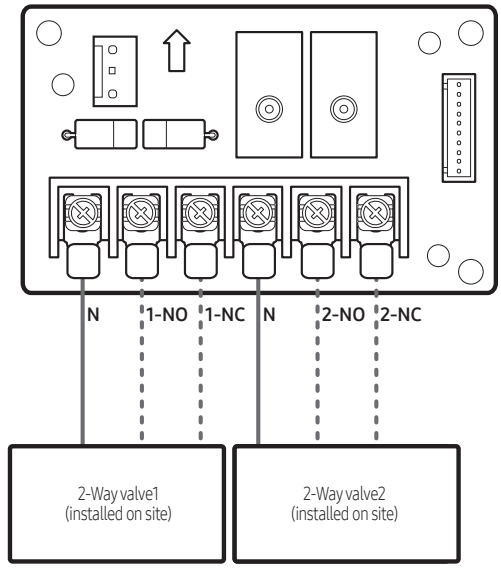
(Unit: mm)

AC power: M4 screw	Communication: M3 screw	Communication: M3.5 screwELB
		

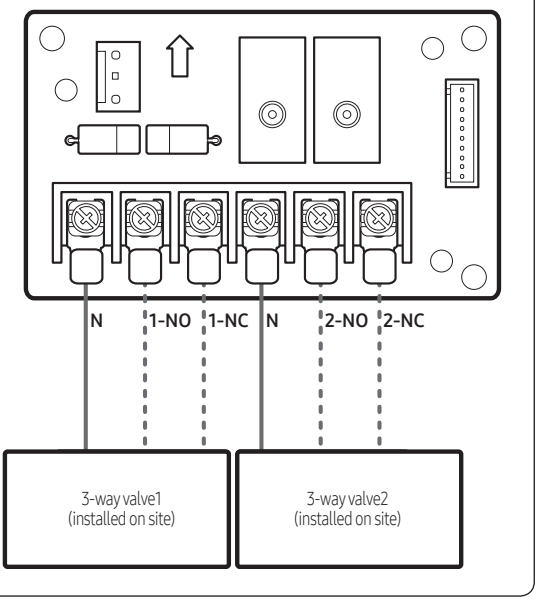
⚠ CAUTION

- When installing the product, be sure to install a 2-way electric valve on the water inlet pipe.
  When connecting a 2-way electric value, be sure to check the correct sub PBA terminals as shown in the figure below.
  Incorrect terminal connection may cause product malfunction. (Valve: Purchased at site)
  - Specification: AC 220 to 240V (Operating current must be 0.3A or less.)
  - Applicable type: ON / OFF startup contact
- The standard specification is that the power supply for the fan coil unit should be separate from that for a heat source such as a chiller.

Wiring diagram when connecting a 2-way valve



Wiring diagram when connecting a 3-way valve



- In the 05 series installation options, the SEG15 and SEG22 values define the valve signals, classified as shown in the table below.
- SEG15 and SEG22 are set to 0 by default. After delivery, connect N, NO, and NC terminals depending on the valve specifications noting the table below:

		Valve specification	
		Normal Close	Normal Open
PBA terminal	N	Connect	Connect
	NO	Connect	Do not connect
	NC	Do not connect	Connect

10. Installation

- Depending on the 05 series installation options (SEG15 and SEG22), the contact output signals are as follows:

			SEG22: 0 (Cooling/Heating synchronizing signal)						SEG22: 1 (Cooling/Heating signal separated)					
			SEG15: 0			SEG15: 1			SEG15: 0			SEG15: 1		
Valve	Common terminal	Optional terminal	Cooling T-ON	Heating T-ON	Operation OFF	Cooling T-ON	Heating T-ON	Operation OFF	Cooling T-ON	Heating T-ON	Operation OFF	Cooling T-ON	Heating T-ON	Operation OFF
Valve 1	N	NO	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON
		NC	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF
Valve 2	N	NO	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON	ON
		NC	OFF	OFF	ON	ON	ON	OFF	OFF	ON	ON	ON	OFF	OFF

※ ON (220 VAC), OFF (0 VAC)

- The terminal output upon T-OFF is subject to change depending on the 05 series installation options, SEG16.

4 Specifications of electrical wiring between fan coil units

Power supply (single phase)	MCCB	ELB	Power cable	Earth wire	Communication cable
220 to 240 V Min. 198V Max. 264V	XA	XA, 30 mA 0.1 s	2.5 mm² or more	2.5 mm²	0.75 to 1.5 mm²

- Decide the capacity of ELB and MCCB using the following formula.

$$X\,[A] = 1.25 \times 1.1 \times \sum Ai$$

NOTE

- X: The capacity of ELB, MCCB
- ∑Ai: Sum of the rated currents of the fan coil units

Rated currents

Mode	Rated current (A)
AG026TN1DKH*	0.14
AG032TN1DKH*	0.19
AG042TN1DKH*	0.29

- Select the cable thickness and wiring length so that the total voltage drop between the fan coil units is less than about 10% of the input voltage (220 V).

$$\sum_{k=1}^{n} \left(\frac{Coef \times 35.6 \times L_k}{1000 \times Ak} \times i_k \right) < 10\ \%\ \text{of input voltage [V]}$$

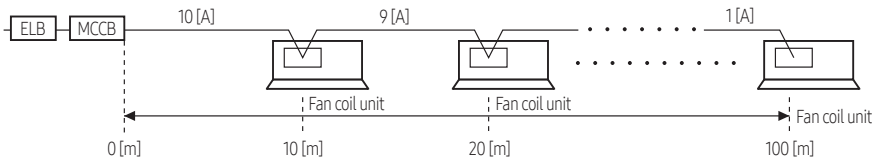
※ Coef: Approximately 1.55 in consideration of the contact resistance when the wire is fastened to the terminal

※ L_k: Distance between fan coil units [m],
Ak: Thickness of the power cable [mm²]
ik: Current between fan coil units [A]

10. Installation

Installation example

Total power cable length L = 100 [m], initial pull-in current i = 10 [A], running current of each unit = 1 [A], total 10 fan coil units are installed.

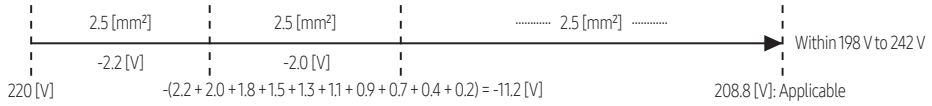


- Apply the following formula.

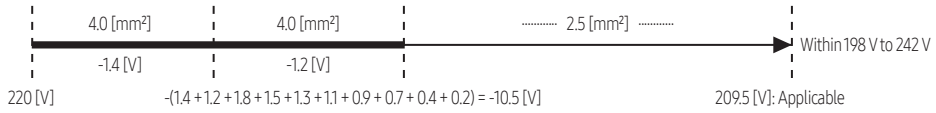
$$\sum_{k=1}^{n} \left(\frac{Coef \times 35.6 \times L_k}{1000 \times Ak} \times i_k \right) < 10\ \%\ \text{of input voltage [V]}$$

- Calculation

  Installing with one type of wire



  Installing with two types of wires



※ Appendix : Capacity Table

Wind Free 1Way Cassette (AG026TN1DKH/**)

Cooling

※ Total Capacity : Total cooling capacity (**k**W) / Sensible : Sensible cooling capacity (**k**W)
Water Flow : Water flow rate (ℓ/min) / ΔP : Water in-out pressure drop (kPa)

Air temperature (DB°C - WB°C)	24-17															
Water In (°C)-Out (°C)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	2.21	1.79	6.3	17.7	1.78	1.59	3.6	7.4	1.98	1.69	5.7	14.8	1.57	1.47	4.5	10.3
M	1.98	1.58	5.7	14.8	1.59	1.40	3.3	6.3	1.77	1.49	5.1	12.4	1.40	1.30	4.0	8.7
L	1.76	1.39	5.0	12.3	1.41	1.22	2.9	5.3	1.57	1.31	4.5	10.3	1.25	1.14	3.6	7.3
Air temperature (DB°C - WB°C)	25-18.7															
Water In (°C)-Out (°C)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	2.75	1.86	7.9	25.3	2.19	1.65	4.5	10.2	2.41	1.74	6.9	20.4	1.87	1.52	5.3	13.5
M	2.46	1.63	7.0	21.0	1.96	1.45	4.0	8.6	2.16	1.53	6.2	17.0	1.67	1.33	4.8	11.3
L	2.18	1.44	6.3	17.3	1.74	1.26	3.6	7.2	1.92	1.35	5.5	14.0	1.48	1.16	4.3	9.4
Air temperature (DB°C - WB°C)	27-19.5															
Water In (°C)-Out (°C)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	3.08	2.12	8.8	30.6	2.43	1.86	5.0	12.0	2.60	1.93	7.5	23.1	2.17	1.78	6.2	17.1
M	2.75	1.86	7.9	25.4	2.17	1.63	4.4	10.1	2.33	1.70	6.7	19.2	1.94	1.56	5.6	14.3
L	2.45	1.63	7.0	20.8	1.93	1.43	4.0	8.4	2.07	1.49	5.9	15.9	1.72	1.37	4.9	11.9
Air temperature (DB°C - WB°C)	27-21															
Water In (°C)-Out (°C)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	3.67	2.13	10.5	41.6	2.97	1.84	6.1	16.5	3.26	1.99	9.4	33.9	2.67	1.75	7.7	24.2
M	3.29	1.88	9.4	34.3	2.65	1.63	5.4	13.8	2.92	1.75	8.4	28.0	2.39	1.55	6.9	20.1
L	2.92	1.66	8.4	28.1	2.36	1.44	4.8	11.5	2.60	1.51	7.4	23.0	2.13	1.37	6.1	16.6

Heating

※ Capacity : Heating capacity (**k**W) / Water Flow : Water flow rate (ℓ/min) / ΔP : Water in-out pressure drop (kPa)

Air temperature(°C)	18														
Water In(°C)-Out(°C)	45-40			50-45			55-50			55-45			60-50		
Air Flow	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP
H	3.10	8.9	30.7	3.50	10.0	38.4	4.09	11.7	50.8	3.74	5.4	12.4	4.43	6.4	17.5
M	2.77	7.9	25.4	3.16	9.1	32.3	3.71	10.6	43.1	3.40	4.9	10.6	3.97	5.7	14.6
L	2.46	7.1	20.9	2.91	8.4	28.2	3.47	10.0	38.8	3.18	4.6	9.5	3.52	5.1	12.1
Air temperature(°C)	20														
Water In(°C)-Out(°C)	45-40			50-45			55-50			55-45			60-50		
Air Flow	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP
H	2.90	8.4	28.0	3.31	9.5	34.9	3.83	11.0	45.4	3.51	5.0	11.1	4.19	6.0	16.0
M	2.59	7.4	22.8	2.96	8.5	28.9	3.48	10.0	38.7	3.19	4.6	9.5	3.75	5.4	13.4
L	2.31	6.6	18.7	2.73	7.8	25.4	3.25	9.3	34.8	2.97	4.3	8.5	3.33	4.8	11.1
Air temperature(°C)	22														
Water In(°C)-Out(°C)	45-40			50-45			55-50			55-45			60-50		
Air Flow	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP
H	2.55	7.3	22.1	2.90	8.3	28.0	3.36	9.6	36.4	3.08	4.4	8.9	3.93	5.6	14.4
M	2.28	6.5	18.3	2.60	7.5	23.3	3.05	8.8	31.1	2.79	4.0	7.6	3.51	5.0	12.1
L	2.02	5.8	15.1	2.39	6.9	20.5	2.85	8.2	28.1	2.61	3.7	6.9	3.12	4.5	10.0

※ Appendix : Capacity Table

Wind Free 1Way Cassette (AG032TN1DKH/**)

Cooling

※ Total Capacity : Total cooling capacity (kW) / Sensible : Sensible cooling capacity (kW)
Water Flow : Water flow rate (ℓ/min) / ΔP : Water in-out pressure drop (kPa)

Air temperature (DB°C - WB°C)	24-17															
Water In (°C)-Out (°C)	6-11				6-13				7-12				9-14			
Air flow	Total capacity (KW)	Sensible (kW)	Water Flow (ℓ/min)	ΔP (kPa)	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	3.05	2.42	8.7	30.2	2.46	2.17	5.0	12.3	2.73	2.29	7.8	25.1	2.18	2.01	6.3	17.3
M	2.77	2.17	7.9	25.6	2.24	1.94	4.6	10.6	2.48	2.05	7.1	21.4	1.98	1.81	5.7	14.8
L	2.20	1.71	6.3	17.6	1.78	1.51	3.6	7.5	1.97	1.61	5.7	14.7	1.58	1.42	4.5	10.3
Air temperature (DB°C - WB°C)	25-18.7															
Water In (°C)-Out (°C)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	3.77	2.50	10.8	43.4	3.02	2.23	6.2	17.0	3.32	2.35	9.5	34.8	2.58	2.06	7.4	22.8
M	3.42	2.22	9.8	36.7	2.74	1.98	5.6	14.6	3.01	2.09	8.6	29.5	2.34	1.84	6.7	19.5
L	2.72	1.75	7.8	24.9	2.18	1.55	4.5	10.2	2.39	1.65	6.9	20.1	1.86	1.43	5.3	13.4
Air temperature (DB°C - WB°C)	27-19.5															
Water In (°C)-Out (°C)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	4.21	2.84	12.1	52.7	3.34	2.50	6.8	20.0	3.50	2.55	10.0	38.2	2.99	2.40	8.6	29.1
M	3.82	2.53	11.0	44.5	3.03	2.24	6.2	17.1	3.18	2.28	9.1	32.4	2.71	2.15	7.8	24.8
L	3.04	1.98	8.7	30.0	2.41	1.75	4.9	11.9	2.53	1.78	7.2	22.0	2.16	1.69	6.2	17.0
Air temperature (DB°C - WB°C)	27-21															
Water In (°C)-Out (°C)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	5.02	2.83	14.4	72.0	4.06	2.46	8.3	27.7	4.47	2.65	12.8	58.5	3.67	2.35	10.5	41.5
M	4.56	2.54	13.1	60.6	3.69	2.22	7.6	23.6	4.06	2.37	11.6	49.4	3.33	2.11	9.6	35.1
L	3.62	2.00	10.4	40.5	2.93	1.75	6.0	16.2	3.22	1.83	9.2	33.2	2.65	1.67	7.6	23.8

Heating

※ Capacity : Heating capacity (kW) / Water Flow : Water flow rate (ℓ/min) / ΔP : Water in-out pressure drop (kPa)

Air temperature(°C)	18														
Water In(°C)-Out(°C)	45-40			50-45			55-50			55-45			60-50		
Air Flow	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP
H	3.58	10.3	39.4	4.08	11.7	50.0	4.72	13.5	65.0	4.32	6.2	15.9	5.36	7.7	24.1
M	3.25	9.3	33.4	3.71	10.6	42.4	4.36	12.5	56.8	3.99	5.7	13.9	4.87	7.0	20.5
L	2.59	7.4	22.6	3.36	9.6	36.4	3.98	11.4	49.3	3.58	5.1	11.7	3.87	5.5	14.1
Air temperature(°C)	20														
Water In(°C)-Out(°C)	45-40			50-45			55-50			55-45			60-50		
Air Flow	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP
H	3.35	9.7	35.8	3.82	11.0	44.6	4.42	12.7	58.0	4.05	5.8	14.2	5.06	7.3	21.9
M	3.04	8.7	29.8	3.47	10.0	37.8	4.08	11.7	50.7	3.73	5.4	12.4	4.60	6.6	18.6
L	2.42	6.9	20.3	3.15	9.0	32.7	3.72	10.7	44.1	3.31	4.7	10.3	3.66	5.2	12.9
Air temperature(°C)	22														
Water In(°C)-Out(°C)	45-40			50-45			55-50			55-45			60-50		
Air Flow	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP
H	2.94	8.4	28.1	3.35	9.6	35.6	3.88	11.1	46.4	3.55	5.1	11.4	4.75	6.8	19.6
M	2.67	7.7	23.9	3.05	8.8	30.4	3.58	10.3	40.6	3.28	4.7	10.0	4.31	6.2	16.8
L	2.12	6.1	16.4	2.76	7.9	26.3	3.27	9.4	35.7	2.99	4.3	8.7	3.43	4.9	11.6

※ Appendix : Capacity Table

Wind Free 1Way Cassette (AG042TN1DKH/**)

Cooling

※ Total Capacity : Total cooling capacity (kW) / Sensible : Sensible cooling capacity (kW)
Water Flow : Water flow rate (ℓ/min) / ΔP : Water in-out pressure drop (kPa)

Air temperature (DB℃ - WB℃)	24-17															
Water In (℃)-Out (℃)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	3.83	2.95	11.0	40.4	3.08	2.64	6.3	16.2	3.42	2.79	9.8	33.4	2.72	2.44	7.8	22.8
M	3.45	2.62	9.9	33.9	2.77	2.34	5.7	13.8	3.09	2.48	8.9	28.1	2.45	2.18	7.0	19.3
L	3.08	2.32	8.8	28.0	2.47	2.05	5.1	11.6	2.75	2.18	7.9	23.3	2.19	1.92	6.3	16.1
Air temperature (DB℃ - WB℃)	25-18.7															
Water In (℃)-Out (℃)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	4.75	3.04	13.6	58.6	3.79	2.71	7.8	22.7	4.17	2.86	12.0	46.7	3.23	2.50	9.3	30.3
M	4.29	2.68	12.3	49.0	3.42	2.40	7.0	19.2	3.76	2.52	10.8	39.2	2.91	2.21	8.3	25.5
L	3.82	2.38	11.0	40.2	3.05	2.09	6.2	16.0	3.36	2.24	9.6	32.3	2.60	1.94	7.4	21.2
Air temperature (DB℃ - WB℃)	27-19.5															
Water In (℃)-Out (℃)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	5.32	3.47	15.3	71.5	4.20	3.06	8.6	26.8	4.50	3.18	12.9	53.3	3.75	2.93	10.7	38.9
M	4.80	3.07	13.8	59.6	3.79	2.71	7.8	22.6	4.06	2.81	11.6	44.6	3.38	2.60	9.7	32.7
L	4.28	2.69	12.3	48.9	3.38	2.38	6.9	18.8	3.62	2.47	10.4	36.7	3.02	2.29	8.6	27.0
Air temperature (DB℃ - WB℃)	27-21															
Water In (℃)-Out (℃)	6-11				6-13				7-12				9-14			
Air flow	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP	Total capacity	Sensible	Water Flow	ΔP
H	6.36	3.44	18.2	98.2	5.13	2.99	10.5	37.5	5.65	3.22	16.2	79.5	4.63	2.85	13.3	55.9
M	5.74	3.07	16.4	81.7	4.63	2.68	9.5	31.5	5.10	2.86	14.6	66.2	4.18	2.55	12.0	46.8
L	5.12	2.71	14.7	66.7	4.13	2.36	8.5	26.0	4.55	2.47	13.0	54.2	3.72	2.25	10.7	38.5

Heating

※ Capacity : Heating capacity (kW) / Water Flow : Water flow rate (ℓ/min) / ΔP : Water in-out pressure drop (kPa)

Air temperature(℃)	18														
Water In(℃)-Out(℃)	45-40			50-45			55-50			55-45			60-50		
Air Flow	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP
H	5.34	15.3	72.0	6.09	17.5	91.4	7.05	20.2	118.9	6.45	9.3	29.1	7.01	10.0	34.8
M	5.02	14.4	64.5	5.72	16.4	81.8	6.72	19.3	109.4	6.09	8.7	26.3	6.58	9.4	31.3
L	4.70	13.5	57.5	5.36	15.4	73.0	6.30	18.1	97.7	5.70	8.2	23.4	6.17	8.8	28.1
Air temperature(℃)	20														
Water In(℃)-Out(℃)	45-40			50-45			55-50			55-45			60-50		
Air Flow	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP
H	5.00	14.4	64.6	5.70	16.4	81.3	6.60	18.9	105.9	6.00	8.6	25.6	6.62	9.5	31.6
M	4.70	13.5	57.4	5.35	15.4	72.8	6.29	18.1	97.4	5.63	8.1	22.9	6.22	8.9	28.5
L	4.40	12.6	51.3	5.01	14.4	64.9	5.89	16.9	86.9	5.28	7.6	20.5	5.83	8.3	25.6
Air temperature(℃)	22														
Water In(℃)-Out(℃)	45-40			50-45			55-50			55-45			60-50		
Air Flow	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP	Capacity	Water Flow	ΔP
H	4.39	12.6	51.1	5.00	14.3	64.7	5.79	16.6	84.3	5.30	7.6	20.6	6.21	8.9	28.4
M	4.12	11.8	45.8	4.70	13.5	58.2	5.52	15.8	77.7	5.05	7.2	19.0	5.83	8.4	25.6
L	3.86	11.1	41.0	4.40	12.6	52.0	5.17	14.8	69.5	4.73	6.8	17.0	5.46	7.8	23.0

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