MITSUBISHI ELECTRIC

Changes for the Better

Air-cooled Chilling Unit

e-series

DATA BOOK

MODEL

EAHV-M040YCL(-N)(-BS)

EAHV-M050YCL(-N)(-BS)

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Air-cooled Chilling Unit

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1. Specifications

Model			EAHV-M040YCL(-N)(-BS)
Power source			3-phase 3-wire 460 V 50/60Hz
Cooling capacity *1		BTU/h	511,800
		kW	150.0
	Power input	kW	43.99
	EER	BTU/(W × h)	11.64
		kW/kW	3.41
	IPLV *4	BTU/(W × h)	22.60
	Water flow rate	GPM	102.3
		m^3/h	23.24
Heating capacity *2		BTU/h	511,800
		kW	150.0
	Power input	kW	48.07
	COP	BTU/(W × h)	10.65
		kW/kW	3.12
	Water flow rate	GPM	102.3
		m^3/h	23.24
Current input	Cooling current 460 V *1	A	62
	Heating current 460 V *2	A	68
	Maximum current	A	120
Water pressure drop *1	Standard piping	ftAq	15.4
		psi	6.7
		kPa	46
	Inside header piping	ftAq	37.1
		psi	16.1
		kPa	111
Temperature range	Outlet water (Cooling) *5	°F	39.20~86.00
		°C	4.00~30.00
	Outlet water (Heating) *5	°F	77.00~131.00
		°C	25.00~55.00
	Outdoor (Cooling) *5	°F	5.0~125.6
		°C	-15.0~52.0
	Outdoor (Heating) *5	°F	-4.0~109.4
		°C	-20.0~43.0
Circulating water volume range		GPM	56.8~189
		m^3/h	12.9~43.0
Sound pressure level *1 *6		dB (A)	67
Sound power level *1		dB (A)	89
Diameter of water pipe (Standard piping)	Inlet	in.	2 1/2B housing type joint
		mm	65A housing type joint
	Outlet	in.	2 1/2B housing type joint
		mm	65A housing type joint
Diameter of water pipe (Inside header piping)	Inlet	in.	6B housing type joint
		mm	150A housing type joint
	Outlet	in.	6B housing type joint
		mm	150A housing type joint
External finish			Polyester powder coating steel plate
External dimension H × W × D		in.	92-17/32 × 133-27/32 × 42-17/32
		mm	2350 × 3400 × 1080
Net weight	Standard piping	lbs	2921
		kg	1325
	Inside header piping	lbs	2981
		kg	1352
Design pressure	R32	MPa	4.15
		psi	602
	Water	MPa	1.0
		psi	145
Heat exchanger	Water side		Stainless steel plate and copper brazing
	Air side		Salt-resistant cross fin & aluminium tube
Compressor	Type		Inverter scroll hermetic compressor
	Maker		MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Quantity		4
	Motor output	kW	11.5 × 4
	Lubricant		MEL46EH
Fan	Air flow rate	cfm	9534 × 4
		m^3/min	270 × 4
		L/s	4500 × 4
	Type, Quantity		Propeller fan × 4
	Starting method		Inverter
	Motor output	kW	0.92×4
	External static pressure	psi	0.0029
		Pa	20
Protection	High pressure protection		High pressure sensor & High pressure switch at 4.15 MPa (602 psi)
	Inverter circuit		Over-heat protection, Over current protection
	Compressor		Over-heat protection
Refrigerant	Type		R32
	charge *3	lbs	25.4 × 4
		kg	11.5 × 4
	Control		LEV

Notes:

*1 Under normal cooling conditions at outdoor temp 95.00°F DB (35.00°C DB) outlet water temp 44.00°F (6.67°C) inlet water temp 54.00°F (12.22°C). Pump input is not included in cooling capacity and power input.
*2 Under normal heating conditions at outdoor temp 47.00°F DB/43.00°F WB (8.33°C DB / 6.11°C WB) outlet water temp 120.00°F (48.89°C). Pump input is not included in heating capacity and power input.
*3 Amount of factory-charged refrigerant is 2.95 (kg) × 4. Please add the refrigerant at the field.
*4 IPLV is calculated in accordance with AHRI 550/590.
*Please don't use the steel material for the water piping.
*Please always make water circulate, or pull the circulation water out completely when not in use.
*Please do not use groundwater or well water in direct.
*The water circuit must be closed circuit.
*Due to continuous improvement, the above specifications may be subject to change without notice.
*This model doesn't equip with a pump.
*5 Refer to the following page(s) for detail. "Operation temperature range" (p. 64)
*6 In anechoic room at 3.28 ft. (1m) from the service surface

Unit converter

BTU/h = kW × 3,412.14
cfm = m^3/min × 35.31
lbs = kg / 0.4536
*Above specification data is subject to rounding variation.

1. Specifications

Model			EAHV-M050YCL(-N)(-BS)
Power source			3-phase 3-wire 460 V 50/60Hz
Cooling capacity *1		BTU/h	614,200
		kW	180.0
	Power input	kW	58.06
	EER	BTU/(W × h)	10.58
		kW/kW	3.10
	IPLV *4	BTU/(W × h)	21.59
	Water flow rate	GPM	122.8
		m^3/h	27.89
Heating capacity *2		BTU/h	614,200
		kW	180.0
	Power input	kW	59.60
	COP	BTU/(W × h)	10.30
		kW/kW	3.02
	Water flow rate	GPM	122.8
		m^3/h	27.89
Current input	Cooling current 460 V *1	A	81
	Heating current 460 V *2	A	84
	Maximum current	A	120
Water pressure drop *1	Standard piping	ftAq	21.8
		psi	9.4
		kPa	65
	Inside header piping	ftAq	52.2
		psi	22.6
		kPa	156
Temperature range	Outlet water (Cooling) *5	°F	39.20~86.00
		°C	4.00~30.00
	Outlet water (Heating) *5	°F	77.00~131.00
		°C	25.00~55.00
	Outdoor (Cooling) *5	°F	5.0~125.6
		°C	-15.0~52.0
	Outdoor (Heating) *5	°F	-4.0~109.4
		°C	-20.0~43.0
Circulating water volume range		GPM	56.8~189
		m^3/h	12.9~43.0
Sound pressure level *1 *6		dB (A)	68
Sound power level *1		dB (A)	89
Diameter of water pipe	Inlet	in.	2 1/2B housing type joint
		mm	65A housing type joint
	Outlet	in.	2 1/2B housing type joint
(Standard piping)		mm	65A housing type joint
Diameter of water pipe	Inlet	in.	6B housing type joint
		mm	150A housing type joint
	Outlet	in.	6B housing type joint
(Inside header piping)		mm	150A housing type joint
External finish			Polyester powder coating steel plate
External dimension H × W × D		in.	92-17/32 × 133-27/32 × 42-17/32
		mm	2350 × 3400 × 1080
Net weight	Standard piping	lbs	2921
		kg	1325
	Inside header piping	lbs	2981
		kg	1352
Design pressure	R32	MPa	4.15
		psi	602
	Water	MPa	1.0
		psi	145
Heat exchanger	Water side		Stainless steel plate and copper brazing
	Air side		Salt-resistant cross fin & aluminium tube
Compressor	Type		Inverter scroll hermetic compressor
	Maker		MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Quantity		4
	Motor output	kW	11.5 × 4
	Lubricant		MEL46EH
Fan	Air flow rate	cfm	9534 × 4
		m^3/min	270 × 4
		L/s	4500 × 4
	Type, Quantity		Propeller fan × 4
	Starting method		Inverter
	Motor output	kW	0.92×4
	External static pressure	psi	0.0029
		Pa	20
Protection	High pressure protection		High pressure sensor & High pressure switch at 4.15 MPa (602 psi)
	Inverter circuit		Over-heat protection, Over current protection
	Compressor		Over-heat protection
Refrigerant	Type		R32
	charge *3	lbs	25.4 × 4
		kg	11.5 × 4
	Control		LEV

Notes:

*1 Under normal cooling conditions at outdoor temp 95.00°F DB (35.00°C DB) outlet water temp 44.00°F (6.67°C) inlet water temp 54.00°F (12.22°C). Pump input is not included in cooling capacity and power input.
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*3 Amount of factory-charged refrigerant is 2.95 (kg) × 4. Please add the refrigerant at the field.
*4 IPLV is calculated in accordance with AHRI 550/590.
*Please don't use the steel material for the water piping.
*Please always make water circulate, or pull the circulation water out completely when not in use.
*Please do not use groundwater or well water in direct.
*The water circuit must be closed circuit.
*Due to continuous improvement, the above specifications may be subject to change without notice.
*This model doesn't equip with a pump.
*5 Refer to the following page(s) for detail. "Operation temperature range" (p. 64)
*6 In anechoic room at 3.28 ft. (1m) from the service surface

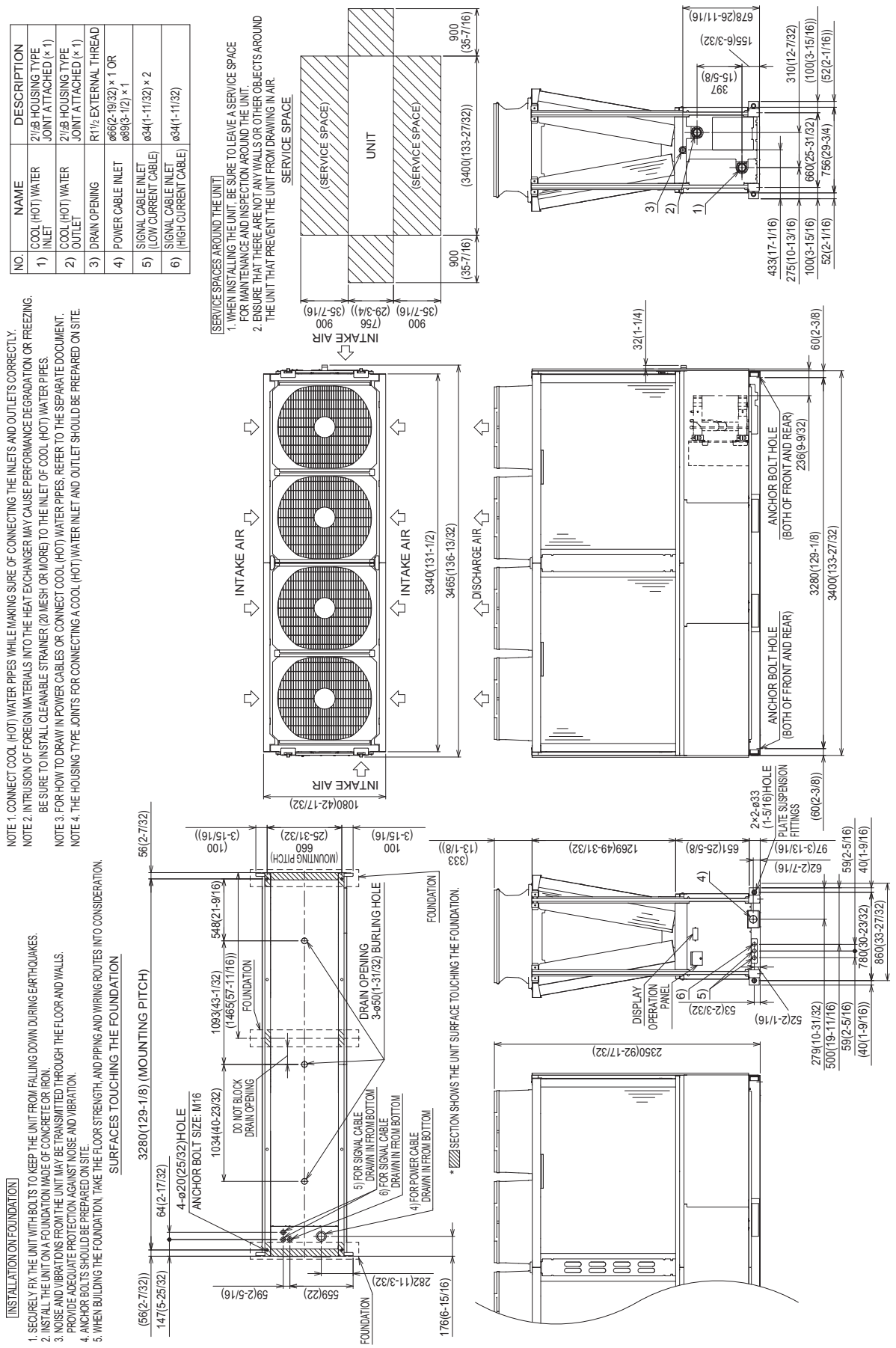
Unit converter

BTU/h = kW × 3,412.14
cfm = m^3/min × 35.31
lbs = kg / 0.4536
*Above specification data is subject to rounding variation.

2. External Dimensions

EAHV-M040, 050YCL(-BS)

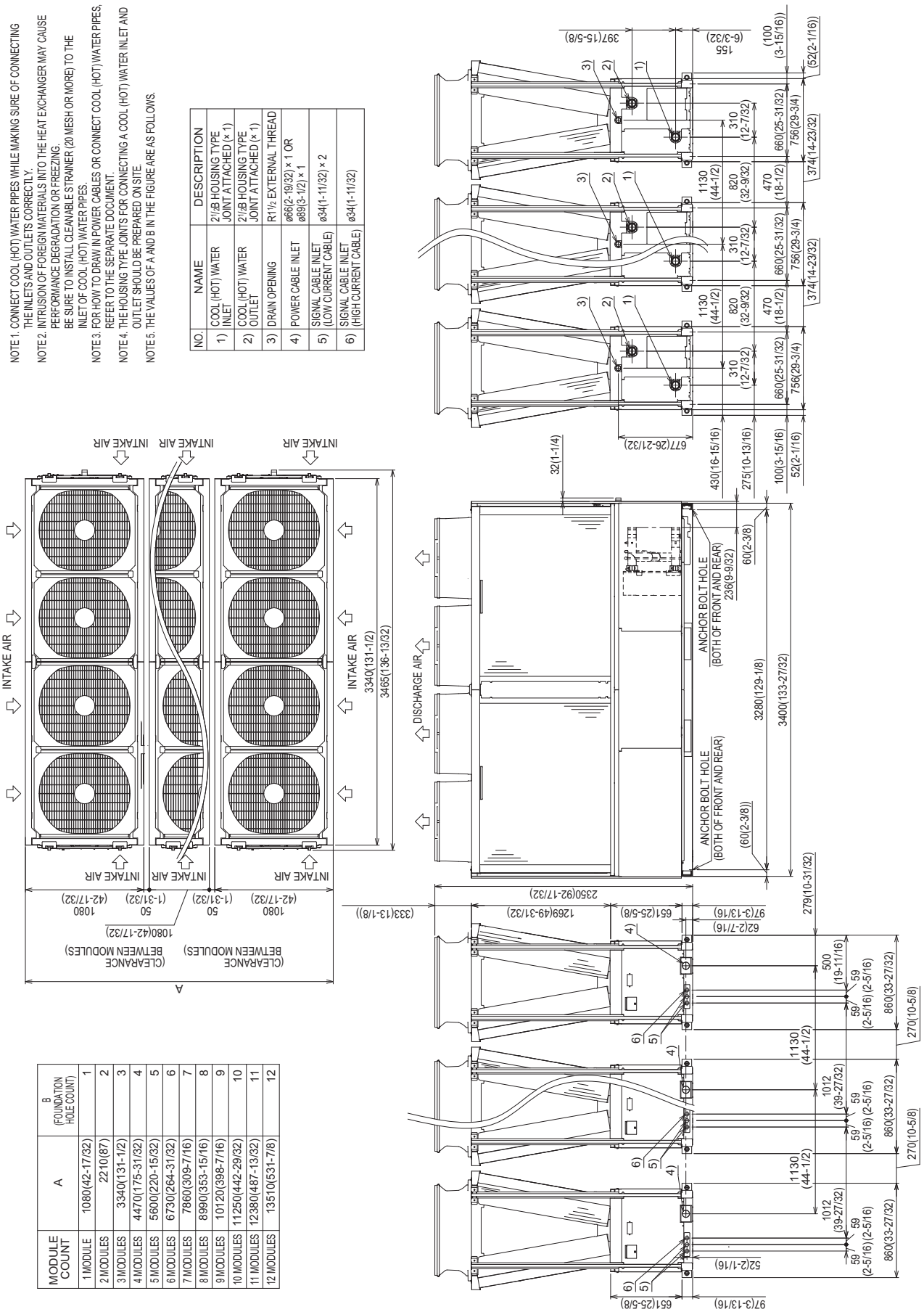
Unit: mm (in.)



2. External Dimensions

EAHV-M040, 050YCL(-BS)

Unit: mm (in.)

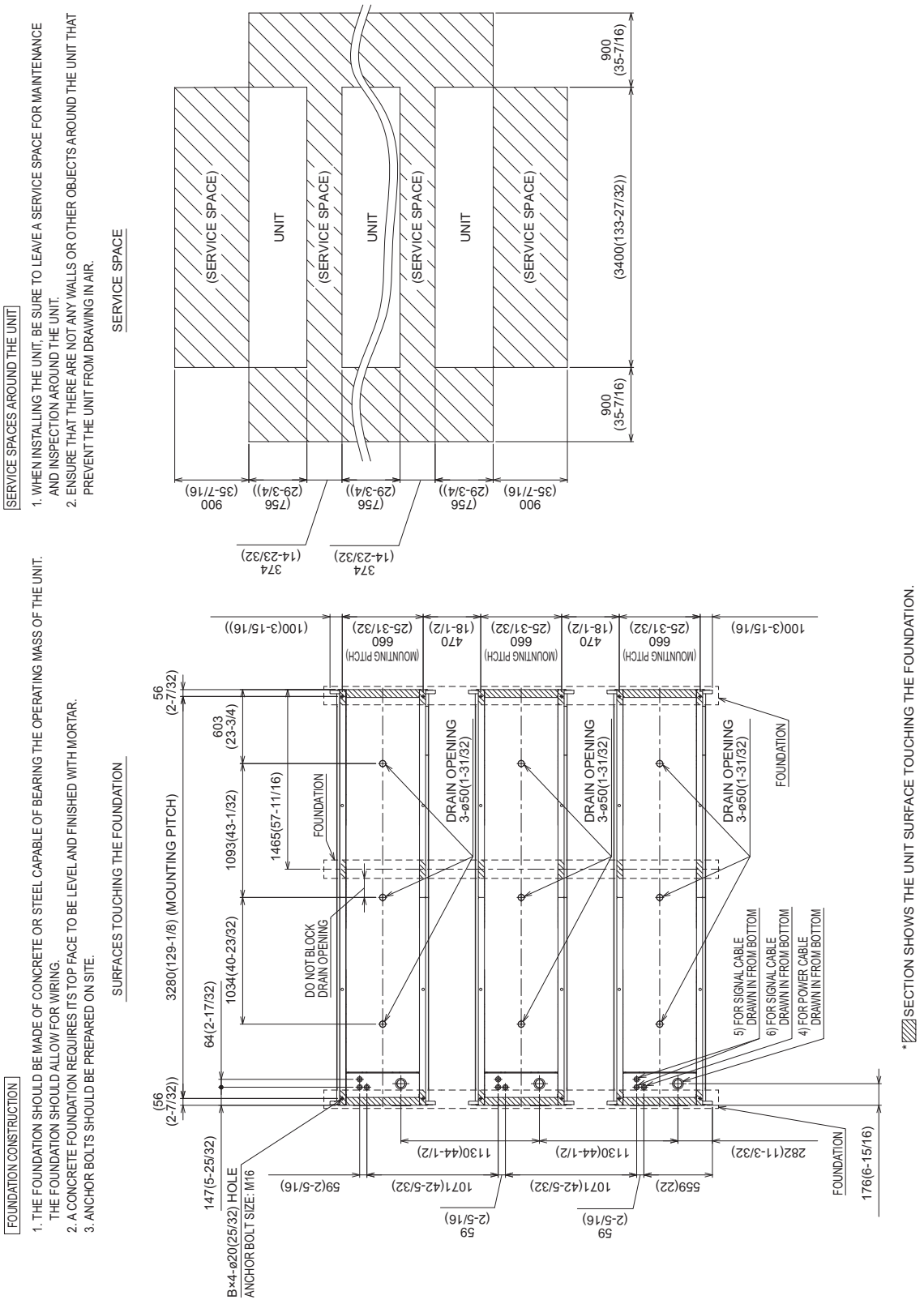


MODULE COUNT	A	B (FOUNDATION HOLE COUNT)
1 MODULE	1080(42-17/32)	1
2 MODULES	2210(87)	2
3 MODULES	3340(131-1/2)	3
4 MODULES	4470(175-31/32)	4
5 MODULES	5600(220-15/32)	5
6 MODULES	6730(264-31/32)	6
7 MODULES	7860(309-7/16)	7
8 MODULES	8990(353-15/16)	8
9 MODULES	10120(398-7/16)	9
10 MODULES	11250(442-29/32)	10
11 MODULES	12380(487-13/32)	11
12 MODULES	13510(531-7/8)	12

2. External Dimensions

EAHV-M040, 050YCL(-BS)

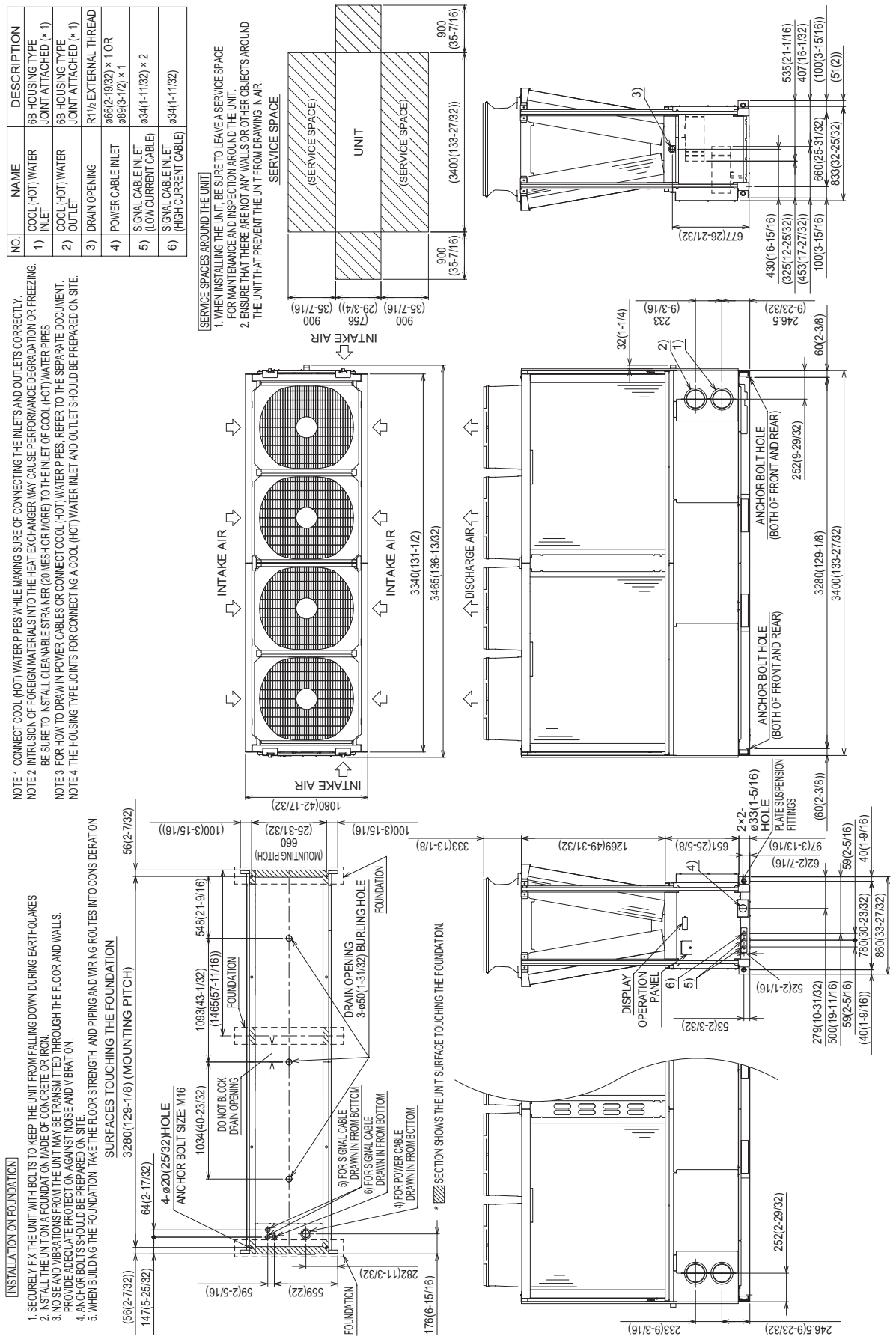
Unit: mm (in.)



2. External Dimensions

EAHV-M040, 050YCL-N(-BS)

Unit: mm (in.)



2. External Dimensions

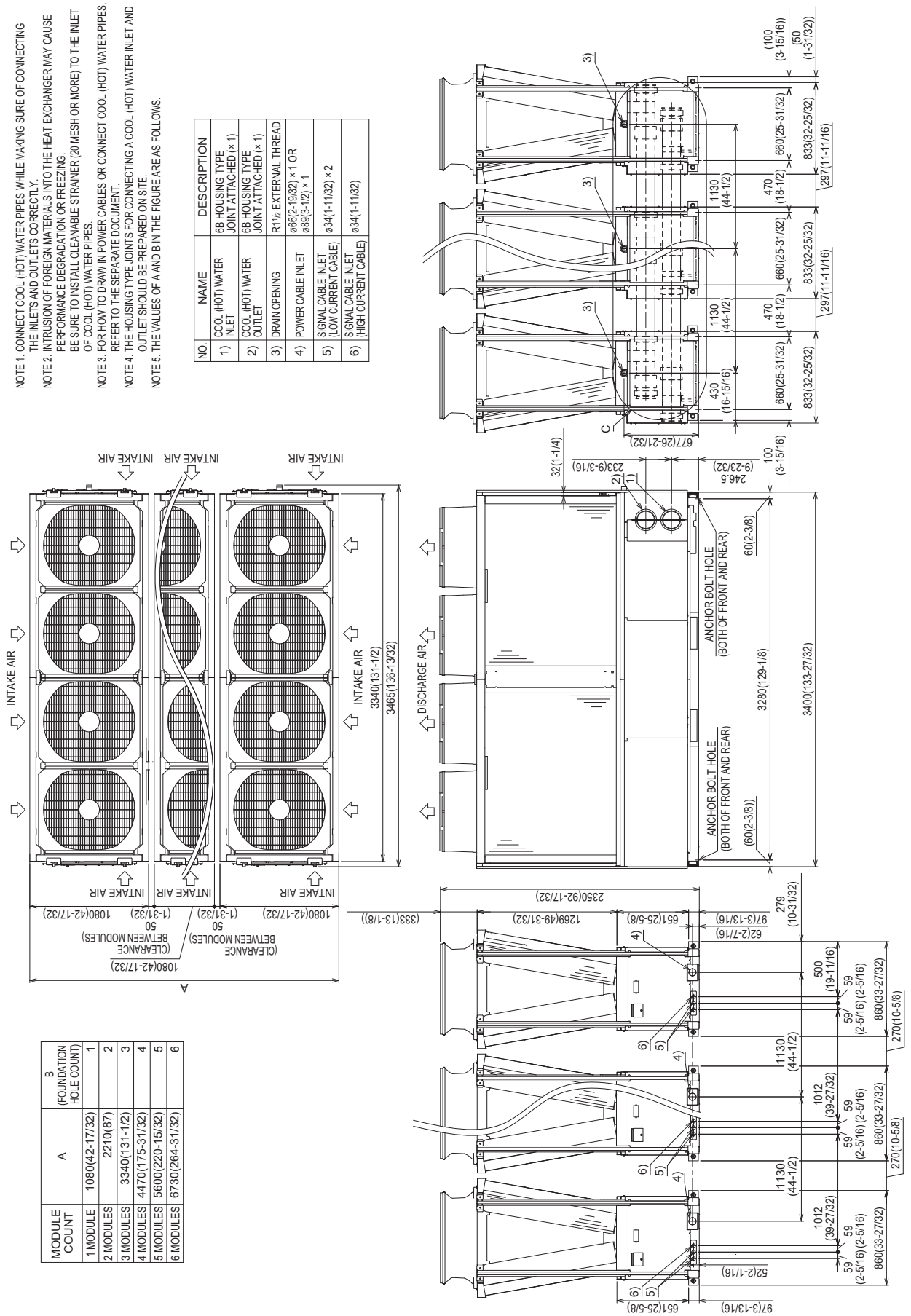
EAHV-M040, 050YCL-N(-BS)

Unit: mm (in.)

NOTE 1. CONNECT COOL (HOT) WATER PIPES WHILE MAKING SURE OF CONNECTING THE INLETS AND OUTLETS CORRECTLY.
NOTE 2. INTRUSION OF FOREIGN MATERIALS INTO THE HEAT EXCHANGER MAY CAUSE PERFORMANCE DEGRADATION OR FREEZING. BE SURE TO INSTALL CLEANABLE STRAINER (20 MESH OR MORE) TO THE INLET OF COOL (HOT) WATER PIPES.
NOTE 3. FOR HOW TO DRAW IN POWER CABLES OR CONNECT COOL (HOT) WATER PIPES, REFER TO THE SEPARATE DOCUMENT.
NOTE 4. THE HOUSING TYPE JOINTS FOR CONNECTING A COOL (HOT) WATER INLET AND OUTLET SHOULD BE PREPARED ON SITE.
NOTE 5. THE VALUES OF A AND B IN THE FIGURE ARE AS FOLLOWS.

NO.	NAME	DESCRIPTION
1)	COOL (HOT) WATER INLET	6B HOUSING TYPE JOINT ATTACHED (× 1)
2)	COOL (HOT) WATER OUTLET	6B HOUSING TYPE JOINT ATTACHED (× 1)
3)	DRAIN OPENING	R1½ EXTERNAL THREAD
4)	POWER CABLE INLET	ø66(2-19/32) × 1 OR ø89(3-1/2) × 1
5)	SIGNAL CABLE INLET (LOW CURRENT CABLE)	ø34(1-11/32) × 2
6)	SIGNAL CABLE INLET (HIGH CURRENT CABLE)	ø34(1-11/32)

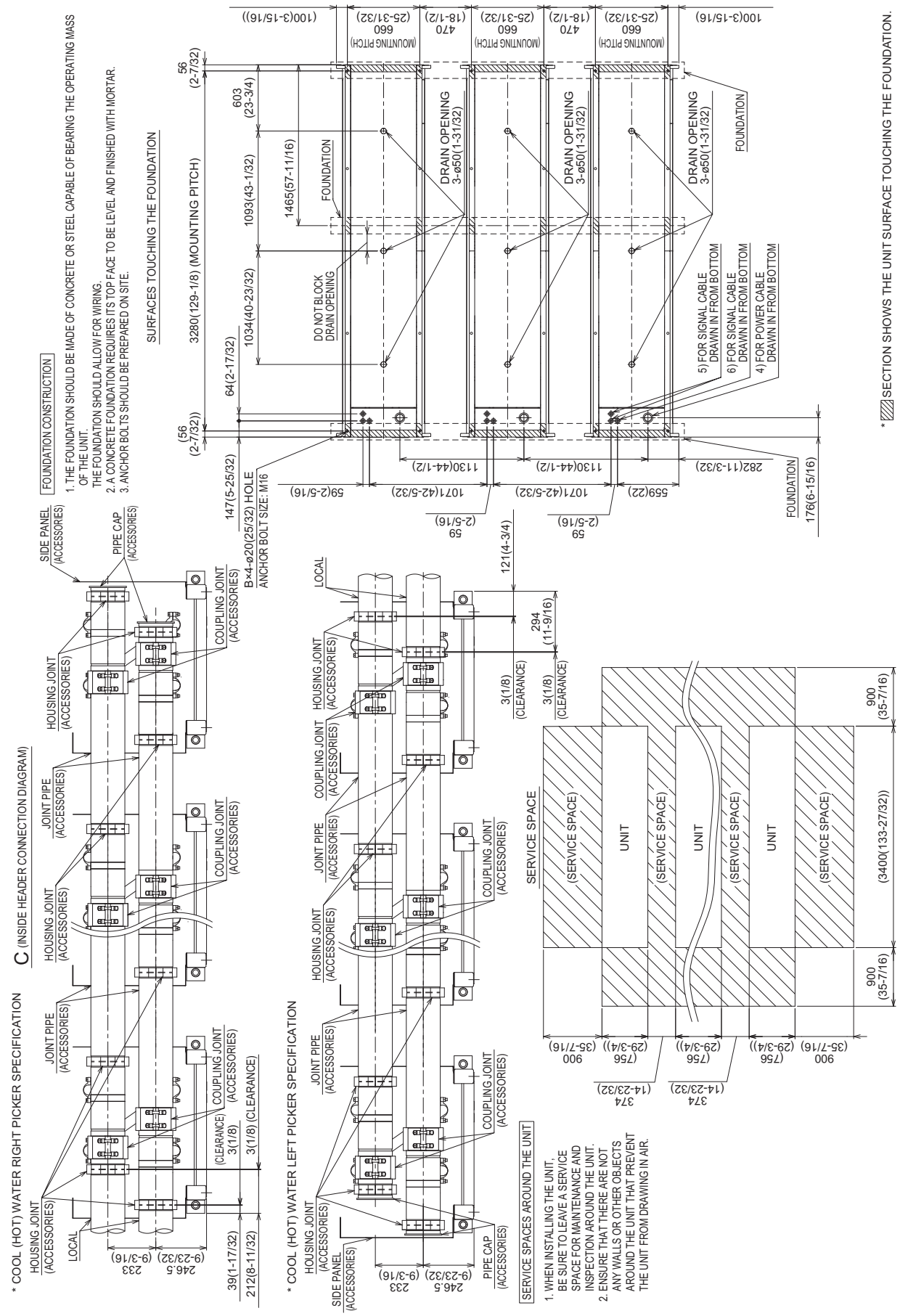
MODULE COUNT	A	B (FOUNDATION HOLE COUNT)
1 MODULE	1080(42-17/32)	1
2 MODULES	2210(87)	2
3 MODULES	3340(131-1/2)	3
4 MODULES	4470(175-31/32)	4
5 MODULES	5600(220-15/32)	5
6 MODULES	6730(264-31/32)	6



2. External Dimensions

EAHV-M040, 050YCL-N(-BS)

Unit: mm (in.)

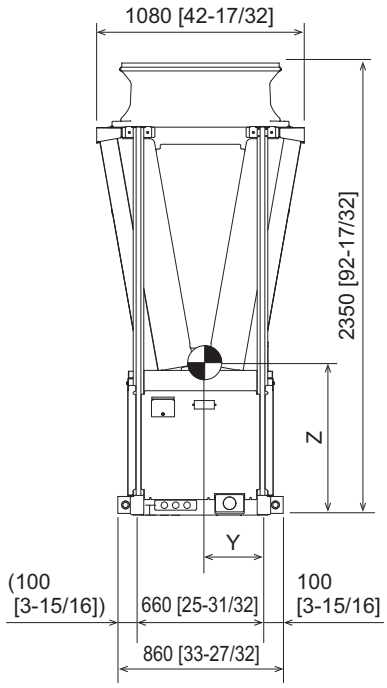


3. Center of Gravity

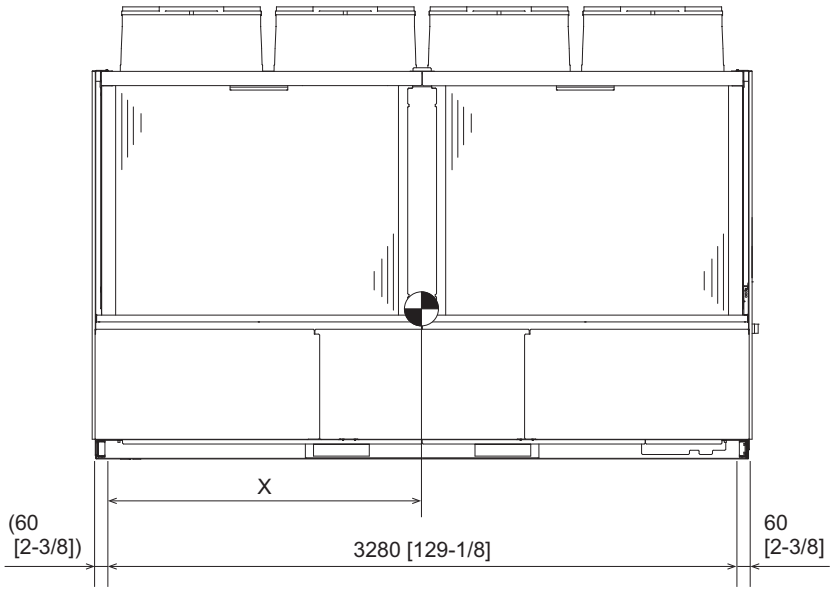
The center of gravity position is shown with the ⊕ mark.

Standard piping type

Unit: mm [in.]



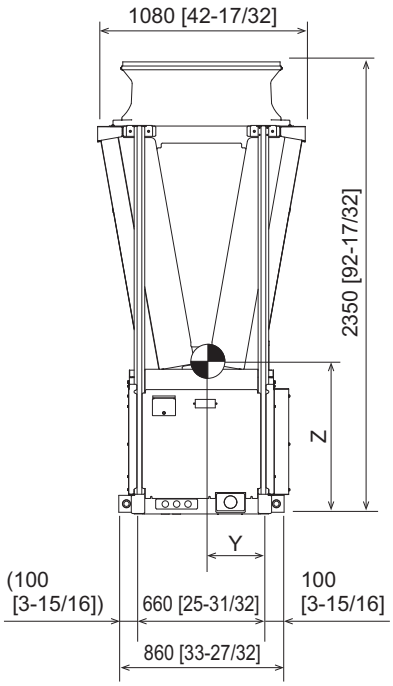
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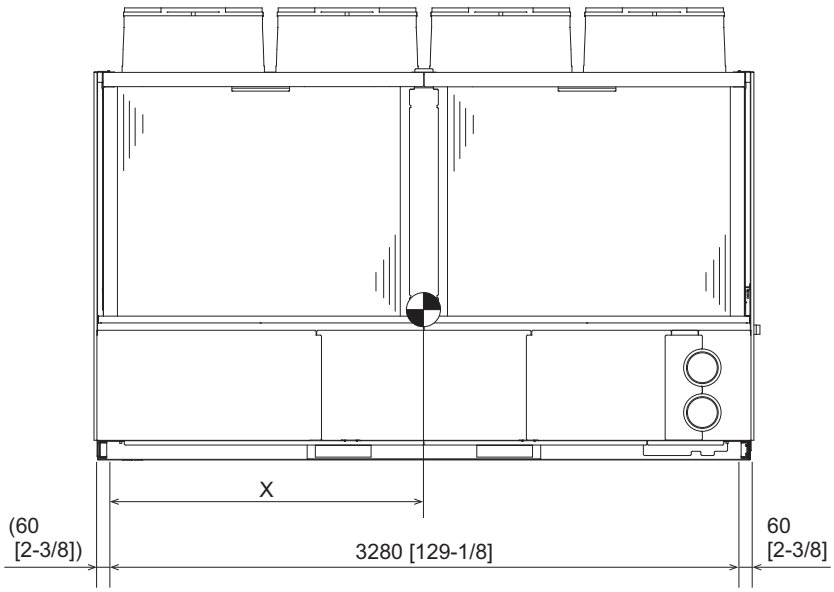
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Inside header piping type

Unit: mm [in.]



<Service side>



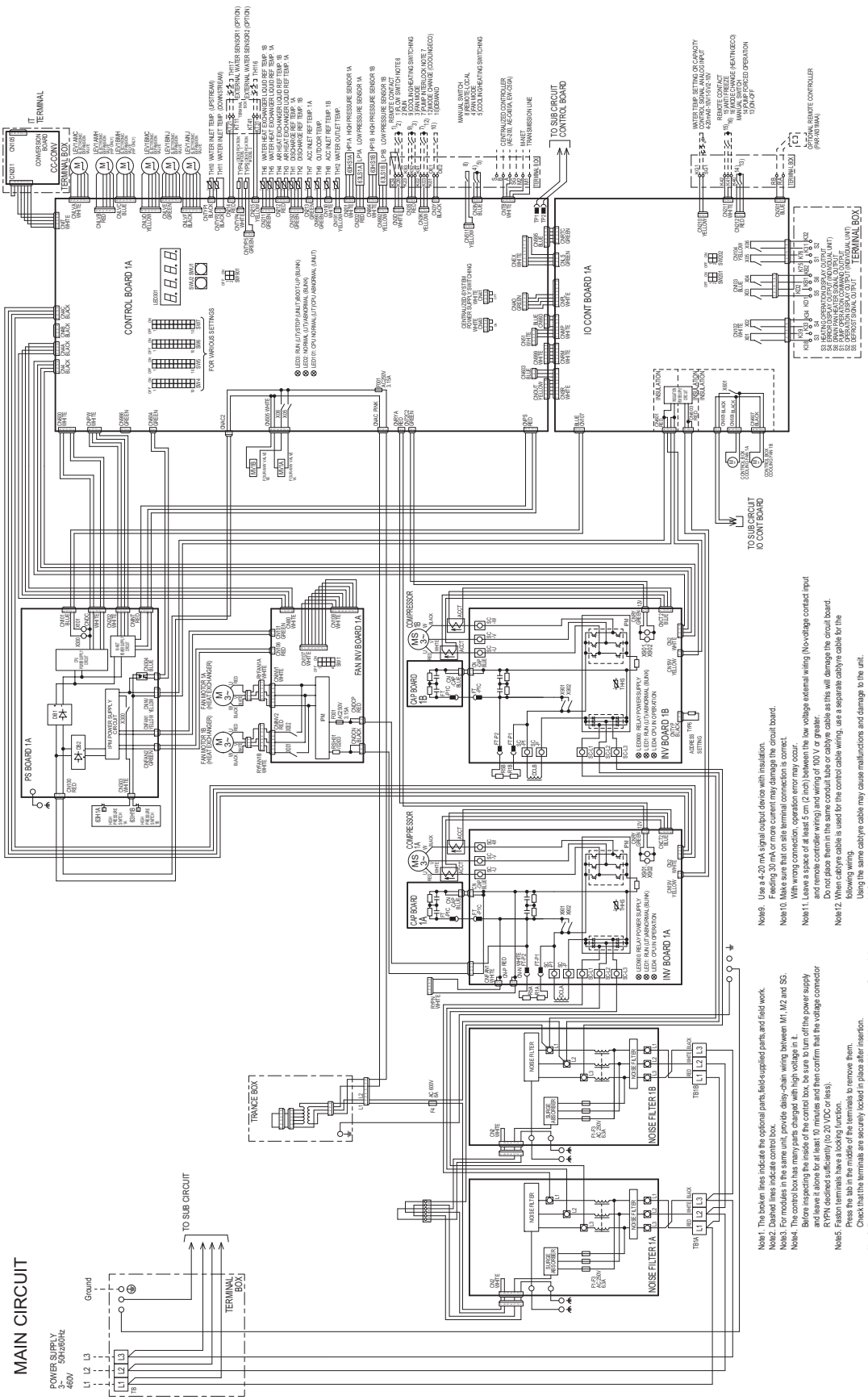
<Right side>

Unit: mm [in.]

Model	X	Y	Z
EAHV-M040, 050YCL(-BS)	1595 [62-25/32]	345 [13-19/32]	785 [30-29/32]
EAHV-M040, 050YCL-N(-BS)	1695 [66-23/32]	345 [13-19/32]	755 [29-23/32]

4. Electrical Wiring Diagrams

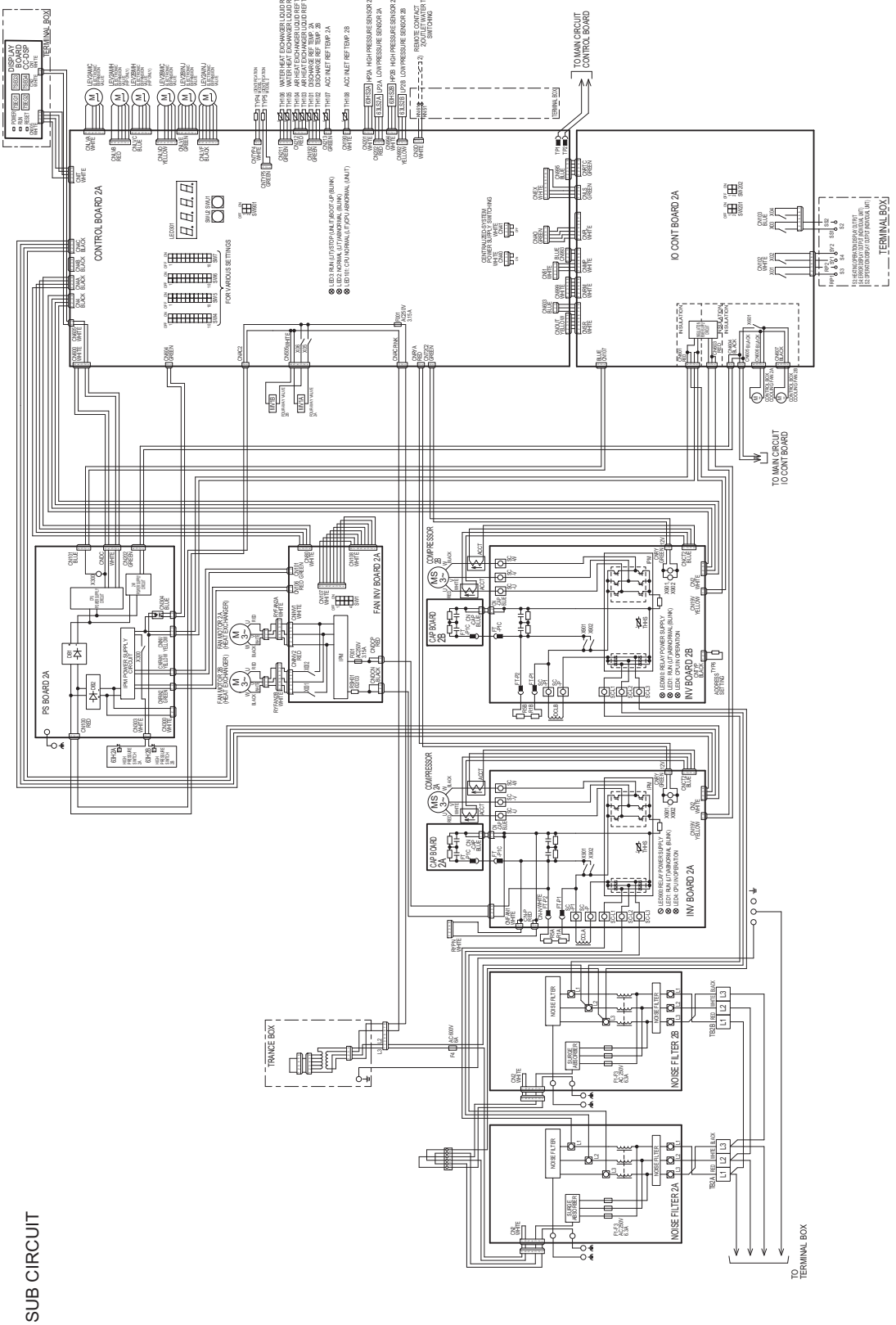
EAHV-M040, 050YCL (-N)(-BS)



Note1. The broken lines indicate the optional parts, field-supplied parts, and field work.
Note2. Dashed lines indicate control box.
Note3. For modules in the same unit, provide daisy-chain wiring between M1, M2 and SG.
Note4. The control box has many parts charged with high voltage in it.
Before inspecting the inside of the control box, be sure to turn off the power supply and leave it alone for at least 10 minutes and then confirm that the voltage of the capacitor in the RYPN declined sufficiently (to 20 VDC or less).
Note5. Faston terminals have a locking function.
Press the tab in the middle of the terminals to remove them.
Check that the terminals are securely locked in place after insertion.
Note6. Remove the short circuit wire between the terminals K23 and K24 to connect a flow switch.
Note7. Be sure to connect the wires from terminals K01 and K02 to the interlock contact on the pump.
A short-circuit may cause abnormal stop or malfunctions.
Note8. Operation signals can be received from through the No-voltage contact.
Use the non-voltage contact output with 240 VAC or less, or 10 VDC or more and 24 VDC or less (10 mA or more and 1 A or less).
Note9. Use a 4-20 mA signal output device with insulation.
Feeding 30 mA or more current may damage the circuit board.
Note10. Make sure that on site terminal connection is correct.
With wrong connection, operation error may occur.
Note11. Leave a space of at least 5 cm (2 inch) between the low voltage external wiring (No-voltage contact input and remote controller wiring) and wiring of 100 V or greater.
Do not place them in the same conduit tube or cabtyre cable as this will damage the circuit board.
Note12. When cabtyre cable is used for the control cable wiring, use a separate cabtyre cable for the following wiring.
Using the same cabtyre cable may cause malfunctions and damage to the unit.
(a) Optional remote controller wiring
(b) No-voltage contact input wiring
(c) No-voltage contact output wiring
(d) Analog input wiring
Note13. Use a contact that takes 12 VDC 1 mA for No-voltage contact input.

4. Electrical Wiring Diagrams

EAHV-M040, 050YCL (-N)(-BS)



4-1. External Input/Output

When using a local controller, refer to the table below for the types of input/output signals that are available and the operations that correspond to the signals.

Input type

Dry contact		**ON (Close)**	**OFF (Open)**	**Terminal block**
(a) UNIT OPERATION	Run/Stop	The unit will go into operation when the water temperature drops below the preset temperature.	The unit will stop except when the unit is in the Anti-Freeze mode.	K23-K26
(b) MODE CHANGE (Heating ECO)	Heating Eco/ Heating	Heating ECO mode (When "COOLING/ HEATING SWITCHING" contact (item (j) below) is ON, this mode is enabled.)	Heating mode (When "COOLING/ HEATING SWITCHING" contact (item (j) below) is ON, this mode is enabled.)	K40-K42
(c) MODE CHANGE (Cooling ECO)	Cooling ECO/ Cooling	Cooling ECO mode (When "COOLING/HEATING SWITCHING" contact (item (j) below) is OFF, this mode is enabled.)	Cooling mode (When "COOLING/HEATING SWITCHING" contact (item (j) below) is OFF, this mode is enabled.)	K01-K03
(d) FAN MODE	Forced/Normal	When the outdoor temperature is 5ºC [41°F] or less, the fan will remain in operation after the compressor has stopped.	The fan will stop when the compressor stops.	K91-K92
(e) ANTI FREEZE	On/Off	The unit will operate in the Anti-Freeze mode (with the target temperature 25ºC [77°F]) when the contact status of (a) "UNIT OPERATION" is "Stop" or the ON/ OFF button on the remote controller is turned off. (When "COOLING/HEATING SWITCHING" contact (item (j) below) is ON, this mode is enabled.)	The unit will operate according to the status of the "UNIT OPERATION" contact (item (a) above) or the ON/OFF command from the remote controller.	K40-K41
(f) FLOW SWITCH	Normal/Error	The unit is allowed to operate.	The unit will not operate.	K23-K24
(g) PUMP INTERLOCK	Normal/Error	The unit is allowed to operate.	The unit will not operate.	K01-K02
(h) PEAK-DEMAND CONTROL	On/Off	The unit will operate at or below the maximum capacity level that was set for the Peak-demand control setting.	The unit will operate at or below the maximum capacity.	DE1-DE2
(i) OUTLET WATER TEMP. SWITCHING	2nd/1st	Setting temp. 2 (Refer to the following page(s) for detail. "Water-temperature setting" (p. 107))	Setting temp. 1 (Refer to the following page(s) for detail. "Water-temperature setting" (p. 107))	KN51-KN61
(j) COOLING/HEATING SWITCHING	Heating/Cooling	Heating mode	Cooling mode	K91-K93
Analog				**Terminal block**
Input type		**Action**		
(k) WATER TEMP. SETTING/ CAPACITY CONTROL SIGNAL		Water temperature or capacity control signal can be set by using the external analog input to the CN421 on the MAIN circuit board. One analog input type can be selected from the following types: 4-20 mA, 1-5 V, 0-10 V, or 2-10 V. * Use a 4-20 mA signal output devise with insulation.		SG1(+)-KG1(-)
(l) EXTERNAL WATER SENSOR 1 (option)		For simultaneous operating group		KT11-KT21
(m) EXTERNAL WATER SENSOR 2 (option)		For identical water system group		KT31-KT41

Output type

Contact type		**Conditions in which the contact closes (turns on)**	**Conditions in which the contact opens (turns off)**	**Terminal block**
(n) ERROR INDICATOR (Individual unit)	Close/Open	The unit has made an abnormal stop.	During normal operation	K33-K34
(o) ERROR INDICATOR (System leader unit only)	Close/Open	The unit in the system has made an abnormal stop.	During normal operation	SY1-SY2
(p) OPERATION INDICATOR (Individual unit)	Close/Open	The unit operation output is ON.	The unit operation output is OFF.	K31-K32
(q) OPERATION INDICATOR (System leader unit only)	Close/Open	The "UNIT OPERATION" contact (item (a) above) or the ON/OFF button on the remote controller is ON.	The "UNIT OPERATION" contact (item (a) above) or the ON/OFF button on the remote controller is OFF.	SS1-SS2
(r) PUMP OPERATION COMMAND	Close/Open	The pump will operate according to the status of the "UNIT OPERATION" contact (item (a) above) or the ON/OFF button on the remote controller button.	Under all conditions other than the ones listed on the left	K75-K76
(s) SUPPLEMENTARY HEATER SIGNAL	Close/Open	Water and outdoor temperature has dropped below a setting water temperature and a set outdoor temperature.	Water temperature is at or above a set water temperature +2ºC [3.6°F] or the outdoor temperature is at or above a set outdoor temperature +2ºC [3.6°F].	RP1-RP2
(t) DEFROST SIGNAL	Close/Open	The unit is in defrost mode.	The unit is not in defrost mode.	KD1-KD2
(u) DRAIN PAN HEATER SIGNAL	Close/Open	Outdoor temperature has dropped below a set outdoor temperature.	Outdoor temperature is at or above a set outdoor temperature +2ºC [3.6°F].	KB1-KB2
(v) HEATING OPERATION DISPLAY	Close/Open	The unit is in heating mode.	The unit is in cooling mode.	K38-K39

RC/M-NET

REMOTE CONTROLLER	PAR-W31MAA	RA-RB
Centralized controller	AE-200, AE-C400A, EW-C50A	A-B
M-NET	–	M1-M2

4-1-1. Input and output correspondence table

When wiring on site, check the operation during the commissioning.

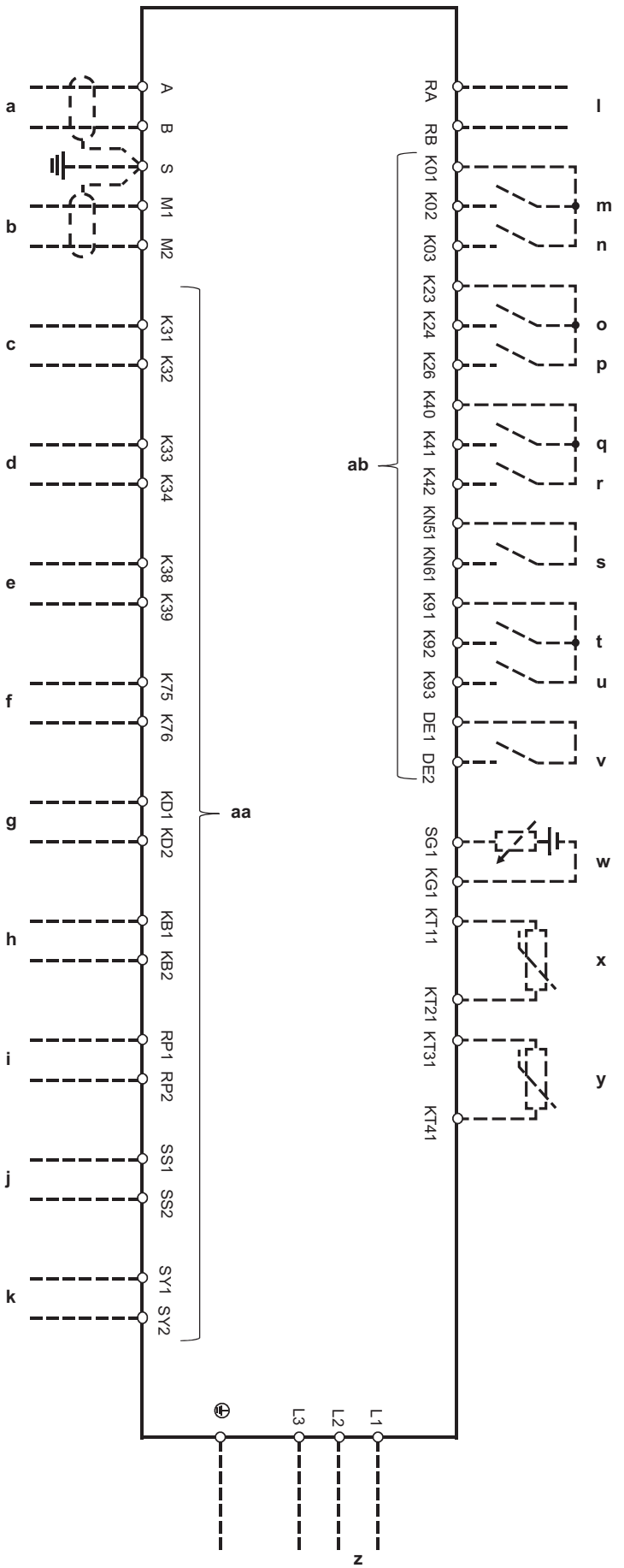
		Terminal block	ON	OFF	System leader unit	Group leader unit	SUB unit
No-voltage contact input	Run	K23-K26	Run	Stop	○	−	−
	Fan mode	K91-K92	Forced	Normal	○	−	−
	Cooling/Heating switching	K91-K93	Heating	Cooling	○	−	−
	Pump interlock	K01-K02	Normal	Error	○	○	○*1
	Anti freeze	K40-K41	ON	OFF	○	−	−
	Flow switch	K23-K24	Normal	Error	○	○	○*1
	Outlet water temp. switching	KN51-KN61	2nd	1st	○	−	−
	Demand	DE1-DE2	ON	OFF	○	−	−
	Mode change (Heating ECO)	K40-K42	Heating ECO	Heating	○	−	−
	Mode change (Cooling ECO)	K01-K03	Cooling ECO	Cooling	○	−	−
Analog input	Water temp. setting / Capacity control signal	SG1(+)-KG1(-)	4-20mA, 0-10V, 2-10V, 1-5V		○	−	−
	External water sensor 1 (Option)	KT11-KT21	For simultaneous operating group		○	○	−
	External water sensor 2 (Option)	KT31-KT41	For identical water system group		○	−	−
No-voltage contact output	Supplementary heater signal output	RP1-RP2	During the low outdoor and water temperature is ON.		○	○	○
	Defrost signal output	KD1-KD2	During the defrosting operation is ON.		○	○	○
	Heating operation display	K38-K39	Heating	Cooling	○	○	○
	Operation display output (Individual unit)	K31-K32	ON while the unit is operating.		○	○	○
	Error display output (Individual unit)	K33-K34	While abnormally stop is ON.		○	○	○
	Pump operation command output	K75-K76	ON is when the pump is required.		○	○	○*1
	Drain pan heater signal output	KB1-KB2	During the low outdoor temperature is ON.		○	○	○
	Operation display output (System leader unit only)	SS1-SS2	ON while any of the units is operating.		○	−	−
	Error display output (System leader unit only)	SY1-SY2	ON when any of the units in the system has come to an abnormal stop.		○	−	−
RC	Remote controller	RA-RB	PAR-W31MAA		○	−	−
	Centralized controller	A-B	AE-200, AE-C400A, EW-C50A		○	−	−

○: Input and output signal is enabled.

−: Invalid

*1:Invalid when the one pump system

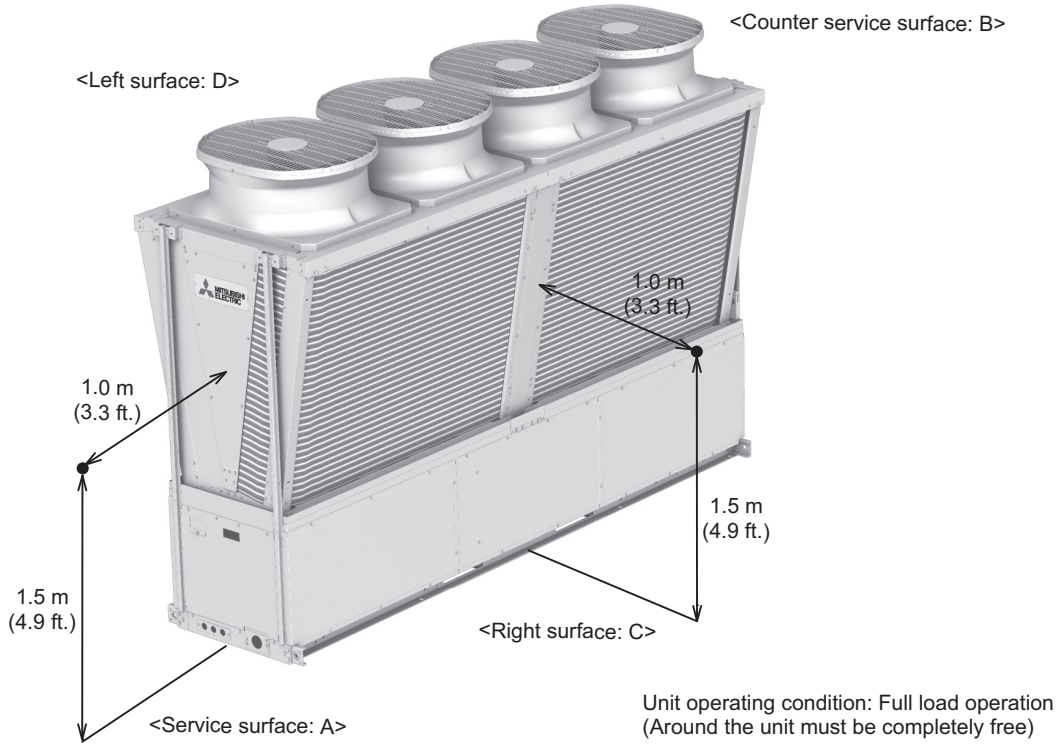
4-1-2. External signal interface



a Centralized controller (AE-200, AE-C400A, EW-C50A)
b M-NET Transmission line
c Operation display output (Individual unit)
d Error display output (Individual unit)
e Heating operation display output
f Pump operation command output
g Defrost signal output
h Drain pan heater signal output
i Supplementary heater signal output
j Operation display output (System leader unit only)
k Error display output (System leader unit only)
l Optional remote controller (PAR-W31MAA)
m Pump interlock (Normal/Error)
n Mode change (Cooling ECO) (Cooling ECO/ Cooling)
o Flow switch (Normal/Error)
p Run (Run/Stop)
q Anti freeze (ON/OFF)
r Mode change (Heating ECO) (Heating ECO/ Heating)
s Outlet water temp. switching (2nd/1st)
t Fan mode (Forced/Normal)
u Cooling/Heating switching (Heating/Cooling)
v Demand (ON/OFF)
w Water temp. setting or Capacity control signal
Analog input 4-20mA/ 0-10V/1-5V/2-10V
x External water sensor 1 (option)
y External water sensor 2 (option)
z Power supply
aa No-voltage contact output
ab No-voltage contact input

5-1. Measurement condition

Measurement condition
EAHV-M040, 050YCL(-N)



Sound pressure level
The following values are the planned value.

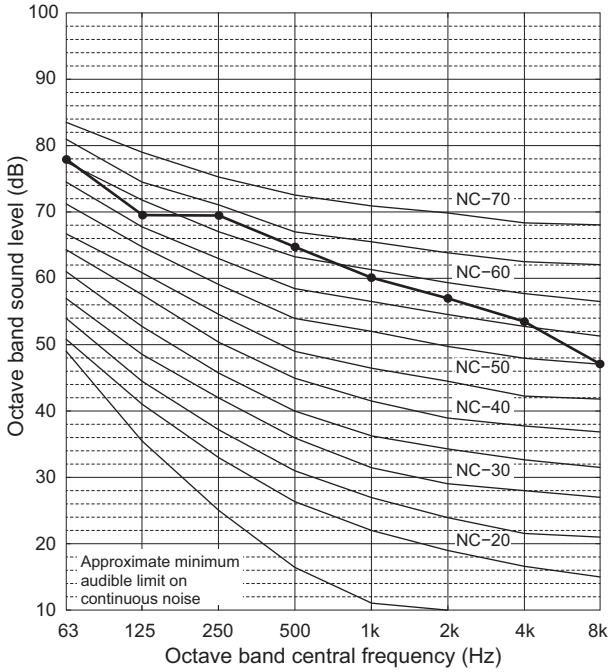
Sound pressure level dB <A> (anechoic room level)		
Measurement location	EAHV-M040YCL(-N)	EAHV-M050YCL(-N)
Service surface: A	67	68
Counter service surface: B	67	68
Right surface: C	71	72
Left surface: D	71	72

*1:The above values are obtained by converting the values measured in location with less echo sound to the anechoic room level.
The values could be larger than those values if the operating conditions are different or the measuring location is affected by echo sound.
(It could be roughly 4 dB to 6 dB higher though it depends on the installation conditions.)
Regarding the installation, consider the effect of echo sound, implement soundproof treatment as necessary.

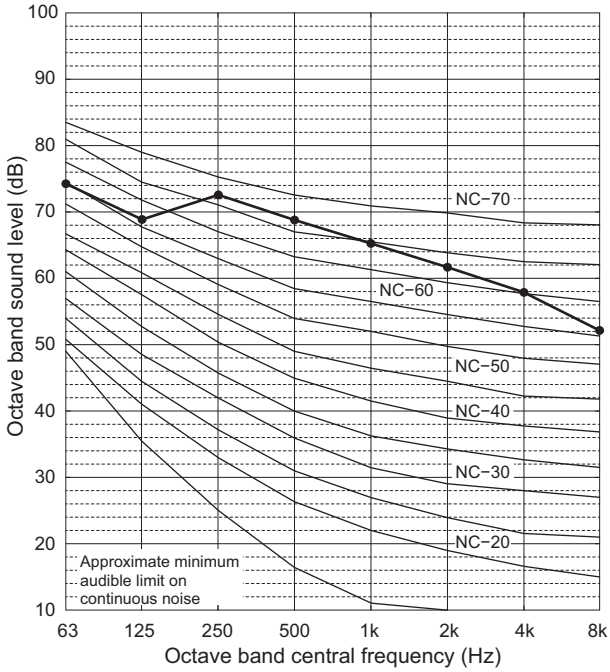
5-2. Sound levels

EAHV-M040YCL(-N)

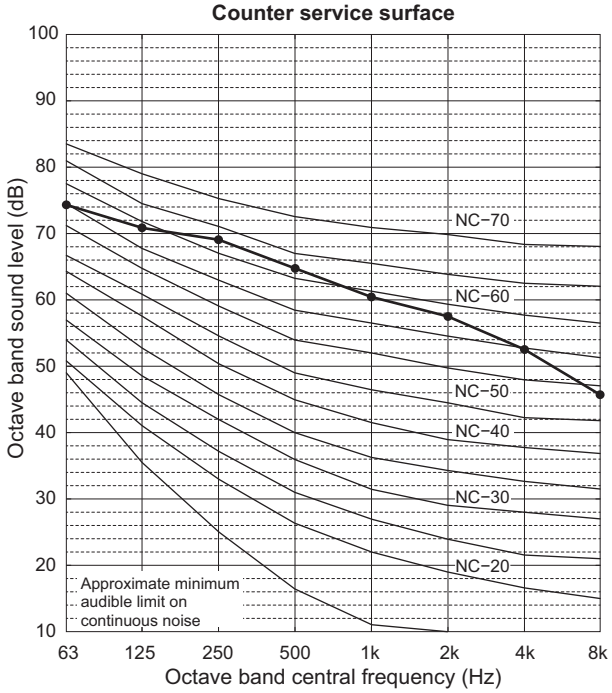
Service surface



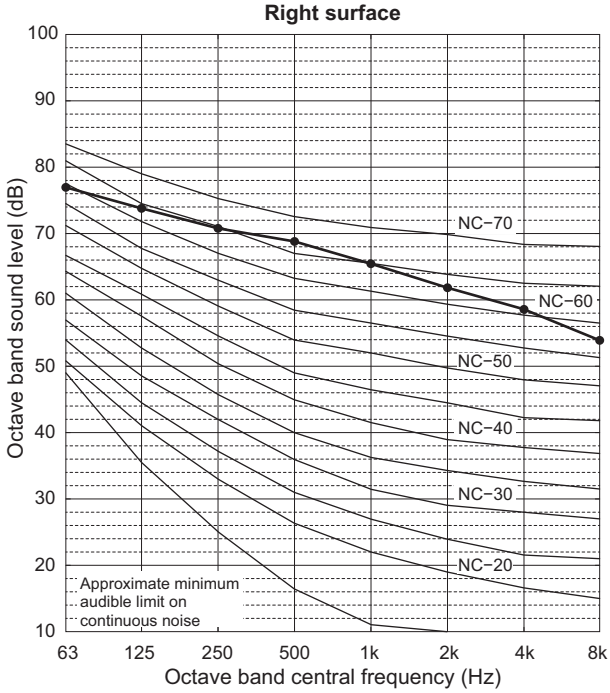
Left surface



Counter service surface

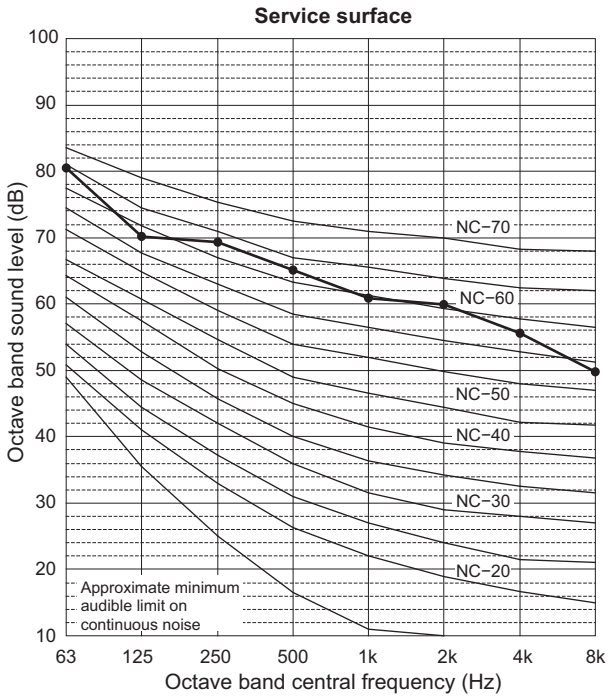


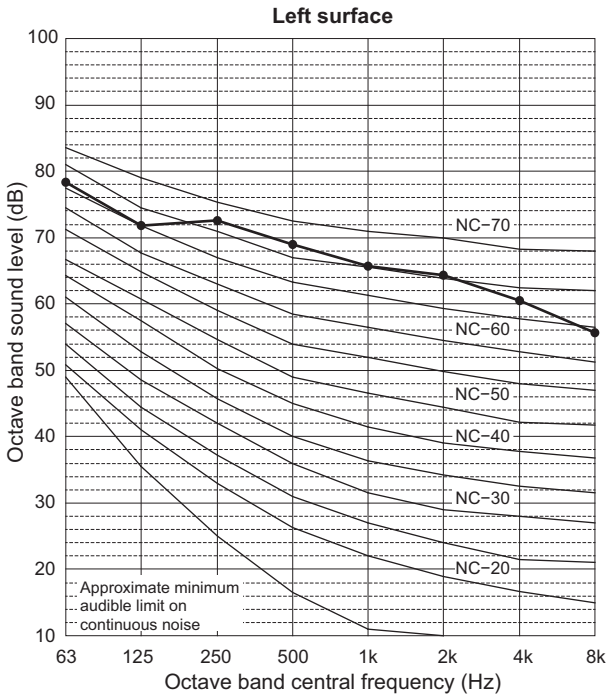
Right surface

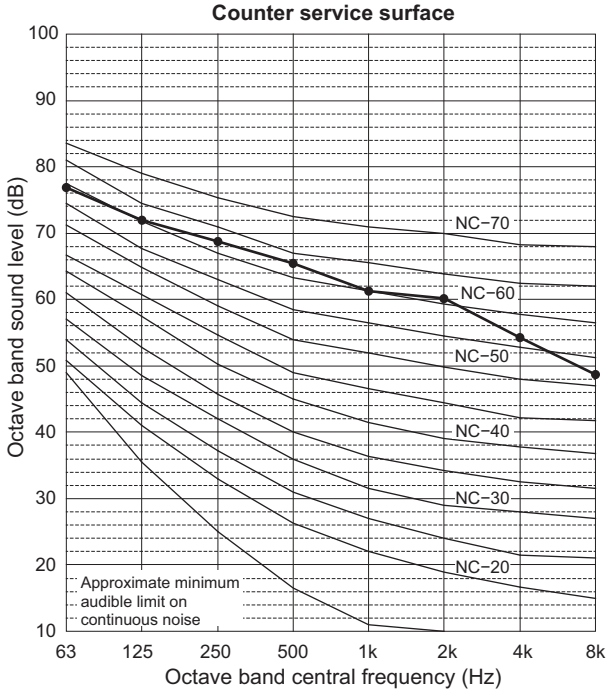


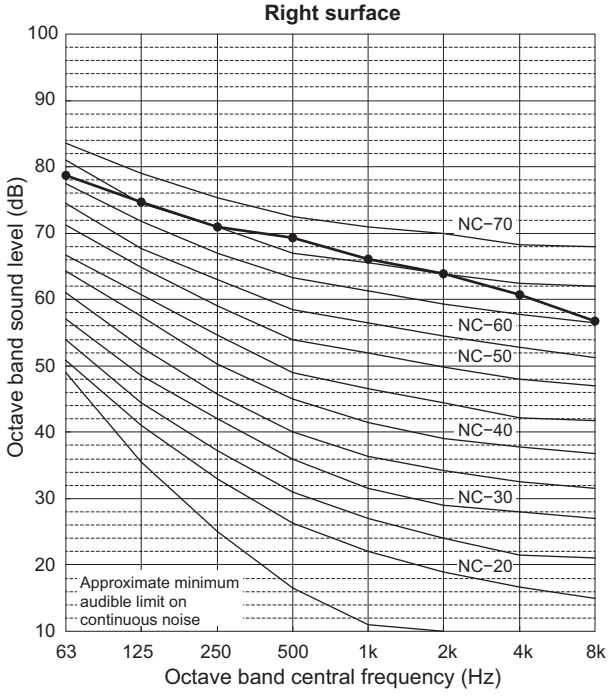
5. Sound pressure levels

EAHV-M050YCL(-N)



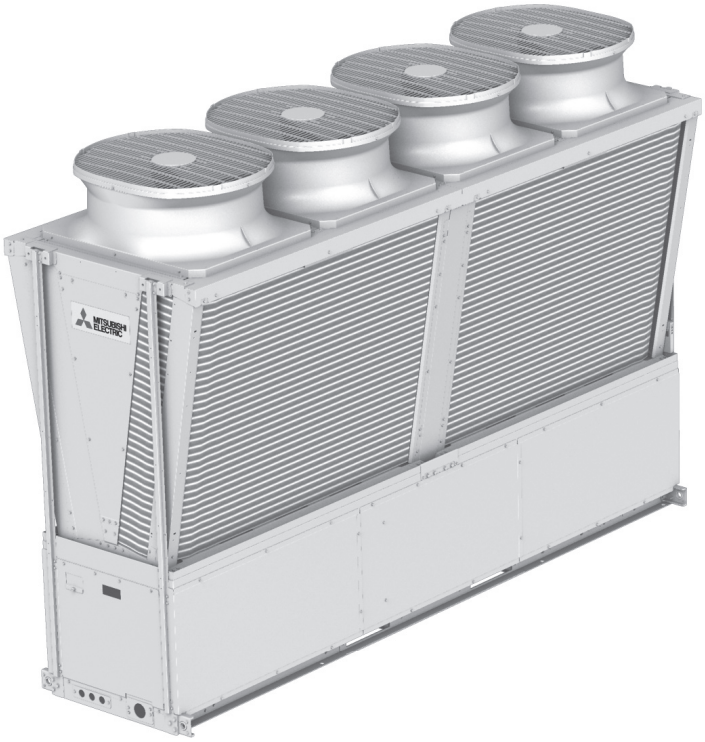


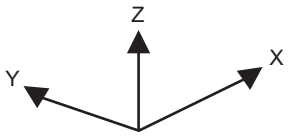




6. Vibration levels

EAHV-M040, 050YCL(-N)

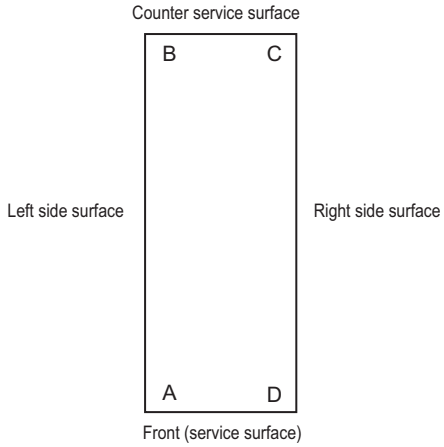




unit: μm (one side amplitude effective value)

	X	Y	Z
A	1	4	3
B	1	2	4
C	1	2	3
D	1	4	3

* The above values are the planned value.



Note

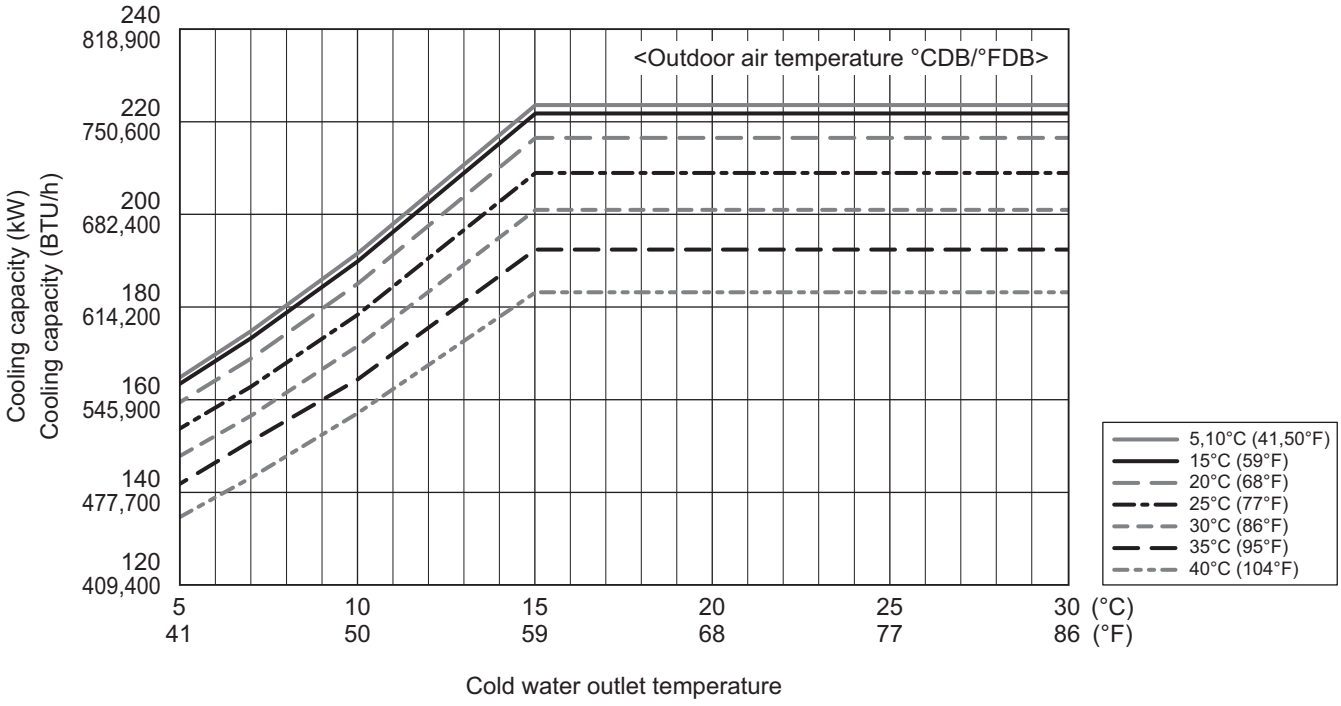
1. Unit operation condition
   · Full load operation
2. Unit installation conditions
   Directly placed on the surface plate in the test room in the Works

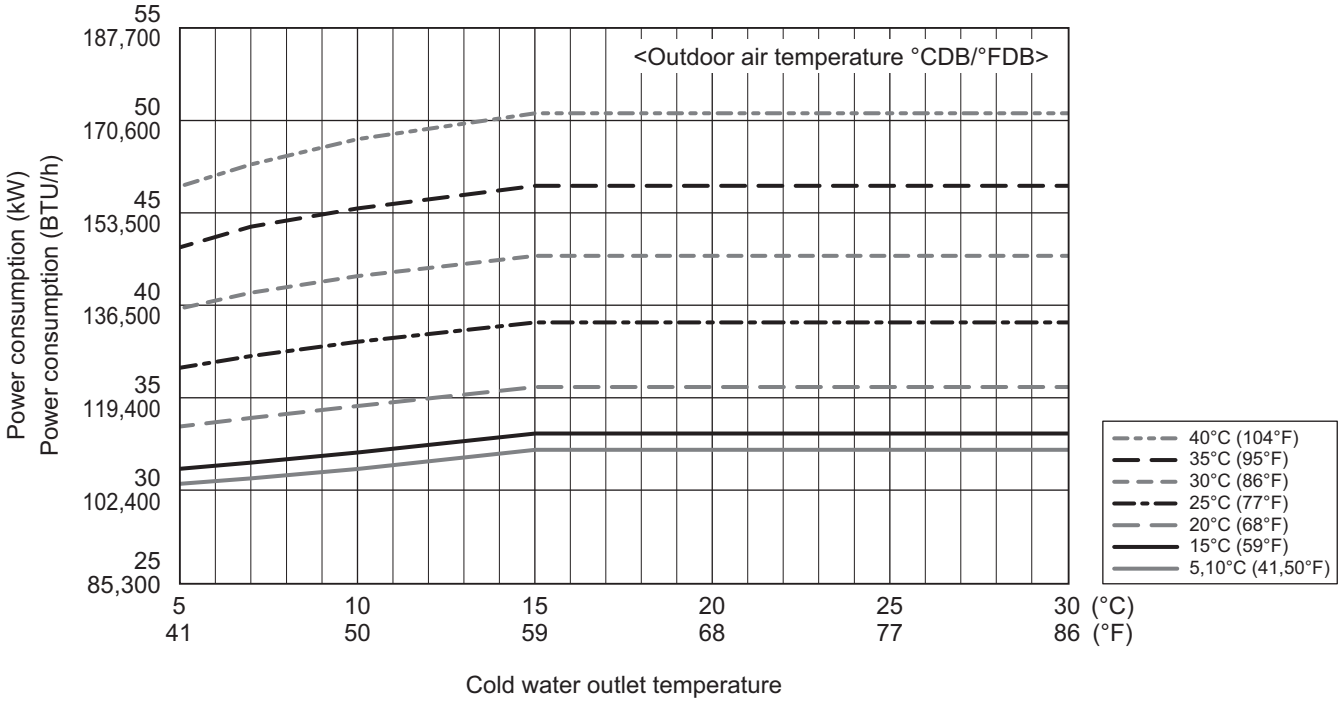
7-1. Correction by temperature

[Cold/hot water outlet/inlet temperature difference 5°C/9°F]

EAHV-M040YCL(-N)

Cooling Capacity [Water]



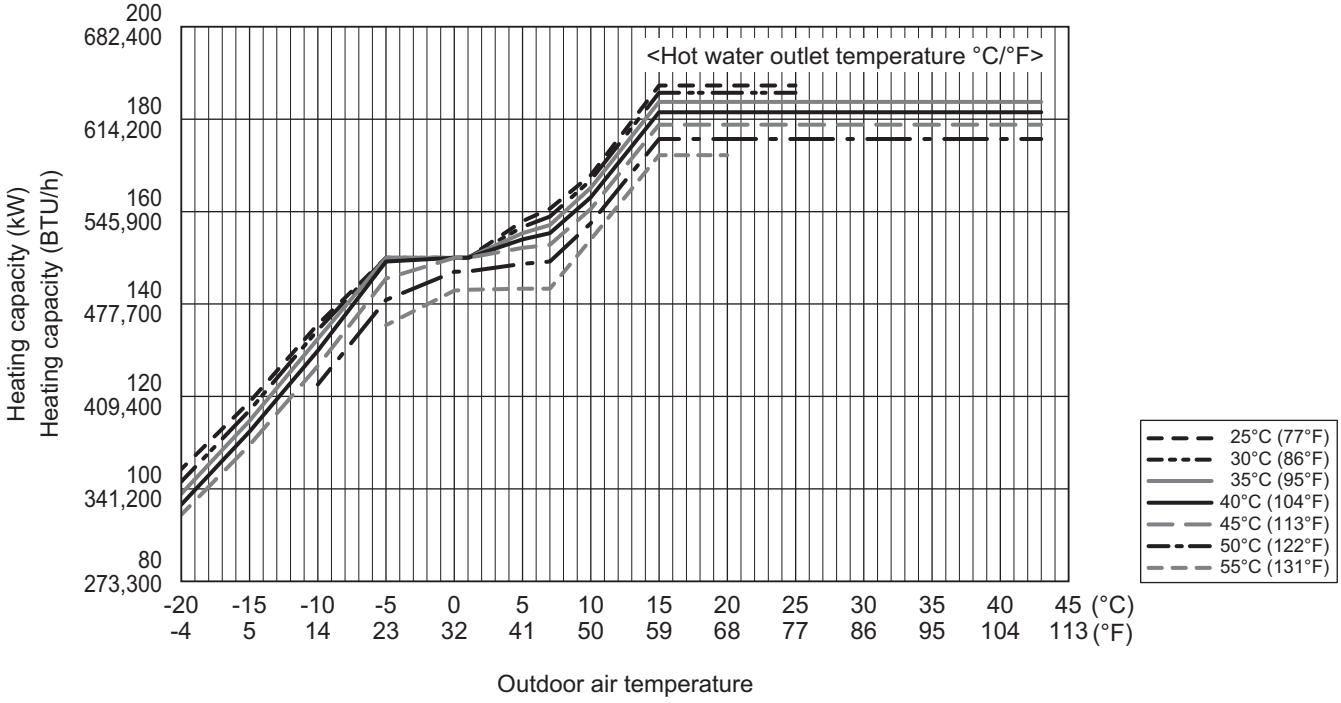


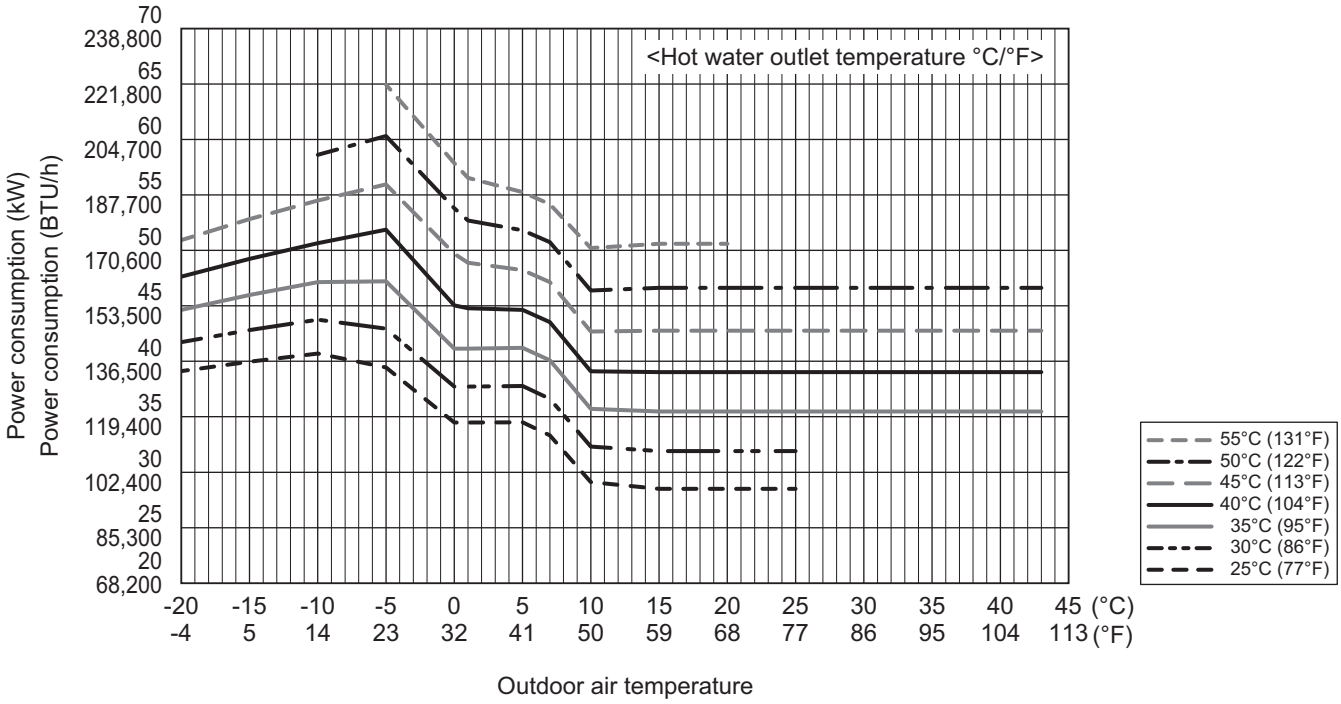
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 5°C/9°F]

EAHV-M040YCL(-N)

Heating Capacity



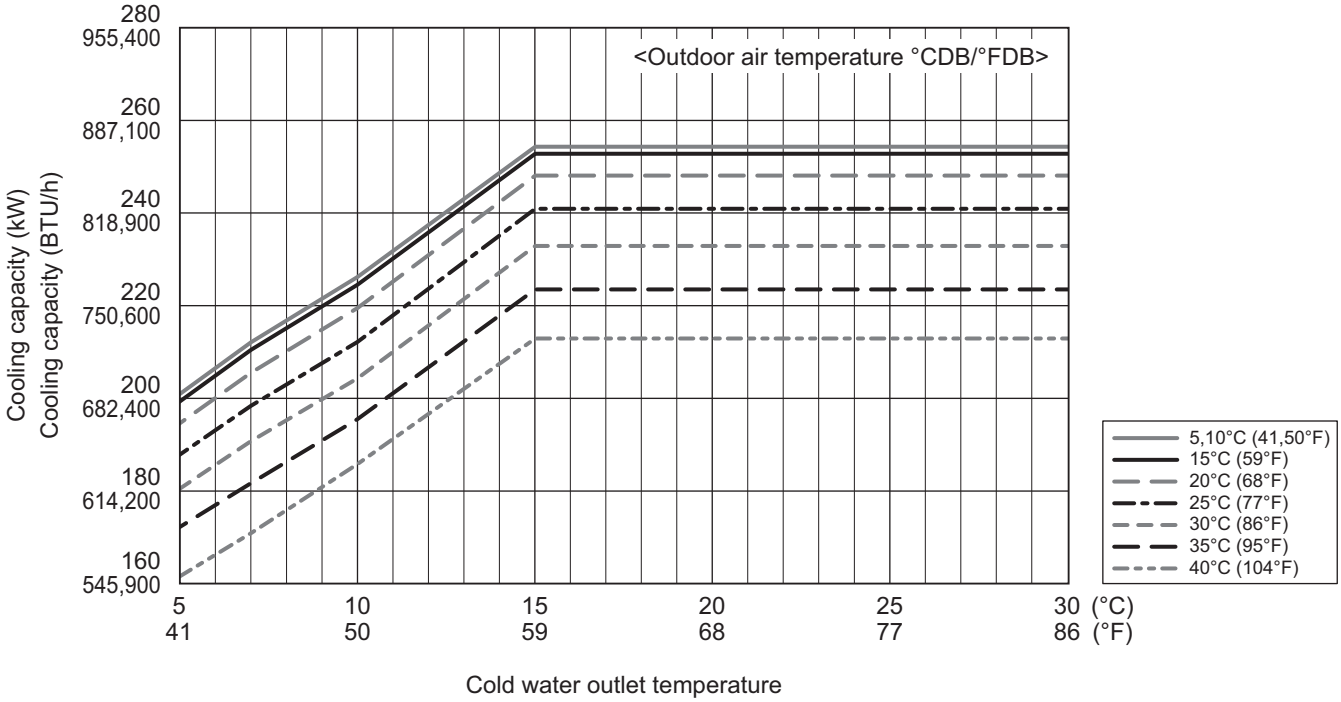


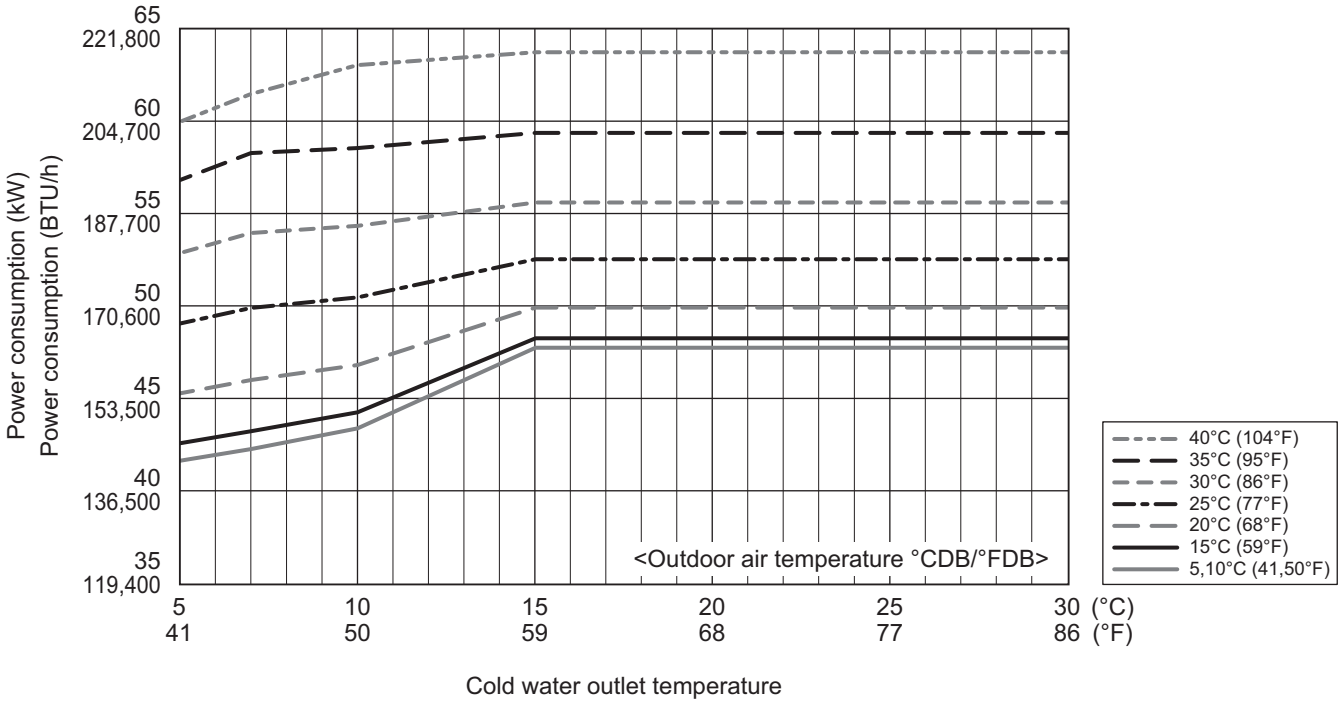
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 5°C/9°F]

EAHV-M050YCL(-N)

Cooling Capacity [Water]



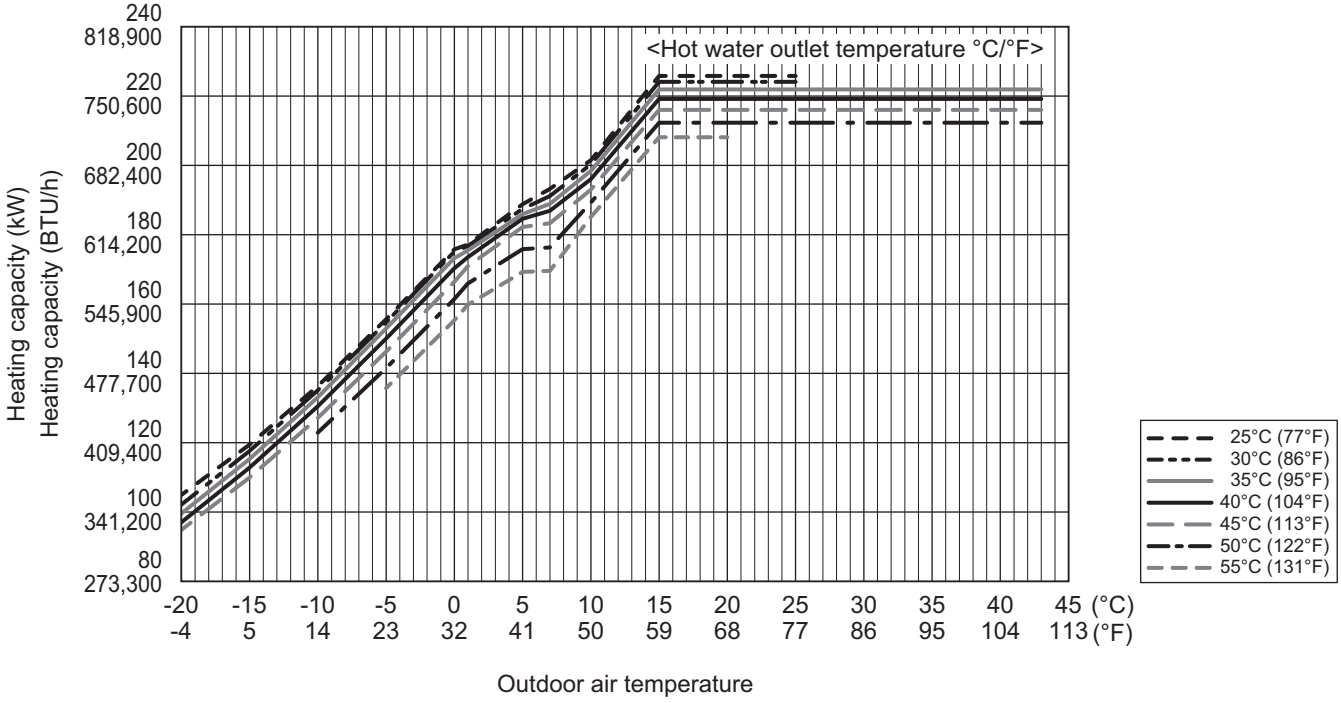


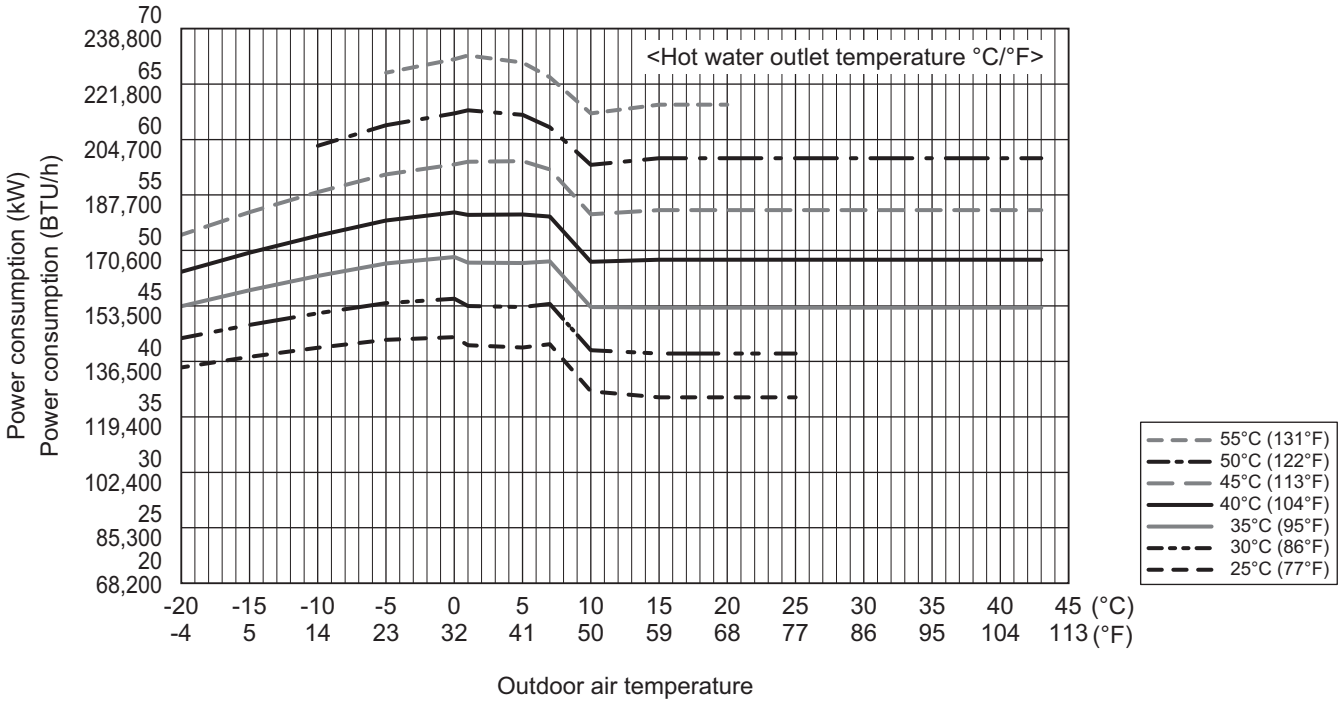
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 5°C/9°F]

EAHV-M050YCL(-N)

Heating Capacity



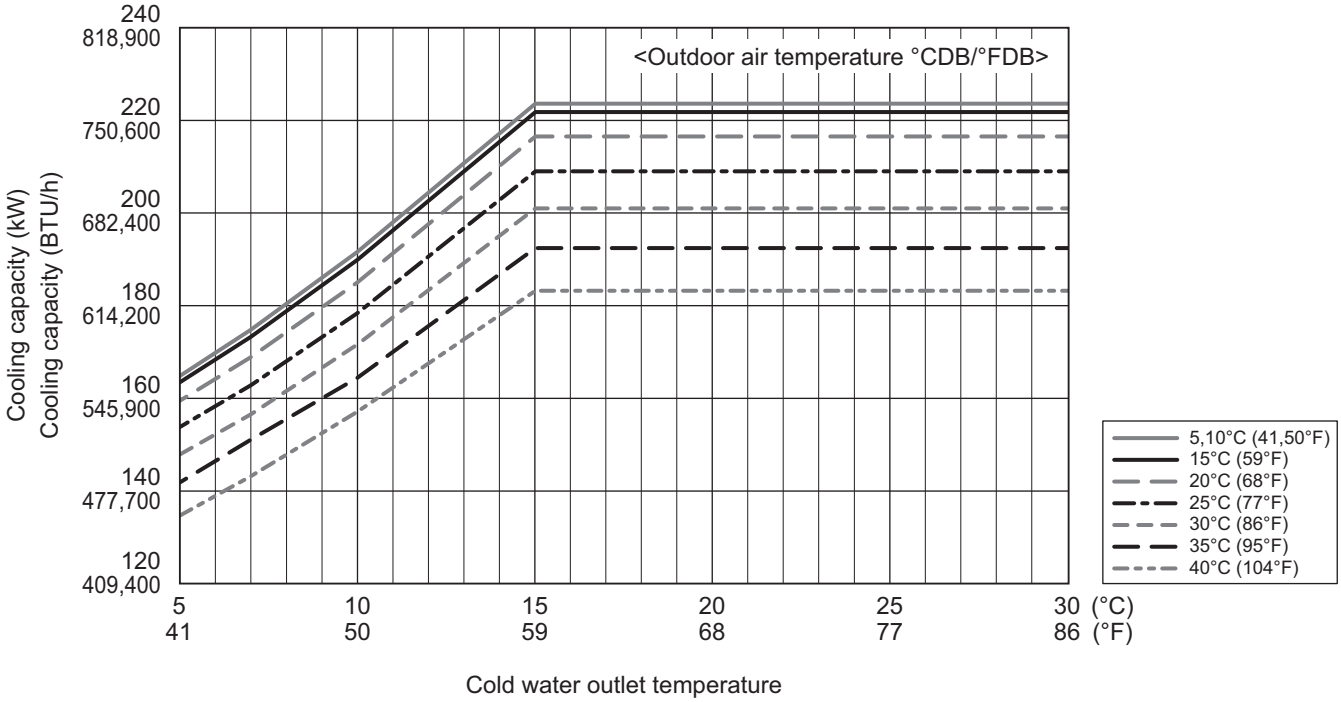


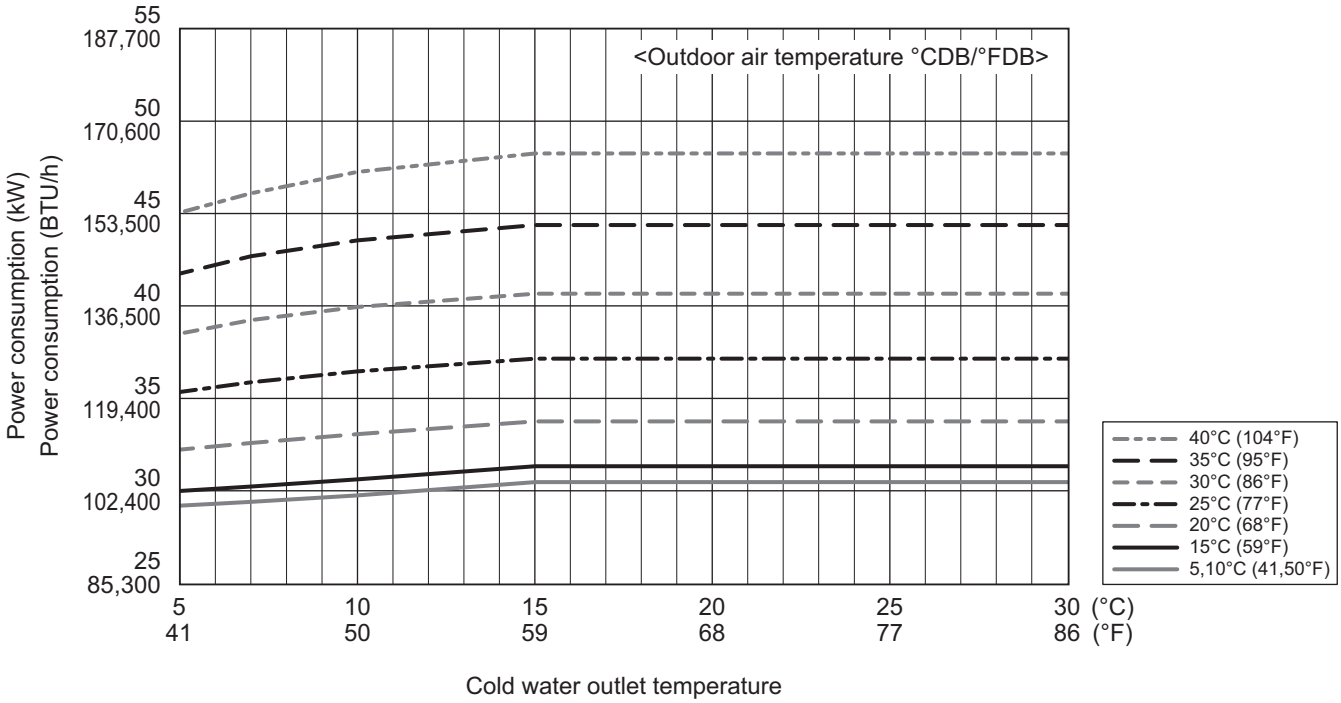
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 7°C/13°F]

EAHV-M040YCL(-N)

Cooling Capacity [Water]



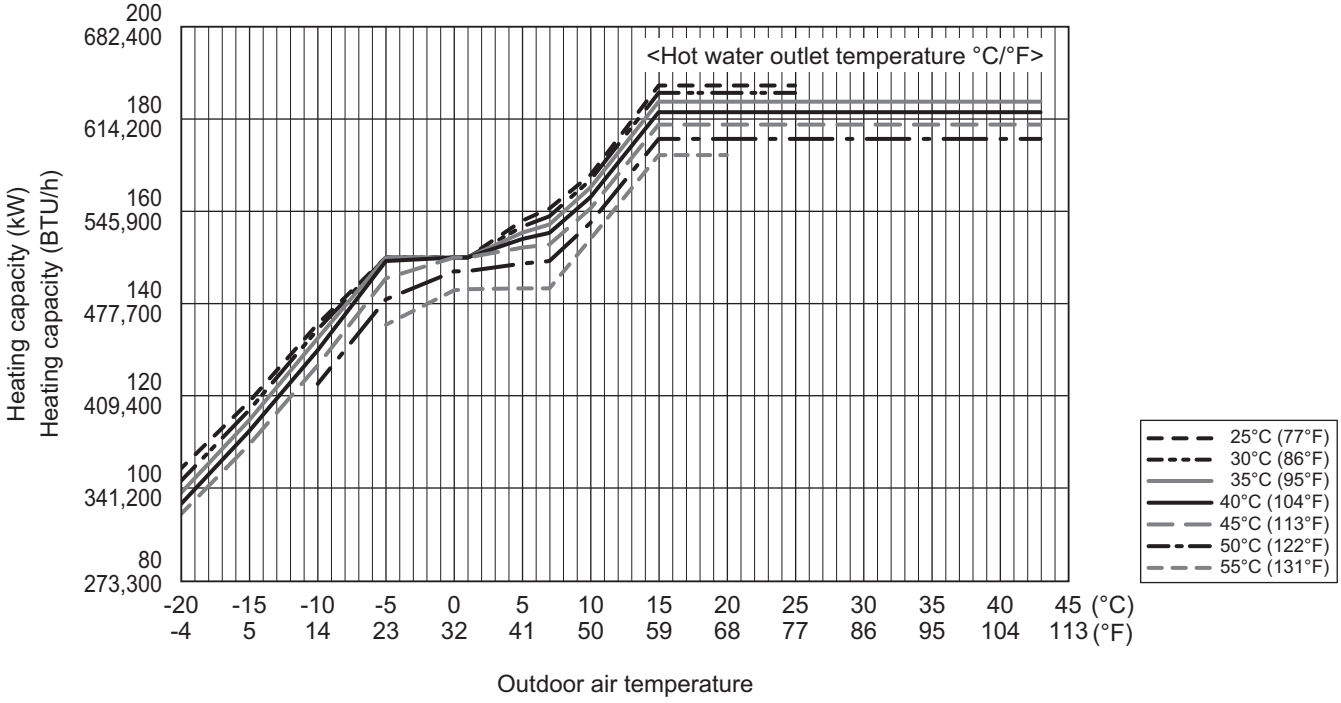


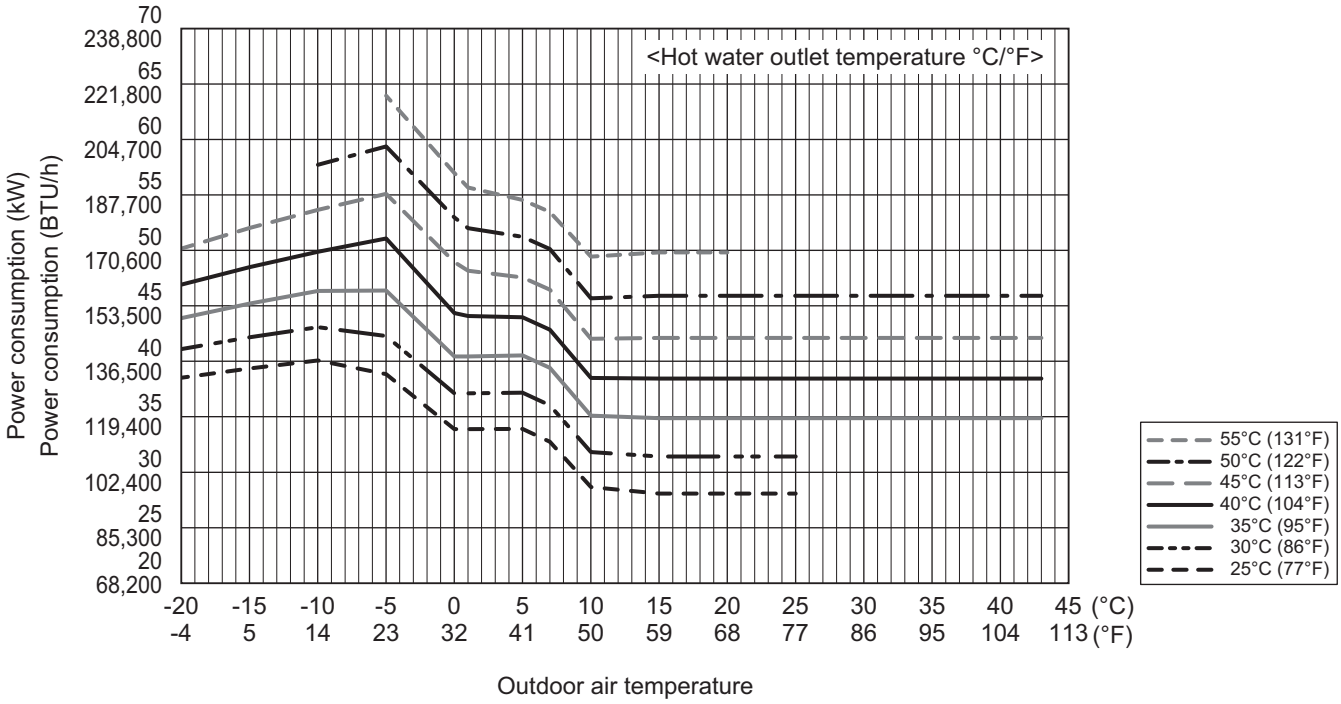
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 7°C/13°F]

EAHV-M040YCL(-N)

Heating Capacity



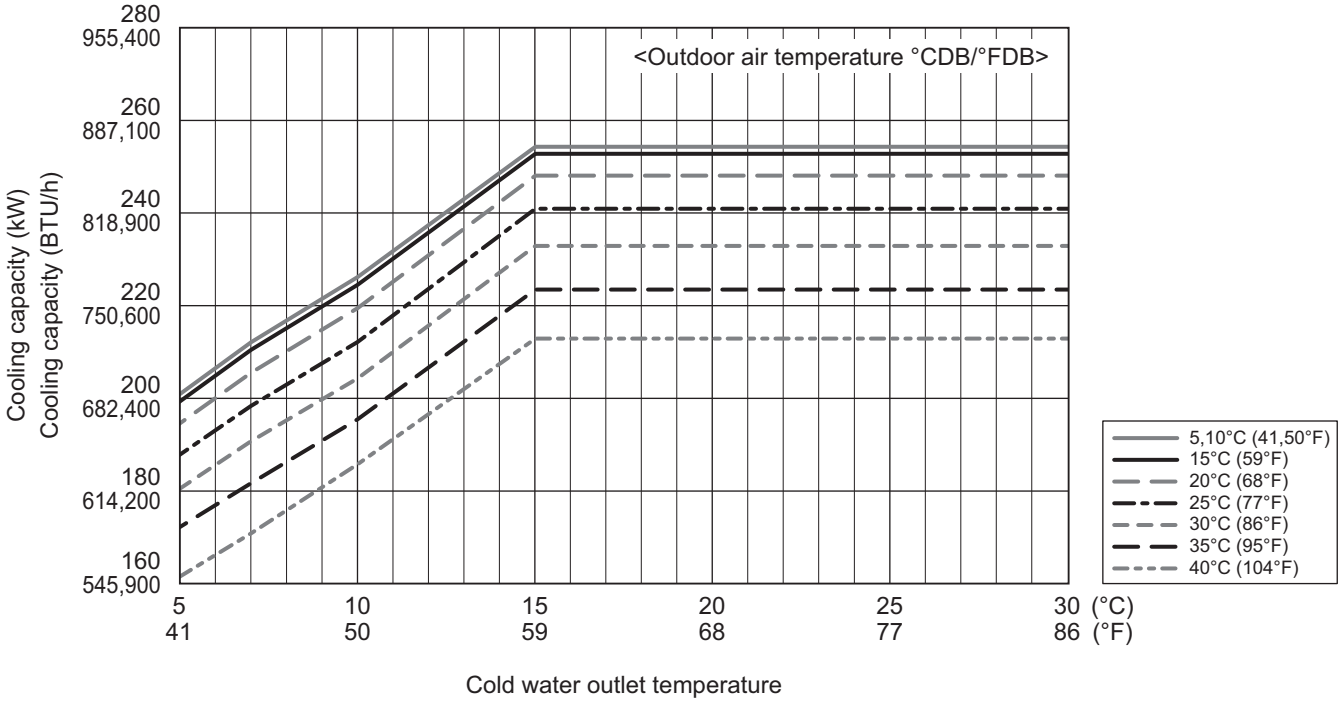


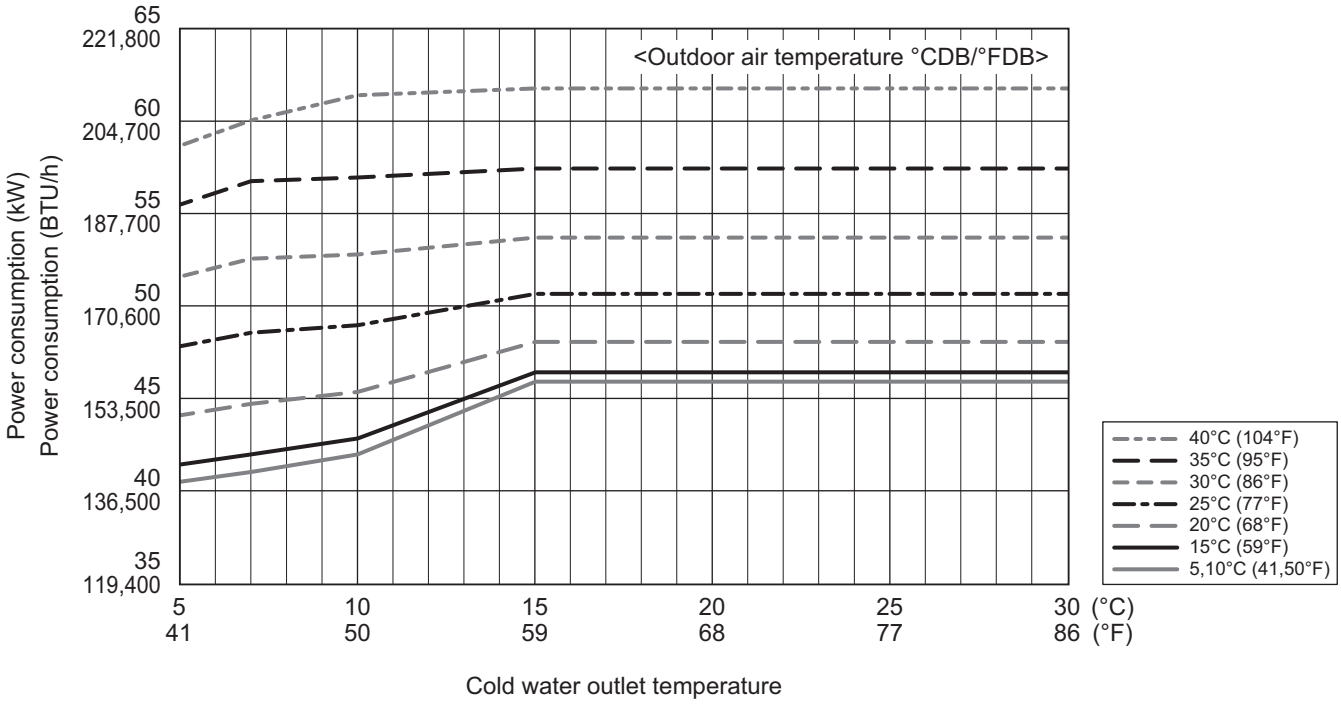
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 7°C/13°F]

EAHV-M050YCL(-N)

Cooling Capacity [Water]



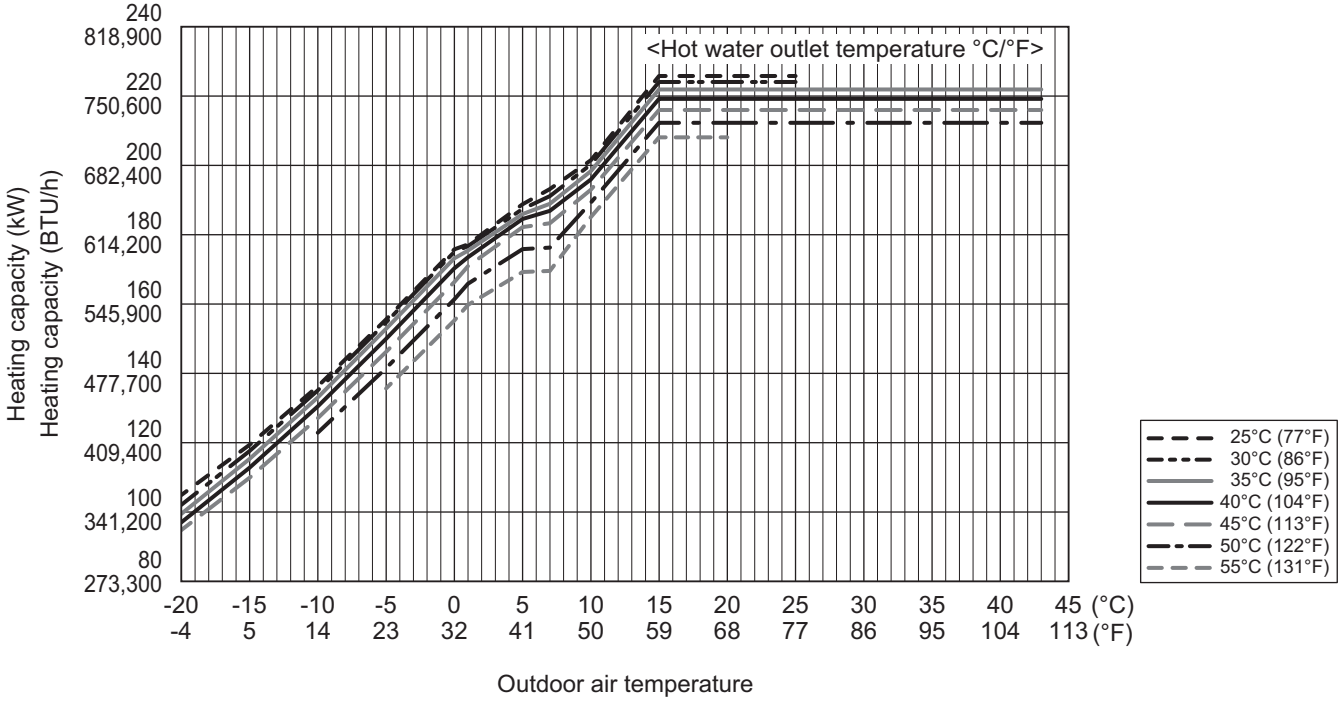


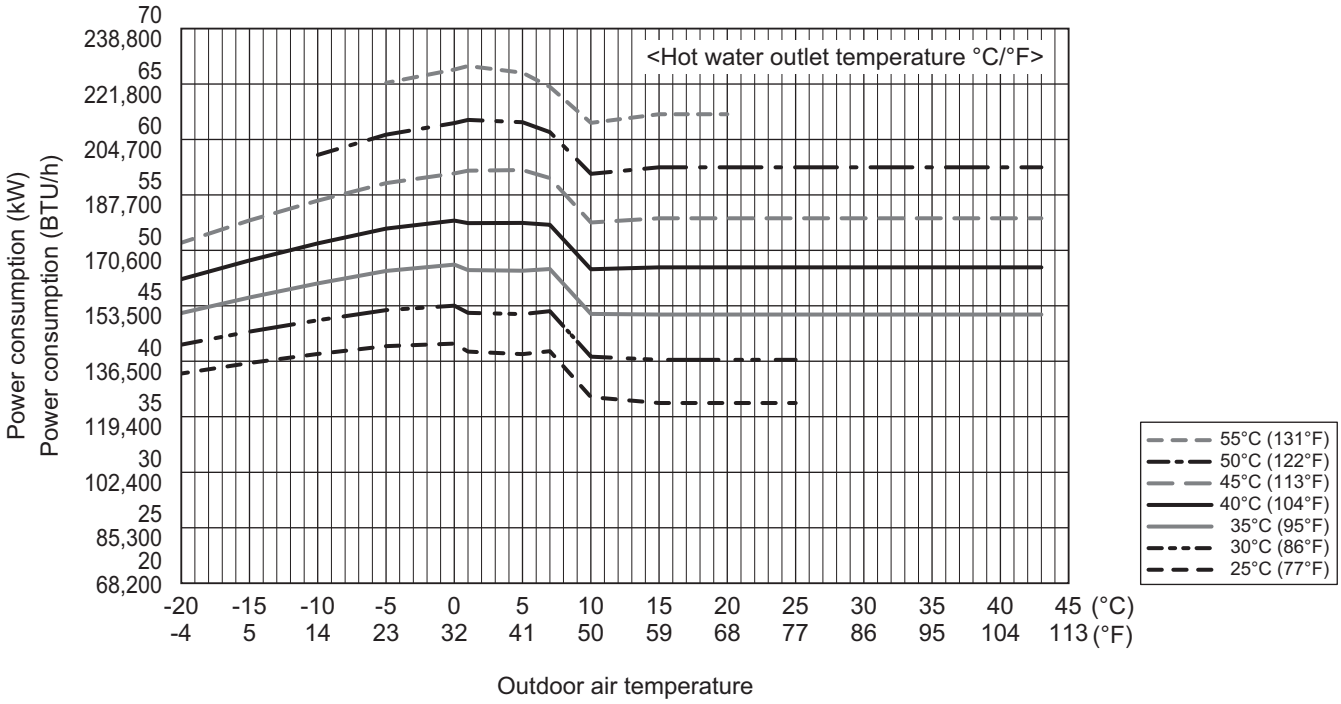
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 7°C/13°F]

EAHV-M050YCL(-N)

Heating Capacity



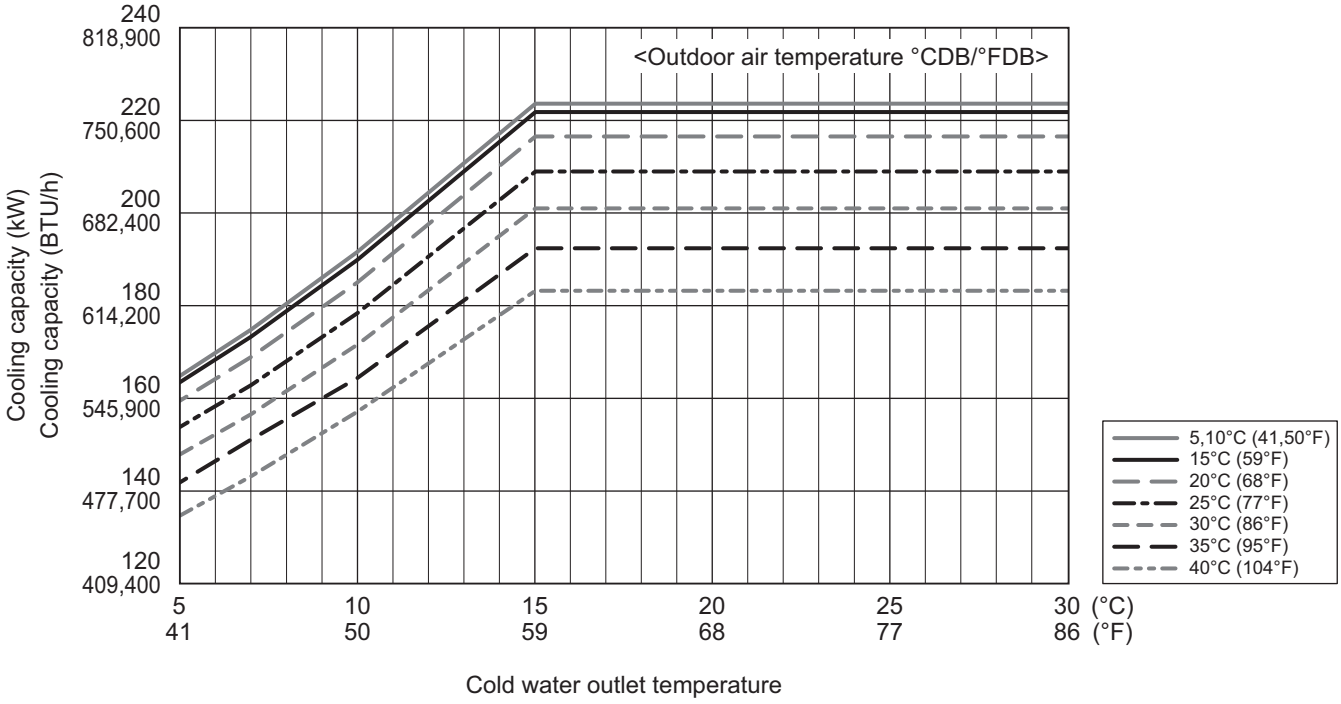


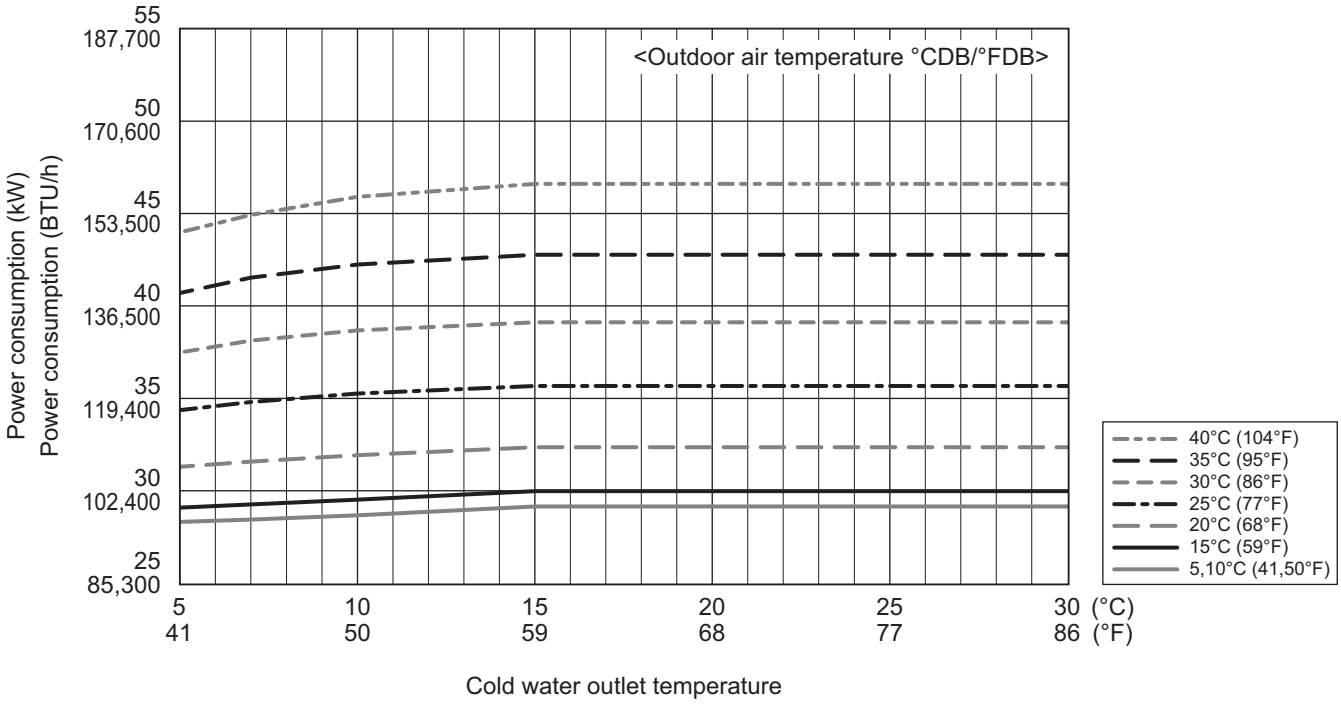
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 10°C/18°F]

EAHV-M040YCL(-N)

Cooling Capacity [Water]



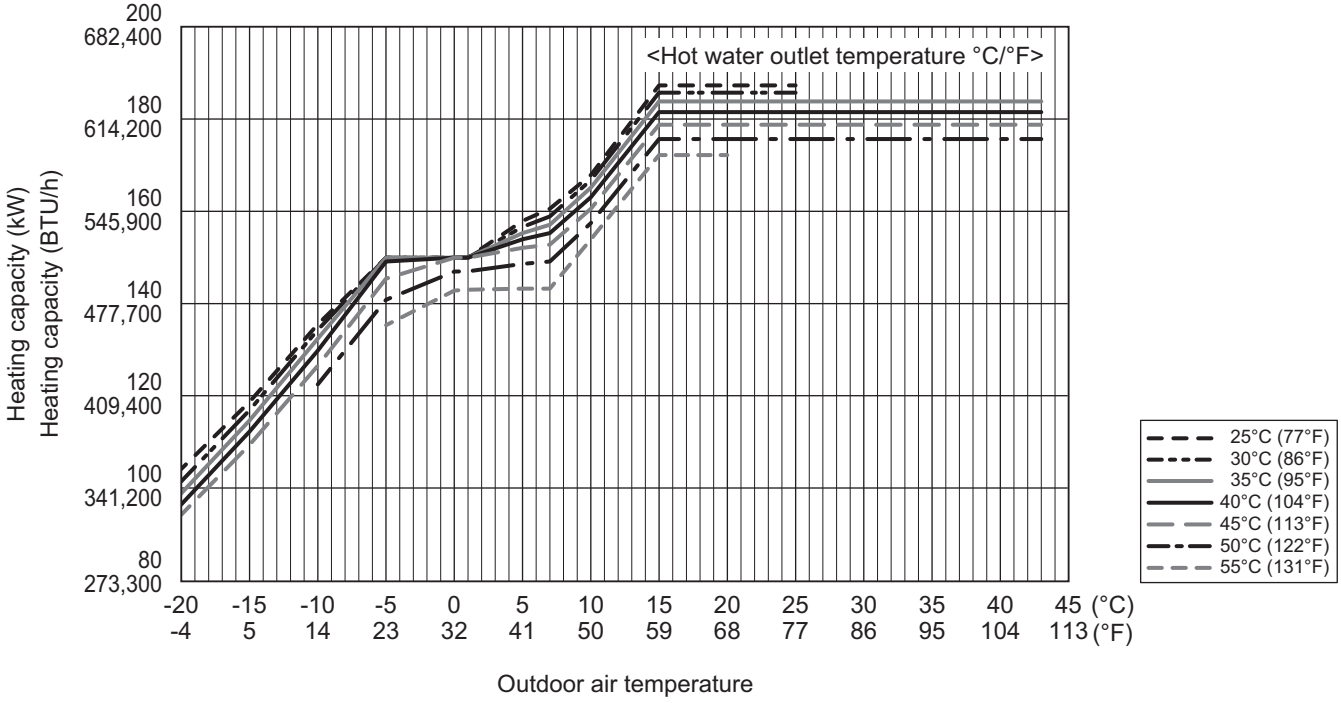


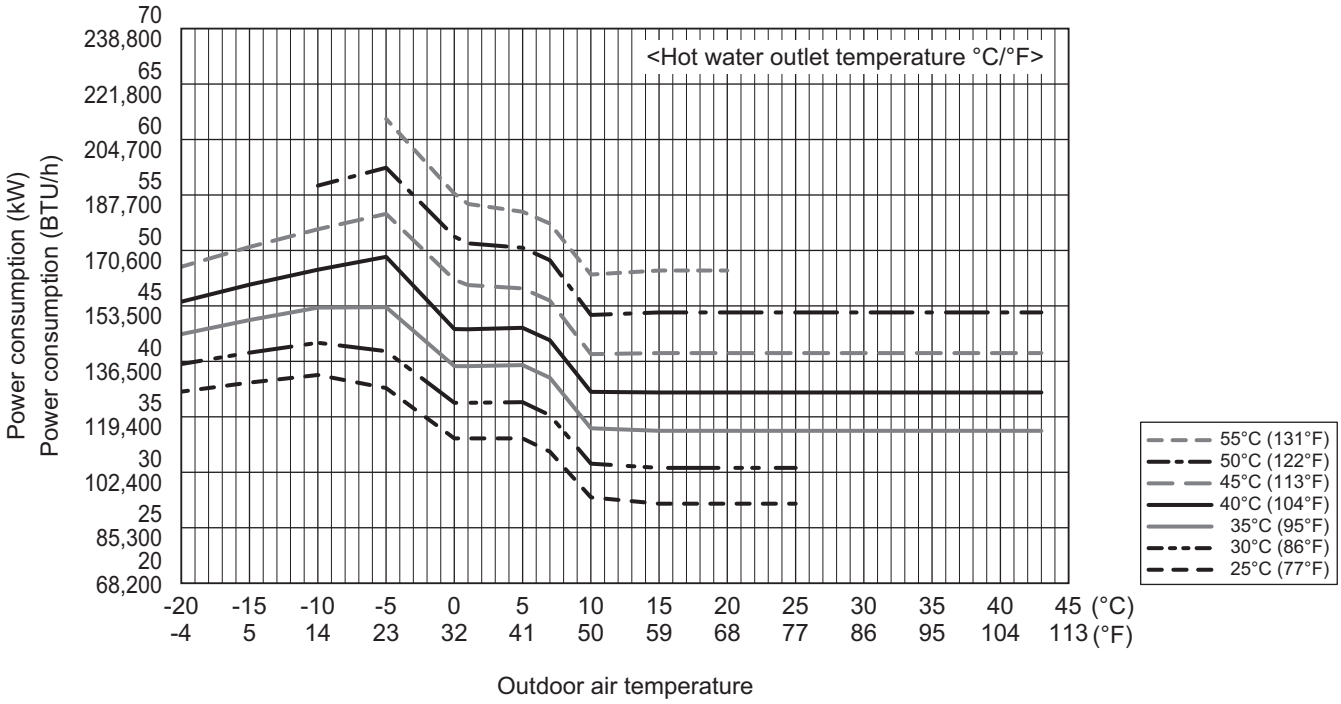
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 10°C/18°F]

EAHV-M040YCL(-N)

Heating Capacity



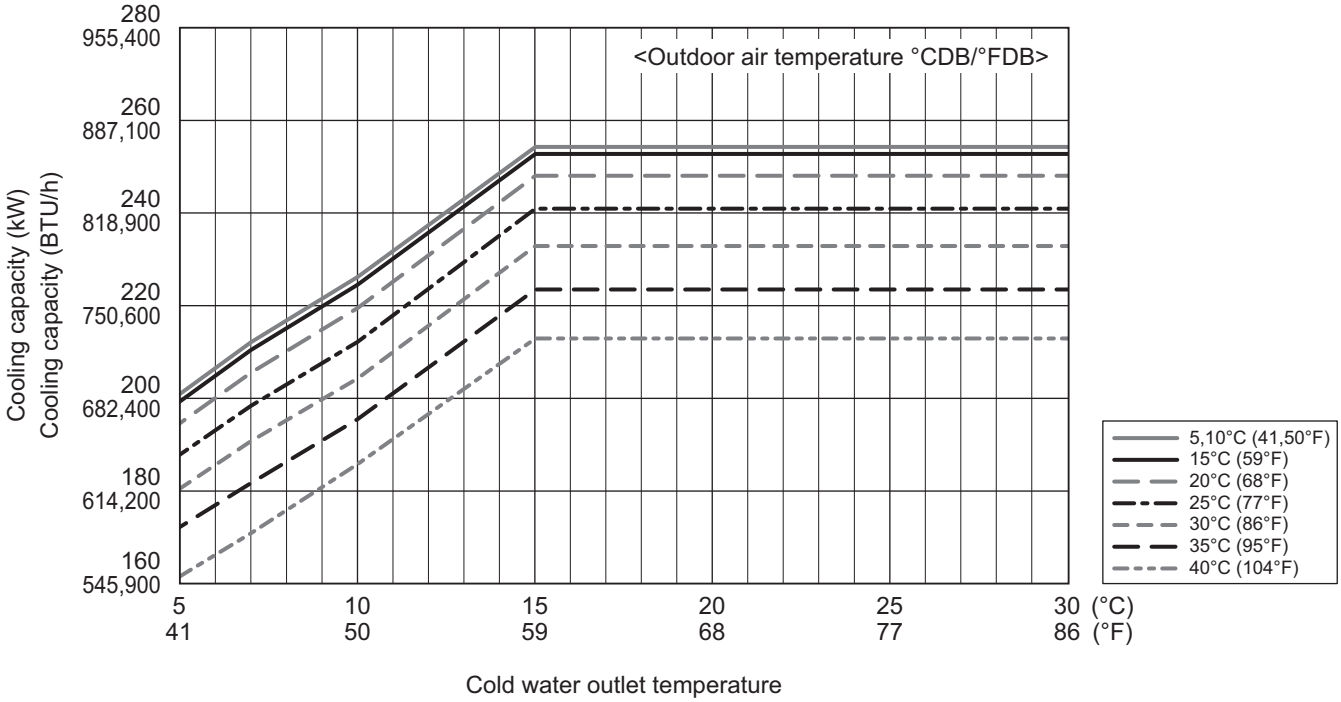


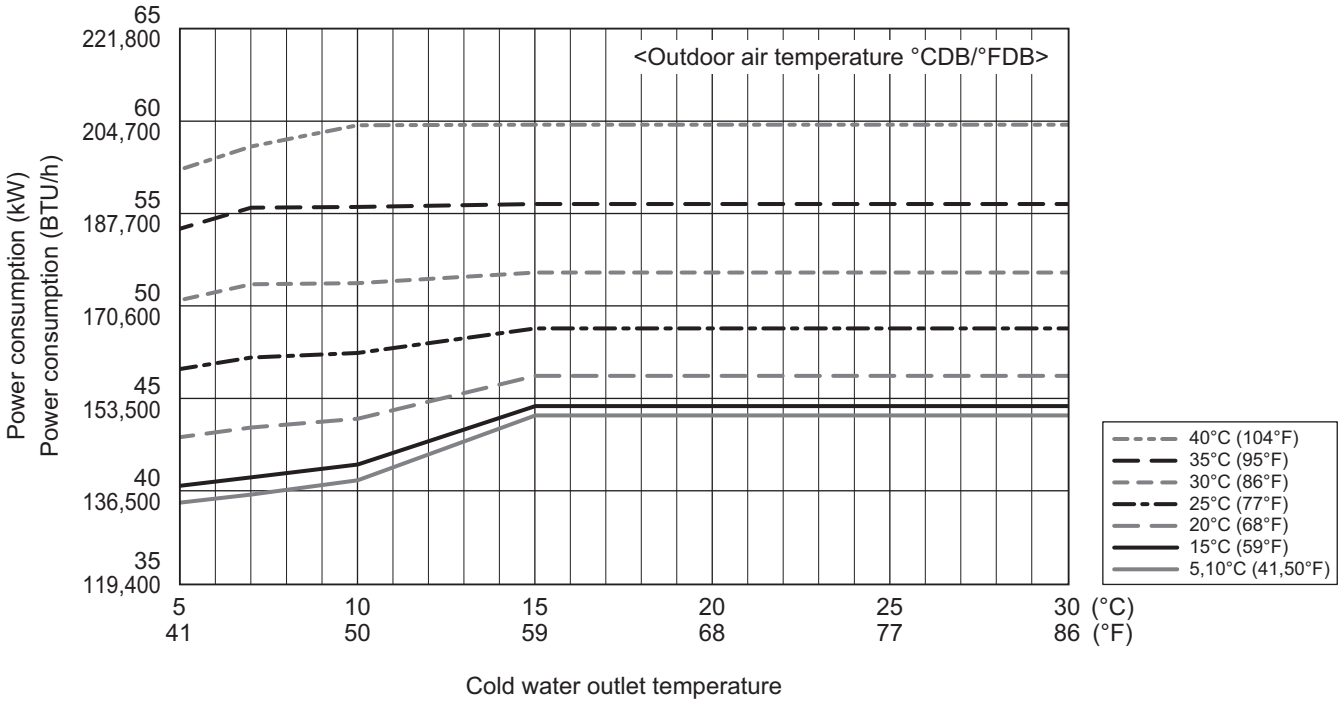
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 10°C/18°F]

EAHV-M050YCL(-N)

Cooling Capacity [Water]



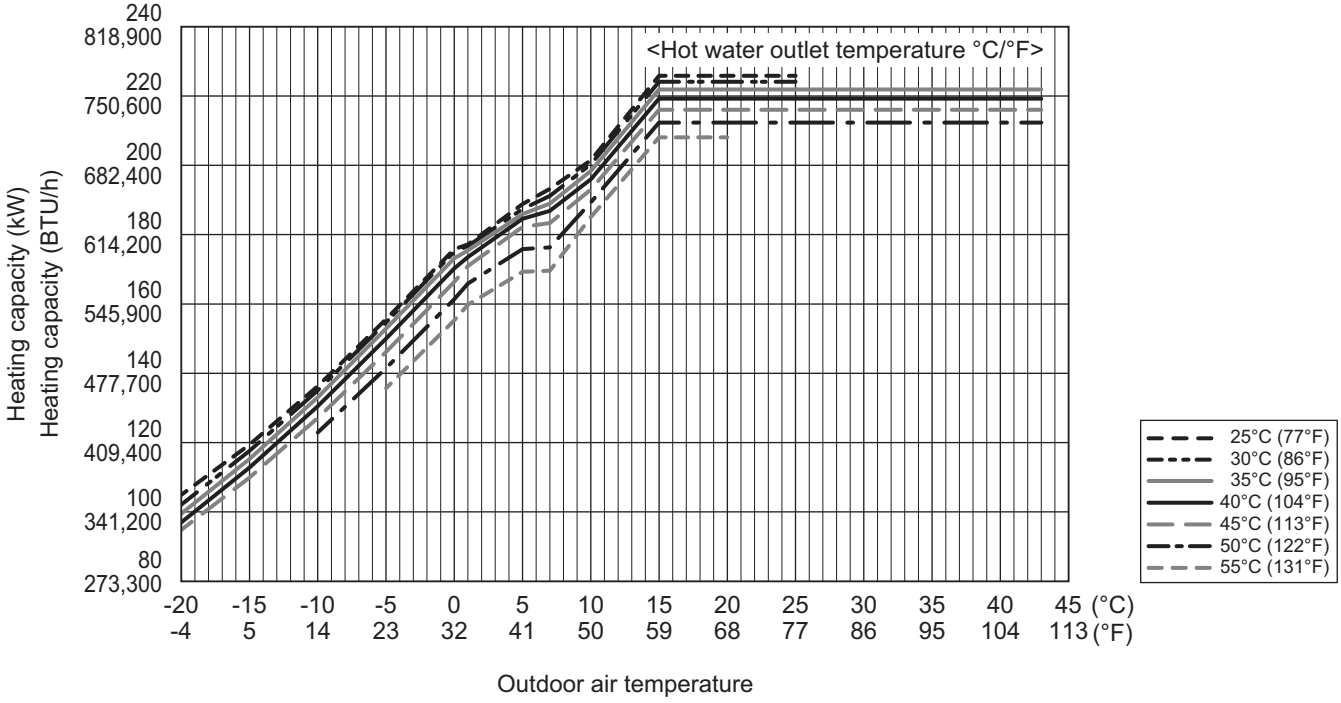


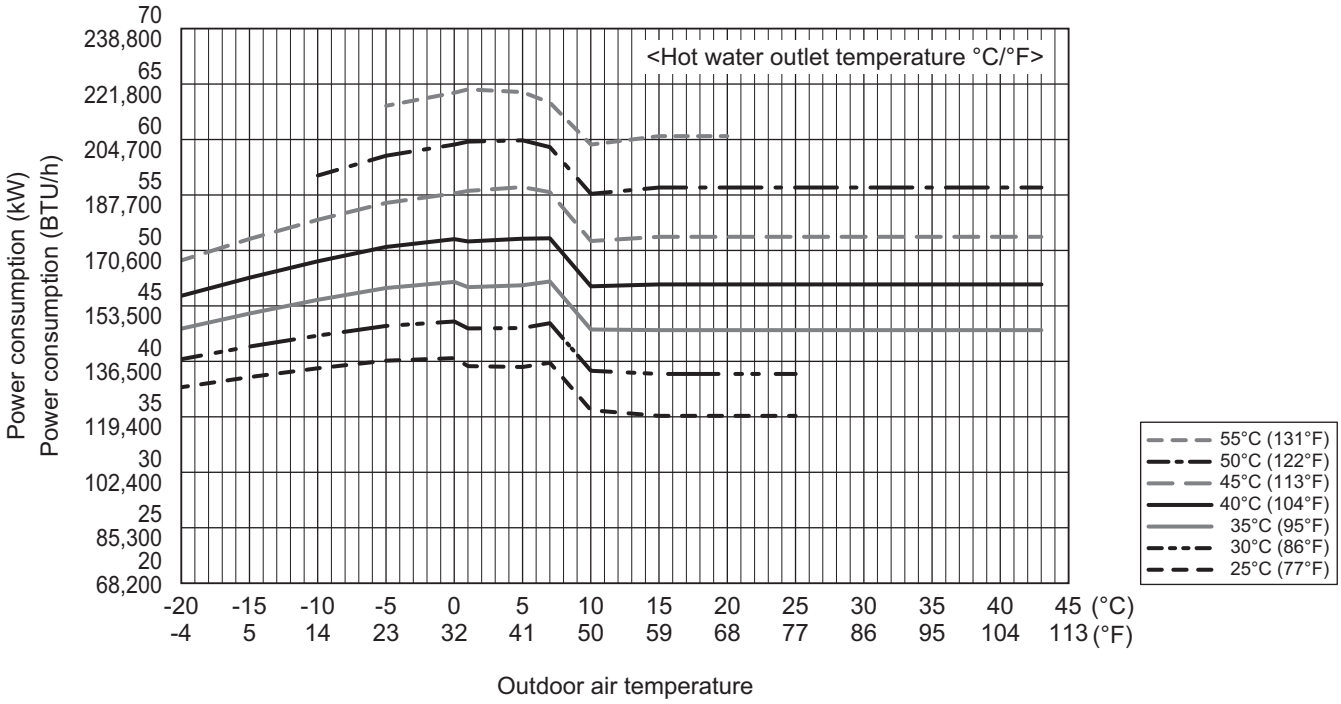
7. Capacity tables

[Cold/hot water outlet/inlet temperature difference 10°C/18°F]

EAHV-M050YCL(-N)

Heating Capacity





7. Capacity tables

Cooling capacity: Cold water outlet/inlet temperature difference 5°C/9°F

MODEL				EAHV-M040YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
4 (39)	Cooling capacity		BTU/h	545260	545260	545260	545260	545260	545260	540892	527988	509303	489642	468146	444943	430203	154570
			kW	159.8	159.8	159.8	159.8	159.8	159.8	158.5	154.7	149.3	143.5	137.2	130.4	126.1	45.3
	Power consumption		BTU/h	103206	103206	103206	103206	103206	103206	105887	113481	123987	134535	145349	156457	163292	71025
			kW	30.2	30.2	30.2	30.2	30.2	30.2	31.0	33.3	36.3	39.4	42.6	45.9	47.9	20.8
	Cold water flow rate		GPM	121.0	121.0	121.0	121.0	121.0	121.0	120.0	117.2	113.0	108.7	103.9	98.8	95.5	56.8
			m^3/h	27.5	27.5	27.5	27.5	27.5	27.5	27.3	26.6	25.7	24.7	23.6	22.4	21.7	12.9
	Water pressure drop	Standard piping	ftAq	21.1	21.1	21.1	21.1	21.1	21.1	20.7	19.7	18.4	17.4	15.7	14.4	13.7	5.4
			psi	9.1	9.1	9.1	9.1	9.1	9.1	9.0	8.6	8.0	7.5	6.8	6.2	5.9	2.3
			kPa	63	63	63	63	63	63	62	59	55	52	47	43	41	16
		Inside header piping	ftAq	50.5	50.5	50.5	50.5	50.5	50.5	49.9	47.9	44.5	41.5	38.1	34.8	32.5	12.7
			psi	21.9	21.9	21.9	21.9	21.9	21.9	21.6	20.7	19.3	18.0	16.5	15.1	14.1	5.5
			kPa	151	151	151	151	151	151	149	143	133	124	114	104	97	38
7 (45)	Cooling capacity		BTU/h	596495	596495	596495	596495	596495	596495	591245	576317	555569	534105	515443	488487	472644	169452
			kW	174.8	174.8	174.8	174.8	174.8	174.8	173.3	168.9	162.8	156.5	151.1	143.2	138.5	49.7
	Power consumption		BTU/h	104695	104695	104695	104695	104695	104695	107597	115826	127230	138901	151073	162517	168657	71491
			kW	30.7	30.7	30.7	30.7	30.7	30.7	31.5	33.9	37.3	40.7	44.3	47.6	49.4	21.0
	Cold water flow rate		GPM	132.4	132.4	132.4	132.4	132.4	132.4	131.2	127.9	123.3	118.5	114.4	108.4	104.9	56.8
			m^3/h	30.1	30.1	30.1	30.1	30.1	30.1	29.8	29.1	28.0	26.9	26.0	24.6	23.8	12.9
	Water pressure drop	Standard piping	ftAq	24.8	24.8	24.8	24.8	24.8	24.8	24.4	23.4	21.8	20.4	19.1	17.1	16.1	5.4
			psi	10.7	10.7	10.7	10.7	10.7	10.7	10.6	10.2	9.4	8.8	8.3	7.4	7.0	2.3
			kPa	74	74	74	74	74	74	73	70	65	61	57	51	48	16
		Inside header piping	ftAq	59.9	59.9	59.9	59.9	59.9	59.9	58.9	56.2	52.5	48.9	45.5	41.2	38.8	12.7
			psi	26.0	26.0	26.0	26.0	26.0	26.0	25.5	24.4	22.8	21.2	19.7	17.8	16.8	5.5
			kPa	179	179	179	179	179	179	176	168	157	146	136	123	116	38
10 (50)	Cooling capacity		BTU/h	653766	653766	653766	653766	653766	653766	647897	631360	608612	585523	560956	536047	502676	185279
			kW	191.6	191.6	191.6	191.6	191.6	191.6	189.9	185.0	178.4	171.6	164.4	157.1	147.3	54.3
	Power consumption		BTU/h	106434	106434	106434	106434	106434	106434	109463	118034	129879	141967	154444	167203	164672	71853
			kW	31.2	31.2	31.2	31.2	31.2	31.2	32.1	34.6	38.1	41.6	45.3	49.0	48.3	21.1
	Cold water flow rate		GPM	145.1	145.1	145.1	145.1	145.1	145.1	143.8	140.1	135.1	130.0	124.5	119.0	111.6	56.8
			m^3/h	33.0	33.0	33.0	33.0	33.0	33.0	32.7	31.8	30.7	29.5	28.3	27.0	25.3	12.9
	Water pressure drop	Standard piping	ftAq	29.4	29.4	29.4	29.4	29.4	29.4	29.1	27.8	25.8	24.1	22.1	20.4	18.1	5.4
			psi	12.8	12.8	12.8	12.8	12.8	12.8	12.6	12.0	11.2	10.4	9.6	8.8	7.8	2.3
			kPa	88	88	88	88	88	88	87	83	77	72	66	61	54	16
		Inside header piping	ftAq	71.3	71.3	71.3	71.3	71.3	71.3	69.9	66.6	62.2	57.9	53.5	49.2	43.5	12.7
			psi	30.9	30.9	30.9	30.9	30.9	30.9	30.3	28.9	27.0	25.1	23.2	21.3	18.9	5.5
			kPa	213	213	213	213	213	213	209	199	186	173	160	147	130	38
15 (59)	Cooling capacity		BTU/h	762955	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	545055	214624
			kW	223.6	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	159.7	62.9
	Power consumption		BTU/h	109983	109983	109983	109983	109983	109983	112980	121525	133435	145709	158582	171948	153671	72302
			kW	32.2	32.2	32.2	32.2	32.2	32.2	33.1	35.6	39.1	42.7	46.5	50.4	45.0	21.2
	Cold water flow rate		GPM	169.3	169.3	169.3	169.3	169.3	169.3	168.0	164.0	158.3	152.2	145.7	138.7	121.0	56.8
			m^3/h	38.5	38.5	38.5	38.5	38.5	38.5	38.1	37.2	35.9	34.6	33.1	31.5	27.5	12.9
	Water pressure drop	Standard piping	ftAq	39.5	39.5	39.5	39.5	39.5	39.5	38.8	37.1	34.8	32.5	29.8	27.1	21.1	5.4
			psi	17.1	17.1	17.1	17.1	17.1	17.1	16.8	16.1	15.1	14.1	12.9	11.7	9.1	2.3
			kPa	118	118	118	118	118	118	116	111	104	97	89	81	63	16
		Inside header piping	ftAq	95.7	95.7	95.7	95.7	95.7	95.7	94.0	90.0	84.0	78.0	71.9	65.6	50.5	12.7
			psi	41.5	41.5	41.5	41.5	41.5	41.5	40.8	39.0	36.4	33.8	31.2	28.4	21.9	5.5
			kPa	286	286	286	286	286	286	281	269	251	233	215	196	151	38
20 (68)	Cooling capacity		BTU/h	-	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	545055	214624
			kW	-	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	159.7	62.9
	Power consumption		BTU/h	-	109983	109983	109983	109983	109983	112980	121525	133435	145709	158582	171948	153671	72302
			kW	-	32.2	32.2	32.2	32.2	32.2	33.1	35.6	39.1	42.7	46.5	50.4	45.0	21.2
	Cold water flow rate		GPM	-	169.3	169.3	169.3	169.3	169.3	168.0	164.0	158.3	152.2	145.7	138.7	121.0	56.8
			m^3/h	-	38.5	38.5	38.5	38.5	38.5	38.1	37.2	35.9	34.6	33.1	31.5	27.5	12.9
	Water pressure drop	Standard piping	ftAq	-	39.5	39.5	39.5	39.5	39.5	38.8	37.1	34.8	32.5	29.8	27.1	21.1	5.4
			psi	-	17.1	17.1	17.1	17.1	17.1	16.8	16.1	15.1	14.1	12.9	11.7	9.1	2.3
			kPa	-	118	118	118	118	118	116	111	104	97	89	81	63	16
		Inside header piping	ftAq	-	95.7	95.7	95.7	95.7	95.7	94.0	90.0	84.0	78.0	71.9	65.6	50.5	12.7
			psi	-	41.5	41.5	41.5	41.5	41.5	40.8	39.0	36.4	33.8	31.2	28.4	21.9	5.5
			kPa	-	286	286	286	286	286	281	269	251	233	215	196	151	38

7. Capacity tables

MODEL				EAHV-M040YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
25 (77)	Cooling capacity		BTU/h	-	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	545055	-
			kW	-	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	159.7	-
	Power consumption		BTU/h	-	109983	109983	109983	109983	109983	112980	121525	133435	145709	158582	171948	153671	-
			kW	-	32.2	32.2	32.2	32.2	32.2	33.1	35.6	39.1	42.7	46.5	50.4	45.0	-
	Cold water flow rate		GPM	-	169.3	169.3	169.3	169.3	169.3	168.0	164.0	158.3	152.2	145.7	138.7	121.0	-
			m^3/h	-	38.5	38.5	38.5	38.5	38.5	38.1	37.2	35.9	34.6	33.1	31.5	27.5	-
	Water pressure drop	Standard piping	ftAq	-	39.5	39.5	39.5	39.5	39.5	38.8	37.1	34.8	32.5	29.8	27.1	21.1	-
			psi	-	17.1	17.1	17.1	17.1	17.1	16.8	16.1	15.1	14.1	12.9	11.7	9.1	-
			kPa	-	118	118	118	118	118	116	111	104	97	89	81	63	-
		Inside header piping	ftAq	-	95.7	95.7	95.7	95.7	95.7	94.0	90.0	84.0	78.0	71.9	65.6	50.5	-
			psi	-	41.5	41.5	41.5	41.5	41.5	40.8	39.0	36.4	33.8	31.2	28.4	21.9	-
			kPa	-	286	286	286	286	286	281	269	251	233	215	196	151	-
30 (86)	Cooling capacity		BTU/h	-	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	-	-
			kW	-	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	-	-
	Power consumption		BTU/h	-	109983	109983	109983	109983	109983	112980	121525	133435	145709	158582	171948	-	-
			kW	-	32.2	32.2	32.2	32.2	32.2	33.1	35.6	39.1	42.7	46.5	50.4	-	-
	Cold water flow rate		GPM	-	169.3	169.3	169.3	169.3	169.3	168.0	164.0	158.3	152.2	145.7	138.7	-	-
			m^3/h	-	38.5	38.5	38.5	38.5	38.5	38.1	37.2	35.9	34.6	33.1	31.5	-	-
	Water pressure drop	Standard piping	ftAq	-	39.5	39.5	39.5	39.5	39.5	38.8	37.1	34.8	32.5	29.8	27.1	-	-
			psi	-	17.1	17.1	17.1	17.1	17.1	16.8	16.1	15.1	14.1	12.9	11.7	-	-
			kPa	-	118	118	118	118	118	116	111	104	97	89	81	-	-
		Inside header piping	ftAq	-	95.7	95.7	95.7	95.7	95.7	94.0	90.0	84.0	78.0	71.9	65.6	-	-
			psi	-	41.5	41.5	41.5	41.5	41.5	40.8	39.0	36.4	33.8	31.2	28.4	-	-
			kPa	-	286	286	286	286	286	281	269	251	233	215	196	-	-

*1:Pump doesn't include.

*2:Hatching area shows outlet/inlet temperature difference under 5°C/9°F.

Flow rates shown above are outside the specified range, and the specified values listed are for reference only.

7. Capacity tables

Cooling capacity: Cold water outlet/inlet temperature difference 5°C/9°F

MODEL				EAHV-M050YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
4 (39)	Cooling capacity		BTU/h	666533	666533	666533	666533	666533	666533	661143	645435	623017	598463	571512	535365	470671	168219
			kW	195.3	195.3	195.3	195.3	195.3	195.3	193.8	189.2	182.6	175.4	167.5	156.9	137.9	49.3
	Power consumption		BTU/h	141146	141146	141146	141146	141146	141146	144318	153385	166053	178580	191414	202054	180164	79262
			kW	41.4	41.4	41.4	41.4	41.4	41.4	42.3	45.0	48.7	52.3	56.1	59.2	52.8	23.2
	Cold water flow rate		GPM	147.9	147.9	147.9	147.9	147.9	147.9	146.7	143.2	138.3	132.8	126.8	118.8	104.5	56.8
			m^3/h	33.6	33.6	33.6	33.6	33.6	33.6	33.3	32.5	31.4	30.2	28.8	27.0	23.7	12.9
	Water pressure drop	Standard piping	ftAq	30.8	30.8	30.8	30.8	30.8	30.8	30.1	28.8	27.1	25.1	23.1	20.4	16.1	5.4
			psi	13.3	13.3	13.3	13.3	13.3	13.3	13.1	12.5	11.7	10.9	10.0	8.8	7.0	2.3
			kPa	92	92	92	92	92	92	90	86	81	75	69	61	48	16
		Inside header piping	ftAq	74.0	74.0	74.0	74.0	74.0	74.0	73.0	69.6	65.3	60.2	55.2	48.9	38.5	12.7
			psi	32.1	32.1	32.1	32.1	32.1	32.1	31.6	30.2	28.3	26.1	23.9	21.2	16.7	5.5
			kPa	221	221	221	221	221	221	218	208	195	180	165	146	115	38
7 (45)	Cooling capacity		BTU/h	723759	723759	723759	723759	723759	723759	718092	701292	676880	650878	619966	583056	514488	182497
			kW	212.1	212.1	212.1	212.1	212.1	212.1	210.5	205.5	198.4	190.8	181.7	170.9	150.8	53.5
	Power consumption		BTU/h	144356	144356	144356	144356	144356	144356	147644	157082	170333	184135	198874	209745	185641	79795
			kW	42.3	42.3	42.3	42.3	42.3	42.3	43.3	46.0	49.9	54.0	58.3	61.5	54.4	23.4
	Cold water flow rate		GPM	160.6	160.6	160.6	160.6	160.6	160.6	159.4	155.6	150.2	144.5	137.6	129.4	114.2	56.8
			m^3/h	36.5	36.5	36.5	36.5	36.5	36.5	36.2	35.4	34.1	32.8	31.3	29.4	25.9	12.9
	Water pressure drop	Standard piping	ftAq	35.8	35.8	35.8	35.8	35.8	35.8	35.1	33.8	31.5	29.4	26.8	23.8	18.7	5.4
			psi	15.5	15.5	15.5	15.5	15.5	15.5	15.2	14.6	13.6	12.8	11.6	10.3	8.1	2.3
			kPa	107	107	107	107	107	107	105	101	94	88	80	71	56	16
		Inside header piping	ftAq	86.7	86.7	86.7	86.7	86.7	86.7	85.3	81.3	76.3	70.6	64.6	57.6	45.5	12.7
			psi	37.6	37.6	37.6	37.6	37.6	37.6	37.0	35.2	33.1	30.6	28.0	24.9	19.7	5.5
			kPa	259	259	259	259	259	259	255	243	228	211	193	172	136	38
10 (50)	Cooling capacity		BTU/h	771826	771826	771826	771826	771826	771826	766094	749001	724020	697100	667073	633976	549013	200293
			kW	226.2	226.2	226.2	226.2	226.2	226.2	224.5	219.5	212.2	204.3	195.5	185.8	160.9	58.7
	Power consumption		BTU/h	148157	148157	148157	148157	148157	148157	151138	159843	172293	185470	199774	215051	184092	80212
			kW	43.4	43.4	43.4	43.4	43.4	43.4	44.3	46.8	50.5	54.4	58.5	63.0	54.0	23.5
	Cold water flow rate		GPM	171.3	171.3	171.3	171.3	171.3	171.3	170.0	166.2	160.7	154.7	148.1	140.7	121.8	56.8
			m^3/h	38.9	38.9	38.9	38.9	38.9	38.9	38.6	37.8	36.5	35.1	33.6	32.0	27.7	12.9
	Water pressure drop	Standard piping	ftAq	40.5	40.5	40.5	40.5	40.5	40.5	39.8	38.1	35.8	33.5	30.8	27.8	21.4	5.4
			psi	17.5	17.5	17.5	17.5	17.5	17.5	17.3	16.5	15.5	14.5	13.3	12.0	9.3	2.3
			kPa	121	121	121	121	121	121	119	114	107	100	92	83	64	16
		Inside header piping	ftAq	97.7	97.7	97.7	97.7	97.7	97.7	96.4	92.4	86.7	80.6	74.0	67.3	51.2	12.7
			psi	42.4	42.4	42.4	42.4	42.4	42.4	41.8	40.0	37.6	35.0	32.1	29.2	22.2	5.5
			kPa	292	292	292	292	292	292	288	276	259	241	221	201	153	38
15 (59)	Cooling capacity		BTU/h	867707	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	606678	239191
			kW	254.3	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	177.8	70.1
	Power consumption		BTU/h	163014	163014	163014	163014	163014	163014	164757	170400	179308	189765	202587	217418	177689	80760
			kW	47.8	47.8	47.8	47.8	47.8	47.8	48.3	49.9	52.5	55.6	59.4	63.7	52.1	23.7
	Cold water flow rate		GPM	189.3	189.3	189.3	189.3	189.3	189.3	189.3	187.9	182.5	176.4	169.3	161.2	134.6	56.8
			m^3/h	43.0	43.0	43.0	43.0	43.0	43.0	43.0	42.7	41.4	40.1	38.4	36.6	30.6	12.9
	Water pressure drop	Standard piping	ftAq	48.9	48.9	48.9	48.9	48.9	48.9	48.9	48.2	45.5	42.8	39.5	36.1	25.8	5.4
			psi	21.2	21.2	21.2	21.2	21.2	21.2	21.2	20.9	19.7	18.6	17.1	15.7	11.2	2.3
			kPa	146	146	146	146	146	146	146	144	136	128	118	108	77	16
		Inside header piping	ftAq	118.5	118.5	118.5	118.5	118.5	118.5	118.5	116.8	110.4	103.4	95.7	87.0	61.9	12.7
			psi	51.3	51.3	51.3	51.3	51.3	51.3	51.3	50.6	47.9	44.8	41.5	37.7	26.8	5.5
			kPa	354	354	354	354	354	354	354	349	330	309	286	260	185	38
20 (68)	Cooling capacity		BTU/h	-	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	606678	239191
			kW	-	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	177.8	70.1
	Power consumption		BTU/h	-	163014	163014	163014	163014	163014	164757	170400	179308	189765	202587	217418	177689	80760
			kW	-	47.8	47.8	47.8	47.8	47.8	48.3	49.9	52.5	55.6	59.4	63.7	52.1	23.7
	Cold water flow rate		GPM	-	189.3	189.3	189.3	189.3	189.3	189.3	187.9	182.5	176.4	169.3	161.2	134.6	56.8
			m^3/h	-	43.0	43.0	43.0	43.0	43.0	43.0	42.7	41.4	40.1	38.4	36.6	30.6	12.9
	Water pressure drop	Standard piping	ftAq	-	48.9	48.9	48.9	48.9	48.9	48.9	48.2	45.5	42.8	39.5	36.1	25.8	5.4
			psi	-	21.2	21.2	21.2	21.2	21.2	21.2	20.9	19.7	18.6	17.1	15.7	11.2	2.3
			kPa	-	146	146	146	146	146	146	144	136	128	118	108	77	16
		Inside header piping	ftAq	-	118.5	118.5	118.5	118.5	118.5	118.5	116.8	110.4	103.4	95.7	87.0	61.9	12.7
			psi	-	51.3	51.3	51.3	51.3	51.3	51.3	50.6	47.9	44.8	41.5	37.7	26.8	5.5
			kPa	-	354	354	354	354	354	354	349	330	309	286	260	185	38

7. Capacity tables

MODEL				EAHV-M050YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
25 (77)	Cooling capacity		BTU/h	-	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	606678	-
			kW	-	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	177.8	-
	Power consumption		BTU/h	-	163014	163014	163014	163014	163014	164757	170400	179308	189765	202587	217418	177689	-
			kW	-	47.8	47.8	47.8	47.8	47.8	48.3	49.9	52.5	55.6	59.4	63.7	52.1	-
	Cold water flow rate		GPM	-	189.3	189.3	189.3	189.3	189.3	189.3	187.9	182.5	176.4	169.3	161.2	134.6	-
			m^3/h	-	43.0	43.0	43.0	43.0	43.0	43.0	42.7	41.4	40.1	38.4	36.6	30.6	-
	Water pressure drop	Standard piping	ftAq	-	48.9	48.9	48.9	48.9	48.9	48.9	48.2	45.5	42.8	39.5	36.1	25.8	-
			psi	-	21.2	21.2	21.2	21.2	21.2	21.2	20.9	19.7	18.6	17.1	15.7	11.2	-
			kPa	-	146	146	146	146	146	146	144	136	128	118	108	77	-
		Inside header piping	ftAq	-	118.5	118.5	118.5	118.5	118.5	118.5	116.8	110.4	103.4	95.7	87.0	61.9	-
			psi	-	51.3	51.3	51.3	51.3	51.3	51.3	50.6	47.9	44.8	41.5	37.7	26.8	-
			kPa	-	354	354	354	354	354	354	349	330	309	286	260	185	-
30 (86)	Cooling capacity		BTU/h	-	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	-	-
			kW	-	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	-	-
	Power consumption		BTU/h	-	163014	163014	163014	163014	163014	164757	170400	179308	189765	202587	217418	-	-
			kW	-	47.8	47.8	47.8	47.8	47.8	48.3	49.9	52.5	55.6	59.4	63.7	-	-
	Cold water flow rate		GPM	-	189.3	189.3	189.3	189.3	189.3	189.3	187.9	182.5	176.4	169.3	161.2	-	-
			m^3/h	-	43.0	43.0	43.0	43.0	43.0	43.0	42.7	41.4	40.1	38.4	36.6	-	-
	Water pressure drop	Standard piping	ftAq	-	48.9	48.9	48.9	48.9	48.9	48.9	48.2	45.5	42.8	39.5	36.1	-	-
			psi	-	21.2	21.2	21.2	21.2	21.2	21.2	20.9	19.7	18.6	17.1	15.7	-	-
			kPa	-	146	146	146	146	146	146	144	136	128	118	108	-	-
		Inside header piping	ftAq	-	118.5	118.5	118.5	118.5	118.5	118.5	116.8	110.4	103.4	95.7	87.0	-	-
			psi	-	51.3	51.3	51.3	51.3	51.3	51.3	50.6	47.9	44.8	41.5	37.7	-	-
			kPa	-	354	354	354	354	354	354	349	330	309	286	260	-	-

*1:Pump doesn't include.

*2:□Hatching area shows outlet/inlet temperature difference under 5°C/9°F.
Flow rates shown above are outside the specified range, and the specified values listed are for reference only.

*3:□Hatching area shows outlet/inlet temperature difference over 5°C/9°F.
Flow rates shown above are outside the specified range, and the specified values listed are for reference only.

7. Capacity tables

Cooling capacity: Cold water outlet/inlet temperature difference 7°C/13°F

MODEL				EAHV-M040YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
4 (39)	Cooling capacity		BTU/h	545260	545260	545260	545260	545260	545260	540892	527988	509303	489642	468146	444943	430203	154570
			kW	159.8	159.8	159.8	159.8	159.8	159.8	158.5	154.7	149.3	143.5	137.2	130.4	126.1	45.3
	Power consumption		BTU/h	99468	99468	99468	99468	99468	99468	102088	109527	119844	130234	140942	151989	158818	70563
			kW	29.2	29.2	29.2	29.2	29.2	29.2	29.9	32.1	35.1	38.2	41.3	44.5	46.5	20.7
	Cold water flow rate		GPM	86.4	86.4	86.4	86.4	86.4	86.4	85.7	83.7	80.7	77.6	74.2	70.5	68.2	56.8
			m^3/h	19.6	19.6	19.6	19.6	19.6	19.6	19.5	19.0	18.3	17.6	16.9	16.0	15.5	12.9
	Water pressure drop	Standard piping	ftAq	11.4	11.4	11.4	11.4	11.4	11.4	11.0	10.7	10.0	9.4	8.7	8.0	7.4	5.4
			psi	4.9	4.9	4.9	4.9	4.9	4.9	4.8	4.6	4.4	4.1	3.8	3.5	3.2	2.3
			kPa	34	34	34	34	34	34	33	32	30	28	26	24	22	16
		Inside header piping	ftAq	27.1	27.1	27.1	27.1	27.1	27.1	26.8	25.4	24.1	22.4	20.4	18.7	17.7	12.7
			psi	11.7	11.7	11.7	11.7	11.7	11.7	11.6	11.0	10.4	9.7	8.8	8.1	7.7	5.5
			kPa	81	81	81	81	81	81	80	76	72	67	61	56	53	38
7 (45)	Cooling capacity		BTU/h	596495	596495	596495	596495	596495	596495	591245	576317	555569	534105	515443	488487	472644	169452
			kW	174.8	174.8	174.8	174.8	174.8	174.8	173.3	168.9	162.8	156.5	151.1	143.2	138.5	49.7
	Power consumption		BTU/h	100491	100491	100491	100491	100491	100491	103321	111362	122529	133988	145750	157335	163490	70945
			kW	29.5	29.5	29.5	29.5	29.5	29.5	30.3	32.6	35.9	39.3	42.7	46.1	47.9	20.8
	Cold water flow rate		GPM	94.6	94.6	94.6	94.6	94.6	94.6	93.7	91.4	88.1	84.7	81.7	77.4	74.9	56.8
			m^3/h	21.5	21.5	21.5	21.5	21.5	21.5	21.3	20.8	20.0	19.2	18.6	17.6	17.0	12.9
	Water pressure drop	Standard piping	ftAq	13.4	13.4	13.4	13.4	13.4	13.4	13.1	12.7	11.7	11.0	10.4	9.4	8.7	5.4
			psi	5.8	5.8	5.8	5.8	5.8	5.8	5.7	5.5	5.1	4.8	4.5	4.1	3.8	2.3
			kPa	40	40	40	40	40	40	39	38	35	33	31	28	26	16
		Inside header piping	ftAq	32.1	32.1	32.1	32.1	32.1	32.1	31.5	30.1	28.1	26.1	24.4	22.1	21.1	12.7
			psi	13.9	13.9	13.9	13.9	13.9	13.9	13.6	13.1	12.2	11.3	10.6	9.6	9.1	5.5
			kPa	96	96	96	96	96	96	94	90	84	78	73	66	63	38
10 (50)	Cooling capacity		BTU/h	653766	653766	653766	653766	653766	653766	647897	631360	608612	585523	560956	536047	502676	185279
			kW	191.6	191.6	191.6	191.6	191.6	191.6	189.9	185.0	178.4	171.6	164.4	157.1	147.3	54.3
	Power consumption		BTU/h	101692	101692	101692	101692	101692	101692	104638	112988	124552	136386	148664	161264	159239	71219
			kW	29.8	29.8	29.8	29.8	29.8	29.8	30.7	33.1	36.5	40.0	43.6	47.3	46.7	20.9
	Cold water flow rate		GPM	103.6	103.6	103.6	103.6	103.6	103.6	102.7	100.1	96.5	92.8	88.9	85.0	79.7	56.8
			m^3/h	23.5	23.5	23.5	23.5	23.5	23.5	23.3	22.7	21.9	21.1	20.2	19.3	18.1	12.9
	Water pressure drop	Standard piping	ftAq	15.7	15.7	15.7	15.7	15.7	15.7	15.4	14.7	13.7	13.1	12.0	11.0	9.7	5.4
			psi	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.4	5.9	5.7	5.2	4.8	4.2	2.3
			kPa	47	47	47	47	47	47	46	44	41	39	36	33	29	16
		Inside header piping	ftAq	37.8	37.8	37.8	37.8	37.8	37.8	37.1	35.5	33.1	30.8	28.4	26.4	23.4	12.7
			psi	16.4	16.4	16.4	16.4	16.4	16.4	16.1	15.4	14.4	13.3	12.3	11.5	10.2	5.5
			kPa	113	113	113	113	113	113	111	106	99	92	85	79	70	38
15 (59)	Cooling capacity		BTU/h	762955	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	545055	214624
			kW	223.6	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	159.7	62.9
	Power consumption		BTU/h	104157	104157	104157	104157	104157	104157	107051	115325	126892	138857	151484	164666	148031	71503
			kW	30.5	30.5	30.5	30.5	30.5	30.5	31.4	33.8	37.2	40.7	44.4	48.3	43.4	21.0
	Cold water flow rate		GPM	121.0	121.0	121.0	121.0	121.0	121.0	120.0	117.1	113.0	108.7	104.1	99.1	86.4	56.8
			m^3/h	27.5	27.5	27.5	27.5	27.5	27.5	27.2	26.6	25.7	24.7	23.6	22.5	19.6	12.9
	Water pressure drop	Standard piping	ftAq	21.1	21.1	21.1	21.1	21.1	21.1	20.7	19.7	18.4	17.4	16.1	14.7	11.4	5.4
			psi	9.1	9.1	9.1	9.1	9.1	9.1	9.0	8.6	8.0	7.5	7.0	6.4	4.9	2.3
			kPa	63	63	63	63	63	63	62	59	55	52	48	44	34	16
		Inside header piping	ftAq	50.5	50.5	50.5	50.5	50.5	50.5	49.9	47.5	44.5	41.5	38.1	34.8	27.1	12.7
			psi	21.9	21.9	21.9	21.9	21.9	21.9	21.6	20.6	19.3	18.0	16.5	15.1	11.7	5.5
			kPa	151	151	151	151	151	151	149	142	133	124	114	104	81	38
20 (68)	Cooling capacity		BTU/h	-	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	545055	214624
			kW	-	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	159.7	62.9
	Power consumption		BTU/h	-	104157	104157	104157	104157	104157	107051	115325	126892	138857	151484	164666	148031	71503
			kW	-	30.5	30.5	30.5	30.5	30.5	31.4	33.8	37.2	40.7	44.4	48.3	43.4	21.0
	Cold water flow rate		GPM	-	121.0	121.0	121.0	121.0	121.0	120.0	117.1	113.0	108.7	104.1	99.1	86.4	56.8
			m^3/h	-	27.5	27.5	27.5	27.5	27.5	27.2	26.6	25.7	24.7	23.6	22.5	19.6	12.9
	Water pressure drop	Standard piping	ftAq	-	21.1	21.1	21.1	21.1	21.1	20.7	19.7	18.4	17.4	16.1	14.7	11.4	5.4
			psi	-	9.1	9.1	9.1	9.1	9.1	9.0	8.6	8.0	7.5	7.0	6.4	4.9	2.3
			kPa	-	63	63	63	63	63	62	59	55	52	48	44	34	16
		Inside header piping	ftAq	-	50.5	50.5	50.5	50.5	50.5	49.9	47.5	44.5	41.5	38.1	34.8	27.1	12.7
			psi	-	21.9	21.9	21.9	21.9	21.9	21.6	20.6	19.3	18.0	16.5	15.1	11.7	5.5
			kPa	-	151	151	151	151	151	149	142	133	124	114	104	81	38

7. Capacity tables

MODEL				EAHV-M040YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
25 (77)	Cooling capacity		BTU/h	-	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	545055	-
			kW	-	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	159.7	-
	Power consumption		BTU/h	-	104157	104157	104157	104157	104157	107051	115325	126892	138857	151484	164666	148031	-
			kW	-	30.5	30.5	30.5	30.5	30.5	31.4	33.8	37.2	40.7	44.4	48.3	43.4	-
	Cold water flow rate		GPM	-	121.0	121.0	121.0	121.0	121.0	120.0	117.1	113.0	108.7	104.1	99.1	86.4	-
			m^3/h	-	27.5	27.5	27.5	27.5	27.5	27.2	26.6	25.7	24.7	23.6	22.5	19.6	-
	Water pressure drop	Standard piping	ftAq	-	21.1	21.1	21.1	21.1	21.1	20.7	19.7	18.4	17.4	16.1	14.7	11.4	-
			psi	-	9.1	9.1	9.1	9.1	9.1	9.0	8.6	8.0	7.5	7.0	6.4	4.9	-
			kPa	-	63	63	63	63	63	62	59	55	52	48	44	34	-
		Inside header piping	ftAq	-	50.5	50.5	50.5	50.5	50.5	49.9	47.5	44.5	41.5	38.1	34.8	27.1	-
			psi	-	21.9	21.9	21.9	21.9	21.9	21.6	20.6	19.3	18.0	16.5	15.1	11.7	-
			kPa	-	151	151	151	151	151	149	142	133	124	114	104	81	-
30 (86)	Cooling capacity		BTU/h	-	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	-	-
			kW	-	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	-	-
	Power consumption		BTU/h	-	104157	104157	104157	104157	104157	107051	115325	126892	138857	151484	164666	-	-
			kW	-	30.5	30.5	30.5	30.5	30.5	31.4	33.8	37.2	40.7	44.4	48.3	-	-
	Cold water flow rate		GPM	-	121.0	121.0	121.0	121.0	121.0	120.0	117.1	113.0	108.7	104.1	99.1	-	-
			m^3/h	-	27.5	27.5	27.5	27.5	27.5	27.2	26.6	25.7	24.7	23.6	22.5	-	-
	Water pressure drop	Standard piping	ftAq	-	21.1	21.1	21.1	21.1	21.1	20.7	19.7	18.4	17.4	16.1	14.7	-	-
			psi	-	9.1	9.1	9.1	9.1	9.1	9.0	8.6	8.0	7.5	7.0	6.4	-	-
			kPa	-	63	63	63	63	63	62	59	55	52	48	44	-	-
		Inside header piping	ftAq	-	50.5	50.5	50.5	50.5	50.5	49.9	47.5	44.5	41.5	38.1	34.8	-	-
			psi	-	21.9	21.9	21.9	21.9	21.9	21.6	20.6	19.3	18.0	16.5	15.1	-	-
			kPa	-	151	151	151	151	151	149	142	133	124	114	104	-	-

*1:Pump doesn't include.

*2:Hatching area shows outlet/inlet temperature difference under 7°C/13°F.

Flow rates shown above are outside the specified range, and the specified values listed are for reference only.

7. Capacity tables

Cooling capacity: Cold water outlet/inlet temperature difference 7°C/13°F

MODEL				EAHV-M050YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
4 (39)	Cooling capacity		BTU/h	666533	666533	666533	666533	666533	666533	661143	645435	623017	598463	571512	535365	470671	168219
			kW	195.3	195.3	195.3	195.3	195.3	195.3	193.8	189.2	182.6	175.4	167.5	156.9	137.9	49.3
	Power consumption		BTU/h	137439	137439	137439	137439	137439	137439	140565	149510	162029	174440	187204	197869	176568	78887
			kW	40.3	40.3	40.3	40.3	40.3	40.3	41.2	43.8	47.5	51.1	54.9	58.0	51.7	23.1
	Cold water flow rate		GPM	105.7	105.7	105.7	105.7	105.7	105.7	104.8	102.3	98.8	94.9	90.6	84.9	74.6	56.8
			m^3/h	24.0	24.0	24.0	24.0	24.0	24.0	23.8	23.2	22.4	21.5	20.6	19.3	16.9	12.9
	Water pressure drop	Standard piping	ftAq	16.4	16.4	16.4	16.4	16.4	16.4	16.1	15.4	14.4	13.4	12.4	11.0	8.7	5.4
			psi	7.1	7.1	7.1	7.1	7.1	7.1	7.0	6.7	6.2	5.8	5.4	4.8	3.8	2.3
			kPa	49	49	49	49	49	49	48	46	43	40	37	33	26	16
		Inside header piping	ftAq	39.5	39.5	39.5	39.5	39.5	39.5	38.8	37.1	34.8	32.1	29.4	26.1	20.7	12.7
			psi	17.1	17.1	17.1	17.1	17.1	17.1	16.8	16.1	15.1	13.9	12.8	11.3	9.0	5.5
			kPa	118	118	118	118	118	118	116	111	104	96	88	78	62	38
7 (45)	Cooling capacity		BTU/h	723759	723759	723759	723759	723759	723759	718092	701292	676880	650878	619966	583056	514488	182497
			kW	212.1	212.1	212.1	212.1	212.1	212.1	210.5	205.5	198.4	190.8	181.7	170.9	150.8	53.5
	Power consumption		BTU/h	140155	140155	140155	140155	140155	140155	143392	152693	165770	179413	193694	204895	181497	79352
			kW	41.1	41.1	41.1	41.1	41.1	41.1	42.0	44.8	48.6	52.6	56.8	60.0	53.2	23.3
	Cold water flow rate		GPM	114.7	114.7	114.7	114.7	114.7	114.7	113.8	111.2	107.3	103.2	98.3	92.4	81.6	56.8
			m^3/h	26.1	26.1	26.1	26.1	26.1	26.1	25.9	25.3	24.4	23.4	22.3	21.0	18.5	12.9
	Water pressure drop	Standard piping	ftAq	19.1	19.1	19.1	19.1	19.1	19.1	18.7	18.1	16.7	15.7	14.4	12.7	10.4	5.4
			psi	8.3	8.3	8.3	8.3	8.3	8.3	8.1	7.8	7.3	6.8	6.2	5.5	4.5	2.3
			kPa	57	57	57	57	57	57	56	54	50	47	43	38	31	16
		Inside header piping	ftAq	45.8	45.8	45.8	45.8	45.8	45.8	45.2	43.2	40.5	37.5	34.5	30.8	24.4	12.7
			psi	19.9	19.9	19.9	19.9	19.9	19.9	19.6	18.7	17.5	16.2	14.9	13.3	10.6	5.5
			kPa	137	137	137	137	137	137	135	129	121	112	103	92	73	38
10 (50)	Cooling capacity		BTU/h	771826	771826	771826	771826	771826	771826	766094	749001	724020	697100	667073	633976	549013	200293
			kW	226.2	226.2	226.2	226.2	226.2	226.2	224.5	219.5	212.2	204.3	195.5	185.8	160.9	58.7
	Power consumption		BTU/h	143374	143374	143374	143374	143374	143374	146310	154889	167171	180186	194354	209514	179653	79697
			kW	42.0	42.0	42.0	42.0	42.0	42.0	42.9	45.4	49.0	52.8	57.0	61.4	52.7	23.4
	Cold water flow rate		GPM	122.4	122.4	122.4	122.4	122.4	122.4	121.4	118.7	114.8	110.5	105.8	100.5	87.0	56.8
			m^3/h	27.8	27.8	27.8	27.8	27.8	27.8	27.6	27.0	26.1	25.1	24.0	22.8	19.8	12.9
	Water pressure drop	Standard piping	ftAq	21.4	21.4	21.4	21.4	21.4	21.4	21.1	20.4	19.1	17.7	16.4	15.1	11.4	5.4
			psi	9.3	9.3	9.3	9.3	9.3	9.3	9.1	8.8	8.3	7.7	7.1	6.5	4.9	2.3
			kPa	64	64	64	64	64	64	63	61	57	53	49	45	34	16
		Inside header piping	ftAq	51.9	51.9	51.9	51.9	51.9	51.9	50.9	48.9	45.8	42.8	39.5	35.8	27.4	12.7
			psi	22.5	22.5	22.5	22.5	22.5	22.5	22.0	21.2	19.9	18.6	17.1	15.5	11.9	5.5
			kPa	155	155	155	155	155	155	152	146	137	128	118	107	82	38
15 (59)	Cooling capacity		BTU/h	867707	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	606678	239191
			kW	254.3	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	177.8	70.1
	Power consumption		BTU/h	156762	156762	156762	156762	156762	156762	158496	164100	172935	183302	196017	210746	172906	80112
			kW	45.9	45.9	45.9	45.9	45.9	45.9	46.5	48.1	50.7	53.7	57.4	61.8	50.7	23.5
	Cold water flow rate		GPM	137.6	137.6	137.6	137.6	137.6	137.6	136.7	134.2	130.3	126.0	120.9	115.2	96.2	56.8
			m^3/h	31.2	31.2	31.2	31.2	31.2	31.2	31.1	30.5	29.6	28.6	27.5	26.2	21.8	12.9
	Water pressure drop	Standard piping	ftAq	26.8	26.8	26.8	26.8	26.8	26.8	26.4	25.4	24.1	22.8	21.1	19.1	13.7	5.4
			psi	11.6	11.6	11.6	11.6	11.6	11.6	11.5	11.0	10.4	9.9	9.1	8.3	5.9	2.3
			kPa	80	80	80	80	80	80	79	76	72	68	63	57	41	16
		Inside header piping	ftAq	64.6	64.6	64.6	64.6	64.6	64.6	63.6	61.6	58.2	54.5	50.5	46.2	33.1	12.7
			psi	28.0	28.0	28.0	28.0	28.0	28.0	27.6	26.7	25.2	23.6	21.9	20.0	14.4	5.5
			kPa	193	193	193	193	193	193	190	184	174	163	151	138	99	38
20 (68)	Cooling capacity		BTU/h	-	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	606678	239191
			kW	-	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	177.8	70.1
	Power consumption		BTU/h	-	156762	156762	156762	156762	156762	158496	164100	172935	183302	196017	210746	172906	80112
			kW	-	45.9	45.9	45.9	45.9	45.9	46.5	48.1	50.7	53.7	57.4	61.8	50.7	23.5
	Cold water flow rate		GPM	-	137.6	137.6	137.6	137.6	137.6	136.7	134.2	130.3	126.0	120.9	115.2	96.2	56.8
			m^3/h	-	31.2	31.2	31.2	31.2	31.2	31.1	30.5	29.6	28.6	27.5	26.2	21.8	12.9
	Water pressure drop	Standard piping	ftAq	-	26.8	26.8	26.8	26.8	26.8	26.4	25.4	24.1	22.8	21.1	19.1	13.7	5.4
			psi	-	11.6	11.6	11.6	11.6	11.6	11.5	11.0	10.4	9.9	9.1	8.3	5.9	2.3
			kPa	-	80	80	80	80	80	79	76	72	68	63	57	41	16
		Inside header piping	ftAq	-	64.6	64.6	64.6	64.6	64.6	63.6	61.6	58.2	54.5	50.5	46.2	33.1	12.7
			psi	-	28.0	28.0	28.0	28.0	28.0	27.6	26.7	25.2	23.6	21.9	20.0	14.4	5.5
			kPa	-	193	193	193	193	193	190	184	174	163	151	138	99	38

7. Capacity tables

MODEL				EAHV-M050YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
25 (77)	Cooling capacity		BTU/h	-	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	606678	-
			kW	-	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	177.8	-
	Power consumption		BTU/h	-	156762	156762	156762	156762	156762	158496	164100	172935	183302	196017	210746	172906	-
			kW	-	45.9	45.9	45.9	45.9	45.9	46.5	48.1	50.7	53.7	57.4	61.8	50.7	-
	Cold water flow rate		GPM	-	137.6	137.6	137.6	137.6	137.6	136.7	134.2	130.3	126.0	120.9	115.2	96.2	-
			m^3/h	-	31.2	31.2	31.2	31.2	31.2	31.1	30.5	29.6	28.6	27.5	26.2	21.8	-
	Water pressure drop	Standard piping	ftAq	-	26.8	26.8	26.8	26.8	26.8	26.4	25.4	24.1	22.8	21.1	19.1	13.7	-
			psi	-	11.6	11.6	11.6	11.6	11.6	11.5	11.0	10.4	9.9	9.1	8.3	5.9	-
			kPa	-	80	80	80	80	80	79	76	72	68	63	57	41	-
		Inside header piping	ftAq	-	64.6	64.6	64.6	64.6	64.6	63.6	61.6	58.2	54.5	50.5	46.2	33.1	-
			psi	-	28.0	28.0	28.0	28.0	28.0	27.6	26.7	25.2	23.6	21.9	20.0	14.4	-
			kPa	-	193	193	193	193	193	190	184	174	163	151	138	99	-
30 (86)	Cooling capacity		BTU/h	-	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	-	-
			kW	-	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	-	-
	Power consumption		BTU/h	-	156762	156762	156762	156762	156762	158496	164100	172935	183302	196017	210746	-	-
			kW	-	45.9	45.9	45.9	45.9	45.9	46.5	48.1	50.7	53.7	57.4	61.8	-	-
	Cold water flow rate		GPM	-	137.6	137.6	137.6	137.6	137.6	136.7	134.2	130.3	126.0	120.9	115.2	-	-
			m^3/h	-	31.2	31.2	31.2	31.2	31.2	31.1	30.5	29.6	28.6	27.5	26.2	-	-
	Water pressure drop	Standard piping	ftAq	-	26.8	26.8	26.8	26.8	26.8	26.4	25.4	24.1	22.8	21.1	19.1	-	-
			psi	-	11.6	11.6	11.6	11.6	11.6	11.5	11.0	10.4	9.9	9.1	8.3	-	-
			kPa	-	80	80	80	80	80	79	76	72	68	63	57	-	-
		Inside header piping	ftAq	-	64.6	64.6	64.6	64.6	64.6	63.6	61.6	58.2	54.5	50.5	46.2	-	-
			psi	-	28.0	28.0	28.0	28.0	28.0	27.6	26.7	25.2	23.6	21.9	20.0	-	-
			kPa	-	193	193	193	193	193	190	184	174	163	151	138	-	-

*1:Pump doesn't include.

*2:Hatching area shows outlet/inlet temperature difference under 7°C/13°F.

Flow rates shown above are outside the specified range, and the specified values listed are for reference only.

7. Capacity tables

Cooling capacity: Cold water outlet/inlet temperature difference 10°C/18°F

MODEL				EAHV-M040YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
4 (39)	Cooling capacity		BTU/h	545260	545260	545260	545260	545260	545260	540892	527988	509303	489642	468146	444943	430203	154570
			kW	159.8	159.8	159.8	159.8	159.8	159.8	158.5	154.7	149.3	143.5	137.2	130.4	126.1	45.3
	Power consumption		BTU/h	96592	96592	96592	96592	96592	96592	99166	106486	116657	126926	137552	148553	155377	70563
			kW	28.3	28.3	28.3	28.3	28.3	28.3	29.1	31.2	34.2	37.2	40.3	43.5	45.5	20.7
	Cold water flow rate		GPM	60.5	60.5	60.5	60.5	60.5	60.5	60.0	58.6	56.8	56.8	56.8	56.8	56.8	56.8
			m^3/h	13.7	13.7	13.7	13.7	13.7	13.7	13.6	13.3	12.9	12.9	12.9	12.9	12.9	12.9
	Water pressure drop	Standard piping	ftAq	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.7	5.4	5.4	5.4	5.4	5.4	5.4
			psi	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.3	2.3	2.3	2.3	2.3	2.3
			kPa	18	18	18	18	18	18	18	17	16	16	16	16	16	16
		Inside header piping	ftAq	14.4	14.4	14.4	14.4	14.4	14.4	14.1	13.4	12.7	12.7	12.7	12.7	12.7	12.7
			psi	6.2	6.2	6.2	6.2	6.2	6.2	6.1	5.8	5.5	5.5	5.5	5.5	5.5	5.5
			kPa	43	43	43	43	43	43	42	40	38	38	38	38	38	38
7 (45)	Cooling capacity		BTU/h	596495	596495	596495	596495	596495	596495	591245	576317	555569	534105	515443	488487	472644	169452
			kW	174.8	174.8	174.8	174.8	174.8	174.8	173.3	168.9	162.8	156.5	151.1	143.2	138.5	49.7
	Power consumption		BTU/h	97258	97258	97258	97258	97258	97258	100033	107929	118913	130209	141812	153350	159515	70945
			kW	28.5	28.5	28.5	28.5	28.5	28.5	29.3	31.6	34.8	38.2	41.6	44.9	46.7	20.8
	Cold water flow rate		GPM	66.2	66.2	66.2	66.2	66.2	66.2	65.6	64.0	61.7	59.3	57.2	56.8	56.8	56.8
			m^3/h	15.0	15.0	15.0	15.0	15.0	15.0	14.9	14.5	14.0	13.5	13.0	12.9	12.9	12.9
	Water pressure drop	Standard piping	ftAq	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.7	6.4	5.7	5.4	5.4	5.4	5.4
			psi	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.8	2.5	2.3	2.3	2.3	2.3
			kPa	21	21	21	21	21	21	21	20	19	17	16	16	16	16
		Inside header piping	ftAq	16.7	16.7	16.7	16.7	16.7	16.7	16.4	15.7	14.7	13.7	13.1	12.7	12.7	12.7
			psi	7.3	7.3	7.3	7.3	7.3	7.3	7.1	6.8	6.4	5.9	5.7	5.5	5.5	5.5
			kPa	50	50	50	50	50	50	49	47	44	41	39	38	38	38
10 (50)	Cooling capacity		BTU/h	653766	653766	653766	653766	653766	653766	647897	631360	608612	585523	560956	536047	502676	185279
			kW	191.6	191.6	191.6	191.6	191.6	191.6	189.9	185.0	178.4	171.6	164.4	157.1	147.3	54.3
	Power consumption		BTU/h	98045	98045	98045	98045	98045	98045	100926	109107	120455	132094	144218	156696	155060	71219
			kW	28.7	28.7	28.7	28.7	28.7	28.7	29.6	32.0	35.3	38.7	42.3	45.9	45.4	20.9
	Cold water flow rate		GPM	72.5	72.5	72.5	72.5	72.5	72.5	71.9	70.1	67.5	65.0	62.2	59.5	56.8	56.8
			m^3/h	16.5	16.5	16.5	16.5	16.5	16.5	16.3	15.9	15.3	14.8	14.1	13.5	12.9	12.9
	Water pressure drop	Standard piping	ftAq	8.4	8.4	8.4	8.4	8.4	8.4	8.0	7.7	7.4	6.7	6.4	6.0	5.4	5.4
			psi	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.3	3.2	2.9	2.8	2.6	2.3	2.3
			kPa	25	25	25	25	25	25	24	23	22	20	19	18	16	16
		Inside header piping	ftAq	19.7	19.7	19.7	19.7	19.7	19.7	19.4	18.4	17.4	16.1	15.1	13.7	12.7	12.7
			psi	8.6	8.6	8.6	8.6	8.6	8.6	8.4	8.0	7.5	7.0	6.5	5.9	5.5	5.5
			kPa	59	59	59	59	59	59	58	55	52	48	45	41	38	38
15 (59)	Cooling capacity		BTU/h	762955	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	545055	214624
			kW	223.6	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	159.7	62.9
	Power consumption		BTU/h	99676	99676	99676	99676	99676	99676	102491	110557	121860	133588	146024	159065	143693	71503
			kW	29.2	29.2	29.2	29.2	29.2	29.2	30.0	32.4	35.7	39.2	42.8	46.6	42.1	21.0
	Cold water flow rate		GPM	84.7	84.7	84.7	84.7	84.7	84.7	84.0	82.0	79.1	76.1	72.9	69.4	60.5	56.8
			m^3/h	19.2	19.2	19.2	19.2	19.2	19.2	19.1	18.6	18.0	17.3	16.5	15.8	13.7	12.9
	Water pressure drop	Standard piping	ftAq	11.0	11.0	11.0	11.0	11.0	11.0	10.7	10.4	9.7	9.0	8.4	7.7	6.0	5.4
			psi	4.8	4.8	4.8	4.8	4.8	4.8	4.6	4.5	4.2	3.9	3.6	3.3	2.6	2.3
			kPa	33	33	33	33	33	33	32	31	29	27	25	23	18	16
		Inside header piping	ftAq	26.1	26.1	26.1	26.1	26.1	26.1	25.8	24.8	23.1	21.4	19.7	18.1	14.4	12.7
			psi	11.3	11.3	11.3	11.3	11.3	11.3	11.2	10.7	10.0	9.3	8.6	7.8	6.2	5.5
			kPa	78	78	78	78	78	78	77	74	69	64	59	54	43	38
20 (68)	Cooling capacity		BTU/h	-	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	545055	214624
			kW	-	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	159.7	62.9
	Power consumption		BTU/h	-	99676	99676	99676	99676	99676	102491	110557	121860	133588	146024	159065	143693	70889
			kW	-	29.2	29.2	29.2	29.2	29.2	30.0	32.4	35.7	39.2	42.8	46.6	42.1	20.8
	Cold water flow rate		GPM	-	84.7	84.7	84.7	84.7	84.7	84.0	82.0	79.1	76.1	72.9	69.4	60.5	56.8
			m^3/h	-	19.2	19.2	19.2	19.2	19.2	19.1	18.6	18.0	17.3	16.5	15.8	13.7	12.9
	Water pressure drop	Standard piping	ftAq	-	11.0	11.0	11.0	11.0	11.0	10.7	10.4	9.7	9.0	8.4	7.7	6.0	5.4
			psi	-	4.8	4.8	4.8	4.8	4.8	4.6	4.5	4.2	3.9	3.6	3.3	2.6	2.3
			kPa	-	33	33	33	33	33	32	31	29	27	25	23	18	16
		Inside header piping	ftAq	-	26.1	26.1	26.1	26.1	26.1	25.8	24.8	23.1	21.4	19.7	18.1	14.4	12.7
			psi	-	11.3	11.3	11.3	11.3	11.3	11.2	10.7	10.0	9.3	8.6	7.8	6.2	5.5
			kPa	-	78	78	78	78	78	77	74	69	64	59	54	43	38

7. Capacity tables

MODEL				EAHV-M040YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
25 (77)	Cooling capacity		BTU/h	-	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	545055	-
			kW	-	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	159.7	-
	Power consumption		BTU/h	-	99676	99676	99676	99676	99676	102491	110557	121860	133588	146024	159065	143693	-
			kW	-	29.2	29.2	29.2	29.2	29.2	30.0	32.4	35.7	39.2	42.8	46.6	42.1	-
	Cold water flow rate		GPM	-	84.7	84.7	84.7	84.7	84.7	84.0	82.0	79.1	76.1	72.9	69.4	60.5	-
			m^3/h	-	19.2	19.2	19.2	19.2	19.2	19.1	18.6	18.0	17.3	16.5	15.8	13.7	-
	Water pressure drop	Standard piping	ftAq	-	11.0	11.0	11.0	11.0	11.0	10.7	10.4	9.7	9.0	8.4	7.7	6.0	-
			psi	-	4.8	4.8	4.8	4.8	4.8	4.6	4.5	4.2	3.9	3.6	3.3	2.6	-
			kPa	-	33	33	33	33	33	32	31	29	27	25	23	18	-
		Inside header piping	ftAq	-	26.1	26.1	26.1	26.1	26.1	25.8	24.8	23.1	21.4	19.7	18.1	14.4	-
			psi	-	11.3	11.3	11.3	11.3	11.3	11.2	10.7	10.0	9.3	8.6	7.8	6.2	-
			kPa	-	78	78	78	78	78	77	74	69	64	59	54	43	-
30 (86)	Cooling capacity		BTU/h	-	762955	762955	762955	762955	762955	756813	738830	713036	685840	656496	625104	-	-
			kW	-	223.6	223.6	223.6	223.6	223.6	221.8	216.5	209.0	201.0	192.4	183.2	-	-
	Power consumption		BTU/h	-	99676	99676	99676	99676	99676	102491	110557	121860	133588	146024	159065	-	-
			kW	-	29.2	29.2	29.2	29.2	29.2	30.0	32.4	35.7	39.2	42.8	46.6	-	-
	Cold water flow rate		GPM	-	84.7	84.7	84.7	84.7	84.7	84.0	82.0	79.1	76.1	72.9	69.4	-	-
			m^3/h	-	19.2	19.2	19.2	19.2	19.2	19.1	18.6	18.0	17.3	16.5	15.8	-	-
	Water pressure drop	Standard piping	ftAq	-	11.0	11.0	11.0	11.0	11.0	10.7	10.4	9.7	9.0	8.4	7.7	-	-
			psi	-	4.8	4.8	4.8	4.8	4.8	4.6	4.5	4.2	3.9	3.6	3.3	-	-
			kPa	-	33	33	33	33	33	32	31	29	27	25	23	-	-
		Inside header piping	ftAq	-	26.1	26.1	26.1	26.1	26.1	25.8	24.8	23.1	21.4	19.7	18.1	-	-
			psi	-	11.3	11.3	11.3	11.3	11.3	11.2	10.7	10.0	9.3	8.6	7.8	-	-
			kPa	-	78	78	78	78	78	77	74	69	64	59	54	-	-

*1:Pump doesn't include.

*2:Hatching area shows outlet/inlet temperature difference under 10°C/18°F.

Flow rates shown above are outside the specified range, and the specified values listed are for reference only.

7. Capacity tables

Cooling capacity: Cold water outlet/inlet temperature difference 10°C/18°F

MODEL				EAHV-M050YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
4 (39)	Cooling capacity		BTU/h	666533	666533	666533	666533	666533	666533	661143	645435	623017	598463	571512	535365	470671	168219
			kW	195.3	195.3	195.3	195.3	195.3	195.3	193.8	189.2	182.6	175.4	167.5	156.9	137.9	49.3
	Power consumption		BTU/h	133745	133745	133745	133745	133745	133745	136823	145647	158019	170314	183008	193698	172983	78514
			kW	39.2	39.2	39.2	39.2	39.2	39.2	40.1	42.7	46.3	49.9	53.6	56.8	50.7	23.0
	Cold water flow rate		GPM	74.0	74.0	74.0	74.0	74.0	74.0	73.4	71.6	69.1	66.4	63.4	59.4	56.8	56.8
			m^3/h	16.8	16.8	16.8	16.8	16.8	16.8	16.7	16.3	15.7	15.1	14.4	13.5	12.9	12.9
	Water pressure drop	Standard piping	ftAq	8.7	8.7	8.7	8.7	8.7	8.7	8.4	8.0	7.7	7.0	6.7	6.0	5.4	5.4
			psi	3.8	3.8	3.8	3.8	3.8	3.8	3.6	3.5	3.3	3.0	2.9	2.6	2.3	2.3
			kPa	26	26	26	26	26	26	25	24	23	21	20	18	16	16
		Inside header piping	ftAq	20.4	20.4	20.4	20.4	20.4	20.4	20.1	19.4	18.1	16.7	15.4	13.7	12.7	12.7
			psi	8.8	8.8	8.8	8.8	8.8	8.8	8.7	8.4	7.8	7.3	6.7	5.9	5.5	5.5
			kPa	61	61	61	61	61	61	60	58	54	50	46	41	38	38
7 (45)	Cooling capacity		BTU/h	723759	723759	723759	723759	723759	723759	718092	701292	676880	650878	619966	583056	514488	182497
			kW	212.1	212.1	212.1	212.1	212.1	212.1	210.5	205.5	198.4	190.8	181.7	170.9	150.8	53.5
	Power consumption		BTU/h	135967	135967	135967	135967	135967	135967	139153	148319	161221	174706	188823	200062	177368	78911
			kW	39.8	39.8	39.8	39.8	39.8	39.8	40.8	43.5	47.2	51.2	55.3	58.6	52.0	23.1
	Cold water flow rate		GPM	80.3	80.3	80.3	80.3	80.3	80.3	79.7	77.8	75.1	72.2	68.8	64.7	57.1	56.8
			m^3/h	18.2	18.2	18.2	18.2	18.2	18.2	18.1	17.7	17.1	16.4	15.6	14.7	13.0	12.9
	Water pressure drop	Standard piping	ftAq	10.0	10.0	10.0	10.0	10.0	10.0	9.7	9.4	8.7	8.4	7.7	6.7	5.4	5.4
			psi	4.4	4.4	4.4	4.4	4.4	4.4	4.2	4.1	3.8	3.6	3.3	2.9	2.3	2.3
			kPa	30	30	30	30	30	30	29	28	26	25	23	20	16	16
		Inside header piping	ftAq	23.8	23.8	23.8	23.8	23.8	23.8	23.4	22.4	21.1	19.7	18.1	16.1	13.1	12.7
			psi	10.3	10.3	10.3	10.3	10.3	10.3	10.2	9.7	9.1	8.6	7.8	7.0	5.7	5.5
			kPa	71	71	71	71	71	71	70	67	63	59	54	48	39	38
10 (50)	Cooling capacity		BTU/h	771826	771826	771826	771826	771826	771826	766094	749001	724020	697100	667073	633976	549013	200293
			kW	226.2	226.2	226.2	226.2	226.2	226.2	224.5	219.5	212.2	204.3	195.5	185.8	160.9	58.7
	Power consumption		BTU/h	138608	138608	138608	138608	138608	138608	141498	149952	162065	174919	188952	203994	175229	79184
			kW	40.6	40.6	40.6	40.6	40.6	40.6	41.5	43.9	47.5	51.3	55.4	59.8	51.4	23.2
	Cold water flow rate		GPM	85.7	85.7	85.7	85.7	85.7	85.7	85.0	83.1	80.3	77.4	74.0	70.4	60.9	56.8
			m^3/h	19.5	19.5	19.5	19.5	19.5	19.5	19.3	18.9	18.2	17.6	16.8	16.0	13.8	12.9
	Water pressure drop	Standard piping	ftAq	11.0	11.0	11.0	11.0	11.0	11.0	11.0	10.7	10.0	9.4	8.7	8.0	6.0	5.4
			psi	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.6	4.4	4.1	3.8	3.5	2.6	2.3
			kPa	33	33	33	33	33	33	33	32	30	28	26	24	18	16
		Inside header piping	ftAq	26.8	26.8	26.8	26.8	26.8	26.8	26.4	25.4	23.8	22.1	20.4	18.7	14.4	12.7
			psi	11.6	11.6	11.6	11.6	11.6	11.6	11.5	11.0	10.3	9.6	8.8	8.1	6.2	5.5
			kPa	80	80	80	80	80	80	79	76	71	66	61	56	43	38
15 (59)	Cooling capacity		BTU/h	867707	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	606678	239191
			kW	254.3	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	177.8	70.1
	Power consumption		BTU/h	150531	150531	150531	150531	150531	150531	152255	157820	166583	176860	189469	204096	168140	79466
			kW	44.1	44.1	44.1	44.1	44.1	44.1	44.6	46.3	48.8	51.8	55.5	59.8	49.3	23.3
	Cold water flow rate		GPM	96.3	96.3	96.3	96.3	96.3	96.3	95.7	93.9	91.2	88.2	84.6	80.6	67.3	56.8
			m^3/h	21.9	21.9	21.9	21.9	21.9	21.9	21.7	21.3	20.7	20.0	19.2	18.3	15.3	12.9
	Water pressure drop	Standard piping	ftAq	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.1	12.4	11.7	11.0	10.0	7.4	5.4
			psi	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.7	5.4	5.1	4.8	4.4	3.2	2.3
			kPa	41	41	41	41	41	41	41	39	37	35	33	30	22	16
		Inside header piping	ftAq	33.1	33.1	33.1	33.1	33.1	33.1	32.8	31.8	30.1	28.1	26.1	23.8	17.4	12.7
			psi	14.4	14.4	14.4	14.4	14.4	14.4	14.2	13.8	13.1	12.2	11.3	10.3	7.5	5.5
			kPa	99	99	99	99	99	99	98	95	90	84	78	71	52	38
20 (68)	Cooling capacity		BTU/h	-	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	606678	239191
			kW	-	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	177.8	70.1
	Power consumption		BTU/h	-	150531	150531	150531	150531	150531	152255	157820	166583	176860	189469	204096	168140	79466
			kW	-	44.1	44.1	44.1	44.1	44.1	44.6	46.3	48.8	51.8	55.5	59.8	49.3	23.3
	Cold water flow rate		GPM	-	96.3	96.3	96.3	96.3	96.3	95.7	93.9	91.2	88.2	84.6	80.6	67.3	56.8
			m^3/h	-	21.9	21.9	21.9	21.9	21.9	21.7	21.3	20.7	20.0	19.2	18.3	15.3	12.9
	Water pressure drop	Standard piping	ftAq	-	13.7	13.7	13.7	13.7	13.7	13.7	13.1	12.4	11.7	11.0	10.0	7.4	5.4
			psi	-	5.9	5.9	5.9	5.9	5.9	5.9	5.7	5.4	5.1	4.8	4.4	3.2	2.3
			kPa	-	41	41	41	41	41	41	39	37	35	33	30	22	16
		Inside header piping	ftAq	-	33.1	33.1	33.1	33.1	33.1	32.8	31.8	30.1	28.1	26.1	23.8	17.4	12.7
			psi	-	14.4	14.4	14.4	14.4	14.4	14.2	13.8	13.1	12.2	11.3	10.3	7.5	5.5
			kPa	-	99	99	99	99	99	98	95	90	84	78	71	52	38

7. Capacity tables

MODEL				EAHV-M050YCL(-N)													
Cold water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)	52 (126)
25 (77)	Cooling capacity		BTU/h	-	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	606678	-
			kW	-	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	177.8	-
	Power consumption		BTU/h	-	150531	150531	150531	150531	150531	152255	157820	166583	176860	189469	204096	168140	-
			kW	-	44.1	44.1	44.1	44.1	44.1	44.6	46.3	48.8	51.8	55.5	59.8	49.3	-
	Cold water flow rate		GPM	-	96.3	96.3	96.3	96.3	96.3	95.7	93.9	91.2	88.2	84.6	80.6	67.3	-
			m^3/h	-	21.9	21.9	21.9	21.9	21.9	21.7	21.3	20.7	20.0	19.2	18.3	15.3	-
	Water pressure drop	Standard piping	ftAq	-	13.7	13.7	13.7	13.7	13.7	13.7	13.1	12.4	11.7	11.0	10.0	7.4	-
			psi	-	5.9	5.9	5.9	5.9	5.9	5.9	5.7	5.4	5.1	4.8	4.4	3.2	-
			kPa	-	41	41	41	41	41	41	39	37	35	33	30	22	-
		Inside header piping	ftAq	-	33.1	33.1	33.1	33.1	33.1	32.8	31.8	30.1	28.1	26.1	23.8	17.4	-
			psi	-	14.4	14.4	14.4	14.4	14.4	14.2	13.8	13.1	12.2	11.3	10.3	7.5	-
			kPa	-	99	99	99	99	99	98	95	90	84	78	71	52	-
30 (86)	Cooling capacity		BTU/h	-	867707	867707	867707	867707	867707	862521	846454	822082	794687	762613	726445	-	-
			kW	-	254.3	254.3	254.3	254.3	254.3	252.8	248.1	240.9	232.9	223.5	212.9	-	-
	Power consumption		BTU/h	-	150531	150531	150531	150531	150531	152255	157820	166583	176860	189469	204096	-	-
			kW	-	44.1	44.1	44.1	44.1	44.1	44.6	46.3	48.8	51.8	55.5	59.8	-	-
	Cold water flow rate		GPM	-	96.3	96.3	96.3	96.3	96.3	95.7	93.9	91.2	88.2	84.6	80.6	-	-
			m^3/h	-	21.9	21.9	21.9	21.9	21.9	21.7	21.3	20.7	20.0	19.2	18.3	-	-
	Water pressure drop	Standard piping	ftAq	-	13.7	13.7	13.7	13.7	13.7	13.7	13.1	12.4	11.7	11.0	10.0	-	-
			psi	-	5.9	5.9	5.9	5.9	5.9	5.9	5.7	5.4	5.1	4.8	4.4	-	-
			kPa	-	41	41	41	41	41	41	39	37	35	33	30	-	-
		Inside header piping	ftAq	-	33.1	33.1	33.1	33.1	33.1	32.8	31.8	30.1	28.1	26.1	23.8	-	-
			psi	-	14.4	14.4	14.4	14.4	14.4	14.2	13.8	13.1	12.2	11.3	10.3	-	-
			kPa	-	99	99	99	99	99	98	95	90	84	78	71	-	-

*1:Pump doesn't include.

*2:Hatching area shows outlet/inlet temperature difference under 10°C/18°F.

Flow rates shown above are outside the specified range, and the specified values listed are for reference only.

7. Capacity tables

Heating capacity: Hot water outlet/inlet temperature difference 5°C/9°F

MODEL				EAHV-M040YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
25 (77)	Heating capacity		BTU/h	355886	405362	462686	511821	511821	538967	572898	639094	639094	639094	-	-	-	-
			kW	104.3	118.8	135.6	150.0	150.0	158.0	167.9	187.3	187.3	187.3	-	-	-	-
	Power consumption		BTU/h	133491	136414	138894	134646	117702	117758	99337	97297	97297	97297	-	-	-	-
			kW	39.12	39.98	40.71	39.46	34.50	34.51	29.11	28.52	28.52	28.52	-	-	-	-
	Hot water flow rate		GPM	79.0	90.0	102.7	113.6	113.6	119.6	127.1	141.8	141.8	141.8	-	-	-	-
			m^3/h	17.9	20.4	23.3	25.8	25.8	27.2	28.9	32.2	32.2	32.2	-	-	-	-
	Water pressure drop	Standard piping	ftAq	9.7	12.0	15.4	18.7	18.7	20.7	23.1	28.4	28.4	28.4	-	-	-	-
			psi	4.2	5.2	6.7	8.1	8.1	9.0	10.0	12.3	12.3	12.3	-	-	-	-
			kPa	29	36	46	56	56	62	69	85	85	85	-	-	-	-
		Inside header piping	ftAq	23.1	29.1	37.1	44.8	44.8	49.5	55.6	68.3	68.3	68.3	-	-	-	-
			psi	10.0	12.6	16.1	19.4	19.4	21.5	24.1	29.6	29.6	29.6	-	-	-	-
			kPa	69	87	111	134	134	148	166	204	204	204	-	-	-	-
30 (86)	Heating capacity		BTU/h	346673	399220	458592	511821	511821	534673	569145	633634	633634	633634	-	-	-	-
			kW	101.6	117.0	134.4	150.0	150.0	156.7	166.8	185.7	185.7	185.7	-	-	-	-
	Power consumption		BTU/h	142429	146133	149328	146575	128745	128916	110280	108886	108886	108886	-	-	-	-
			kW	41.74	42.83	43.76	42.96	37.73	37.78	32.32	31.91	31.91	31.91	-	-	-	-
	Hot water flow rate		GPM	76.9	88.6	101.8	113.6	113.6	118.7	126.3	140.6	140.6	140.6	-	-	-	-
			m^3/h	17.5	20.1	23.1	25.8	25.8	27.0	28.7	31.9	31.9	31.9	-	-	-	-
	Water pressure drop	Standard piping	ftAq	9.4	11.7	15.4	18.7	18.7	20.4	22.8	27.8	27.8	27.8	-	-	-	-
			psi	4.1	5.1	6.7	8.1	8.1	8.8	9.9	12.0	12.0	12.0	-	-	-	-
			kPa	28	35	46	56	56	61	68	83	83	83	-	-	-	-
		Inside header piping	ftAq	22.1	28.4	36.8	44.8	44.8	48.9	54.9	67.3	67.3	67.3	-	-	-	-
			psi	9.6	12.3	16.0	19.4	19.4	21.2	23.8	29.2	29.2	29.2	-	-	-	-
			kPa	66	85	110	134	134	146	164	201	201	201	-	-	-	-
35 (95)	Heating capacity		BTU/h	337802	391714	452109	511821	511821	530106	563686	627151	627151	627151	627151	627151	627151	627151
			kW	99.0	114.8	132.5	150.0	150.0	155.4	165.2	183.8	183.8	183.8	183.8	183.8	183.8	183.8
	Power consumption		BTU/h	152114	156668	160644	160780	140147	140442	121664	120849	120849	120849	120849	120849	120849	120849
			kW	44.58	45.91	47.08	47.12	41.07	41.16	35.66	35.42	35.42	35.42	35.42	35.42	35.42	35.42
	Hot water flow rate		GPM	75.0	86.9	100.3	113.6	113.6	117.7	125.1	139.2	139.2	139.2	139.2	139.2	139.2	139.2
			m^3/h	17.0	19.7	22.8	25.8	25.8	26.7	28.4	31.6	31.6	31.6	31.6	31.6	31.6	31.6
	Water pressure drop	Standard piping	ftAq	8.7	11.4	15.1	18.7	18.7	20.1	22.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4
			psi	3.8	4.9	6.5	8.1	8.1	8.7	9.7	11.9	11.9	11.9	11.9	11.9	11.9	11.9
			kPa	26	34	45	56	56	60	67	82	82	82	82	82	82	82
		Inside header piping	ftAq	21.1	27.4	35.8	44.8	44.8	48.2	53.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9
			psi	9.1	11.9	15.5	19.4	19.4	20.9	23.4	28.6	28.6	28.6	28.6	28.6	28.6	28.6
			kPa	63	82	107	134	134	144	161	197	197	197	197	197	197	197
40 (104)	Heating capacity		BTU/h	329613	383525	443237	509091	511821	525475	556520	619303	619303	619303	619303	619303	619303	619303
			kW	96.6	112.4	129.9	149.2	150.0	154.0	163.1	181.5	181.5	181.5	181.5	181.5	181.5	181.5
	Power consumption		BTU/h	162582	168053	172879	177025	153712	152320	133457	133219	133219	133219	133219	133219	133219	133219
			kW	47.65	49.25	50.67	51.88	45.05	44.64	39.11	39.04	39.04	39.04	39.04	39.04	39.04	39.04
	Hot water flow rate		GPM	73.2	85.1	98.4	113.0	113.6	116.6	123.5	137.4	137.4	137.4	137.4	137.4	137.4	137.4
			m^3/h	16.6	19.3	22.3	25.7	25.8	26.5	28.1	31.2	31.2	31.2	31.2	31.2	31.2	31.2
	Water pressure drop	Standard piping	ftAq	8.4	11.0	14.4	18.4	18.7	19.7	21.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8
			psi	3.6	4.8	6.2	8.0	8.1	8.6	9.4	11.6	11.6	11.6	11.6	11.6	11.6	11.6
			kPa	25	33	43	55	56	59	65	80	80	80	80	80	80	80
		Inside header piping	ftAq	20.1	26.4	34.5	44.5	44.8	47.2	52.5	64.3	64.3	64.3	64.3	64.3	64.3	64.3
			psi	8.7	11.5	14.9	19.3	19.4	20.5	22.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
			kPa	60	79	103	133	134	141	157	192	192	192	192	192	192	192
45 (113)	Heating capacity		BTU/h	322106	373629	431977	496466	511821	519087	547990	610091	610091	610091	610091	610091	610091	610091
			kW	94.4	109.5	126.6	145.5	150.0	152.1	160.6	178.8	178.8	178.8	178.8	178.8	178.8	178.8
	Power consumption		BTU/h	173830	180288	185997	190959	169616	164582	145657	145963	145963	145963	145963	145963	145963	145963
			kW	50.94	52.84	54.51	55.96	49.71	48.23	42.69	42.78	42.78	42.78	42.78	42.78	42.78	42.78
	Hot water flow rate		GPM	71.5	82.9	95.9	110.2	113.6	115.2	121.6	135.4	135.4	135.4	135.4	135.4	135.4	135.4
			m^3/h	16.2	18.8	21.8	25.0	25.8	26.2	27.6	30.8	30.8	30.8	30.8	30.8	30.8	30.8
	Water pressure drop	Standard piping	ftAq	8.0	10.7	13.7	17.7	18.7	19.1	21.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
			psi	3.5	4.6	5.9	7.7	8.1	8.3	9.1	11.3	11.3	11.3	11.3	11.3	11.3	11.3
			kPa	24	32	41	53	56	57	63	78	78	78	78	78	78	78
		Inside header piping	ftAq	19.1	25.1	32.8	42.5	44.8	46.2	51.2	62.6	62.6	62.6	62.6	62.6	62.6	62.6
			psi	8.3	10.9	14.2	18.4	19.4	20.0	22.2	27.1	27.1	27.1	27.1	27.1	27.1	27.1
			kPa	57	75	98	127	134	138	153	187	187	187	187	187	187	187

7. Capacity tables

MODEL				EAHV-M040YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
50 (122)	Heating capacity		BTU/h	-	-	418328	480771	501585	507322	537412	599513	599513	599513	599513	599513	599513	599513
			kW	-	-	122.6	140.9	147.0	148.7	157.5	175.7	175.7	175.7	175.7	175.7	175.7	175.7
	Power consumption		BTU/h	-	-	200066	205810	183618	176799	158300	159115	159115	159115	159115	159115	159115	159115
			kW	-	-	58.63	60.32	53.81	51.81	46.39	46.63	46.63	46.63	46.63	46.63	46.63	46.63
	Hot water flow rate		GPM	-	-	92.8	106.7	111.3	112.6	119.3	133.1	133.1	133.1	133.1	133.1	133.1	133.1
			m^3/h	-	-	21.1	24.2	25.3	25.6	27.1	30.2	30.2	30.2	30.2	30.2	30.2	30.2
	Water pressure drop	Standard piping	ftAq	-	-	13.1	16.7	18.1	18.4	20.4	25.1	25.1	25.1	25.1	25.1	25.1	25.1
			psi	-	-	5.7	7.3	7.8	8.0	8.8	10.9	10.9	10.9	10.9	10.9	10.9	10.9
			kPa	-	-	39	50	54	55	61	75	75	75	75	75	75	75
		Inside header piping	ftAq	-	-	30.8	40.2	43.2	44.2	49.2	60.6	60.6	60.6	60.6	60.6	60.6	60.6
			psi	-	-	13.3	17.4	18.7	19.1	21.3	26.3	26.3	26.3	26.3	26.3	26.3	26.3
			kPa	-	-	92	120	129	132	147	181	181	181	181	181	181	181
55 (131)	Heating capacity		BTU/h	-	-	-	462004	487595	488960	525470	587571	587571	-	-	-	-	-
			kW	-	-	-	135.4	142.9	143.3	154.0	172.2	172.2	-	-	-	-	-
	Power consumption		BTU/h	-	-	-	221613	197484	188529	171350	172641	172641	-	-	-	-	-
			kW	-	-	-	64.95	57.88	55.25	50.22	50.60	50.60	-	-	-	-	-
	Hot water flow rate		GPM	-	-	-	102.5	108.2	108.5	116.6	130.4	130.4	-	-	-	-	-
			m^3/h	-	-	-	23.3	24.6	24.6	26.5	29.6	29.6	-	-	-	-	-
	Water pressure drop	Standard piping	ftAq	-	-	-	15.4	17.1	17.1	19.7	24.1	24.1	-	-	-	-	-
			psi	-	-	-	6.7	7.4	7.4	8.6	10.4	10.4	-	-	-	-	-
			kPa	-	-	-	46	51	51	59	72	72	-	-	-	-	-
		Inside header piping	ftAq	-	-	-	37.1	41.2	41.2	47.2	58.2	58.2	-	-	-	-	-
			psi	-	-	-	16.1	17.8	17.8	20.5	25.2	25.2	-	-	-	-	-
			kPa	-	-	-	111	123	123	141	174	174	-	-	-	-	-

*1:Pump doesn't include.

7. Capacity tables

Heating capacity: Hot water outlet/inlet temperature difference 5°C/9°F

MODEL				EAHV-M050YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
25 (77)	Heating capacity		BTU/h	357933	407410	465075	530929	599854	644230	687546	770461	770461	770461	-	-	-	-
			kW	104.9	119.4	136.3	155.6	175.8	188.8	201.5	225.8	225.8	225.8	-	-	-	-
	Power consumption		BTU/h	134619	137884	140706	143120	143936	140764	127241	125404	125404	125404	-	-	-	-
			kW	39.45	40.41	41.24	41.94	42.18	41.25	37.29	36.75	36.75	36.75	-	-	-	-
	Hot water flow rate		GPM	79.4	90.4	103.2	117.8	133.1	143.0	152.6	171.0	171.0	171.0	-	-	-	-
			m^3/h	18.0	20.5	23.4	26.8	30.2	32.5	34.7	38.8	38.8	38.8	-	-	-	-
	Water pressure drop	Standard piping	ftAq	9.7	12.4	15.7	20.1	25.1	28.8	32.5	40.2	40.2	40.2	-	-	-	-
			psi	4.2	5.4	6.8	8.7	10.9	12.5	14.1	17.4	17.4	17.4	-	-	-	-
			kPa	29	37	47	60	75	86	97	120	120	120	-	-	-	-
		Inside header piping	ftAq	23.4	29.4	37.8	48.2	60.6	69.3	78.3	97.4	97.4	97.4	-	-	-	-
			psi	10.2	12.8	16.4	20.9	26.3	30.0	33.9	42.2	42.2	42.2	-	-	-	-
			kPa	70	88	113	144	181	207	234	291	291	291	-	-	-	-
30 (86)	Heating capacity		BTU/h	348379	401268	460980	527858	597466	639557	683452	764661	764661	764661	-	-	-	-
			kW	102.1	117.6	135.1	154.7	175.1	187.4	200.3	224.1	224.1	224.1	-	-	-	-
	Power consumption		BTU/h	143630	147677	151247	154375	155769	153166	139890	138904	138904	138904	-	-	-	-
			kW	42.09	43.28	44.33	45.24	45.65	44.89	41.00	40.71	40.71	40.71	-	-	-	-
	Hot water flow rate		GPM	77.3	89.1	102.3	117.2	132.6	141.9	151.7	169.7	169.7	169.7	-	-	-	-
			m^3/h	17.6	20.2	23.2	26.6	30.1	32.2	34.5	38.5	38.5	38.5	-	-	-	-
	Water pressure drop	Standard piping	ftAq	9.4	12.0	15.4	19.7	25.1	28.4	32.1	39.8	39.8	39.8	-	-	-	-
			psi	4.1	5.2	6.7	8.6	10.9	12.3	13.9	17.3	17.3	17.3	-	-	-	-
			kPa	28	36	46	59	75	85	96	119	119	119	-	-	-	-
		Inside header piping	ftAq	22.1	28.8	37.1	47.5	60.2	68.3	77.6	96.0	96.0	96.0	-	-	-	-
			psi	9.6	12.5	16.1	20.6	26.1	29.6	33.6	41.6	41.6	41.6	-	-	-	-
			kPa	66	86	111	142	180	204	232	287	287	287	-	-	-	-
35 (95)	Heating capacity		BTU/h	339508	393420	454156	521716	590983	634507	676969	757154	757154	757154	757154	757154	757154	757154
			kW	99.5	115.3	133.1	152.9	173.2	186.0	198.4	221.9	221.9	221.9	221.9	221.9	221.9	221.9
	Power consumption		BTU/h	153457	158354	162740	166583	168555	166707	153185	153015	153015	153015	153015	153015	153015	153015
			kW	44.97	46.41	47.69	48.82	49.40	48.86	44.89	44.84	44.84	44.84	44.84	44.84	44.84	44.84
	Hot water flow rate		GPM	75.4	87.3	100.8	115.8	131.2	140.8	150.2	168.0	168.0	168.0	168.0	168.0	168.0	168.0
			m^3/h	17.1	19.8	22.9	26.3	29.8	32.0	34.1	38.2	38.2	38.2	38.2	38.2	38.2	38.2
	Water pressure drop	Standard piping	ftAq	9.0	11.7	15.1	19.4	24.4	27.8	31.5	38.8	38.8	38.8	38.8	38.8	38.8	38.8
			psi	3.9	5.1	6.5	8.4	10.6	12.0	13.6	16.8	16.8	16.8	16.8	16.8	16.8	16.8
			kPa	27	35	45	58	73	83	94	116	116	116	116	116	116	116
		Inside header piping	ftAq	21.1	27.8	36.1	46.5	58.9	67.3	76.3	94.4	94.4	94.4	94.4	94.4	94.4	94.4
			psi	9.1	12.0	15.7	20.2	25.5	29.2	33.1	40.9	40.9	40.9	40.9	40.9	40.9	40.9
			kPa	63	83	108	139	176	201	228	282	282	282	282	282	282	282
40 (104)	Heating capacity		BTU/h	330978	384889	445284	511821	581087	629858	668779	747941	747941	747941	747941	747941	747941	747941
			kW	97.0	112.8	130.5	150.0	170.3	184.6	196.0	219.2	219.2	219.2	219.2	219.2	219.2	219.2
	Power consumption		BTU/h	164032	169915	175185	179810	182326	181653	167127	167739	167739	167739	167739	167739	167739	167739
			kW	48.07	49.80	51.34	52.70	53.43	53.24	48.98	49.16	49.16	49.16	49.16	49.16	49.16	49.16
	Hot water flow rate		GPM	73.5	85.4	98.8	113.6	129.0	139.8	148.4	166.0	166.0	166.0	166.0	166.0	166.0	166.0
			m^3/h	16.7	19.4	22.4	25.8	29.3	31.8	33.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7
	Water pressure drop	Standard piping	ftAq	8.4	11.0	14.4	18.7	23.8	27.4	30.8	38.1	38.1	38.1	38.1	38.1	38.1	38.1
			psi	3.6	4.8	6.2	8.1	10.3	11.9	13.3	16.5	16.5	16.5	16.5	16.5	16.5	16.5
			kPa	25	33	43	56	71	82	92	114	114	114	114	114	114	114
		Inside header piping	ftAq	20.1	26.4	34.8	44.8	57.2	66.6	74.3	92.0	92.0	92.0	92.0	92.0	92.0	92.0
			psi	8.7	11.5	15.1	19.4	24.8	28.9	32.2	39.9	39.9	39.9	39.9	39.9	39.9	39.9
			kPa	60	79	104	134	171	199	222	275	275	275	275	275	275	275
45 (113)	Heating capacity		BTU/h	323471	374994	433683	498855	567780	621763	658543	737022	737022	737022	737022	737022	737022	737022
			kW	94.8	109.9	127.1	146.2	166.4	182.2	193.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0
	Power consumption		BTU/h	175423	182360	188549	193989	197050	198073	181714	183040	183040	183040	183040	183040	183040	183040
			kW	51.41	53.44	55.26	56.85	57.75	58.05	53.26	53.64	53.64	53.64	53.64	53.64	53.64	53.64
	Hot water flow rate		GPM	71.8	83.2	96.3	110.7	126.0	138.0	146.2	163.6	163.6	163.6	163.6	163.6	163.6	163.6
			m^3/h	16.3	18.9	21.9	25.1	28.6	31.3	33.2	37.2	37.2	37.2	37.2	37.2	37.2	37.2
	Water pressure drop	Standard piping	ftAq	8.0	10.7	13.7	17.7	22.8	26.8	29.8	37.1	37.1	37.1	37.1	37.1	37.1	37.1
			psi	3.5	4.6	5.9	7.7	9.9	11.6	12.9	16.1	16.1	16.1	16.1	16.1	16.1	16.1
			kPa	24	32	41	53	68	80	89	111	111	111	111	111	111	111
		Inside header piping	ftAq	19.4	25.4	33.1	42.8	54.5	64.9	72.3	89.7	89.7	89.7	89.7	89.7	89.7	89.7
			psi	8.4	11.0	14.4	18.6	23.6	28.1	31.3	38.9	38.9	38.9	38.9	38.9	38.9	38.9
			kPa	58	76	99	128	163	194	216	268	268	268	268	268	268	268

7. Capacity tables

MODEL				EAHV-M050YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
50 (122)	Heating capacity		BTU/h	-	-	419352	482818	550719	600039	645918	724397	724397	724397	724397	724397	724397	724397
			kW	-	-	122.9	141.5	161.4	175.9	189.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3
	Power consumption		BTU/h	-	-	202830	209155	212759	212294	196914	198954	198954	198954	198954	198954	198954	198954
			kW	-	-	59.44	61.30	62.35	62.22	57.71	58.31	58.31	58.31	58.31	58.31	58.31	58.31
	Hot water flow rate		GPM	-	-	93.1	107.2	122.2	133.2	143.4	160.8	160.8	160.8	160.8	160.8	160.8	160.8
			m^3/h	-	-	21.1	24.3	27.8	30.2	32.6	36.5	36.5	36.5	36.5	36.5	36.5	36.5
	Water pressure drop	Standard piping	ftAq	-	-	13.1	16.7	21.4	25.1	28.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8
			psi	-	-	5.7	7.3	9.3	10.9	12.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
			kPa	-	-	39	50	64	75	86	107	107	107	107	107	107	107
		Inside header piping	ftAq	-	-	31.1	40.5	51.5	60.6	69.6	86.7	86.7	86.7	86.7	86.7	86.7	86.7
			psi	-	-	13.5	17.5	22.3	26.3	30.2	37.6	37.6	37.6	37.6	37.6	37.6	37.6
			kPa	-	-	93	121	154	181	208	259	259	259	259	259	259	259
55 (131)	Heating capacity		BTU/h	-	-	-	463027	529905	577620	631587	710066	710066	-	-	-	-	-
			kW	-	-	-	135.7	155.3	169.3	185.1	208.1	208.1	-	-	-	-	-
	Power consumption		BTU/h	-	-	-	225272	229455	228392	212793	215479	215479	-	-	-	-	-
			kW	-	-	-	66.02	67.25	66.94	62.36	63.15	63.15	-	-	-	-	-
	Hot water flow rate		GPM	-	-	-	102.8	117.6	128.2	140.2	157.6	157.6	-	-	-	-	-
			m^3/h	-	-	-	23.3	26.7	29.1	31.8	35.8	35.8	-	-	-	-	-
	Water pressure drop	Standard piping	ftAq	-	-	-	15.4	20.1	23.4	27.8	34.5	34.5	-	-	-	-	-
			psi	-	-	-	6.7	8.7	10.2	12.0	14.9	14.9	-	-	-	-	-
			kPa	-	-	-	46	60	70	83	103	103	-	-	-	-	-
		Inside header piping	ftAq	-	-	-	37.5	47.9	56.6	66.9	83.3	83.3	-	-	-	-	-
			psi	-	-	-	16.2	20.7	24.5	29.0	36.1	36.1	-	-	-	-	-
			kPa	-	-	-	112	143	169	200	249	249	-	-	-	-	-

*1:Pump doesn't include.

7. Capacity tables

Heating capacity: Hot water outlet/inlet temperature difference 7°C/13°F

MODEL				EAHV-M040YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
25 (77)	Heating capacity		BTU/h	355886	405362	462686	511821	511821	538967	572898	639094	639094	639094	-	-	-	-
			kW	104.3	118.8	135.6	150.0	150.0	158.0	167.9	187.3	187.3	187.3	-	-	-	-
	Power consumption		BTU/h	131418	134295	136738	132556	115626	115701	97794	95787	95787	95787	-	-	-	-
			kW	38.51	39.36	40.07	38.85	33.89	33.91	28.66	28.07	28.07	28.07	-	-	-	-
	Hot water flow rate		GPM	56.8	64.3	73.3	81.1	81.1	85.4	90.8	101.3	101.3	101.3	-	-	-	-
			m^3/h	12.9	14.6	16.7	18.4	18.4	19.4	20.6	23.0	23.0	23.0	-	-	-	-
	Water pressure drop	Standard piping	ftAq	5.4	6.7	8.4	10.0	10.0	11.0	12.4	15.1	15.1	15.1	-	-	-	-
			psi	2.3	2.9	3.6	4.4	4.4	4.8	5.4	6.5	6.5	6.5	-	-	-	-
			kPa	16	20	25	30	30	33	37	45	45	45	-	-	-	-
		Inside header piping	ftAq	12.7	16.1	20.1	24.1	24.1	26.4	29.8	36.5	36.5	36.5	-	-	-	-
			psi	5.5	7.0	8.7	10.4	10.4	11.5	12.9	15.8	15.8	15.8	-	-	-	-
			kPa	38	48	60	72	72	79	89	109	109	109	-	-	-	-
30 (86)	Heating capacity		BTU/h	346673	399220	458592	511821	511821	534673	569145	633634	633634	633634	-	-	-	-
			kW	101.6	117.0	134.4	150.0	150.0	156.7	166.8	185.7	185.7	185.7	-	-	-	-
	Power consumption		BTU/h	140217	143864	147009	144299	126635	126862	108567	107195	107195	107195	-	-	-	-
			kW	41.09	42.16	43.08	42.29	37.11	37.18	31.82	31.42	31.42	31.42	-	-	-	-
	Hot water flow rate		GPM	56.8	63.3	72.7	81.1	81.1	84.8	90.2	100.4	100.4	100.4	-	-	-	-
			m^3/h	12.9	14.4	16.5	18.4	18.4	19.3	20.5	22.8	22.8	22.8	-	-	-	-
	Water pressure drop	Standard piping	ftAq	5.4	6.7	8.4	10.0	10.0	11.0	12.4	15.1	15.1	15.1	-	-	-	-
			psi	2.3	2.9	3.6	4.4	4.4	4.8	5.4	6.5	6.5	6.5	-	-	-	-
			kPa	16	20	25	30	30	33	37	45	45	45	-	-	-	-
		Inside header piping	ftAq	12.7	15.4	19.7	24.1	24.1	26.1	29.4	35.8	35.8	35.8	-	-	-	-
			psi	5.5	6.7	8.6	10.4	10.4	11.3	12.8	15.5	15.5	15.5	-	-	-	-
			kPa	38	46	59	72	72	78	88	107	107	107	-	-	-	-
35 (95)	Heating capacity		BTU/h	337802	391714	452109	511821	511821	530106	563686	627151	627151	627151	627151	627151	627151	627151
			kW	99.0	114.8	132.5	150.0	150.0	155.4	165.2	183.8	183.8	183.8	183.8	183.8	183.8	183.8
	Power consumption		BTU/h	149752	154236	158150	158284	137991	138315	119775	118972	118972	118972	118972	118972	118972	118972
			kW	43.89	45.20	46.35	46.39	40.44	40.54	35.10	34.87	34.87	34.87	34.87	34.87	34.87	34.87
	Hot water flow rate		GPM	56.8	62.1	71.7	81.1	81.1	84.0	89.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4
			m^3/h	12.9	14.1	16.3	18.4	18.4	19.1	20.3	22.6	22.6	22.6	22.6	22.6	22.6	22.6
	Water pressure drop	Standard piping	ftAq	5.4	6.4	8.0	10.0	10.0	10.7	12.0	14.7	14.7	14.7	14.7	14.7	14.7	14.7
			psi	2.3	2.8	3.5	4.4	4.4	4.6	5.2	6.4	6.4	6.4	6.4	6.4	6.4	6.4
			kPa	16	19	24	30	30	32	36	44	44	44	44	44	44	44
		Inside header piping	ftAq	12.7	15.1	19.4	24.1	24.1	25.8	28.8	35.1	35.1	35.1	35.1	35.1	35.1	35.1
			psi	5.5	6.5	8.4	10.4	10.4	11.2	12.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2
			kPa	38	45	58	72	72	77	86	105	105	105	105	105	105	105
40 (104)	Heating capacity		BTU/h	329613	383525	443237	509091	511821	525475	556520	619303	619303	619303	619303	619303	619303	619303
			kW	96.6	112.4	129.9	149.2	150.0	154.0	163.1	181.5	181.5	181.5	181.5	181.5	181.5	181.5
	Power consumption		BTU/h	160057	165444	170194	174276	151325	150010	131385	131150	131150	131150	131150	131150	131150	131150
			kW	46.91	48.49	49.88	51.08	44.35	43.96	38.51	38.44	38.44	38.44	38.44	38.44	38.44	38.44
	Hot water flow rate		GPM	56.8	60.8	70.3	80.7	81.1	83.3	88.2	98.2	98.2	98.2	98.2	98.2	98.2	98.2
			m^3/h	12.9	13.8	16.0	18.3	18.4	18.9	20.0	22.3	22.3	22.3	22.3	22.3	22.3	22.3
	Water pressure drop	Standard piping	ftAq	5.4	6.0	7.7	10.0	10.0	10.7	11.7	14.4	14.4	14.4	14.4	14.4	14.4	14.4
			psi	2.3	2.6	3.3	4.4	4.4	4.6	5.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2
			kPa	16	18	23	30	30	32	35	43	43	43	43	43	43	43
		Inside header piping	ftAq	12.7	14.4	18.7	24.1	24.1	25.4	28.1	34.5	34.5	34.5	34.5	34.5	34.5	34.5
			psi	5.5	6.2	8.1	10.4	10.4	11.0	12.2	14.9	14.9	14.9	14.9	14.9	14.9	14.9
			kPa	38	43	56	72	72	76	84	103	103	103	103	103	103	103
45 (113)	Heating capacity		BTU/h	322106	373629	431977	496466	511821	519087	547990	610091	610091	610091	610091	610091	610091	610091
			kW	94.4	109.5	126.6	145.5	150.0	152.1	160.6	178.8	178.8	178.8	178.8	178.8	178.8	178.8
	Power consumption		BTU/h	171131	177488	183109	187993	166983	162256	143396	143697	143697	143697	143697	143697	143697	143697
			kW	50.15	52.02	53.66	55.10	48.94	47.55	42.03	42.11	42.11	42.11	42.11	42.11	42.11	42.11
	Hot water flow rate		GPM	56.8	59.2	68.5	78.7	81.1	82.3	86.9	96.7	96.7	96.7	96.7	96.7	96.7	96.7
			m^3/h	12.9	13.5	15.6	17.9	18.4	18.7	19.7	22.0	22.0	22.0	22.0	22.0	22.0	22.0
	Water pressure drop	Standard piping	ftAq	5.4	5.7	7.4	9.7	10.0	10.4	11.4	14.1	14.1	14.1	14.1	14.1	14.1	14.1
			psi	2.3	2.5	3.2	4.2	4.4	4.5	4.9	6.1	6.1	6.1	6.1	6.1	6.1	6.1
			kPa	16	17	22	29	30	31	34	42	42	42	42	42	42	42
		Inside header piping	ftAq	12.7	13.7	17.7	22.8	24.1	24.8	27.4	33.5	33.5	33.5	33.5	33.5	33.5	33.5
			psi	5.5	5.9	7.7	9.9	10.4	10.7	11.9	14.5	14.5	14.5	14.5	14.5	14.5	14.5
			kPa	38	41	53	68	72	74	82	100	100	100	100	100	100	100

7. Capacity tables

MODEL				EAHV-M040YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
50 (122)	Heating capacity		BTU/h	-	-	418328	480771	501585	507322	537412	599513	599513	599513	599513	599513	599513	599513
			kW	-	-	122.6	140.9	147.0	148.7	157.5	175.7	175.7	175.7	175.7	175.7	175.7	175.7
	Power consumption		BTU/h	-	-	196960	202614	180767	174812	155842	156645	156645	156645	156645	156645	156645	156645
			kW	-	-	57.72	59.38	52.98	51.23	45.67	45.91	45.91	45.91	45.91	45.91	45.91	45.91
	Hot water flow rate		GPM	-	-	66.3	76.2	79.5	80.4	85.2	95.0	95.0	95.0	95.0	95.0	95.0	95.0
			m^3/h	-	-	15.1	17.3	18.1	18.3	19.4	21.6	21.6	21.6	21.6	21.6	21.6	21.6
	Water pressure drop	Standard piping	ftAq	-	-	7.0	9.0	9.7	10.0	11.0	13.4	13.4	13.4	13.4	13.4	13.4	13.4
			psi	-	-	3.0	3.9	4.2	4.4	4.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
			kPa	-	-	21	27	29	30	33	40	40	40	40	40	40	40
		Inside header piping	ftAq	-	-	16.7	21.8	23.4	23.8	26.4	32.5	32.5	32.5	32.5	32.5	32.5	32.5
			psi	-	-	7.3	9.4	10.2	10.3	11.5	14.1	14.1	14.1	14.1	14.1	14.1	14.1
			kPa	-	-	50	65	70	71	79	97	97	97	97	97	97	97
55 (131)	Heating capacity		BTU/h	-	-	-	462004	487595	488960	525470	587571	587571	-	-	-	-	-
			kW	-	-	-	135.4	142.9	143.3	154.0	172.2	172.2	-	-	-	-	-
	Power consumption		BTU/h	-	-	-	218171	194417	186157	168689	169960	169960	-	-	-	-	-
			kW	-	-	-	63.94	56.98	54.56	49.44	49.81	49.81	-	-	-	-	-
	Hot water flow rate		GPM	-	-	-	73.2	77.3	77.5	83.3	93.1	93.1	-	-	-	-	-
			m^3/h	-	-	-	16.6	17.6	17.6	18.9	21.2	21.2	-	-	-	-	-
	Water pressure drop	Standard piping	ftAq	-	-	-	8.4	9.4	9.4	10.7	13.1	13.1	-	-	-	-	-
			psi	-	-	-	3.6	4.1	4.1	4.6	5.7	5.7	-	-	-	-	-
			kPa	-	-	-	25	28	28	32	39	39	-	-	-	-	-
		Inside header piping	ftAq	-	-	-	20.1	22.1	22.4	25.4	31.1	31.1	-	-	-	-	-
			psi	-	-	-	8.7	9.6	9.7	11.0	13.5	13.5	-	-	-	-	-
			kPa	-	-	-	60	66	67	76	93	93	-	-	-	-	-

*1:Pump doesn't include.

*2:Hatching area shows outlet/inlet temperature difference under 7°C/13°F.

7. Capacity tables

Heating capacity: Hot water outlet/inlet temperature difference 7°C/13°F

MODEL				EAHV-M050YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
25 (77)	Heating capacity		BTU/h	357933	407410	465075	530929	599854	644230	687546	770461	770461	770461	-	-	-	-
			kW	104.9	119.4	136.3	155.6	175.8	188.8	201.5	225.8	225.8	225.8	-	-	-	-
	Power consumption		BTU/h	132746	135965	138748	141128	141933	138693	125470	123659	123659	123659	-	-	-	-
			kW	38.90	39.85	40.66	41.36	41.60	40.65	36.77	36.24	36.24	36.24	-	-	-	-
	Hot water flow rate		GPM	56.8	64.6	73.7	84.2	95.1	102.1	109.0	122.1	122.1	122.1	-	-	-	-
			m^3/h	12.9	14.7	16.7	19.1	21.6	23.2	24.8	27.7	27.7	27.7	-	-	-	-
	Water pressure drop	Standard piping	ftAq	5.4	6.7	8.7	10.7	13.4	15.4	17.4	21.4	21.4	21.4	-	-	-	-
			psi	2.3	2.9	3.8	4.6	5.8	6.7	7.5	9.3	9.3	9.3	-	-	-	-
			kPa	16	20	26	32	40	46	52	64	64	64	-	-	-	-
		Inside header piping	ftAq	12.7	16.1	20.4	25.8	32.5	36.8	41.5	51.5	51.5	51.5	-	-	-	-
			psi	5.5	7.0	8.8	11.2	14.1	16.0	18.0	22.3	22.3	22.3	-	-	-	-
			kPa	38	48	61	77	97	110	124	154	154	154	-	-	-	-
30 (86)	Heating capacity		BTU/h	348379	401268	460980	527858	597466	639557	683452	764661	764661	764661	-	-	-	-
			kW	102.1	117.6	135.1	154.7	175.1	187.4	200.3	224.1	224.1	224.1	-	-	-	-
	Power consumption		BTU/h	141631	145621	149142	152227	153601	150976	137943	136970	136970	136970	-	-	-	-
			kW	41.51	42.68	43.71	44.61	45.02	44.25	40.43	40.14	40.14	40.14	-	-	-	-
	Hot water flow rate		GPM	56.8	63.6	73.1	83.7	94.7	101.4	108.3	121.2	121.2	121.2	-	-	-	-
			m^3/h	12.9	14.4	16.6	19.0	21.5	23.0	24.6	27.5	27.5	27.5	-	-	-	-
	Water pressure drop	Standard piping	ftAq	5.4	6.7	8.4	10.7	13.4	15.1	17.1	21.1	21.1	21.1	-	-	-	-
			psi	2.3	2.9	3.6	4.6	5.8	6.5	7.4	9.1	9.1	9.1	-	-	-	-
			kPa	16	20	25	32	40	45	51	63	63	63	-	-	-	-
		Inside header piping	ftAq	12.7	15.7	20.1	25.4	32.1	36.5	41.2	50.9	50.9	50.9	-	-	-	-
			psi	5.5	6.8	8.7	11.0	13.9	15.8	17.8	22.0	22.0	22.0	-	-	-	-
			kPa	38	47	60	76	96	109	123	152	152	152	-	-	-	-
35 (95)	Heating capacity		BTU/h	339508	393420	454156	521716	590983	634507	676969	757154	757154	757154	757154	757154	757154	757154
			kW	99.5	115.3	133.1	152.9	173.2	186.0	198.4	221.9	221.9	221.9	221.9	221.9	221.9	221.9
	Power consumption		BTU/h	151321	156150	160475	164264	166209	164370	151053	150885	150885	150885	150885	150885	150885	150885
			kW	44.35	45.76	47.03	48.14	48.71	48.17	44.27	44.22	44.22	44.22	44.22	44.22	44.22	44.22
	Hot water flow rate		GPM	56.8	62.4	72.0	82.7	93.7	100.6	107.3	120.0	120.0	120.0	120.0	120.0	120.0	120.0
			m^3/h	12.9	14.2	16.4	18.8	21.3	22.8	24.4	27.3	27.3	27.3	27.3	27.3	27.3	27.3
	Water pressure drop	Standard piping	ftAq	5.4	6.4	8.0	10.4	13.1	15.1	16.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
			psi	2.3	2.8	3.5	4.5	5.7	6.5	7.3	9.0	9.0	9.0	9.0	9.0	9.0	9.0
			kPa	16	19	24	31	39	45	50	62	62	62	62	62	62	62
		Inside header piping	ftAq	12.7	15.1	19.4	25.1	31.5	35.8	40.5	49.9	49.9	49.9	49.9	49.9	49.9	49.9
			psi	5.5	6.5	8.4	10.9	13.6	15.5	17.5	21.6	21.6	21.6	21.6	21.6	21.6	21.6
			kPa	38	45	58	75	94	107	121	149	149	149	149	149	149	149
40 (104)	Heating capacity		BTU/h	330978	384889	445284	511821	581087	629858	668779	747941	747941	747941	747941	747941	747941	747941
			kW	97.0	112.8	130.5	150.0	170.3	184.6	196.0	219.2	219.2	219.2	219.2	219.2	219.2	219.2
	Power consumption		BTU/h	161749	167550	172747	177307	179788	179097	164800	165404	165404	165404	165404	165404	165404	165404
			kW	47.40	49.10	50.63	51.96	52.69	52.49	48.30	48.48	48.48	48.48	48.48	48.48	48.48	48.48
	Hot water flow rate		GPM	56.8	61.0	70.6	81.1	92.1	99.9	106.0	118.6	118.6	118.6	118.6	118.6	118.6	118.6
			m^3/h	12.9	13.9	16.0	18.4	20.9	22.7	24.1	26.9	26.9	26.9	26.9	26.9	26.9	26.9
	Water pressure drop	Standard piping	ftAq	5.4	6.0	8.0	10.0	12.7	14.7	16.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
			psi	2.3	2.6	3.5	4.4	5.5	6.4	7.1	8.8	8.8	8.8	8.8	8.8	8.8	8.8
			kPa	16	18	24	30	38	44	49	61	61	61	61	61	61	61
		Inside header piping	ftAq	12.7	14.4	18.7	24.1	30.5	35.5	39.5	48.9	48.9	48.9	48.9	48.9	48.9	48.9
			psi	5.5	6.2	8.1	10.4	13.2	15.4	17.1	21.2	21.2	21.2	21.2	21.2	21.2	21.2
			kPa	38	43	56	72	91	106	118	146	146	146	146	146	146	146
45 (113)	Heating capacity		BTU/h	323471	374994	433683	498855	567780	621763	658543	737022	737022	737022	737022	737022	737022	737022
			kW	94.8	109.9	127.1	146.2	166.4	182.2	193.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0
	Power consumption		BTU/h	172982	179822	185924	191289	194307	195354	179185	180493	180493	180493	180493	180493	180493	180493
			kW	50.70	52.70	54.49	56.06	56.95	57.25	52.51	52.90	52.90	52.90	52.90	52.90	52.90	52.90
	Hot water flow rate		GPM	56.8	59.4	68.8	79.1	90.0	98.6	104.4	116.8	116.8	116.8	116.8	116.8	116.8	116.8
			m^3/h	12.9	13.5	15.6	18.0	20.4	22.4	23.7	26.5	26.5	26.5	26.5	26.5	26.5	26.5
	Water pressure drop	Standard piping	ftAq	5.4	6.0	7.7	9.7	12.4	14.4	16.1	19.7	19.7	19.7	19.7	19.7	19.7	19.7
			psi	2.3	2.6	3.3	4.2	5.4	6.2	7.0	8.6	8.6	8.6	8.6	8.6	8.6	8.6
			kPa	16	18	23	29	37	43	48	59	59	59	59	59	59	59
		Inside header piping	ftAq	12.7	13.7	18.1	23.1	29.1	34.5	38.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
			psi	5.5	5.9	7.8	10.0	12.6	14.9	16.7	20.6	20.6	20.6	20.6	20.6	20.6	20.6
			kPa	38	41	54	69	87	103	115	142	142	142	142	142	142	142

7. Capacity tables

MODEL				EAHV-M050YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
50 (122)	Heating capacity		BTU/h	-	-	419352	482818	550719	600039	645918	724397	724397	724397	724397	724397	724397	724397
			kW	-	-	122.9	141.5	161.4	175.9	189.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3
	Power consumption		BTU/h	-	-	200007	206244	209798	210053	194173	196185	196185	196185	196185	196185	196185	196185
			kW	-	-	58.62	60.44	61.49	61.56	56.91	57.50	57.50	57.50	57.50	57.50	57.50	57.50
	Hot water flow rate		GPM	-	-	66.5	76.5	87.3	95.1	102.4	114.8	114.8	114.8	114.8	114.8	114.8	114.8
			m^3/h	-	-	15.1	17.4	19.8	21.6	23.3	26.1	26.1	26.1	26.1	26.1	26.1	26.1
	Water pressure drop	Standard piping	ftAq	-	-	7.0	9.0	11.7	13.4	15.4	19.1	19.1	19.1	19.1	19.1	19.1	19.1
			psi	-	-	3.0	3.9	5.1	5.8	6.7	8.3	8.3	8.3	8.3	8.3	8.3	8.3
			kPa	-	-	21	27	35	40	46	57	57	57	57	57	57	57
		Inside header piping	ftAq	-	-	16.7	21.8	27.8	32.5	37.1	45.8	45.8	45.8	45.8	45.8	45.8	45.8
			psi	-	-	7.3	9.4	12.0	14.1	16.1	19.9	19.9	19.9	19.9	19.9	19.9	19.9
			kPa	-	-	50	65	83	97	111	137	137	137	137	137	137	137
55 (131)	Heating capacity		BTU/h	-	-	-	463027	529905	577620	631587	710066	710066	-	-	-	-	-
			kW	-	-	-	135.7	155.3	169.3	185.1	208.1	208.1	-	-	-	-	-
	Power consumption		BTU/h	-	-	-	222137	226261	225299	209831	212480	212480	-	-	-	-	-
			kW	-	-	-	65.10	66.31	66.03	61.50	62.27	62.27	-	-	-	-	-
	Hot water flow rate		GPM	-	-	-	73.4	84.0	91.6	100.1	112.6	112.6	-	-	-	-	-
			m^3/h	-	-	-	16.7	19.1	20.8	22.7	25.6	25.6	-	-	-	-	-
	Water pressure drop	Standard piping	ftAq	-	-	-	8.4	10.7	12.7	14.7	18.4	18.4	-	-	-	-	-
			psi	-	-	-	3.6	4.6	5.5	6.4	8.0	8.0	-	-	-	-	-
			kPa	-	-	-	25	32	38	44	55	55	-	-	-	-	-
		Inside header piping	ftAq	-	-	-	20.1	25.8	30.1	35.5	44.2	44.2	-	-	-	-	-
			psi	-	-	-	8.7	11.2	13.1	15.4	19.1	19.1	-	-	-	-	-
			kPa	-	-	-	60	77	90	106	132	132	-	-	-	-	-

*1:Pump doesn't include.

*2:Hatching area shows outlet/inlet temperature difference under 7°C/13°F.

7. Capacity tables

Heating capacity: Hot water outlet/inlet temperature difference 10°C/18°F

MODEL				EAHV-M040YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
25 (77)	Heating capacity		BTU/h	355886	405362	462686	511821	511821	538967	572898	639094	639094	639094	-	-	-	-
			kW	104.3	118.8	135.6	150.0	150.0	158.0	167.9	187.3	187.3	187.3	-	-	-	-
	Power consumption		BTU/h	127151	129935	132298	128252	112762	112762	94619	92677	92677	92677	-	-	-	-
			kW	37.26	38.08	38.77	37.59	33.05	33.05	27.73	27.16	27.16	27.16	-	-	-	-
	Hot water flow rate		GPM	56.8	56.8	56.8	56.8	56.8	59.8	63.6	70.9	70.9	70.9	-	-	-	-
			m^3/h	12.9	12.9	12.9	12.9	12.9	13.6	14.4	16.1	16.1	16.1	-	-	-	-
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.4	5.4	6.0	6.7	8.0	8.0	8.0	-	-	-	-
			psi	2.3	2.3	2.3	2.3	2.3	2.6	2.9	3.5	3.5	3.5	-	-	-	-
			kPa	16	16	16	16	16	18	20	24	24	24	-	-	-	-
		Inside header piping	ftAq	12.7	12.7	12.7	12.7	12.7	14.1	15.7	19.1	19.1	19.1	-	-	-	-
			psi	5.5	5.5	5.5	5.5	5.5	6.1	6.8	8.3	8.3	8.3	-	-	-	-
			kPa	38	38	38	38	38	42	47	57	57	57	-	-	-	-
30 (86)	Heating capacity		BTU/h	346673	399220	458592	511821	511821	534673	569145	633634	633634	633634	-	-	-	-
			kW	101.6	117.0	134.4	150.0	150.0	156.7	166.8	185.7	185.7	185.7	-	-	-	-
	Power consumption		BTU/h	135665	139193	142236	139614	123755	123907	105042	103715	103715	103715	-	-	-	-
			kW	39.76	40.79	41.69	40.92	36.27	36.31	30.78	30.40	30.40	30.40	-	-	-	-
	Hot water flow rate		GPM	56.8	56.8	56.8	56.8	56.8	59.3	63.2	70.3	70.3	70.3	-	-	-	-
			m^3/h	12.9	12.9	12.9	12.9	12.9	13.5	14.3	16.0	16.0	16.0	-	-	-	-
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.4	5.4	5.7	6.4	7.7	7.7	7.7	-	-	-	-
			psi	2.3	2.3	2.3	2.3	2.3	2.5	2.8	3.3	3.3	3.3	-	-	-	-
			kPa	16	16	16	16	16	17	19	23	23	23	-	-	-	-
		Inside header piping	ftAq	12.7	12.7	12.7	12.7	12.7	13.7	15.4	18.7	18.7	18.7	-	-	-	-
			psi	5.5	5.5	5.5	5.5	5.5	5.9	6.7	8.1	8.1	8.1	-	-	-	-
			kPa	38	38	38	38	38	41	46	56	56	56	-	-	-	-
35 (95)	Heating capacity		BTU/h	337802	391714	452109	511821	511821	530106	563686	627151	627151	627151	627151	627151	627151	627151
			kW	99.0	114.8	132.5	150.0	150.0	155.4	165.2	183.8	183.8	183.8	183.8	183.8	183.8	183.8
	Power consumption		BTU/h	144890	149228	153015	153145	135026	135318	115886	115110	115110	115110	115110	115110	115110	115110
			kW	42.46	43.73	44.84	44.88	39.57	39.66	33.96	33.74	33.74	33.74	33.74	33.74	33.74	33.74
	Hot water flow rate		GPM	56.8	56.8	56.8	56.8	56.8	58.8	62.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6
			m^3/h	12.9	12.9	12.9	12.9	12.9	13.4	14.2	15.8	15.8	15.8	15.8	15.8	15.8	15.8
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.4	5.4	5.7	6.4	7.7	7.7	7.7	7.7	7.7	7.7	7.7
			psi	2.3	2.3	2.3	2.3	2.3	2.5	2.8	3.3	3.3	3.3	3.3	3.3	3.3	3.3
			kPa	16	16	16	16	16	17	19	23	23	23	23	23	23	23
		Inside header piping	ftAq	12.7	12.7	12.7	12.7	12.7	13.7	15.1	18.4	18.4	18.4	18.4	18.4	18.4	18.4
			psi	5.5	5.5	5.5	5.5	5.5	5.9	6.5	8.0	8.0	8.0	8.0	8.0	8.0	8.0
			kPa	38	38	38	38	38	41	45	55	55	55	55	55	55	55
40 (104)	Heating capacity		BTU/h	329613	383525	443237	509091	511821	525475	556520	619303	619303	619303	619303	619303	619303	619303
			kW	96.6	112.4	129.9	149.2	150.0	154.0	163.1	181.5	181.5	181.5	181.5	181.5	181.5	181.5
	Power consumption		BTU/h	154861	160072	164669	168618	146412	146785	127119	126892	126892	126892	126892	126892	126892	126892
			kW	45.39	46.91	48.26	49.42	42.91	43.02	37.25	37.19	37.19	37.19	37.19	37.19	37.19	37.19
	Hot water flow rate		GPM	56.8	56.8	56.8	56.8	56.8	58.3	61.8	68.7	68.7	68.7	68.7	68.7	68.7	68.7
			m^3/h	12.9	12.9	12.9	12.9	12.9	13.2	14.0	15.6	15.6	15.6	15.6	15.6	15.6	15.6
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.4	5.4	5.7	6.4	7.7	7.7	7.7	7.7	7.7	7.7	7.7
			psi	2.3	2.3	2.3	2.3	2.3	2.5	2.8	3.3	3.3	3.3	3.3	3.3	3.3	3.3
			kPa	16	16	16	16	16	17	19	23	23	23	23	23	23	23
		Inside header piping	ftAq	12.7	12.7	12.7	12.7	12.7	13.4	14.7	18.1	18.1	18.1	18.1	18.1	18.1	18.1
			psi	5.5	5.5	5.5	5.5	5.5	5.8	6.4	7.8	7.8	7.8	7.8	7.8	7.8	7.8
			kPa	38	38	38	38	38	40	44	54	54	54	54	54	54	54
45 (113)	Heating capacity		BTU/h	322106	373629	431977	496466	511821	519087	547990	610091	610091	610091	610091	610091	610091	610091
			kW	94.4	109.5	126.6	145.5	150.0	152.1	160.6	178.8	178.8	178.8	178.8	178.8	178.8	178.8
	Power consumption		BTU/h	165575	171726	177164	181890	161561	158938	138740	139031	139031	139031	139031	139031	139031	139031
			kW	48.53	50.33	51.92	53.31	47.35	46.58	40.66	40.75	40.75	40.75	40.75	40.75	40.75	40.75
	Hot water flow rate		GPM	56.8	56.8	56.8	56.8	56.8	57.6	60.8	67.7	67.7	67.7	67.7	67.7	67.7	67.7
			m^3/h	12.9	12.9	12.9	12.9	12.9	13.1	13.8	15.4	15.4	15.4	15.4	15.4	15.4	15.4
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.4	5.4	5.7	6.0	7.4	7.4	7.4	7.4	7.4	7.4	7.4
			psi	2.3	2.3	2.3	2.3	2.3	2.5	2.6	3.2	3.2	3.2	3.2	3.2	3.2	3.2
			kPa	16	16	16	16	16	17	18	22	22	22	22	22	22	22
		Inside header piping	ftAq	12.7	12.7	12.7	12.7	12.7	13.1	14.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
			psi	5.5	5.5	5.5	5.5	5.5	5.7	6.2	7.5	7.5	7.5	7.5	7.5	7.5	7.5
			kPa	38	38	38	38	38	39	43	52	52	52	52	52	52	52

7. Capacity tables

MODEL				EAHV-M040YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
50 (122)	Heating capacity		BTU/h	-	-	418328	480771	501585	507322	537412	599513	599513	599513	599513	599513	599513	599513
			kW	-	-	122.6	140.9	147.0	148.7	157.5	175.7	175.7	175.7	175.7	175.7	175.7	175.7
	Power consumption		BTU/h	-	-	190565	196036	174898	171415	150782	151559	151559	151559	151559	151559	151559	151559
			kW	-	-	55.85	57.45	51.26	50.24	44.19	44.42	44.42	44.42	44.42	44.42	44.42	44.42
	Hot water flow rate		GPM	-	-	56.8	56.8	56.8	56.8	59.6	66.5	66.5	66.5	66.5	66.5	66.5	66.5
			m^3/h	-	-	12.9	12.9	12.9	12.9	13.5	15.1	15.1	15.1	15.1	15.1	15.1	15.1
	Water pressure drop	Standard piping	ftAq	-	-	5.4	5.4	5.4	5.4	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
			psi	-	-	2.3	2.3	2.3	2.3	2.6	3.0	3.0	3.0	3.0	3.0	3.0	3.0
			kPa	-	-	16	16	16	16	18	21	21	21	21	21	21	21
		Inside header piping	ftAq	-	-	12.7	12.7	12.7	12.7	14.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
			psi	-	-	5.5	5.5	5.5	5.5	6.1	7.4	7.4	7.4	7.4	7.4	7.4	7.4
			kPa	-	-	38	38	38	38	42	51	51	51	51	51	51	51
55 (131)	Heating capacity		BTU/h	-	-	-	462004	487595	488960	525470	587571	587571	-	-	-	-	-
			kW	-	-	-	135.4	142.9	143.3	154.0	172.2	172.2	-	-	-	-	-
	Power consumption		BTU/h	-	-	-	211088	188105	182507	163212	164442	164442	-	-	-	-	-
			kW	-	-	-	61.86	55.13	53.49	47.83	48.19	48.19	-	-	-	-	-
	Hot water flow rate		GPM	-	-	-	56.8	56.8	56.8	58.3	65.2	65.2	-	-	-	-	-
			m^3/h	-	-	-	12.9	12.9	12.9	13.2	14.8	14.8	-	-	-	-	-
	Water pressure drop	Standard piping	ftAq	-	-	-	5.4	5.4	5.4	5.7	7.0	7.0	-	-	-	-	-
			psi	-	-	-	2.3	2.3	2.3	2.5	3.0	3.0	-	-	-	-	-
			kPa	-	-	-	16	16	16	17	21	21	-	-	-	-	-
		Inside header piping	ftAq	-	-	-	12.7	12.7	12.7	13.4	16.4	16.4	-	-	-	-	-
			psi	-	-	-	5.5	5.5	5.5	5.8	7.1	7.1	-	-	-	-	-
			kPa	-	-	-	38	38	38	40	49	49	-	-	-	-	-

*1:Pump doesn't include.

*2:Hatching area shows outlet/inlet temperature difference under 10°C/18°F.

7. Capacity tables

Heating capacity: Hot water outlet/inlet temperature difference 10°C/18°F

MODEL				EAHV-M050YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
25 (77)	Heating capacity		BTU/h	357933	407410	465075	530929	599854	644230	687546	770461	770461	770461	-	-	-	-
			kW	104.9	119.4	136.3	155.6	175.8	188.8	201.5	225.8	225.8	225.8	-	-	-	-
	Power consumption		BTU/h	128552	131669	134364	136669	137449	134745	121506	119752	119752	119752	-	-	-	-
			kW	37.67	38.59	39.38	40.05	40.28	39.49	35.61	35.10	35.10	35.10	-	-	-	-
	Hot water flow rate		GPM	56.8	56.8	56.8	58.9	66.6	71.5	76.3	85.5	85.5	85.5	-	-	-	-
			m^3/h	12.9	12.9	12.9	13.4	15.1	16.2	17.3	19.4	19.4	19.4	-	-	-	-
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.7	7.0	8.0	9.0	11.0	11.0	11.0	-	-	-	-
			psi	2.3	2.3	2.3	2.5	3.0	3.5	3.9	4.8	4.8	4.8	-	-	-	-
			kPa	16	16	16	17	21	24	27	33	33	33	-	-	-	-
		Inside header piping	ftAq	12.7	12.7	12.7	13.7	17.1	19.1	21.8	26.8	26.8	26.8	-	-	-	-
			psi	5.5	5.5	5.5	5.9	7.4	8.3	9.4	11.6	11.6	11.6	-	-	-	-
			kPa	38	38	38	41	51	57	65	80	80	80	-	-	-	-
30 (86)	Heating capacity		BTU/h	348379	401268	460980	527858	597466	639557	683452	764661	764661	764661	-	-	-	-
			kW	102.1	117.6	135.1	154.7	175.1	187.4	200.3	224.1	224.1	224.1	-	-	-	-
	Power consumption		BTU/h	137157	141021	144430	147417	148749	146766	133585	132643	132643	132643	-	-	-	-
			kW	40.20	41.33	42.33	43.20	43.59	43.01	39.15	38.87	38.87	38.87	-	-	-	-
	Hot water flow rate		GPM	56.8	56.8	56.8	58.6	66.3	71.0	75.8	84.9	84.9	84.9	-	-	-	-
			m^3/h	12.9	12.9	12.9	13.3	15.1	16.1	17.2	19.3	19.3	19.3	-	-	-	-
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.7	7.0	8.0	9.0	11.0	11.0	11.0	-	-	-	-
			psi	2.3	2.3	2.3	2.5	3.0	3.5	3.9	4.8	4.8	4.8	-	-	-	-
			kPa	16	16	16	17	21	24	27	33	33	33	-	-	-	-
		Inside header piping	ftAq	12.7	12.7	12.7	13.4	16.7	19.1	21.4	26.1	26.1	26.1	-	-	-	-
			psi	5.5	5.5	5.5	5.8	7.3	8.3	9.3	11.3	11.3	11.3	-	-	-	-
			kPa	38	38	38	40	50	57	64	78	78	78	-	-	-	-
35 (95)	Heating capacity		BTU/h	339508	393420	454156	521716	590983	634507	676969	757154	757154	757154	757154	757154	757154	757154
			kW	99.5	115.3	133.1	152.9	173.2	186.0	198.4	221.9	221.9	221.9	221.9	221.9	221.9	221.9
	Power consumption		BTU/h	146541	151216	155405	159074	160958	159892	146281	146118	146118	146118	146118	146118	146118	146118
			kW	42.95	44.32	45.54	46.62	47.17	46.86	42.87	42.82	42.82	42.82	42.82	42.82	42.82	42.82
	Hot water flow rate		GPM	56.8	56.8	56.8	57.9	65.6	70.4	75.1	84.0	84.0	84.0	84.0	84.0	84.0	84.0
			m^3/h	12.9	12.9	12.9	13.1	14.9	16.0	17.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.7	7.0	8.0	8.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
			psi	2.3	2.3	2.3	2.5	3.0	3.5	3.8	4.6	4.6	4.6	4.6	4.6	4.6	4.6
			kPa	16	16	16	17	21	24	26	32	32	32	32	32	32	32
		Inside header piping	ftAq	12.7	12.7	12.7	13.1	16.4	18.7	21.1	25.8	25.8	25.8	25.8	25.8	25.8	25.8
			psi	5.5	5.5	5.5	5.7	7.1	8.1	9.1	11.2	11.2	11.2	11.2	11.2	11.2	11.2
			kPa	38	38	38	39	49	56	63	77	77	77	77	77	77	77
40 (104)	Heating capacity		BTU/h	330978	384889	445284	511821	581087	629858	668779	747941	747941	747941	747941	747941	747941	747941
			kW	97.0	112.8	130.5	150.0	170.3	184.6	196.0	219.2	219.2	219.2	219.2	219.2	219.2	219.2
	Power consumption		BTU/h	156639	162256	167289	171705	174108	174194	159594	160178	160178	160178	160178	160178	160178	160178
			kW	45.91	47.55	49.03	50.32	51.03	51.05	46.77	46.94	46.94	46.94	46.94	46.94	46.94	46.94
	Hot water flow rate		GPM	56.8	56.8	56.8	56.8	64.5	69.9	74.2	83.0	83.0	83.0	83.0	83.0	83.0	83.0
			m^3/h	12.9	12.9	12.9	12.9	14.6	15.9	16.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.4	6.7	7.7	8.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
			psi	2.3	2.3	2.3	2.3	2.9	3.3	3.8	4.6	4.6	4.6	4.6	4.6	4.6	4.6
			kPa	16	16	16	16	20	23	26	32	32	32	32	32	32	32
		Inside header piping	ftAq	12.7	12.7	12.7	12.7	16.1	18.4	20.4	25.1	25.1	25.1	25.1	25.1	25.1	25.1
			psi	5.5	5.5	5.5	5.5	7.0	8.0	8.8	10.9	10.9	10.9	10.9	10.9	10.9	10.9
			kPa	38	38	38	38	48	55	61	75	75	75	75	75	75	75
45 (113)	Heating capacity		BTU/h	323471	374994	433683	498855	567780	621763	658543	737022	737022	737022	737022	737022	737022	737022
			kW	94.8	109.9	127.1	146.2	166.4	182.2	193.0	216.0	216.0	216.0	216.0	216.0	216.0	216.0
	Power consumption		BTU/h	167517	174141	180050	185246	188168	190085	173524	174790	174790	174790	174790	174790	174790	174790
			kW	49.09	51.04	52.77	54.29	55.15	55.71	50.85	51.23	51.23	51.23	51.23	51.23	51.23	51.23
	Hot water flow rate		GPM	56.8	56.8	56.8	56.8	63.0	69.0	73.1	81.8	81.8	81.8	81.8	81.8	81.8	81.8
			m^3/h	12.9	12.9	12.9	12.9	14.3	15.7	16.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6
	Water pressure drop	Standard piping	ftAq	5.4	5.4	5.4	5.4	6.4	7.7	8.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
			psi	2.3	2.3	2.3	2.3	2.8	3.3	3.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5
			kPa	16	16	16	16	19	23	25	31	31	31	31	31	31	31
		Inside header piping	ftAq	12.7	12.7	12.7	12.7	15.4	18.1	20.1	24.4	24.4	24.4	24.4	24.4	24.4	24.4
			psi	5.5	5.5	5.5	5.5	6.7	7.8	8.7	10.6	10.6	10.6	10.6	10.6	10.6	10.6
			kPa	38	38	38	38	46	54	60	73	73	73	73	73	73	73

7. Capacity tables

MODEL				EAHV-M050YCL(-N)													
Hot water outlet temperature °C (°F)	Outdoor air temperature °CDB (°FDB)			-20 (-4)	-15 (5)	-10 (14)	-5 (23)	0 (32)	5 (41)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	43 (109)
50 (122)	Heating capacity		BTU/h	-	-	419352	482818	550719	600039	645918	724397	724397	724397	724397	724397	724397	724397
			kW	-	-	122.9	141.5	161.4	175.9	189.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3
	Power consumption		BTU/h	-	-	193688	199728	203170	204451	188038	189986	189986	189986	189986	189986	189986	189986
			kW	-	-	56.76	58.53	59.54	59.92	55.11	55.68	55.68	55.68	55.68	55.68	55.68	55.68
	Hot water flow rate		GPM	-	-	56.8	56.8	61.1	66.6	71.7	80.4	80.4	80.4	80.4	80.4	80.4	80.4
			m^3/h	-	-	12.9	12.9	13.9	15.1	16.3	18.3	18.3	18.3	18.3	18.3	18.3	18.3
	Water pressure drop	Standard piping	ftAq	-	-	5.4	5.4	6.0	7.0	8.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
			psi	-	-	2.3	2.3	2.6	3.0	3.5	4.4	4.4	4.4	4.4	4.4	4.4	4.4
			kPa	-	-	16	16	18	21	24	30	30	30	30	30	30	30
		Inside header piping	ftAq	-	-	12.7	12.7	14.4	17.1	19.4	23.8	23.8	23.8	23.8	23.8	23.8	23.8
			psi	-	-	5.5	5.5	6.2	7.4	8.4	10.3	10.3	10.3	10.3	10.3	10.3	10.3
			kPa	-	-	38	38	43	51	58	71	71	71	71	71	71	71
55 (131)	Heating capacity		BTU/h	-	-	-	463027	529905	577620	631587	710066	710066	-	-	-	-	-
			kW	-	-	-	135.7	155.3	169.3	185.1	208.1	208.1	-	-	-	-	-
	Power consumption		BTU/h	-	-	-	215119	219113	219290	203202	205767	205767	-	-	-	-	-
			kW	-	-	-	63.05	64.22	64.27	59.55	60.30	60.30	-	-	-	-	-
	Hot water flow rate		GPM	-	-	-	56.8	58.8	64.1	70.1	78.8	78.8	-	-	-	-	-
			m^3/h	-	-	-	12.9	13.4	14.6	15.9	17.9	17.9	-	-	-	-	-
	Water pressure drop	Standard piping	ftAq	-	-	-	5.4	5.7	6.7	7.7	9.7	9.7	-	-	-	-	-
			psi	-	-	-	2.3	2.5	2.9	3.3	4.2	4.2	-	-	-	-	-
			kPa	-	-	-	16	17	20	23	29	29	-	-	-	-	-
		Inside header piping	ftAq	-	-	-	12.7	13.7	15.7	18.4	23.1	23.1	-	-	-	-	-
			psi	-	-	-	5.5	5.9	6.8	8.0	10.0	10.0	-	-	-	-	-
			kPa	-	-	-	38	41	47	55	69	69	-	-	-	-	-

*1:Pump doesn't include.

*2:Hatching area shows outlet/inlet temperature difference under 10°C/18°F.

7-2. Capacity tables

EER for cooling [Water]

EAHV-M040YCL(-N)

Water flow rate 23.2 m^3/h (102.2 GPM)

Capacity	Air temp °C D.B (°F D.B)	Outlet water temp °C (°F)						
		4 (39)	7 (45)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)
150 kW 511,800 BTU/h (100%)	-15 (5)	18.94	21.65	25.13	34.12	-	-	-
	-10 (14)	18.94	21.65	25.13	34.12	34.12	34.12	34.12
	-5 (23)	18.94	21.65	25.13	34.12	34.12	34.12	34.12
	0 (32)	18.94	21.65	25.13	34.12	34.12	34.12	34.12
	5 (41)	18.94	21.65	25.13	34.12	34.12	34.12	34.12
	10 (50)	18.94	21.65	25.13	34.12	34.12	34.12	34.12
	15 (59)	18.20	20.72	23.91	32.02	32.02	32.02	32.02
	20 (68)	16.29	18.40	20.93	27.13	27.13	27.13	27.13
	25 (77)	14.09	15.74	17.71	22.17	22.17	22.17	22.17
	30 (86)	-	13.52	15.14	18.48	18.48	18.48	18.48
	35 (95)	-	11.73	13.03	15.67	15.67	15.67	15.67
	40 (104)	-	-	11.25	13.42	13.42	13.42	13.42
	43 (109)	-	-	-	12.44	12.44	12.44	-
	45 (113)	-	-	-	-	-	-	-
	50 (122)	-	-	-	-	-	-	-
	52 (126)	-	-	-	-	-	-	-
112.5 kW 383,900 BTU/h (75%)	-15 (5)	21.73	24.96	29.80	42.29	-	-	-
	-10 (14)	21.73	24.96	29.80	42.29	42.29	42.29	42.29
	-5 (23)	21.73	24.96	29.80	42.29	42.29	42.29	42.29
	0 (32)	21.73	24.96	29.80	42.29	42.29	42.29	42.29
	5 (41)	21.73	24.96	29.80	42.29	42.29	42.29	42.29
	10 (50)	21.73	24.96	29.80	42.29	42.29	42.29	42.29
	15 (59)	20.87	23.81	28.22	39.32	39.32	39.32	39.32
	20 (68)	18.65	20.94	24.32	32.48	32.48	32.48	32.48
	25 (77)	16.10	17.77	20.11	25.76	25.76	25.76	25.76
	30 (86)	13.94	15.23	16.91	20.98	20.98	20.98	20.98
	35 (95)	12.01	13.12	14.41	17.42	17.42	17.42	17.42
	40 (104)	10.35	11.35	12.41	14.67	14.67	14.67	14.67
	43 (109)	9.46	10.41	11.42	13.29	13.29	13.29	-
	45 (113)	8.89	9.82	10.83	12.60	12.60	12.60	-
	50 (122)	-	-	-	-	-	-	-
	52 (126)	-	-	-	-	-	-	-
75 kW 255,900 BTU/h (50%)	-15 (5)	24.93	29.61	33.54	39.52	-	-	-
	-10 (14)	24.93	29.61	33.54	39.52	39.52	39.52	39.52
	-5 (23)	24.93	29.61	33.54	39.52	39.52	39.52	39.52
	0 (32)	24.93	29.61	33.54	39.52	39.52	39.52	39.52
	5 (41)	24.93	29.61	33.54	39.52	39.52	39.52	39.52
	10 (50)	24.93	29.61	33.54	39.52	39.52	39.52	39.52
	15 (59)	23.84	28.24	31.86	37.32	37.32	37.32	37.32
	20 (68)	21.03	24.69	27.64	32.05	32.05	32.05	32.05
	25 (77)	17.82	20.34	22.96	26.45	26.45	26.45	26.45
	30 (86)	15.19	16.97	19.18	22.08	22.08	22.08	22.08
	35 (95)	12.98	14.26	15.88	19.52	19.52	19.52	19.52
	40 (104)	11.13	12.10	13.27	15.75	15.75	15.75	15.75
	43 (109)	10.17	11.01	12.00	14.00	14.00	14.00	-
	45 (113)	9.58	10.37	11.24	12.96	12.96	12.96	-
	50 (122)	-	-	9.80	10.98	10.98	-	-
	52 (126)	-	-	-	-	-	-	-
37.5 kW 128,000 BTU/h (25%)	-15 (5)	26.42	32.01	39.70	60.03	-	-	-
	-10 (14)	26.42	32.01	39.70	60.03	-	-	-
	-5 (23)	26.42	32.01	39.70	60.03	-	-	-
	0 (32)	26.42	32.01	39.70	60.03	-	-	-
	5 (41)	26.42	32.01	39.70	60.03	-	-	-
	10 (50)	26.42	32.01	39.70	60.03	-	-	-
	15 (59)	25.21	30.23	37.06	54.96	-	-	-
	20 (68)	22.13	25.78	30.79	43.41	-	-	-
	25 (77)	18.81	21.09	24.50	32.61	-	-	-
	30 (86)	16.36	17.52	19.89	25.28	-	-	-
	35 (95)	13.79	14.74	16.30	19.96	-	-	-
	40 (104)	11.24	12.50	13.64	16.18	-	-	-
	43 (109)	9.76	11.13	12.38	14.35	14.35	-	-
	45 (113)	8.95	10.24	11.57	13.31	13.31	13.31	-
	50 (122)	7.24	9.04	9.78	10.96	-	-	-
	52 (126)	6.80	7.17	9.18	10.26	-	-	-

7. Capacity tables

EER for cooling [Water]

EAHV-M050YCL(-N) Water flow rate 27.9 m^3/h (122.9 GPM)

Capacity	Air temp °C D.B (°F D.B)	Outlet water temp °C (°F)						
		4 (39)	7 (45)	10 (50)	15 (59)	20 (68)	25 (77)	30 (86)
180 kW 614,160 BTU/h (100%)	-15 (5)	17.05	19.20	21.76	30.51	-	-	-
	-10 (14)	17.05	19.20	21.76	30.51	30.51	30.51	30.51
	-5 (23)	17.05	19.20	21.76	30.51	30.51	30.51	30.51
	0 (32)	17.05	19.20	21.76	30.51	30.51	30.51	30.51
	5 (41)	17.05	19.20	21.76	30.51	30.51	30.51	30.51
	10 (50)	17.05	19.20	21.76	30.51	30.51	30.51	30.51
	15 (59)	16.47	18.50	20.89	28.76	28.76	28.76	28.76
	20 (68)	14.91	16.68	18.66	24.62	24.62	24.62	24.62
	25 (77)	12.98	14.51	16.10	20.34	20.34	20.34	20.34
	30 (86)	-	12.58	13.93	17.13	17.13	17.13	17.13
	35 (95)	-	10.74	12.02	14.59	14.59	14.59	14.59
	40 (104)	-	-	10.31	12.55	12.55	12.55	12.55
	43 (109)	-	-	-	-	-	-	-
	45 (113)	-	-	-	-	-	-	-
	50 (122)	-	-	-	-	-	-	-
	52 (126)	-	-	-	-	-	-	-
135 kW 460,000 BTU/h (75%)	-15 (5)	20.46	23.19	27.35	39.72	-	-	-
	-10 (14)	20.46	23.19	27.35	39.72	39.72	39.72	39.72
	-5 (23)	20.46	23.19	27.35	39.72	39.72	39.72	39.72
	0 (32)	20.46	23.19	27.35	39.72	39.72	39.72	39.72
	5 (41)	20.46	23.19	27.35	39.72	39.72	39.72	39.72
	10 (50)	20.46	23.19	27.35	39.72	39.72	39.72	39.72
	15 (59)	19.73	22.25	26.10	37.30	37.30	37.30	37.30
	20 (68)	17.79	19.85	22.82	31.44	31.44	31.44	31.44
	25 (77)	15.50	17.09	19.21	25.34	25.34	25.34	25.34
	30 (86)	13.47	14.77	16.36	20.83	20.83	20.83	20.83
	35 (95)	11.62	12.75	14.02	17.34	17.34	17.34	17.34
	40 (104)	9.86	10.94	12.06	14.48	14.48	14.48	14.48
	43 (109)	8.96	9.98	11.01	13.02	13.02	13.02	-
	45 (113)	-	9.45	10.49	12.45	12.45	12.45	-
	50 (122)	-	-	-	-	-	-	-
	52 (126)	-	-	-	-	-	-	-
90 kW 307,100 BTU/h (50%)	-15 (5)	24.78	28.19	33.67	53.28	-	-	-
	-10 (14)	24.78	28.19	33.67	53.28	53.28	53.28	53.28
	-5 (23)	24.78	28.19	33.67	53.28	53.28	53.28	53.28
	0 (32)	24.78	28.19	33.67	53.28	53.28	53.28	53.28
	5 (41)	24.78	28.19	33.67	53.28	53.28	53.28	53.28
	10 (50)	24.78	28.19	33.67	53.28	53.28	53.28	53.28
	15 (59)	23.78	26.97	31.97	49.55	49.55	49.55	49.55
	20 (68)	21.15	23.78	27.64	40.57	40.57	40.57	40.57
	25 (77)	18.05	20.02	22.88	31.54	31.54	31.54	31.54
	30 (86)	15.42	16.96	19.08	25.03	25.03	25.03	25.03
	35 (95)	13.14	14.37	15.95	20.06	20.06	20.06	20.06
	40 (104)	11.18	12.19	13.44	16.36	16.36	16.36	16.36
	43 (109)	10.10	11.04	12.05	14.45	14.45	14.45	-
	45 (113)	9.45	10.27	11.21	13.26	13.26	13.26	-
	50 (122)	-	-	-	11.15	11.15	-	-
	52 (126)	-	-	-	-	-	-	-
45 kW 153,500 BTU/h (25%)	-15 (5)	28.63	29.72	35.08	54.63	-	-	-
	-10 (14)	28.63	29.72	35.08	54.63	-	-	-
	-5 (23)	28.63	29.72	35.08	54.63	-	-	-
	0 (32)	28.63	29.72	35.08	54.63	-	-	-
	5 (41)	28.63	29.72	35.08	54.63	-	-	-
	10 (50)	28.63	29.72	35.08	54.63	-	-	-
	15 (59)	27.58	28.48	33.38	50.98	-	-	-
	20 (68)	24.56	25.77	29.01	42.04	-	-	-
	25 (77)	20.59	22.16	24.16	32.88	-	-	-
	30 (86)	16.83	18.65	20.59	26.20	-	-	-
	35 (95)	13.63	15.10	17.09	21.11	-	-	-
	40 (104)	11.19	12.13	13.69	17.33	-	-	-
	43 (109)	9.88	10.70	12.12	15.31	15.31	15.31	-
	45 (113)	9.13	9.80	10.67	14.19	14.19	14.19	-
	50 (122)	7.38	7.84	8.42	10.69	10.69	-	-
	52 (126)	6.96	7.27	7.66	9.65	-	-	-

7. Capacity tables

COP for heating [Water]

EAHV-M040YCL(-N)

Water flow rate 23.2 m^3/h (102.2 GPM)

Capacity	Air temp °C D.B (°F D.B)	Outlet water temp °C (°F)						
		25 (77)	30 (86)	35 (95)	40 (104)	45 (113)	50 (122)	55 (131)
150 kW 511,800 BTU/h (100%)	-20 (-4)	-	-	-	-	-	-	-
	-15 (5)	-	-	-	-	-	-	-
	-10 (14)	-	-	-	-	-	-	-
	-5 (23)	12.98	11.93	10.87	9.82	-	-	-
	0 (32)	14.90	13.62	12.51	11.37	10.31	-	-
	5 (41)	16.15	14.52	13.14	11.95	10.87	9.81	-
	7 (45)	17.18	15.32	13.74	12.40	11.19	10.06	-
	10 (50)	20.54	18.16	16.13	14.40	12.91	11.60	10.46
	15 (59)	25.41	21.71	18.81	16.49	14.58	12.99	11.65
	20 (68)	25.41	21.71	18.81	16.49	14.58	12.99	11.65
	25 (77)	25.41	21.71	18.81	16.49	14.58	12.99	-
	30 (86)	-	-	18.81	16.49	14.58	12.99	-
	35 (95)	-	-	18.81	16.49	14.58	12.99	-
	40 (104)	-	-	18.81	16.49	14.58	12.99	-
	43 (109)	-	-	18.81	16.49	14.58	12.99	-
112.5 kW 383,900 BTU/h (75%)	-20 (-4)	-	-	-	-	-	-	-
	-15 (5)	10.39	9.48	8.60	7.77	-	-	-
	-10 (14)	12.10	11.06	10.10	9.20	8.38	7.51	-
	-5 (23)	13.75	12.48	11.33	10.27	9.31	8.44	7.62
	0 (32)	15.87	14.28	12.87	11.68	10.62	9.44	8.40
	5 (41)	17.29	15.32	13.68	12.29	11.17	10.08	9.08
	7 (45)	18.31	16.10	14.29	12.75	11.49	10.27	9.22
	10 (50)	22.24	19.24	16.76	14.69	12.92	11.41	10.13
	15 (59)	27.96	23.26	19.76	16.99	14.75	12.93	11.41
	20 (68)	27.96	23.26	19.76	16.99	14.75	12.93	11.41
	25 (77)	27.96	23.26	19.76	16.99	14.75	12.93	-
	30 (86)	-	-	19.76	16.99	14.75	12.93	-
	35 (95)	-	-	19.76	16.99	14.75	12.93	-
	40 (104)	-	-	19.76	16.99	14.75	12.93	-
	43 (109)	-	-	19.76	16.99	14.75	12.93	-
75 kW 255,900 BTU/h (50%)	-20 (-4)	9.96	8.87	7.96	7.18	6.52	-	-
	-15 (5)	11.01	9.80	8.77	7.87	7.10	-	-
	-10 (14)	12.14	10.85	9.69	8.65	7.73	6.92	-
	-5 (23)	13.67	12.20	10.86	9.63	8.53	7.56	6.72
	0 (32)	15.77	13.99	12.36	10.90	9.59	8.41	7.38
	5 (41)	17.78	15.47	13.64	12.08	10.83	9.65	8.57
	7 (45)	18.98	16.39	14.42	12.63	11.24	9.96	8.72
	10 (50)	22.48	19.24	16.59	14.39	12.53	10.89	9.48
	15 (59)	27.99	23.10	19.46	16.62	14.34	12.44	10.86
	20 (68)	27.99	23.10	19.46	16.62	14.34	12.44	10.86
	25 (77)	27.99	23.10	19.46	16.62	14.34	12.44	-
	30 (86)	-	-	19.46	16.62	14.34	12.44	-
	35 (95)	-	-	19.46	16.62	14.34	12.44	-
	40 (104)	-	-	19.46	16.62	14.34	12.44	-
	43 (109)	-	-	19.46	16.62	14.34	12.44	-
37.5 kW 128,000 BTU/h (25%)	-20 (-4)	9.51	7.94	6.64	5.59	4.79	-	-
	-15 (5)	10.13	8.76	7.50	6.38	5.42	-	-
	-10 (14)	11.45	10.10	8.81	7.44	6.31	5.31	-
	-5 (23)	13.31	11.91	10.61	8.79	7.61	6.45	5.34
	0 (32)	15.42	13.70	12.12	10.65	9.38	8.11	6.91
	5 (41)	18.47	15.92	13.90	12.24	10.93	9.78	8.64
	7 (45)	19.55	16.86	14.61	12.70	11.24	9.93	8.64
	10 (50)	21.74	18.67	16.14	14.00	12.18	10.58	9.19
	15 (59)	26.65	22.15	18.72	16.05	13.84	12.01	10.45
	20 (68)	26.65	22.15	18.72	16.05	13.84	12.01	10.45
	25 (77)	26.65	-	-	16.05	13.84	12.01	-
	30 (86)	-	-	-	-	-	-	-
	35 (95)	-	-	-	-	-	-	-
	40 (104)	-	-	-	-	-	-	-
	43 (109)	-	-	-	-	-	-	-

7. Capacity tables

COP for heating [Water]

EAHV-M050YCL(-N)

Water flow rate 27.9 m^3/h (122.9 GPM)

Capacity	Air temp °C D.B (°F D.B)	Outlet water temp °C (°F)						
		25 (77)	30 (86)	35 (95)	40 (104)	45 (113)	50 (122)	55 (131)
180 kW 614,160 BTU/h (100%)	-20 (-4)	-	-	-	-	-	-	-
	-15 (5)	-	-	-	-	-	-	-
	-10 (14)	-	-	-	-	-	-	-
	-5 (23)	-	-	-	-	-	-	-
	0 (32)	-	-	-	-	-	-	-
	5 (41)	15.86	14.40	13.09	11.91	10.76	-	-
	7 (45)	16.32	14.74	13.36	12.16	11.00	-	-
	10 (50)	19.23	17.18	15.41	13.86	12.49	11.26	10.16
	15 (59)	23.60	20.53	18.01	15.93	14.19	12.70	11.41
	20 (68)	23.60	20.53	18.01	15.93	14.19	12.70	11.41
	25 (77)	23.60	20.53	18.01	15.93	14.19	12.70	-
	30 (86)	-	-	18.01	15.93	14.19	12.70	-
	35 (95)	-	-	18.01	15.93	14.19	12.70	-
	40 (104)	-	-	18.01	15.93	14.19	12.70	-
	43 (109)	-	-	18.01	15.93	14.19	12.70	-
135 kW 460,000 BTU/h (75%)	-20 (-4)	-	-	-	-	-	-	-
	-15 (5)	-	-	-	-	-	-	-
	-10 (14)	11.29	10.39	-	-	-	-	-
	-5 (23)	12.93	11.86	10.84	9.89	8.94	8.00	7.02
	0 (32)	14.92	13.53	12.28	11.13	10.08	9.11	8.23
	5 (41)	16.78	15.03	13.50	12.13	10.99	9.91	8.92
	7 (45)	16.93	15.15	13.61	12.20	11.15	10.07	9.03
	10 (50)	21.54	18.81	16.52	14.59	12.94	11.51	10.27
	15 (59)	27.39	23.02	19.69	17.05	14.91	13.13	11.64
	20 (68)	27.39	23.02	19.69	17.05	14.91	13.13	11.64
	25 (77)	27.39	23.02	19.69	17.05	14.91	13.13	-
	30 (86)	-	-	19.69	17.05	14.91	13.13	-
	35 (95)	-	-	19.69	17.05	14.91	13.13	-
	40 (104)	-	-	19.69	17.05	14.91	13.13	-
	43 (109)	-	-	19.69	17.05	14.91	13.13	-
90 kW 307,100 BTU/h (50%)	-20 (-4)	9.90	9.00	8.16	7.27	6.51	-	-
	-15 (5)	10.86	9.84	8.93	8.11	7.36	-	-
	-10 (14)	12.04	10.88	9.82	8.86	8.00	7.23	-
	-5 (23)	13.71	12.32	11.05	9.88	8.83	7.90	7.08
	0 (32)	16.04	14.29	12.70	11.25	9.96	8.81	7.81
	5 (41)	17.83	15.86	14.11	12.55	11.12	9.84	8.61
	7 (45)	17.99	16.04	14.35	12.85	11.45	10.20	8.88
	10 (50)	23.51	20.12	17.36	15.07	13.13	11.45	10.01
	15 (59)	29.95	24.65	20.68	17.62	15.20	13.20	11.53
	20 (68)	29.95	24.65	20.68	17.62	15.20	13.20	11.53
	25 (77)	29.95	24.65	20.68	17.62	15.20	13.20	-
	30 (86)	-	-	20.68	17.62	15.20	13.20	-
	35 (95)	-	-	20.68	17.62	15.20	13.20	-
	40 (104)	-	-	20.68	17.62	15.20	13.20	-
	43 (109)	-	-	20.68	17.62	15.20	13.20	-
45 kW 153,500 BTU/h (25%)	-20 (-4)	9.70	8.16	6.95	6.00	5.27	-	-
	-15 (5)	10.80	9.25	7.90	6.72	5.80	-	-
	-10 (14)	13.16	11.40	9.83	8.44	7.18	6.06	-
	-5 (23)	15.74	13.74	12.05	10.57	9.03	7.66	6.42
	0 (32)	16.09	14.34	12.78	10.69	9.57	8.52	7.54
	5 (41)	17.95	15.87	14.13	12.51	10.53	9.30	8.15
	7 (45)	18.67	16.46	14.72	13.05	11.30	9.88	8.50
	10 (50)	22.54	19.35	16.73	14.55	12.68	11.05	9.64
	15 (59)	28.19	23.36	19.67	16.82	14.52	12.59	11.00
	20 (68)	28.19	23.36	19.67	16.82	14.52	12.59	11.00
	25 (77)	28.19	23.36	19.67	16.82	14.52	12.59	-
	30 (86)	-	-	19.67	16.82	14.52	12.59	-
	35 (95)	-	-	19.67	16.82	14.52	12.59	-
	40 (104)	-	-	19.67	16.82	14.52	12.59	-
	43 (109)	-	-	19.67	16.82	14.52	12.59	-

7-3. Correction by relative humidity

[EAHV]

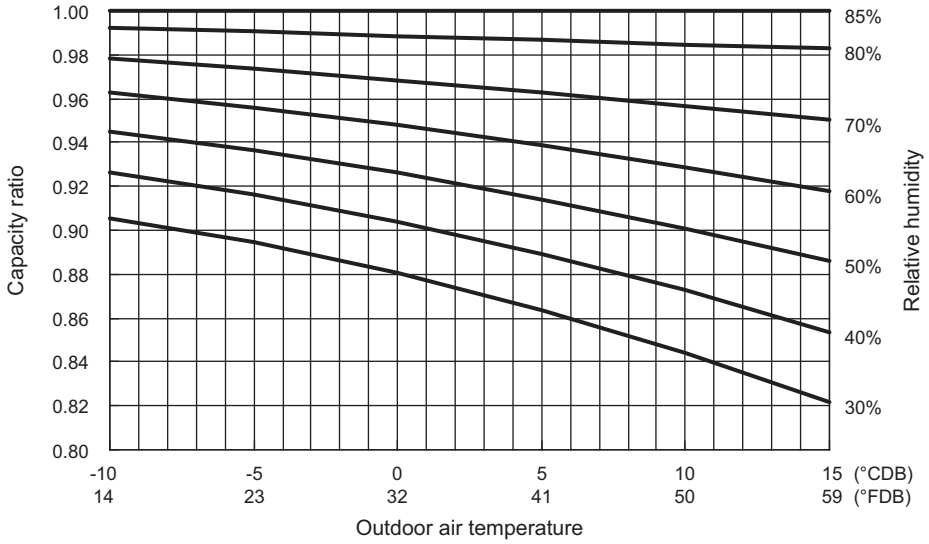
Heating capacity correction diagram (relative humidity correction diagram)

The heating capacity changes depending on the relative humidity.

When the relative humidity is other than RH=85%, correct the capacity based on the following graph.

[Example] When the outdoor air temperature = 0°C and relative humidity RH=50%
Heating capacity in performance diagram × 0.926 <Correction value> = Heating capacity after correction

Relative humidity correction diagram <50/60Hz>



Heating capacity reduction factor by frosting (reference)

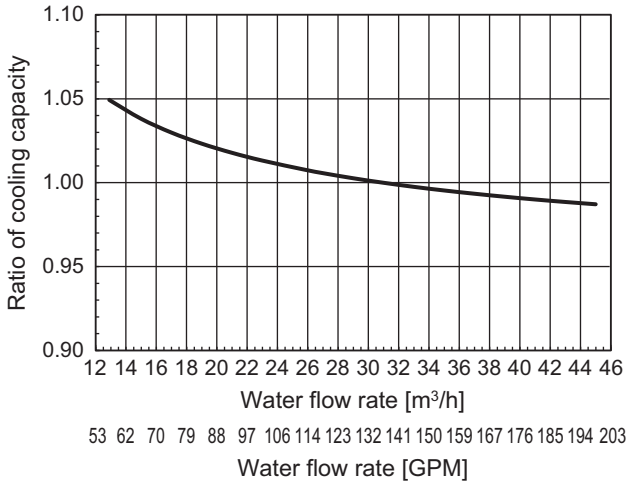
Outdoor air temperature (°CDB/°FDB)	-7/19	-5/23	-3/27	0/32	3/37	5/41	7/45
Heating capacity reduction factor	0.87	0.87	0.86	0.84	0.87	0.98	1.00

*1:In the actual setup status, there are factors (weather, outside wind, relative humidity, etc.) other than outdoor air temperature, so consider the above factors as references.

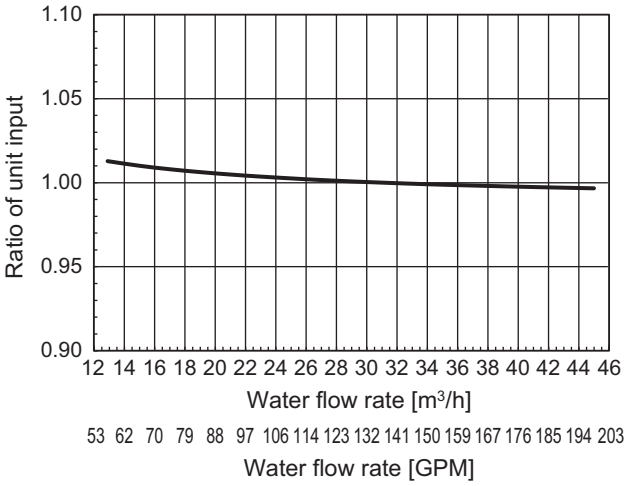
7-4. Correction by water flow rate

EAHV-M040YCL(-N)

Cooling

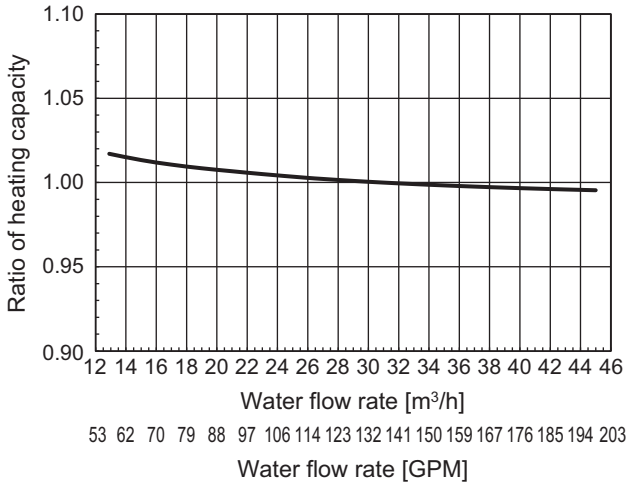


*Conditions
Outdoor temperature 35°C (95.0°F)
Outlet water temperature 7°C (44.6°F)

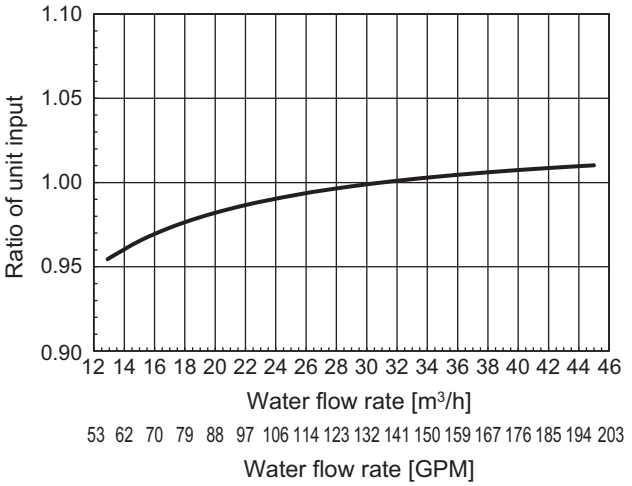


*Conditions
Outdoor temperature 35°C (95.0°F)
Outlet water temperature 7°C (44.6°F)

Heating



*Conditions
Outdoor temperature 7°C (44.6°F)
Outlet water temperature 45°C (113.0°F)

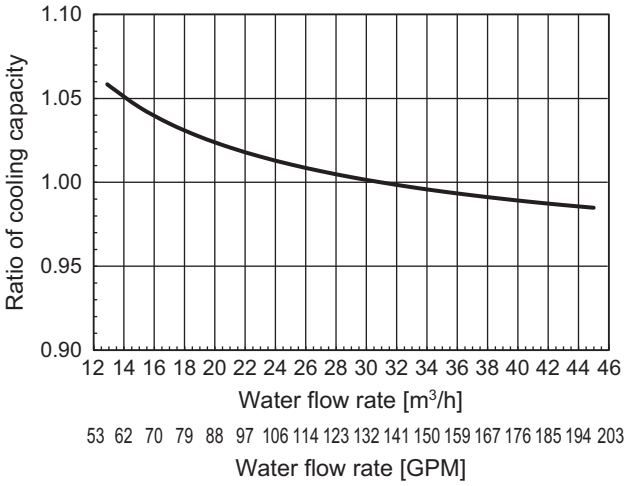


*Conditions
Outdoor temperature 7°C (44.6°F)
Outlet water temperature 45°C (113.0°F)

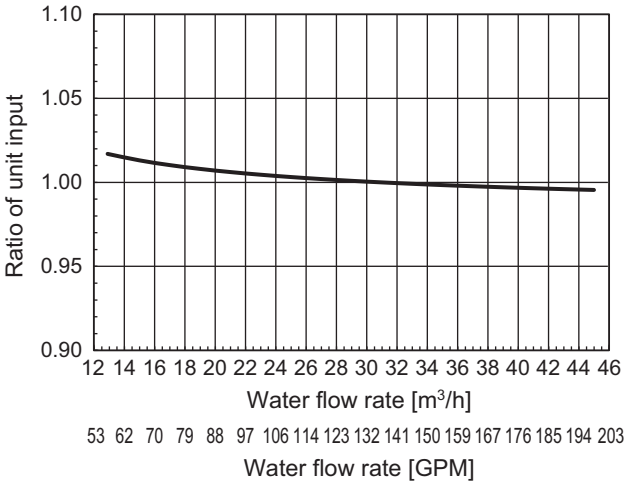
7. Capacity tables

EAHV-M050YCL(-N)

Cooling

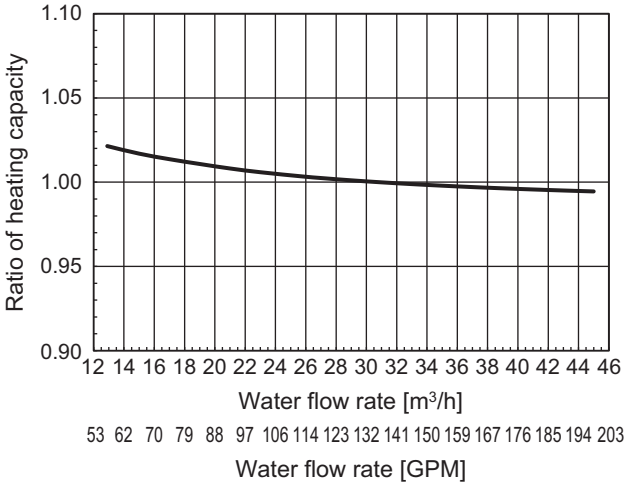


*Conditions
Outdoor temperature 35°C (95.0°F)
Outlet water temperature 7°C (44.6°F)

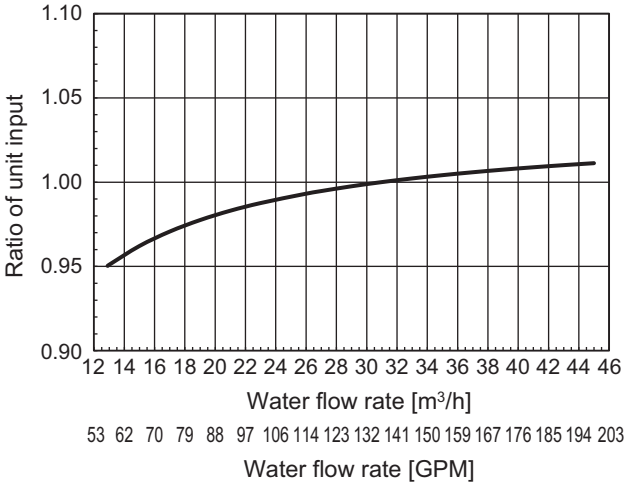


*Conditions
Outdoor temperature 35°C (95.0°F)
Outlet water temperature 7°C (44.6°F)

Heating



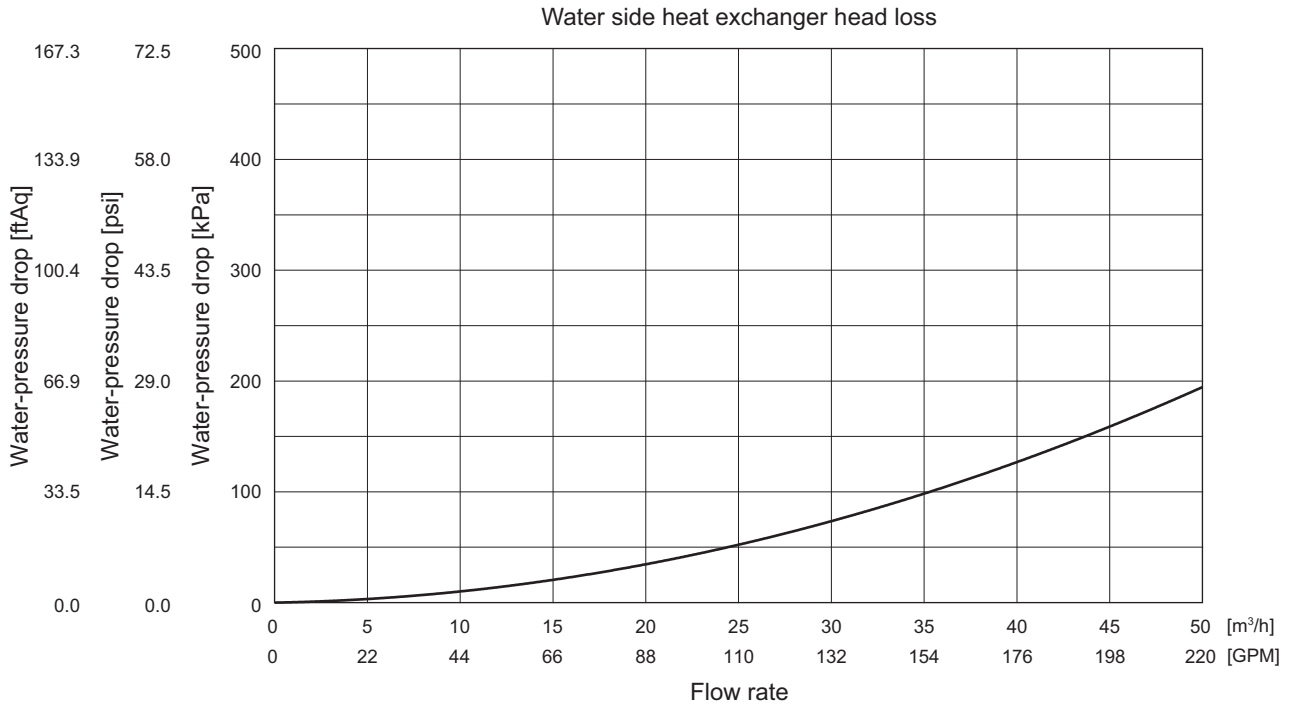
*Conditions
Outdoor temperature 7°C (44.6°F)
Outlet water temperature 45°C (113.0°F)



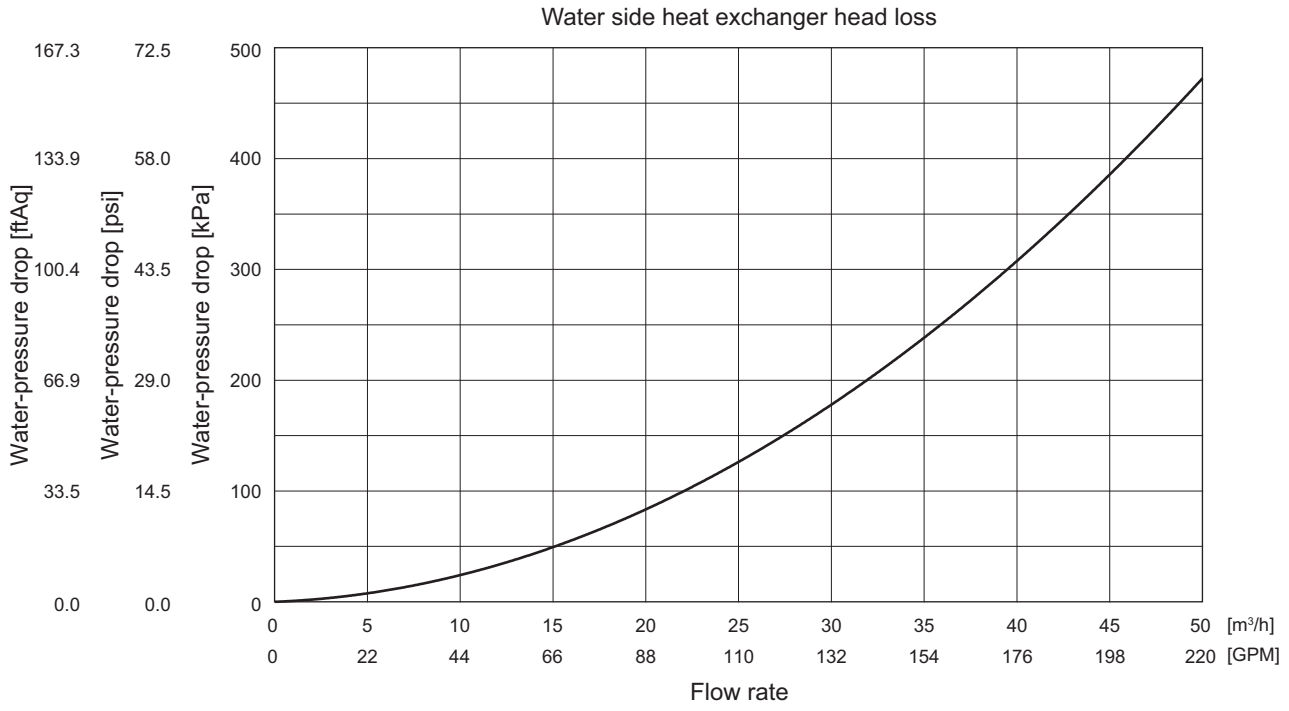
*Conditions
Outdoor temperature 7°C (44.6°F)
Outlet water temperature 45°C (113.0°F)

7-5. Water pressure drop

EAHV-M040, 050YCL
[Water]

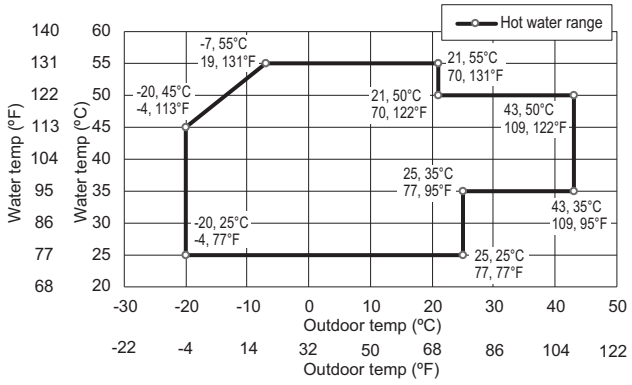


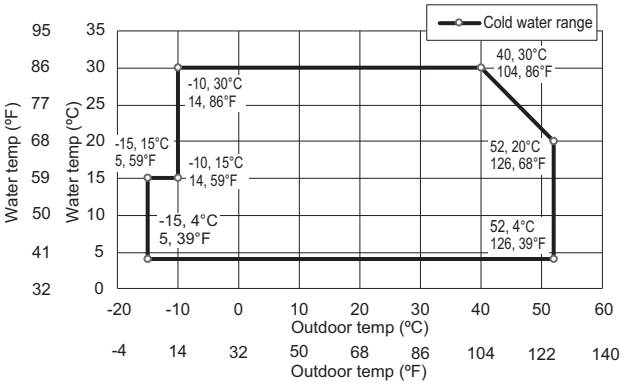
EAHV-M040, 050YCL-N
[Water]



7-6. Operation temperature range

EAHV-M040, 050YCL(-N)(-BS)



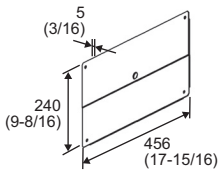
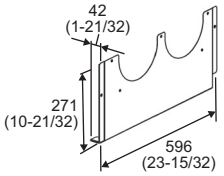
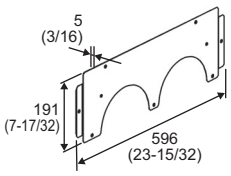
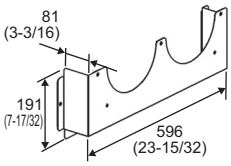
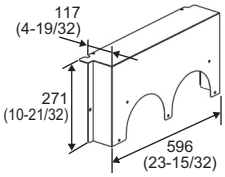
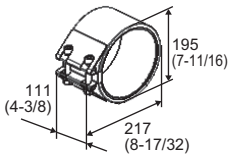
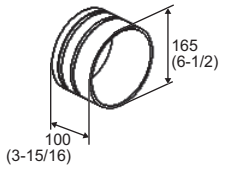
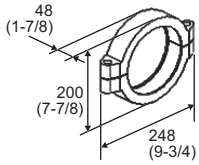
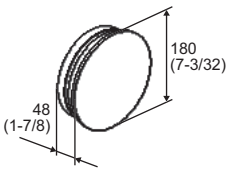
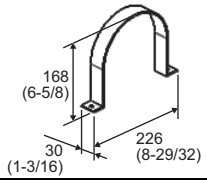
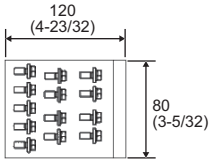


8-1. Piping Kit

[1] Piping Kit EC-01HK (Only for Inside header (-N))

Refer to Installation/Instructions Manual.

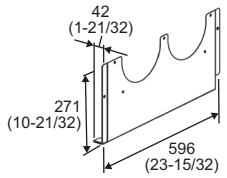
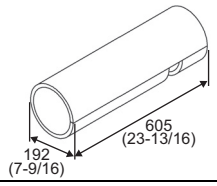
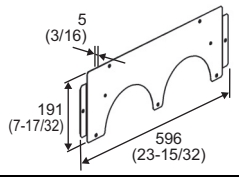
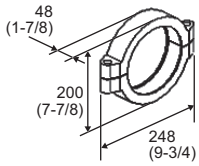
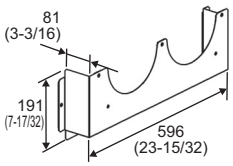
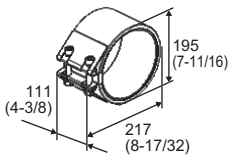
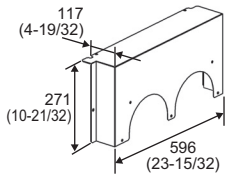
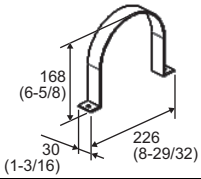
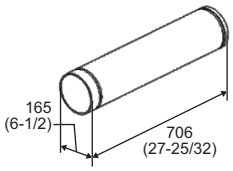
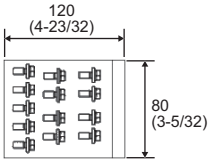
Unit: mm (in.)

No.	Parts name	Size and shape	Quantity
1	SIDE PANEL		1
2	PANEL BL		1
3	PANEL BR		1
4	PANEL SL		1
5	PANEL SR		1
6	PIPE COUPLING		2
7	JOINT PIPE (SHORT)		2
8	HOUSING JOINT		4
9	PIPE CAP		2
10	SADDLE		1
11	BOLT M5		1

[2] Connection Piping Kit EC-02HK (Only for Inside header (-N))

Refer to Installation/Instructions Manual.

Unit: mm (in.)

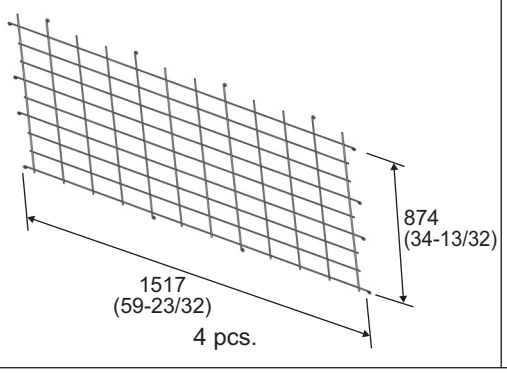
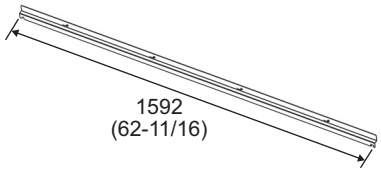
No.	Parts name	Size and shape	Quantity	No.	Parts name	Size and shape	Quantity
1	PANEL BL		1	6	PIPE COVER		2
2	PANEL BR		1	7	HOUSING JOINT		2
3	PANEL SL		1	8	PIPE COUPLING		2
4	PANEL SR		1	9	SADDLE		1
5	JOINT PIPE (LONG)		2	10	BOLT M5		1

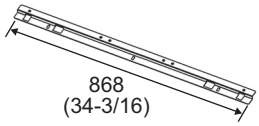
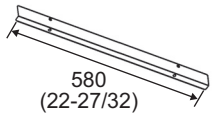
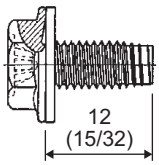
8-2. Fin Guard

[1] Fin Guard EC-130FG

Parts list

Unit: mm (in.)

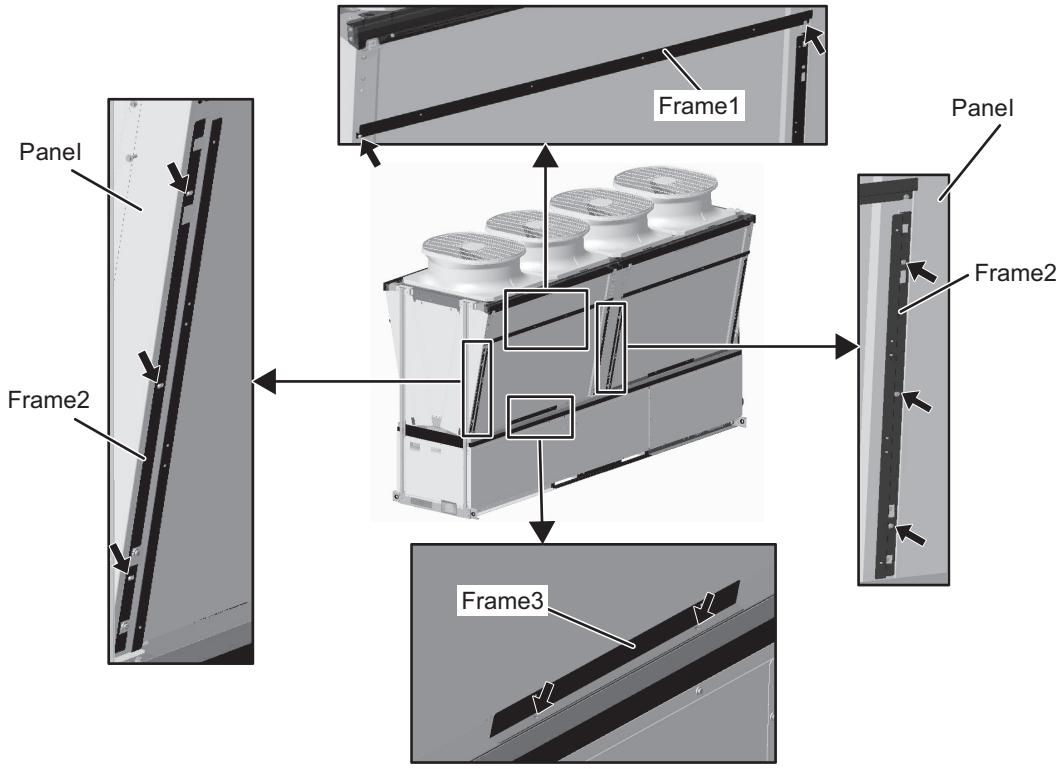
FIN GUARD	FRAME 1
(1)  4 pcs.	(2)  4 pcs.

FRAME 2	FRAME 3	SCREWS
(3)  8 pcs.	(4)  4 pcs.	(5)  96 pcs.

8. Optional parts

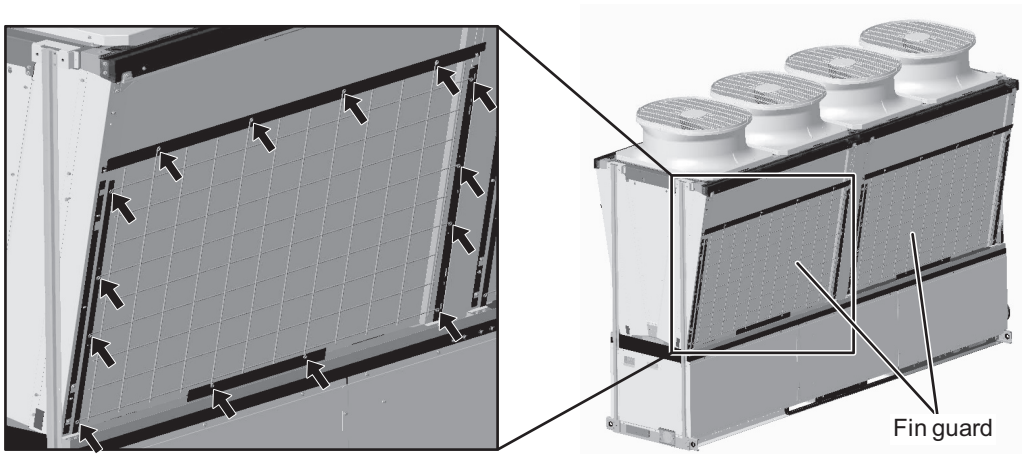
Installing the fin guard

(1) Attach three types of frames at each positions.



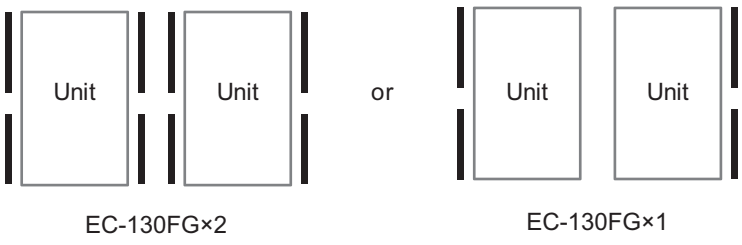
Screw down Frames 1, 2 and 3 on the panel with M5 screws at the 10 positions with arrows in the figure.
*Screw down Frames 1, 2 and 3 in the same way on the other side.

(2) Attach the fin guards to the four side.



Screw down the fin guards on the frame with M5 screws at the 14 positions with arrows in the figure.

・In the case of two units



EC-130FG×2 EC-130FG×1

8-3. Installing the external water temperature sensor

[1] Parts that are required to install an external water temperature sensor TW-TH16

1) External water temperature sensor
2) Wiring to connect the sensor and the unit *1
3) Wiring terminals to connect the wiring to the sensor and the terminal block on the unit
(Four for M4 screws) *1

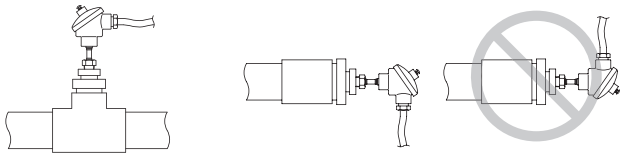
*1: Items 2) and 3) are field supplied.

Wire specifications

Wire size	2-core cable Min. 1.25 mm^2 [16 AWG]
Type	CVVS or CPEVS
Maximum length	20 m [66 ft.]

[2] Installing the external water temperature sensor

- Install the external water temperature sensor where the water pipes merge or on the load-side tank as shown in the figure below.
- Install horizontally or vertically on top of the pipe.
- When installing horizontally, make sure the wire faces down.

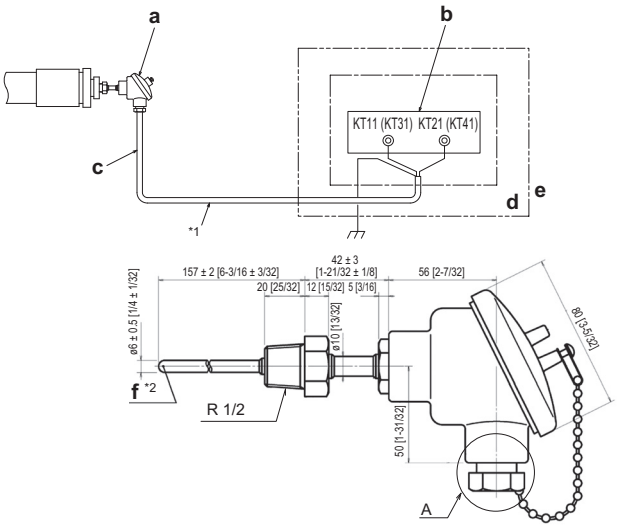


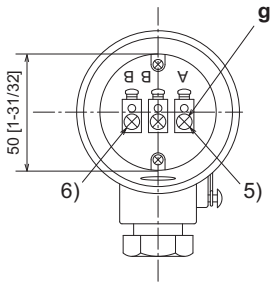
Vertical installation **Horizontal installation**

[3] Wiring the external water temperature sensor

Connect the external temperature sensor wiring to the terminal block in the control box on the unit as shown in the figure below.

Unit: mm [in.]





Terminal block for connection to the sensor

a External water temperature sensor
b Terminal block in the control box on the unit
c Sensor wire
d Control box
e Unit
f Sensor
g M4 screws × 3 (Terminal screws)

*1: Run the sensor wiring at least 5 cm [1-31/32 in.] away from any wire that carries a voltage of 100 V or more, and do not put the sensor wiring in the same conduit tube with it.

*2: Sensor properties
Resistance: R = 15 KΩ ± 3% (0 °C [32°F])
B-constant: 3460 K

8. Optional parts

Connect the sensor wiring to terminals KT11 and KT21 (or KT31 and KT41) of the terminal block in the control box on the unit.

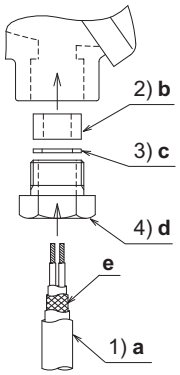
Connect the shield to the earth terminal.

Thread the wire to the external water temperature sensor through parts 2) through 4) as shown in the figure below. Attach M4 terminals (field-supplied) to the wires, and connect them to 5) and 6) (terminals A and B).

Cut the shield wire. Do not connect it to the terminal. (Connect the shield on the unit side to the ground terminal.)

After the wire is connected, securely tighten the tightening screw 4), and then caulk the gap between the wire 1) and the tightening screw to keep water from entering.

*1: In a multiple module connection system, install the temperature sensor where the cold/hot water from each module is sufficiently mixed to provide a representative temperature.
*2: The temperature sensor must be installed on a pipe between the outlet of the unit and the entrance to the load-side system.
*3: Install the sensor at least 5D (D: pipe diameter) away from pipe bends and other areas that can obstruct the normal water flow and so that the sensing probe (protective tube) will not vibrate from the whirl or shock flow.
*4: The sensor is for use at a flow rate of 3 m/sec [9.8 fps] or below.

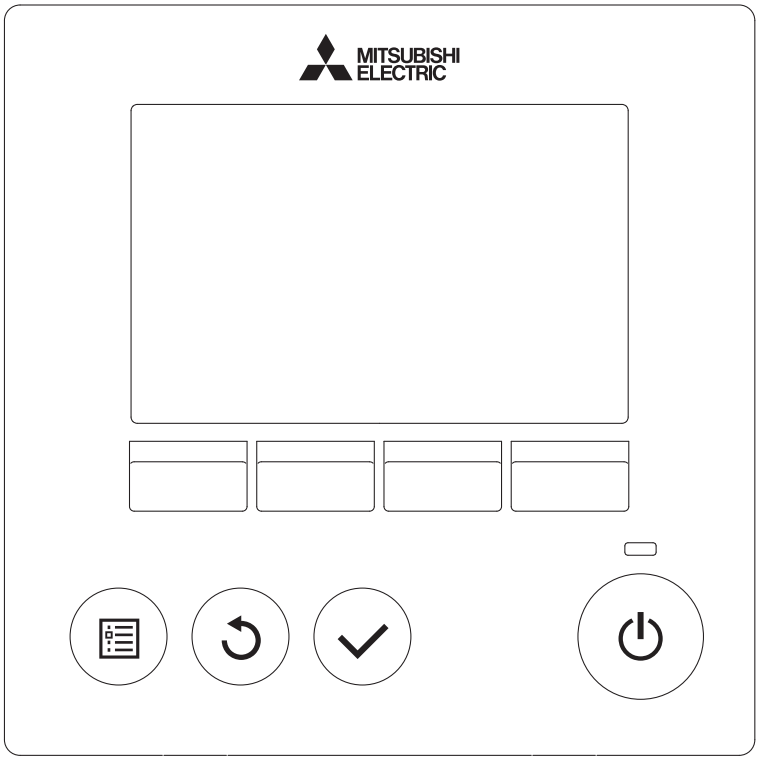


a Field-supplied wire
b Water-sealing rubber (Internal diameter ø11 [7/16])
c Washer (Internal diameter ø12 [15/32])
d Tightening screw (Internal diameter ø15 [19/32])
e Shield (to be cut)

Detailed view of the area labeled "A" in the figure above

9. Controller

[1] Remote controller PAR-W31MAA



Item	Description	Operations	Display
ON/OFF	Runs and stops the operation of a group of units	○	○
Operation mode switching	Switches between Heating/Heating ECO/Anti-freeze/Cooling * Available operation modes vary depending on the unit to be connected. * Switching limit setting can be made via a remote controller.	○	○
Water temperature setting	Temperature can be set within the ranges below. (in increments of 0.5°C or 0.5°F) Heating 25°C ~ 55°C (77°F ~ 131°F) Heating ECO 25°C ~ 55°C (77°F ~ 131°F) Anti-freeze 25°C (77°F) Cooling 4°C ~ 30°C (39°F ~ 86°F) * The settable range varies depending on the unit to be connected.	○	○
Water temperature display	-20°C ~ 90°C (-4°F ~ 194°F) (in increments of 0.5°C or 0.5°F) * The settable range varies depending on the unit to be connected.	×	○
Permit/Prohibit local operation	Individually prohibits operations of each local remote control function: ON/OFF, Operation modes, water temperature setting, Circulating water replacement warning reset. * Upper level controller may not be connected depending on the unit to be connected.	×	○
Weekly scheduler	ON/OFF/Water temperature setting can be done up to 6 times one day in the week. (in increments of a minute)	○	○
Error	When an error is currently occurring on a unit, the afflicted unit and the error code are displayed.	×	○
Self check (Error history)	Searches the latest error history by pressing the CHECK button twice.	○	○
LANGUAGE setting	The language on the dot matrix LCD can be changed. (11 languages) English/French/German/Swedish/Spanish/Italian/Danish/Dutch/Finnish/Norwegian/ Portuguese	○	○
Operation locking function	Remote controller operation can be locked or unlocked. • All-switch locking • Locking except ON/OFF switch	○	○

10. Salt Protection Specifications

No.	Name	Base material	EAHV		Surface treatment	Treatment thickness	
			standard	salt damage protection		External	Internal
1	Fan guard Bell mouth	Polypropylene resin	●	●	-	-	-
2	Panel	Alloyed galvanized sheet	●		Polyester resin coating	30 μm or more	-
				●	Polyester resin coating	70 μm or more	70 μm or more
3	Fan	AS resin	●	●	-	-	-
4	Motor	Unsaturated polyester resin	●	●	-	-	-
5	Motor support	Galvanized sheet	●	●	-	-	-
6	Heat exchanger (Only fin)	Aluminum fin	●	●	Zinc coating	1 μm or more	-
7	Bottom frame (Including drain pan)	Alloyed galvanized sheet	●	●	Polyester resin coating	70 μm or more	70 μm or more
8	Compressor	Carbon steel	●	●	Epoxy resin coating	13 μm or more	13 μm or more
9	Pillar	Alloyed galvanized sheet	●		Polyester resin coating	30 μm or more	-
				●	Polyester resin coating	70 μm or more	70 μm or more
10	Water-side heat exchanger (Including water piping)	Stainless steel	●	●	-	-	-
11	Electrical parts box	Galvanized sheet	●	●	-	-	-
12	Printed circuit board	Composite material <CEM-3>	●	●	Polyurethane coating	20 μm or more	20 μm or more
13	Terminal box	Galvanized sheet	●	●	-	-	-
14	Receiver	Carbon steel	●		Phenolic modified alkyd resin dip	30 μm or more	-
				●	Epoxy resin and polyurethane resin coating	70 μm or more	-
15	Accumulator	Carbon steel	●		Phenolic modified alkyd resin dip	30 μm or more	-
				●	Epoxy resin and polyurethane resin coating	70 μm or more	-
16	Saddle (Water piping)	Stainless steel	●	●	-	-	-
17	Fin guard (Option)	Iron wires	●	●	Polyethylene resin coating	300 μm or more	300 μm or more
18	Screw	Stainless steel, Carbon steel	●	●	Zinc-nickel alloy plating + Geomet filming (only carbon steel screw)	-	-

Application Guide

	Distance from sea		
	300 m (9.84 ft.)	500 m (1640 ft.)	1 km (3281 ft.)
Direct sea breeze			
Facing inland sea	BS		STD
Facing ocean	BS		
Island location	BS		
Indirect sea breeze			
Facing inland sea	BS		STD
Facing ocean	BS		
Island location	BS		

Caution;
1 Set the outdoor unit to the place with rare direct sea breeze.
2 Don't attach a sunshade. A rain will clean the attached salt.
3 Set the outdoor unit horizontally. The water should not keep in the unit.
4 Please wash the outdoor unit periodically.
5 Repair the scratch on the panel as soon as possible.
6 Inspect periodically. Paint or change parts if necessary.

11-1. Installation Conditions

Select the installation site in consultation with the client.

Select a site to install the unit that meets the following conditions:

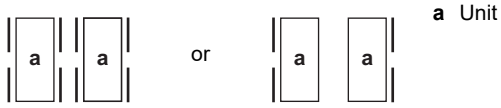
- The unit will not be subject to heat from other heat sources.
- A site does not cause a trouble by the noise from the unit.
- The unit will not be exposed to strong winds.
- Water from the unit can be drained properly.
- The space requirements are met. Refer to the following page(s) for detail. "Installation Space Requirements" (p. 74)
- There is a possibility of injuring with the fin of the heat exchanger, so abide by following contents.

1) Appliances are not accessible to the general public.

2) Limit the installation to a place where the general public cannot touch the product.

3) When installing in a location where the general public can touch the product, install the optional fin guard.
Option Parts: EC-130FG

When two units are joined



EC-130FG × 2 EC-130FG × 1

11-1-1. Protection against winds

- Pay attention to the wind direction and installation location to ensure that the air heat exchanger is not directly exposed to strong winds.
- If unable to avoid strong winds, install wind breaking hoods or walls, etc.

11-1-2. Cold Climate Installation

Observe the following when installing the units in areas where snow or strong winds prevail.

- Avoid direct exposure to rain, winds, and snow.
- If the unit is installed in the direct line of rain, winds, or snow, install snow hoods. Use a snow net or snow fence as necessary to protect the unit.
- Install the unit on a base approximately twice as high as the expected snowfall.
- If the unit of heating mode is continuously operated with the outdoor temperature below the freezing point, install a heater at the drain pan of the unit to prevent freezing of drain. (Recommended capacity: 35 W/m)
  In addition, install a heater at the drain piping joint to prevent freezing.

11-1-3. Weight

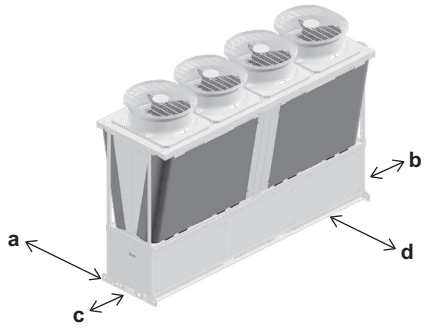
		Net weight <kg [lbs]>	Operating weight <kg [lbs]>
EAHV	Standard piping	1325 [2921]	1360 [2998]
	Inside header piping	1352 [2981]	1427 [3146]

Weight of the optional parts: EC-01HK (30 kg [66 lbs]), EC-02HK (44 kg [97 lbs]), EC-130FG (20 kg [44 lbs])

11-2. Installation Space Requirements

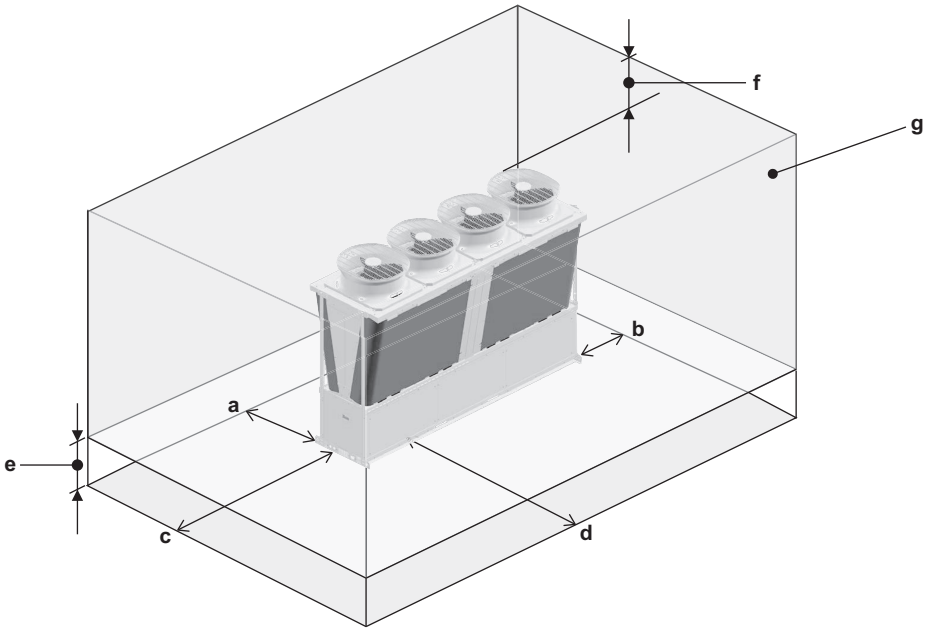
11-2-1.Single unit installation

[1] Required space



a **[Left side]** 0.9 m [3.0 ft.] (Service space)
b **[Opposite service side]** 0.9 m [3.0 ft.] (Service space)
c **[Service side]** 0.9 m [3.0 ft.] (Service space)
d **[Right side]** 0.9 m [3.0 ft.] (Service space)

[2] If entire surrounding area enclosed by walls (but vent holes installed at bottom of wall)

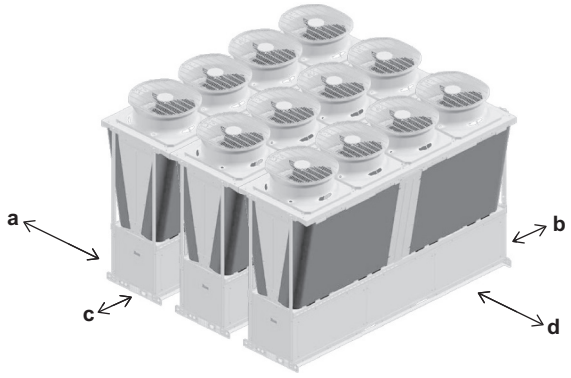


a **[Left side]** 0.9 m [3.0 ft.] or more (Service space)
b **[Opposite service side]** 0.9 m [3.0 ft.] or more (Service space)
c **[Service side]** 0.9 m [3.0 ft.] or more (Service space)
d **[Right side]** 0.9 m [3.0 ft.] or more (Service space)
e Wall opening 0.5 m [1.6 ft.]
f 0.5 m [1.6 ft.]
g Wall

*1:Wall height 2.9 m [9.5 ft.] (unit height (2.4 m [7.9 ft.] + 0.5 m [1.6 ft.]))
*2:Vent holes: 0.5 m [1.6 ft.] from floor
*3:Even if installed as shown in this figure, a short cycle may occur due to the influence of wind.

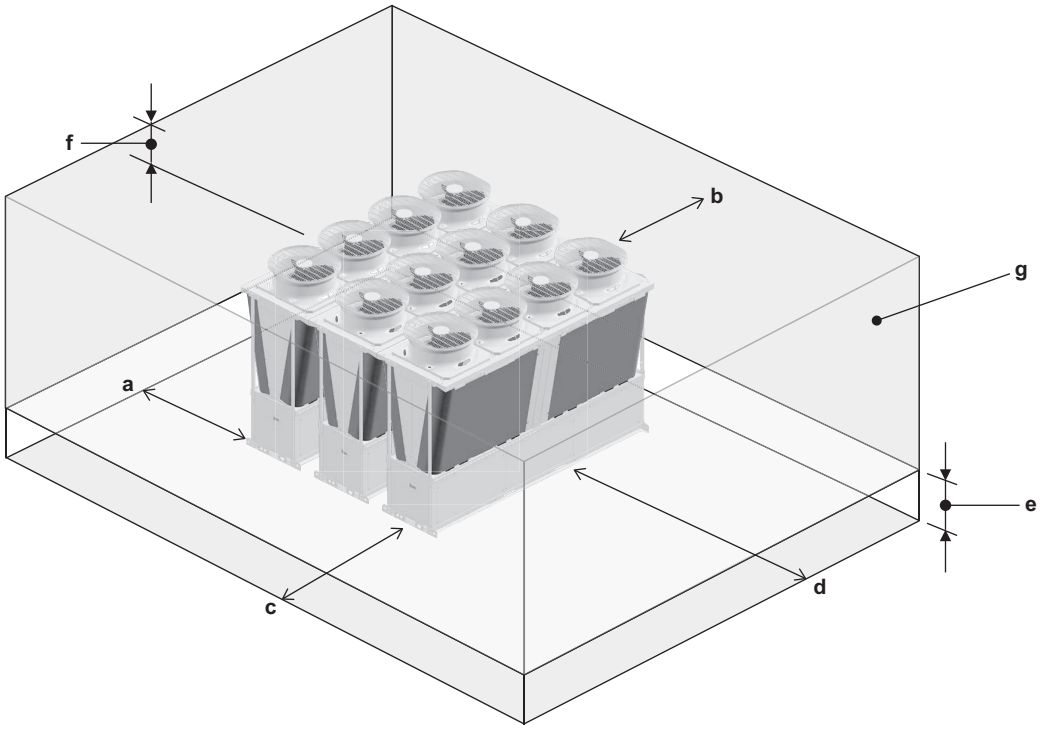
11-2-2.Multiple unit installation

[1] Required space



a **[Left side]** 0.9 m [3.0 ft.] (Service space)
b **[Opposite service side]** 0.9 m [3.0 ft.] (Service space)
c **[Service side]** 0.9 m [3.0 ft.] (Service space)
d **[Right side]** 0.9 m [3.0 ft.] (Service space)

[2] If entire surrounding area enclosed by walls (but vent holes installed at bottom of wall)



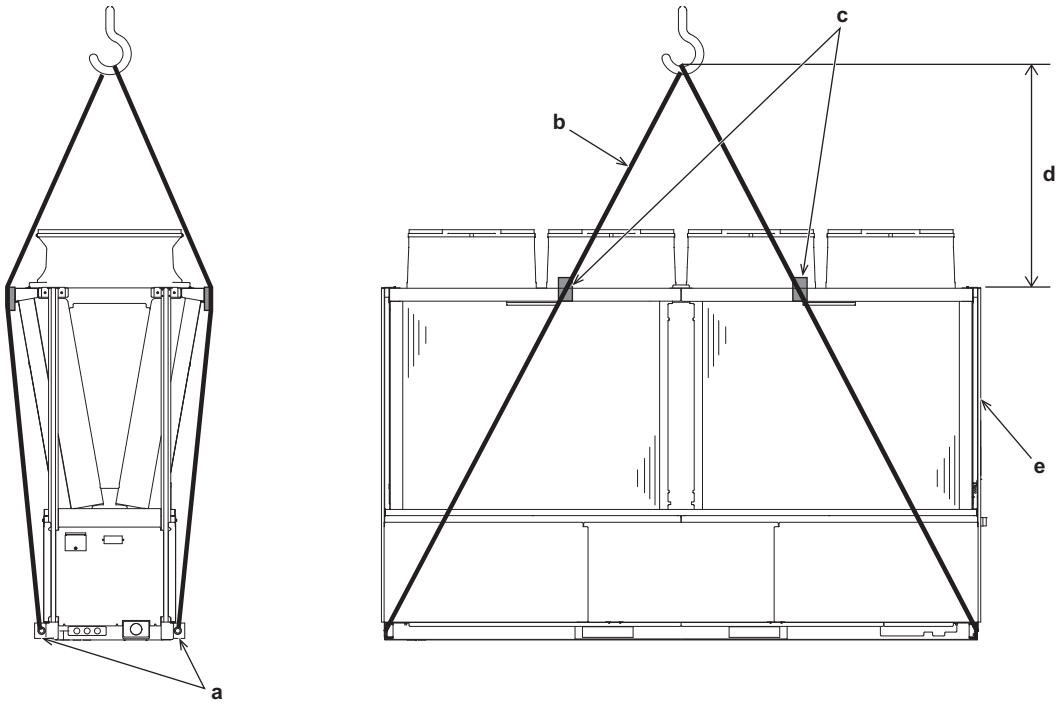
a **[Left side]** 1.5 m [4.9 ft.] or more (Service space)
b **[Opposite service side]** 1.5 m [4.9 ft.] or more (Service space)
c **[Service side]** 1.5 m [4.9 ft.] or more (Service space)
d **[Right side]** 1.5 m [4.9 ft.] or more (Service space)
e Wall opening 0.5 m [1.6 ft.]
f 0.5 m [1.6 ft.]
g Wall

*1:Wall height 2.9 m [9.5 ft.] (unit height (2.4 m [7.9 ft.] + 0.5 m [1.6 ft.]))
*2:Vent holes: 0.5 m [1.6 ft.] from floor
*3:Even if installed as shown in this figure, a short cycle may occur due to the influence of wind.

Units should be installed only by personnel certified by Mitsubishi Electric.

12-1. Product suspension method

- If transporting the product suspended, use the two suspension sections at the front and rear.
- Always feed rope through the four suspension sections so that the unit is not subjected to shocks.
- Use two ropes that are 10 m [32.8 ft.] or longer. (Use four ropes that are 5 m [16.4 ft.] or longer.)
- Use suspension equipment that is capable of supporting the weight of the product.
- Always suspend the product in four sections. (do not suspend the product two sections as this is dangerous)
- Use the appropriate protective pads to ensure that the rope does not rub against the outer panel.
- Refer to the section "Center of Gravity", and suspend the unit while taking care to prevent a deviated center of gravity.



a Plate suspension fittings
b 10 m [32.8 ft.] or longer × 2 ropes (5 m [16.4 ft.] or longer × 4 ropes)
c Protective pads
d 1.6 m [5.2 ft.] or more
e Unit

⚠ WARNING

- **Lift the unit by placing the slings at designated locations. Support the unit securely at four points to keep it from slipping and sliding. If the unit is not properly supported, it may fall and cause personal injury.**

12-2. Installation on foundation

- Securely fix the unit with bolts to keep the unit from falling down during earthquakes.
- Install the unit on a foundation made of concrete or iron.
- Noise and vibrations from the unit may be transmitted through the floor and walls. Provide adequate protection against noise and vibration. (Such as using damper pads)

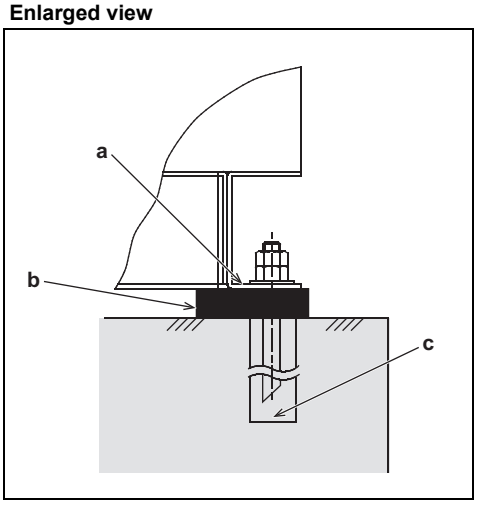
⚠ WARNING

- **Be sure to install the unit on a surface strong enough to withstand its weight to keep the unit from falling down and causing injury.**
- **Provide adequate protection against earthquakes. Improper installation may cause the unit to fall down, resulting in personal injury.**

When building the foundation, take the floor strength, and piping and wiring routes into consideration.
When using damper pads, be sure to attach them to all corners of the unit.

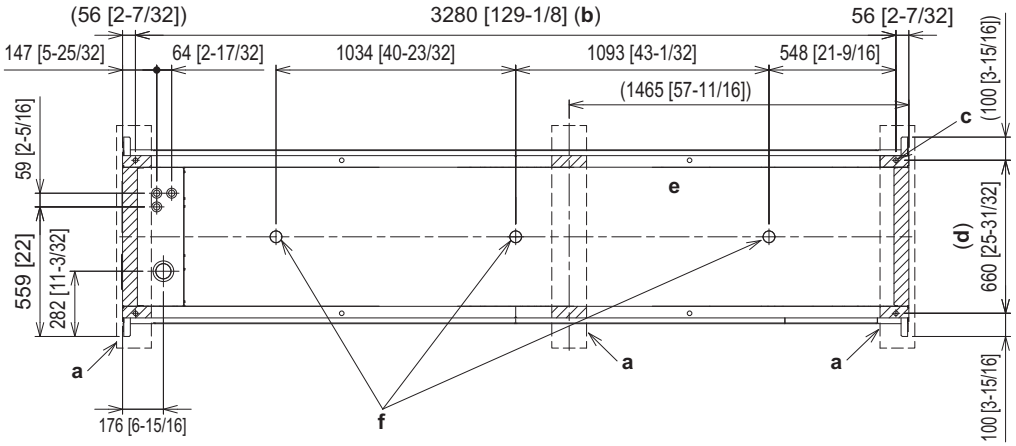
Bolt size	Number
M16	4

Enlarged view



a Base frame
b Damper pad
c Adhesive

Unit: mm [in.]



show mounting surface.

a Foundation
b Anchor bolt hole pitch
c Holes 4-ø20 [25/32]
Bolt size: M16
d Anchor bolt hole pitch
e Base surface (unit bottom)
f Drain discharge holes 3-ø50 [1-31/32]

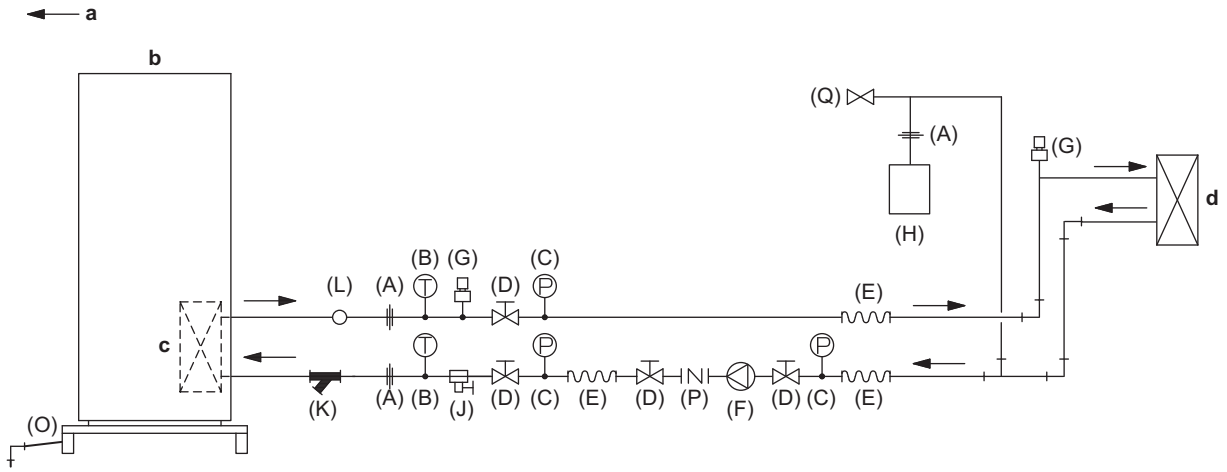
13-1. Schematic Piping Diagram and Piping System Components

[1] Water circuit

WARNING

Please build the water circuit so that it is a closed system.

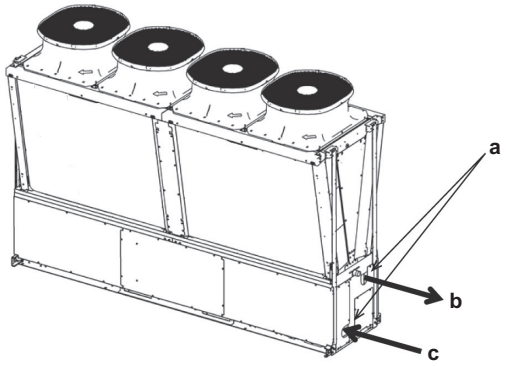
- Do not use water directly for showers or other applications.
- Do not allow other heat source water to mix with the water circuit.
- Build a water circuit as inlet water temperature fluctuation is within 5ºC [9°F]/10 minutes.

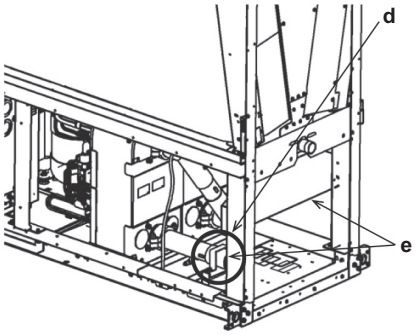


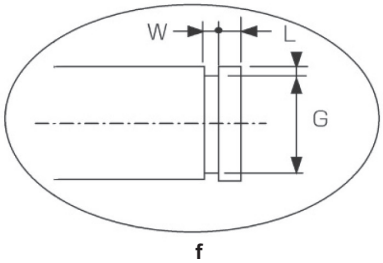
a Indicates the direction of the flow.
b Unit
c Water-side heat exchanger
d AHU etc

(A)	Union joints/flange joints	Required to allow for a replacement of equipment.
(B)	Thermometer	Required to check the performance and monitor the operation of the units.
(C)	Water pressure gauge	Recommended for checking the operation status.
(D)	Valve	Required to allow for a replacement or cleaning of the flow adjuster.
(E)	Flexible joint	Recommended to prevent the noise and vibration from the pump from being transmitted.
(F)	Pump	Use a pump that is large enough to compensate for the total water pressure loss and supply sufficient water to the unit.
(G)	Automatic air-vent valve	Install automatic air vent valves where air accumulates. Even in the case of a failure of the water-side heat exchanger in the unit, the refrigerant may leak from the automatic air vent valve. To prevent accidents resulted from refrigerant leakage, install the unit where leaked refrigerant will not accumulate, such as outdoors.
(H)	Closed expansion tank	Install a closed expansion tank to accommodate expanded water and to supply water.
(I)	Water pipe	Use pipes that allow for easy air purging, and provide adequate insulation.
(J)	Drain valve	Install drain valves so that water can be drained for servicing.
(K)	Strainer	Install a strainer near the unit to keep foreign materials from entering the water-side head exchanger.
(L)	Flow switch	Required to protect the unit.
(O)	Drain pipe	Install the drain pipe with a downward inclination of between 1/100 and 1/200. To prevent drain water from freezing in winter, install the drain pipe as steep an angle as practically possible and minimize the straight line. For cold climate installation, take an appropriate measure (e.g., drain heater) to prevent the drain water from freezing.
(P)	Check valve	Required to prevent the backward flow.
(Q)	Safety valve	Install a safety valve near the closed expansion tank. Even in the case of a failure of the water-side heat exchanger in the unit, the refrigerant may leak from the safety valve. To prevent accidents resulted from refrigerant leakage, install the unit where leaked refrigerant will not accumulate, such as outdoors.

13-2. Standard piping type

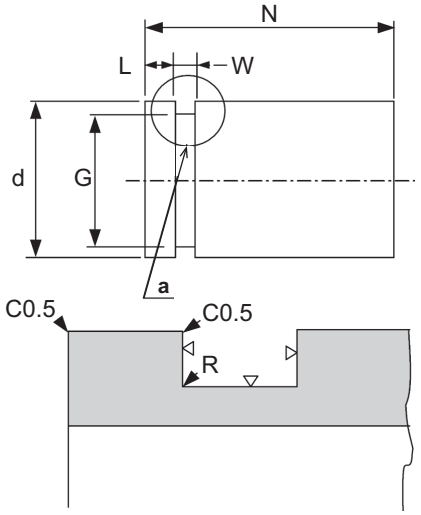






a 65A [2-1/2B] housing type joint (Not supplied)
b Water outlet
c Water inlet
d Connection detail
e Groove pipes at chiller side
f The dimension of the groove pipe at the chiller side

Groove specifications



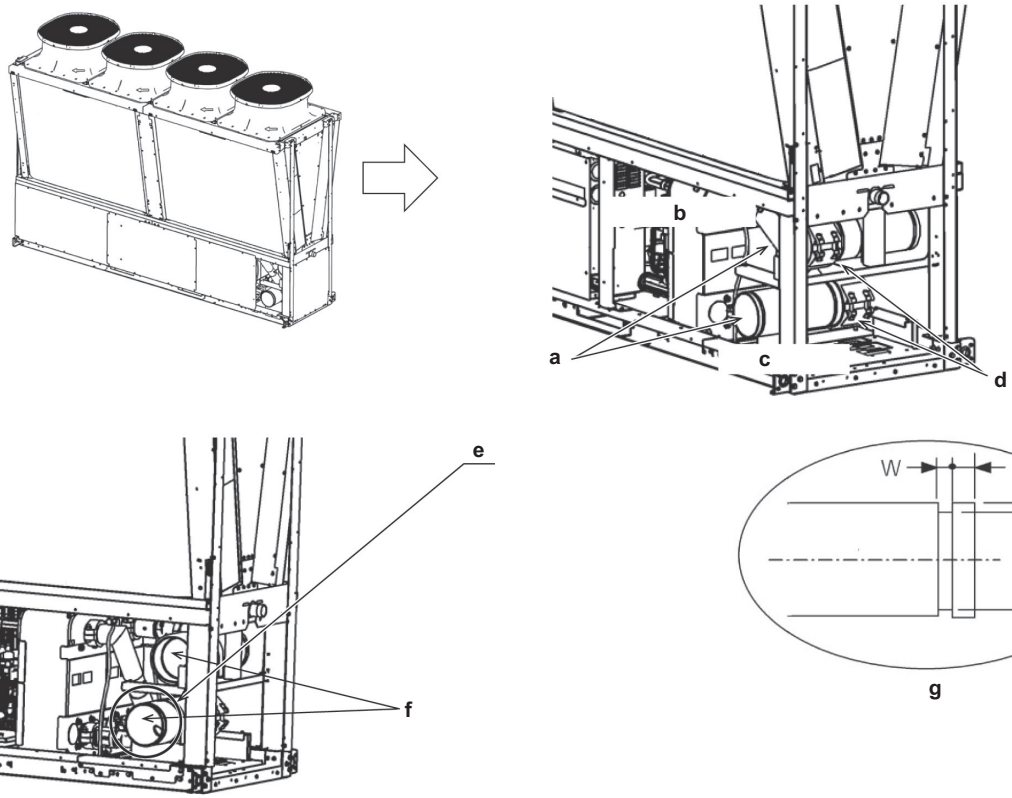
Unit: mm [in.]

	Pipe size
	65A [2-1/2B]
d	ø76.1 [3]
G	ø72.2 [2-27/32] $^{+0\ [0]}_{-0.4\ [1/32]}$
W	8.7 [11/32] $^{+0\ [0]}_{-0.7\ [1/32]}$
L	15.88 [5/8] $^{+0\ [0]}_{-0.7\ [1/32]}$
N	50.0 [1-31/32]
R	1.0 [1/32]

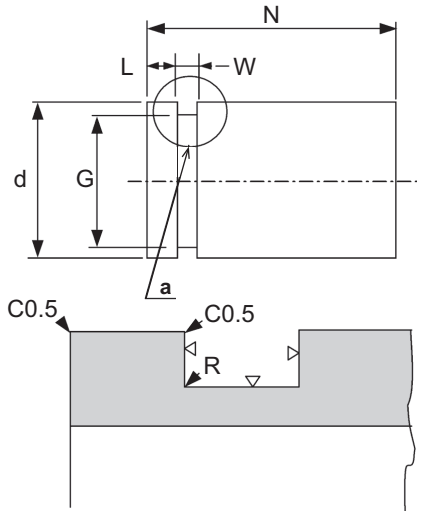
a Groove detail

13-3. Inside header piping type

[1] Inside header piping connection



a 150A [6B] housing type joint (Not supplied)
b Water outlet
c Water inlet
d Pipe coupling
e Connection detail
f Groove pipes at chiller side
g The dimension of the groove pipe at the chiller side

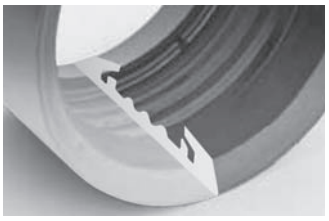


Unit: mm [in.]

	Pipe size
	150A [6B]
d	ø165.1 [6-1/2]
G	ø160.8 [6-11/32]
W	8.7 [11/32] $^{+0.7\ [1/32]}_{-0\ [0]}$
L	15.9 [5/8] $^{+0.7\ [1/32]}_{-0\ [0]}$
N	50.0 [1-31/32]
R	1.0 [1/32]

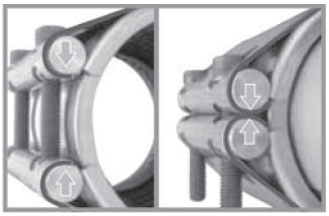
a Groove detail

Installing the pipe coupling

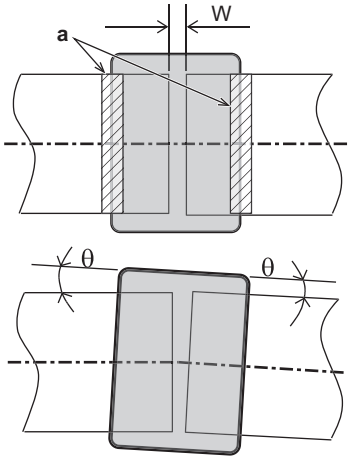


The seal rubber has a lip construction to improve water stopping performance.

Adjust the Pipe coupling position to that the marking on both sides is visible.



The bolts need only be tightened until the casing is sealed (metal touches).
Consequently, the procedure can be carried out accurately by anyone to the same level, regardless of worker proficiency or the type of pipe.



a Marking

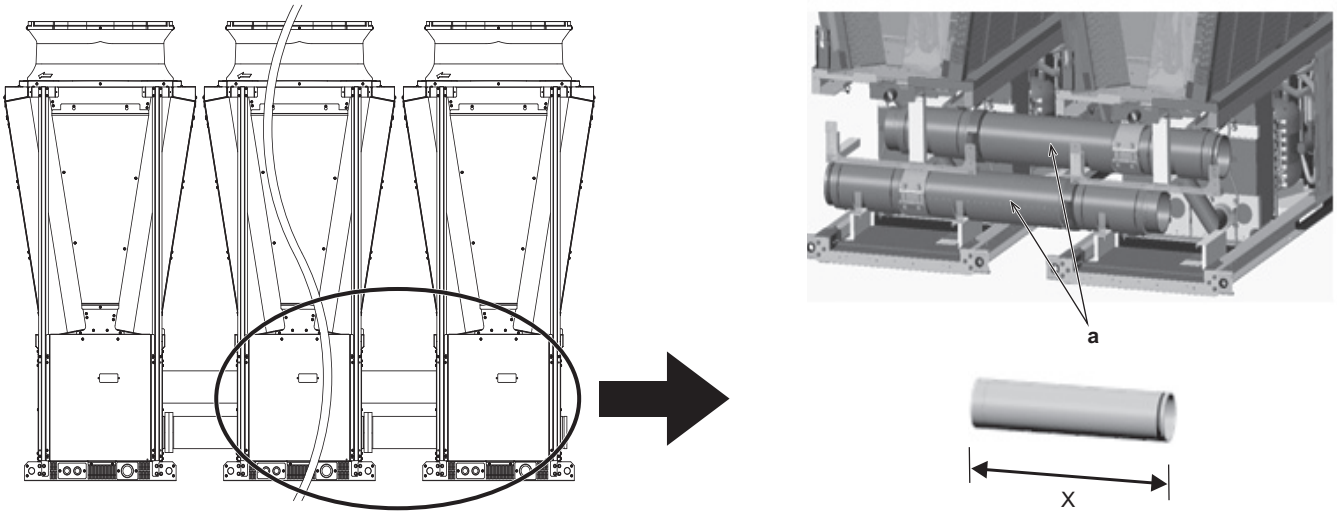
- Allowable tolerance for gaps and tilting
  Pipe gap tolerance [W]: 0 to 25 mm [0 to 31/32 in.]
  Allowable pipe tilt angle [θ]: ±2°

[2] Inside header piping connection with joint pipe (LONG)

The joint pipe (LONG) size is included in the optional parts EC-02HK and can be used to secure wider working space.

- The joint pipe (LONG) can be extended from its original size with a locally procured piping.

Inside header piping type unit (Multiple unit installation)



a JOINT PIPE (LONG)

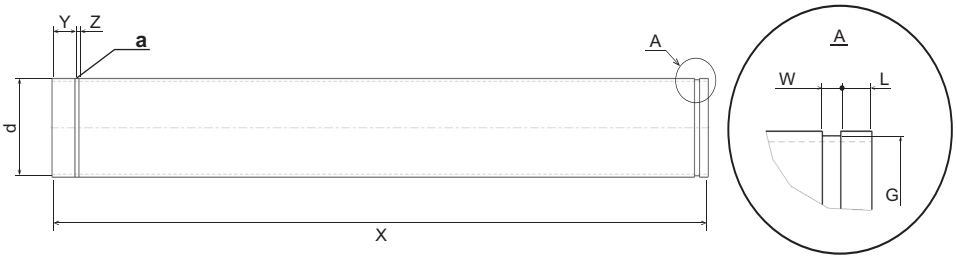
Unit: mm [in.]

	JOINT PIPE (LONG) size X
Original size	706 [27-25/32]
Max size	1232 [48-1/2]

*1:The joint pipe (LONG) size can be changed 706 ≤ X ≤ 1232 [27-25/32 ≤ X ≤ 48-1/2].

Unit: mm [in.]

	Pipe size
	150A [6B]
d	ø165.1 [6-1/2]
G	ø160.8 [6-11/32]
W	8.7 [11/32] $^{+0.7\ [1/32]}_{-0\ [0]}$
L	15.9 [5/8] $^{+0.7\ [1/32]}_{-0\ [0]}$
X	706 ≤ X ≤ 1232 [27-25/32 ≤ X ≤ 48-1/2]
Y	43.0 [11/16]
G	7.5 [9/32]



a Groove of about 0.2 mm [0.008 in.]

13-4. Notes on Pipe Corrosion

Water treatment and water quality control

Poor-quality circulating water can cause scale build-up and corrosion in the water-side heat exchanger, reducing heat-exchange performance. Properly control the quality of the circulating water.

- Removing foreign objects and impurities in the pipes
  During installation, keep foreign objects, such as welding and sealant fragments and rust, out of the pipes.

- Water Quality Control

(1) Poor-quality water can corrode or scale up the heat exchanger. Regular water treatment is recommended.

Water circulation systems using open heat storage tanks are particularly prone to corrosion.
If a water supply tank is installed, keep contact with air to a minimum, and keep the level of dissolved oxygen in the water no higher than 1 mg/ℓ.

(2) Water quality standard

Items			Lower mid-range temperature water system Water Temp. ≤ 60ºC [140°F]		Higher mid-range temperature water system Water Temp. > 60ºC [140°F]		Tendency	
			Recirculating water	Make-up water	Recirculating water	Make-up water	Corrosive	Scale-forming
Standard items	pH	(25°C [77°F])	7.0 – 8.0	7.0 – 8.0	7.0 – 8.0	7.0 – 8.0	○	○
	Electric conductivity	(mS/m) (25°C [77°F])	30 or less	30 or less	30 or less	30 or less	○	○
		(μs/cm) (25°C [77°F])	[300 or less]	[300 or less]	[300 or less]	[300 or less]		
	Chloride ion	(mg Cl^-/ℓ)	50 or less	50 or less	30 or less	30 or less	○	
	Sulfate ion	(mg $SO4^{2-}$/ℓ)	50 or less	50 or less	30 or less	30 or less	○	
	Acid consumption	(pH4.8) (mg $CaCO_3$/ℓ)	50 or less	50 or less	50 or less	50 or less		○
	Total hardness	(mg $CaCO_3$/ℓ)	70 or less	70 or less	70 or less	70 or less		○
	Calcium hardness	(mg $CaCO_3$/ℓ)	50 or less	50 or less	50 or less	50 or less		○
	Ionic silica	(mg SiO_2/ℓ)	30 or less	30 or less	30 or less	30 or less		○
Reference items	Iron	(mg Fe/ℓ)	1.0 or less	0.3 or less	1.0 or less	0.3 or less	○	○
	Copper	(mg Cu/ℓ)	1.0 or less	1.0 or less	1.0 or less	0.1 or less	○	
	Sulfide ion	(mg S^{2-}/ℓ)	Not to be detected	Not to be detected	Not to be detected	Not to be detected	○	
	Ammonium ion	(mg NH_4^+/ℓ)	0.3 or less	0.1 or less	0.1 or less	0.1 or less	○	
	Residual chlorine	(mg Cl/ℓ)	0.25 or less	0.3 or less	0.1 or less	0.3 or less	○	
	Free carbon dioxide	(mg CO_2/ℓ)	0.4 or less	4.0 or less	0.4 or less	4.0 or less	○	
	Ryzner stability index		–	–	–	–	○	○

Reference: Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994)

(3) Please consult with a water quality control specialist about water quality control methods and water quality calculations before using anti-corrosive solutions for water quality management.

(4) When replacing a chilling unit (including when only the heat exchanger is replaced), first analyze the water quality and check for possible corrosion.

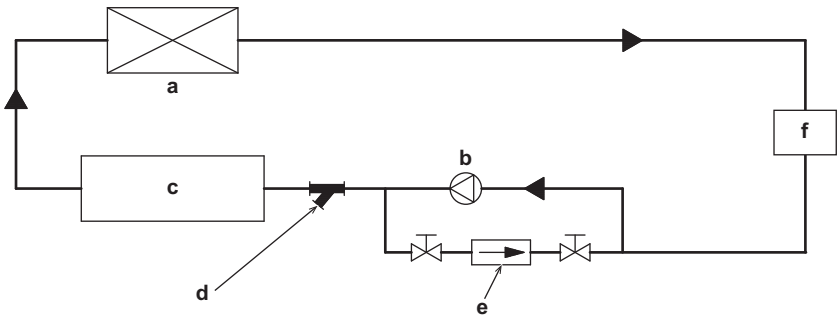
Corrosion can occur in water systems in which there has been no signs of corrosion. If the water quality level has dropped, adjust the water quality before replacing the unit.

(5) Suspended solids in the water

Sand, pebbles, suspended solids, and corrosion products in water can damage the heating surface of the heat exchanger and cause corrosion. Install a good quality strainer (20 mesh or more) at the inlet of the unit to filter out suspended solids.

Removing foreign substances from the water system

Consider installing a settlement tank or a bypass strainer to remove foreign substances from the water system. Select a strainer capable of handling two to three percent of the circulating water. The figure below shows a sample system with a bypass strainer.



a Load system unit
b Pump
c Heat pump unit
d Strainer (20 mesh or more)
e Bypass strainer (100 mesh or more)
f Tank

(6) Connecting pipes made from different materials

If different types of metals are placed in direct contact with each other, the contact surface will corrode. Install an insulating material between pipes that are made of different materials to keep them out of direct contact with each other.

(7) Piping material

Use hot water output piping material that can withstand heat of 60°C [140°F] or more. Use hot water input piping material that can withstand the maximum input water temperature. All piping must be made of SUS or similar material to withstand corrosion.

13-5. Installing the Strainer and Flow Switch

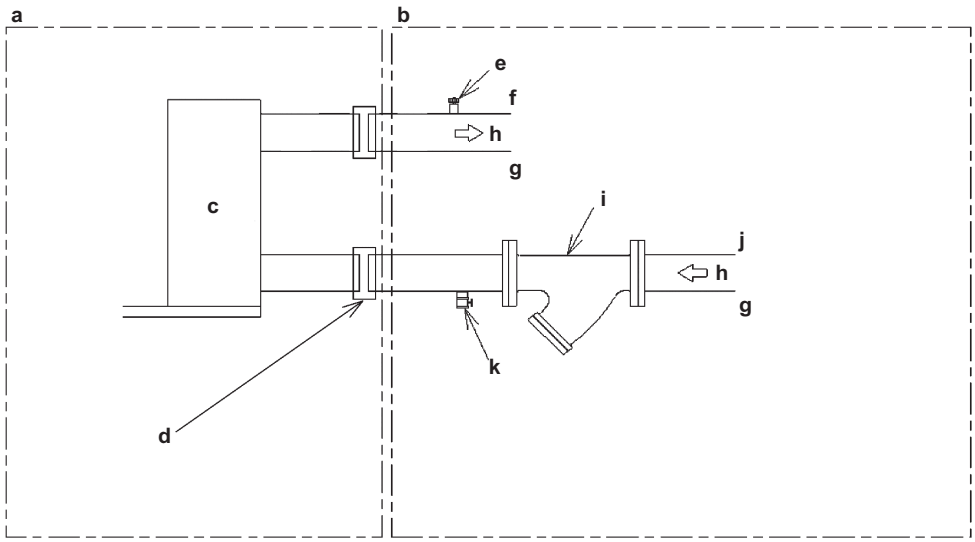
13-5-1.Installing the strainer

Install a strainer on the inlet pipe near the unit to filter out suspended solids and prevent clogging or corrosion of the heat exchanger.

Install a strainer in a way that allows for easy access for cleaning, and instruct the user to clean it regularly.

Operating the units with a clogged strainer may cause the units to make an abnormal stop.

Select a location to install a strainer, taking into consideration the installation angle, insulation thickness, and maintenance space.



a Unit
b Construction site
c Water side heat exchanger
d Housing joint
e Air vent valve
f Outlet
g On-site piping
h Water
i Strainer (20 mesh or more) (Not supplied)
j Inlet
k Drain valve

13-5-2.Installing a flow switch

Install a flow switch that meets the following specifications on the water pipe.

Connect the flow switch to the flow switch contact on the unit.

Minimum flow rate= 12.9 m^3/h [56.8 GPM]

Unit usage range (water flow rate): 12.9 - 43.0 m^3/h [56.8 - 189 GPM]

13-6. Ensuring enough water in the water circuit

13-6-1.Required amount of water (for single unit)

If the amount of water in the water circuit (circulating water circuit) is insufficient, the unit operation hours may become shorter or the amount of water temperature change to be controlled may become extremely large. Also, the defrost operation during the heating mode may not function properly. Refer to the table below for the minimum amount of water required in the circuit. If the water pipe is too short to keep enough amount of water, install a cushion tank in the water pipe to ensure enough amount of water.

Model	Minimum amount of water <L [gal]>
EAHV-M040/050YCL	1650 [436]

[1] Calculating the required amount of water in the water circuit

The required amount of water in the water circuit can be obtained from the following formula.

(Required amount of water in the water circuit) = (Amount of water that can be held in the water pipe) + (Amount of water that can be held in the heat source unit) + (Amount of water that can be held in the load-side unit)

The amount of water that can be held per meter of the water pipe <L/m [gal/ft.]>

Pipe size					
2 1/2B (65A)	3B (80A)	4B (100A)	5B (125A)	6B (150A)	8B (200A)
3.77 [0.30]	5.16 [0.42]	8.87 [0.71]	13.23 [1.07]	18.91 [1.52]	32.44 [2.61]

The amount of water that can be held in the heat source unit <L [gal]>

Standard	Inside header piping type
35 [9.2]	75 [19.8]

[2] Inlet/Outlet pipe connection size and material

The table below shows the inlet/outlet pipe connection size.

Inlet/Outlet pipe connection size

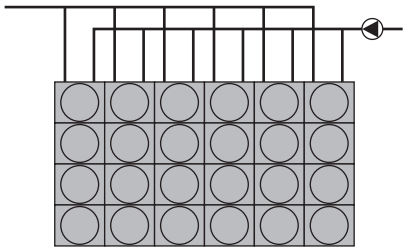
Piping type	Inlet pipe connection	Outlet pipe connection
Standard	65A [2-1/2B] housing type joint (Field-supplied housing joint)	65A [2-1/2B] housing type joint (Field-supplied housing joint)
Inside header piping type	150A [6B] housing type joint (Field-supplied housing joint)	150A [6B] housing type joint (Field-supplied housing joint)

13-6-2.Required amount of water (for multiple units)

The total water volume required for an air conditioning system is determined by whichever operation (cooling or heating) requires more water.

Cooling operation: 850 L [224.5 gal] per unit

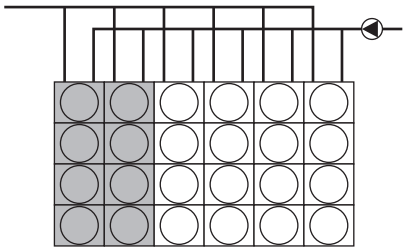
The total water volume required for a system is the sum of the water required for each unit in the system.



The system shown above requires six times the volume of water required for a single unit.

Heating operation: 1650 L [435.9 gal] per unit

The total water volume required for a system is the sum of the water required for all units that simultaneously go into the defrost mode in the same water system.



Two units operate in the defrost mode while the function to suppress the simultaneous operation of multiple units in the defrost mode is enabled.

Requires twice as much water as a system with a single unit

[1] Simultaneous operation of multiple units in the defrost mode

This operation is performed to keep multiple units from simultaneously operating in the defrost mode which leads to a sudden decrease in supply temperature.

This function sets the ratio of units that can simultaneously be operated in the defrost mode in the same water system and the ratio of units that can simultaneously be operated in the groups that are concurrently operated, and suppresses the number of units that operate in the defrost mode at the same time.

Ratio of units that are operable in the defrost mode in the same system	40% (Enabled)
Ratio of units that are operable in the defrost mode in the groups that are concurrently operated	35% (Enabled)

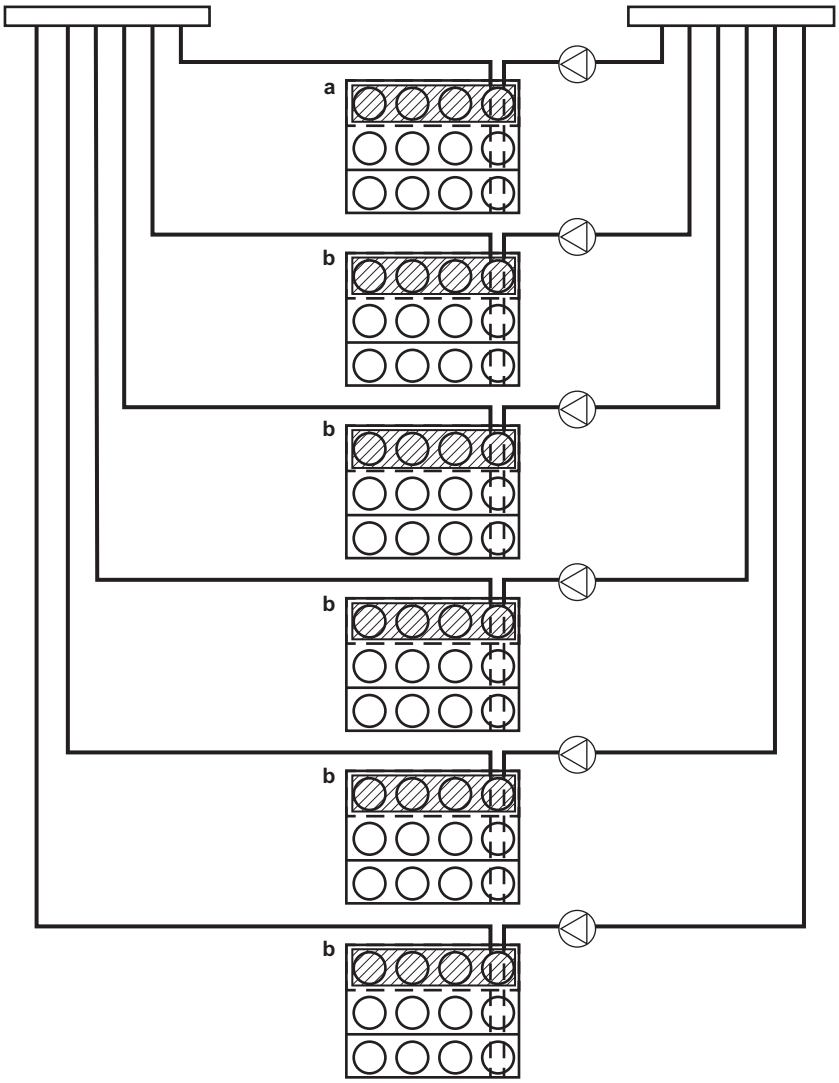
Calculation results less than 1 unit will be rounded up to 1 unit.
Calculation results more than 1 unit will be rounded down to the nearest integer.

The representative unit of the system and the representative unit of the simultaneously operated groups send a command to allow defrost operation to the unit that meets the defrost conditions, ensuring that the total number of units operating in the defrost mode will not exceed the set value.

* Each unit will not go into the defrost mode until it receives a command to allow defrost operation. However, if a command to allow defrost operation is not sent within 60 minutes after the defrost conditions are met, defrost operation will start regardless of the above settings.
* If set to a value lower than the default value, defrost operation may not be performed properly. Additionally, this may cause multiple units to go into the defrost mode simultaneously. Do not set this value below the default value.

Example system with 18 EAHV-M040YCL units (with 6 simultaneously operated groups)

There are 7 units (18 units × 40% = 7.2 units → 7 units) that are simultaneously operable in the defrost mode within the system. Among the simultaneously operated groups, a total of 6 units in 6 groups (3 units × 35% = 1.05 unit→ 1 unit, 1 unit × 6 groups = 6 units) can simultaneously perform defrost operation. The maximum number of units that can simultaneously perform defrost operation in this system is 6.



Defrost operation

a Representative unit in the system

b Representative unit in each of the simultaneously operated groups

1) Unit that are operated from the local remote controller are operable in the defrost mode, regardless of the status of the function to suppress simultaneous defrost operation.
However, during defrosting, this unit is counted as a unit in the defrost mode toward simultaneous defrost prevention control among other units that are operated remotely.

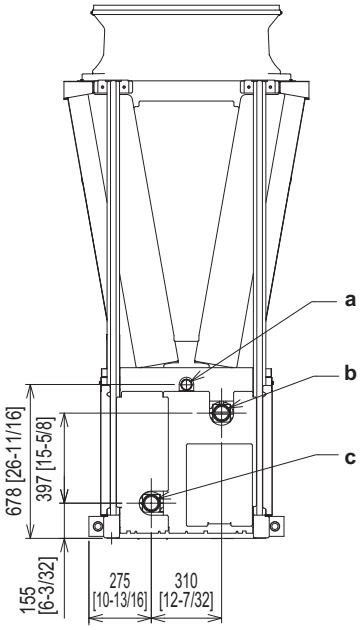
2) The input signal to force the unit to operate in the defrost mode is effective regardless of the setting of simultaneous defrost prevention control for units that are operated both remotely and locally.

3) The unit that is triggered into the defrost mode by this input signal is also counted as a unit in the defrost mode toward simultaneous defrost prevention control among other units that are operated remotely.

13-7. Water Piping Size and Location

[1] Standard piping type

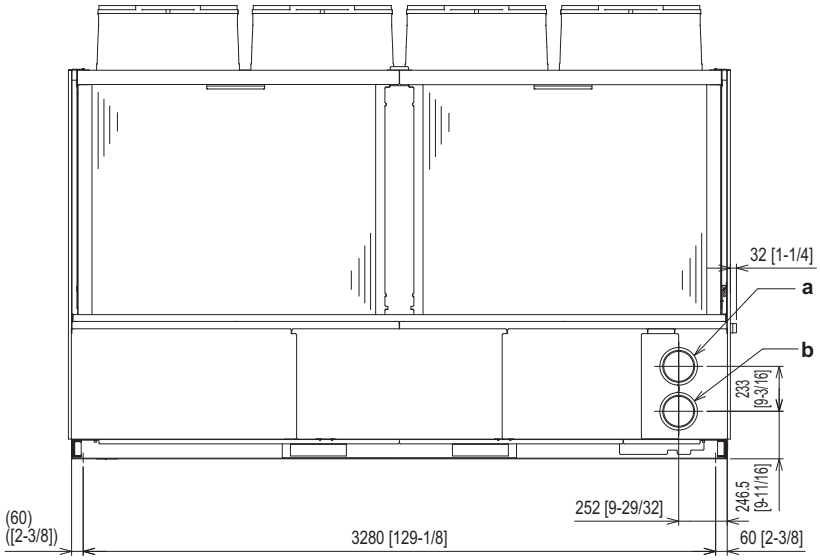
Unit: mm [in.]

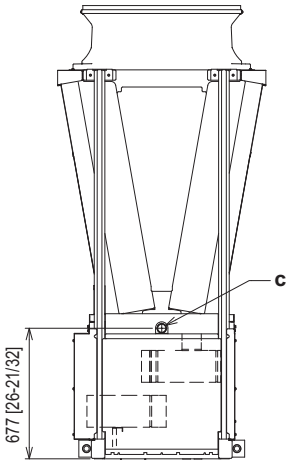


a Drain R1 1/2
b Water outlet 65A housing type joint
c Water inlet 65A housing type joint

[2] Inside header piping type

Unit: mm [in.]





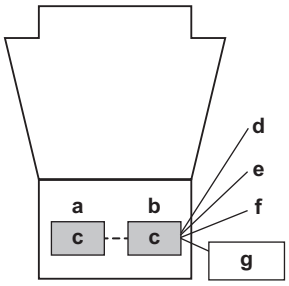
a Water outlet 150A housing type joint
b Water inlet 150A housing type joint
c Drain R1 1/2

14. System Configurations

The system must be configured only by personnel certified by Mitsubishi Electric.

14-1. Schematic Diagrams of Individual and Multiple Units Connection Systems

14-1-1.Individual system

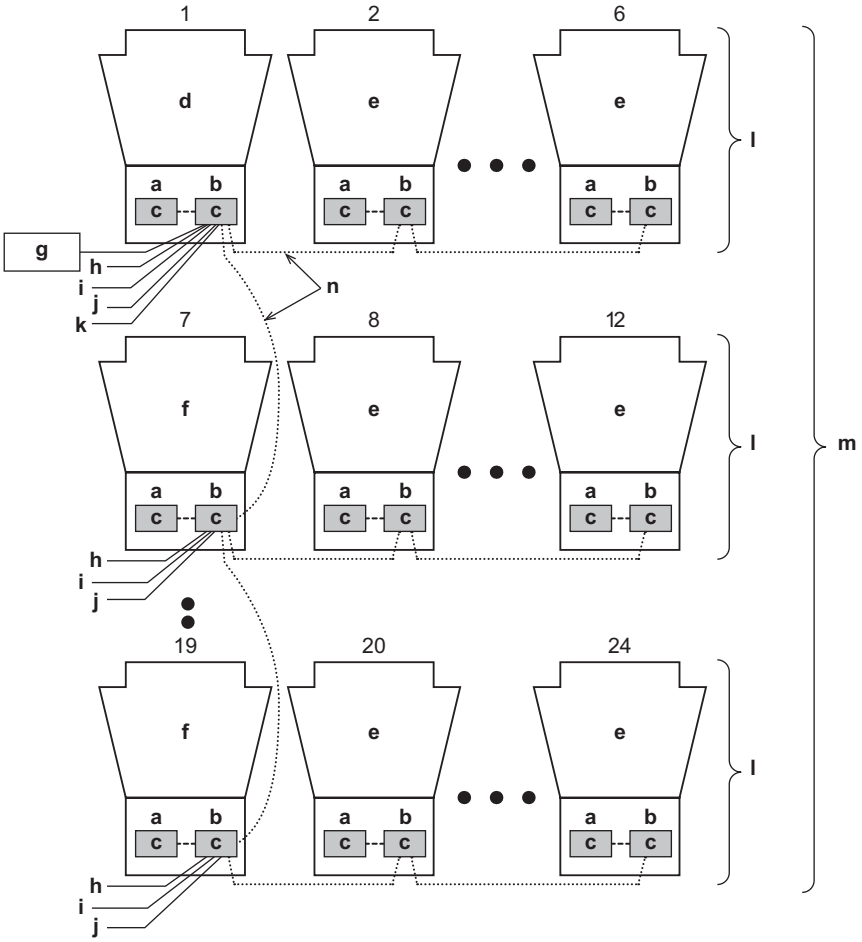


a SUB
b MAIN
c PCB
d External temperature sensor 2 (option)
e Flow switch
f Pump interlock
g Field-supplied dry contact switch/ relay, remote controller or centralized controller

Refer to the following page(s) for detail. "Switch Types and the Factory Settings" (p. 90), "Configuring the Settings" (p. 93)

14-1-2.Multiple units connection system (Max 24 units)

System leader unit	The unit controls the identical water system group.
Group leader unit	The unit transmits the command from the system leader unit to the sub unit.
Sub unit	The unit is other than leader unit.

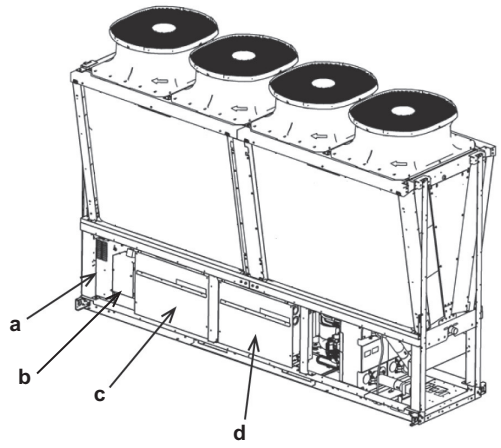


a SUB
b MAIN
c PCB
d System leader unit
e Sub unit
f Group leader unit
g Field-supplied dry contact switch/ relay, remote controller or centralized controller
h External temperature sensor 1 (option)
i Flow switch
j Pump interlock
k External temperature sensor 2 (option)
l Simultaneous operating group (Max 6 units)
m Identical water system group (Max 24 units)
n M-NET line

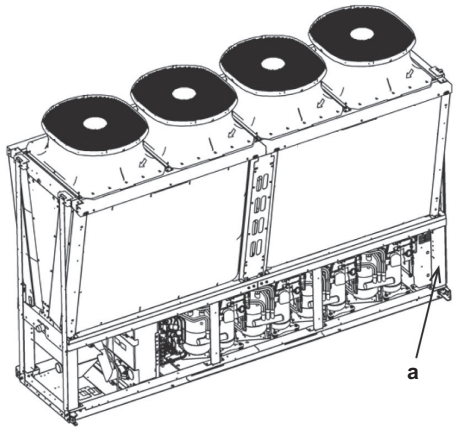
Refer to the following page(s) for detail. "Switch Types and the Factory Settings" (p. 90), "Configuring the Settings" (p. 93)
Refer to the following page(s) for details about connecting the flow switch and the pump."Setting the pump system" (p. 104) The example system shows Pattern 1.

14-2. Switch Types and the Factory Settings

14-2-1. Switch names and functions



Right side



Left side

a Terminal box
b Transformer box
c Control box for MAIN circuit
d Control box for SUB circuit

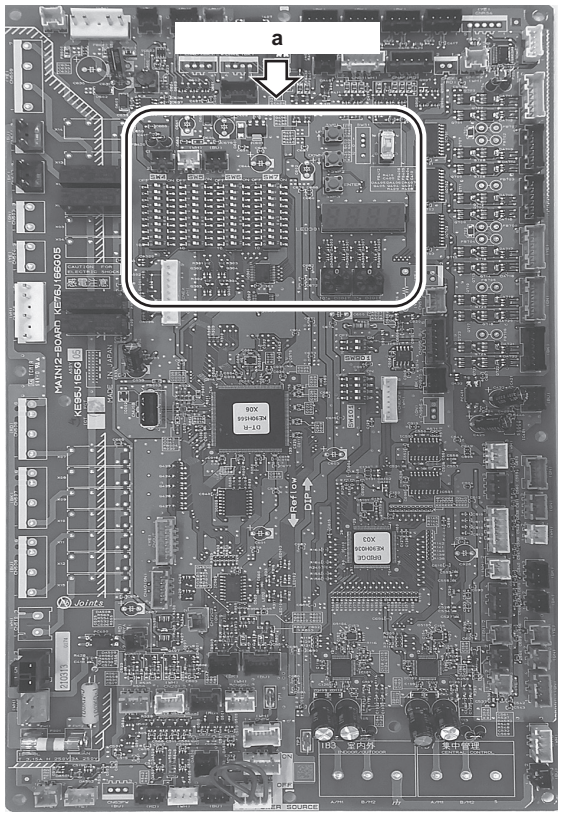
There are three main ways to set the settings as follows:

1) Dip switches (SW4 - SW7)
2) Dip switches used in combination with the push switches
3) Rotary switches

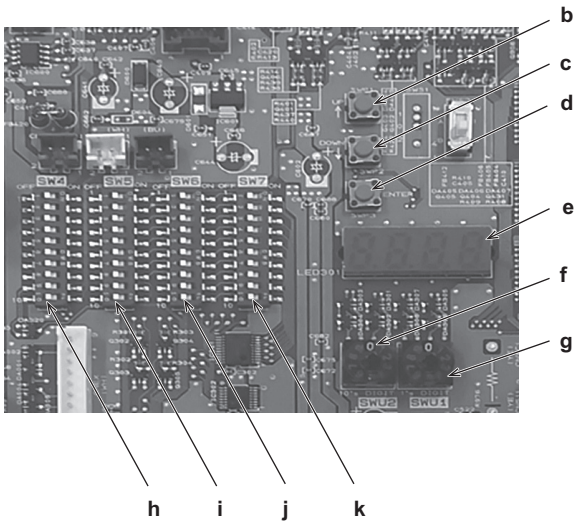
For how these switches are used to set certain items. "Different types of switches on the PCB" (p. 91)

14-2-2.Different types of switches on the PCB

Control board

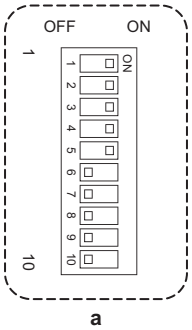


Enlarged view of operation area

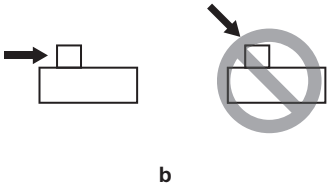


a Operation area
b Push switch (SWP1)
c Push switch (SWP2)
d Push switch (SWP3)
e LED display
f Rotary switch (SWU2) (0-9)
g Rotary switch (SWU1) (0-9)
h Dip switch (SW4)
i Dip switch (SW5)
j Dip switch (SW6)
k Dip switch (SW7)

			Initial Setting	
			MAIN circuit	SUB circuit
Rotary switch	SWU1	Sets the 1's digit of the unit address.	"1"	"1"
	SWU2	Sets the 10's digit of the unit address.	"0"	"5"
Push switch	SWP1	Use for increasing the setting value.	–	–
	SWP2	Use for decreasing the setting value.	–	–
	SWP3	Use for changing and deciding the setting value.	–	–
Dip switch	SW4-7	Select a setting which is decided with a combination of switch numbers.	–	–



a



b

a Example: on the upper figure. 1 to 5 are “ON” and 6 to10 are“OFF”.
b Slide the dip switches: do not push down the switches.

14-2-3.Factory Switch Settings (Dip switch settings table)

SW		Function	Usage	Factory setting MAIN circuit	Factory setting SUB circuit	OFF setting	ON setting	System leader unit	Group leader unit	SUB unit	Setting timing
SW4	1	Settings change or view the settings	These switches are used for setting change with push switch SWP 1, 2 and 3.	OFF	OFF	The 7-segment LED display is changed.		Depends on the setting	Depends on the setting	Depends on the setting	Depends on the setting
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	10										
SW5	1	Model setting		–	–	Leave the setting as it is.		–	–	–	At a reset
	2	System setting	Set the duties to each unit.	OFF	–	System leader unit 2: ON, 3: ON Group leader unit 2: ON, 3: OFF Sub unit 2: OFF, 3: OFF		Required	Required	Required	At a reset
	3										
	4	Water-temperature control 1 (option)	Selects either the external water temperature sensor or the built-in sensor to be used to control water temperature. (Simultaneous operating group)	OFF	–	Built-in sensor on the unit	External water temperature sensor 1	Required	Required	Required	At a reset
	5	Water-temperature control 2 (option)	Selects target temperature correction control. (Identical water system group)	OFF	–	OFF	ON (External water sensor 2 is required.)	Required	Fixed OFF	Fixed OFF	At a reset
	6	Multiple unit control	Selects optimum control of number of operating units.	OFF	–	Ineffective	Effective	Required	Fixed OFF	Fixed OFF	At a reset
	7	Analog input setting	Allows or disallows the analog signals from a remote location.	OFF	–	Disallows the external analog signals.	Allows the external analog signals.	Required	Fixed OFF	Fixed OFF	At a reset
	8	Analog input signal switching	Selects either the water temperature or the capacity control ratio. (Effective only when SW5-7 is set to ON.)	OFF	–	Water temperature	Capacity control ratio	Required	Fixed OFF	Fixed OFF	At a reset
	9	BMS setting *		OFF	–	No input from BMS	Input from BMS	Required	Fixed OFF	Fixed OFF	At a reset
	10	BMS group setting		OFF	OFF	Leader units	Simultaneous operating group units	Fixed OFF	Fixed OFF	Fixed OFF	Any time
SW6	1	Analog input type setting	Selects analog input 4-20mA/ 0-10V/1-5V/2-10V. (Effective only when SW5-7 is set to ON and SW5-9 is set to OFF.)	OFF	–	4-20mA 1: OFF, 2: OFF 1-5V 1: ON, 2: OFF 0-10V 1: OFF, 2: ON 2-10V 1: ON, 2: ON		Required	Fixed OFF	Fixed OFF	Any time
	2										
	3	Model setting		OFF	OFF	Leave the setting as it is.		Fixed OFF	Fixed OFF	Fixed OFF	Any time
	4										
	5										
	6										
	7										
	8										
	9	Auto restart after power failure	Enables or disables the automatic restoration of operation after power failure (in the same mode as the unit was in before a power failure).	ON	ON	An alarm will be issued when power is restored after a power outage. The alarm will be reset when the power is turned off and then turned back on.	Automatically restores operation after power failure.	Required	Required	Required	Any time
	10	Model setting		OFF	OFF	Leave the setting as it is.		Fixed OFF	Fixed OFF	Fixed OFF	Any time

"-" in the table indicates that the function in the corresponding row will be disabled regardless of the actual switch setting.
The factory setting for these items is OFF.

* Connection to a BMS requires an installation of Procon A1M (Modbus interface), which is available from MITSUBISHI ELECTRIC UK. Use a BMS with insulation.

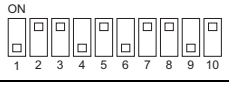
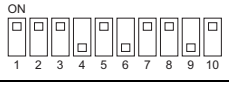
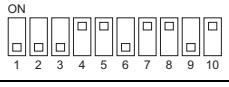
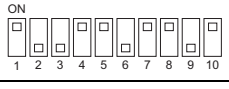
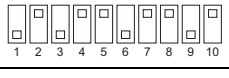
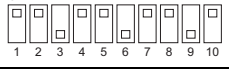
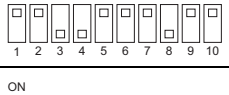
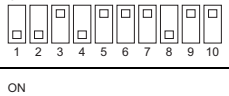
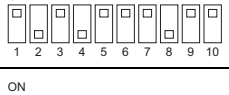
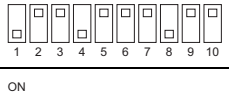
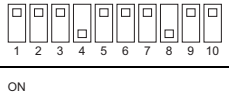
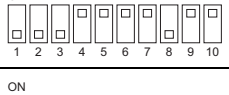
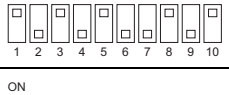
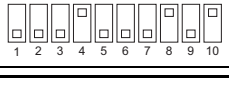
SW5-7	SW5-8	SW5-9	Input from BMS
ON	OFF	ON	Target temperature
ON	ON	ON	Capacity
OFF	OFF	ON	Outdoor temperature

14-3. Configuring the Settings

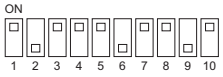
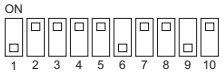
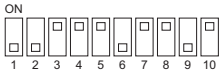
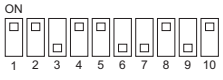
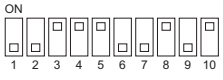
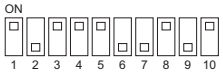
The settings must be set only by a qualified personnel.

14-3-1.Table of settings items

Set dip switches SW7-1, SW7-2, and SW4 as shown in the table below to set the value for the items in the "Setting item" column.

No.	Dip switch setting *1	Dip switch setting (SW4) *2	Setting Item	Default	Need or non-need to set the setting *5						Notes *7
					System		Group		Sub		
					M	S	M	S	M	S	
1	SW7-1 ON		Setting temp. 1 (Cooling mode) *3	7ºC	○	–	–	–	–	–	Range 4–30ºC
2	SW7-1 ON		Setting temp. 2 (Cooling mode) *3	7ºC	○	–	–	–	–	–	Range 4–30ºC
3	SW7-1 ON		Setting temp. 1 (Heating mode) *4	45ºC	○	–	–	–	–	–	Range 25–55ºC
4	SW7-1 ON		Setting temp. 2 (Heating mode) *4	45ºC	○	–	–	–	–	–	Range 25–55ºC
5	SW7-1 ON		Setting water temp. A at Heating ECO mode *4	52ºC	○	–	–	–	–	–	Range 25–55ºC
6	SW7-1 ON		Setting outdoor temp. A at Heating ECO mode *4	-7ºC	○	–	–	–	–	–	Range -30–50ºC
7	SW7-1 ON		Setting water temp. B at Heating ECO mode *4	30ºC	○	–	–	–	–	–	Range 25–55ºC
8	SW7-1 ON		Setting outdoor temp. B at Heating ECO mode *4	12ºC	○	–	–	–	–	–	Range -30–50ºC
9	SW7-1 ON		Setting water temp. C at Heating ECO mode *4	42ºC	○	–	–	–	–	–	Range 25–55ºC
10	SW7-1 ON		Setting outdoor temp. C at Heating ECO mode *4	2ºC	○	–	–	–	–	–	Range -30–50ºC
11	SW7-2 ON		Setting water temp. D at Cooling ECO mode *3	11.5ºC	○	–	–	–	–	–	Range 4–30ºC
12	SW7-2 ON		Setting outdoor temp. D at Cooling ECO mode *3	20ºC	○	–	–	–	–	–	Range -20–55ºC
13	SW7-2 ON		Setting water temp. E at Cooling ECO mode *3	7ºC	○	–	–	–	–	–	Range 4–30ºC
14	SW7-2 ON		Setting outdoor temp. E at Cooling ECO mode *3	35ºC	○	–	–	–	–	–	Range -20–55ºC
15	SW7-2 ON		Setting water temp. F at Cooling ECO mode *3	10ºC	○	–	–	–	–	–	Range 4–30ºC
16	SW7-2 ON		Setting outdoor temp. F at Cooling ECO mode *3	25ºC	○	–	–	–	–	–	Range -20–55ºC
17	SW7-1 ON		Peak-demand control signal input source	0	○	–	–	–	–	–	0: Dry contact 1: PAR-W31MAA
18	SW7-1 ON		Maximum peak-demand capacity	100%	○	–	–	–	–	–	Range 60-100%

14. System Configurations

No.	Dip switch setting *1	Dip switch setting (SW4) *2	Setting Item	Default	Need or non-need to set the setting *5						Notes *7
					System		Group		Sub		
					M	S	M	S	M	S	
19	SW7-1 ON		Preset temp. A (Cooling)	4ºC	○	–	–	–	–	–	Range 4–30ºC
20	SW7-1 ON		Preset temp. B (Cooling)	30ºC	○	–	–	–	–	–	Range 4–30ºC
21	SW7-1 ON		Preset temp. A (Heating)	25ºC	○	–	–	–	–	–	Range 25–55ºC
22	SW7-1 ON		Preset temp. B (Heating)	55ºC	○	–	–	–	–	–	Range 25–55ºC
23	SW7-1 ON		Supplementary heater operation water temp. *4	40ºC	○	–	○	–	○	–	Range 0–55ºC
24	SW7-1 ON		Supplementary heater operation outdoor temp. *4	-10ºC	○	–	○	–	○	–	Range -30–50ºC
25	SW7-1 ON		Drain pan heater operation outdoor temp.	0ºC	○	–	○	–	○	–	Range -40–20ºC
26	SW7-1 ON		Thermo differential 1 (Cooling mode) *3, *6	3ºC	○	–	○	–	○	–	Range 0.2–5ºC
27	SW7-1 ON		Thermo differential 2 (Cooling mode) *3, *6	2ºC	○	–	○	–	○	–	Range 0.2–5ºC
28	SW7-1 ON		Thermo differential 1 (Heating mode) *4, *6	3ºC	○	–	○	–	○	–	Range 0.2–5ºC
29	SW7-1 ON		Thermo differential 2 (Heating mode) *4, *6	2ºC	○	–	○	–	○	–	Range 0.2–5ºC
30	SW7-1 ON		Year setting	–	○	–	–	–	–	–	–
31	SW7-1 ON		Month/Date setting	–	○	–	–	–	–	–	–
32	SW7-1 ON		Current time	–	○	–	–	–	–	–	–

*1: Only the switches designated in the table must be set to ON. (The other switches must be OFF.)

*2: Do not apply undue force when changing the Dip switch settings as this may cause malfunctions.

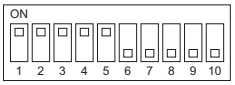
*3: They are enabled during the cooling.

*4: They are enabled during the heating.

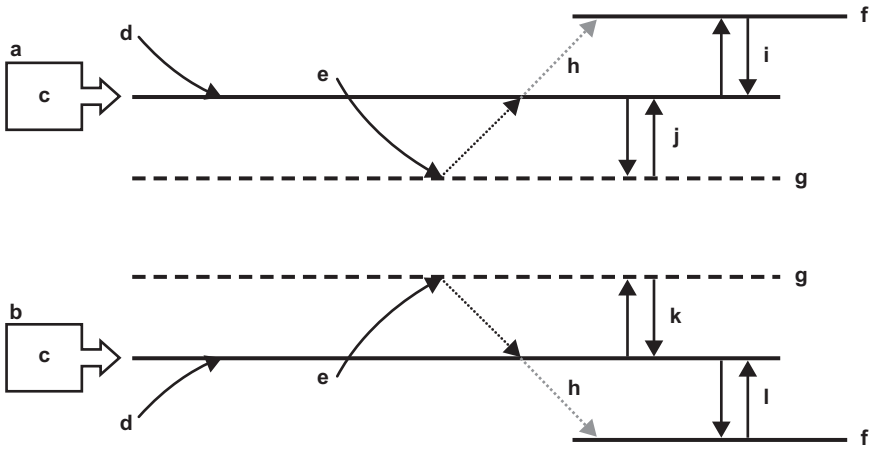
*5: System: System leader unit
Group: Group leader unit
Sub: Sub unit
M: MAIN circuit
S: SUB circuit

*6: Thermo - ON/OFF temperature conditions (water temperature control)

*7: It cannot be set in Fahrenheit.



The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.



a Cooling
b Heating
c Target temp.
d Outlet water temperature changes 1
e Outlet water temperature changes-2
f Thermo-ON temperature
g Thermo-OFF temperature
h Preset water temperature
i Thermo-differential 1 (Cooling mode): 3°C (Default)
j Thermo-differential 2 (Cooling mode): 2°C (Default)
k Thermo-differential 2 (Heating mode): 2°C (Default)
l Thermo-differential 1 (Heating mode): 3°C (Default)

When the water temperature is controlled based on the outlet water temperature, compressor frequency will be controlled in the way that the target water temperature will be maintained.

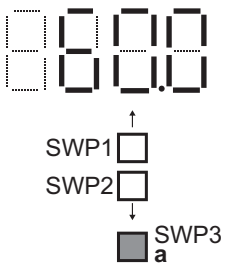
14-3-2.Making the setting value

Use the LED display and the three push switches (SWP1 (↑), SWP2 (↓), and SWP3 (Enter)) to change the current settings on the circuit board and to monitor various monitored values.

[1] Setting procedures

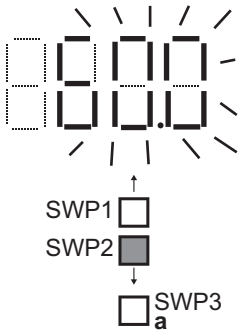
Take the following steps to set the push switches SWP1 through SWP3. These switches must be set after the dip switch SW4 has been set.

1.



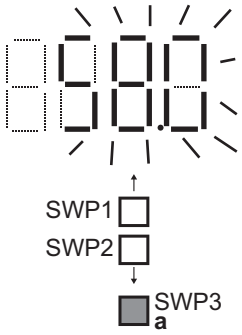
Normally a value of setting item appears on the display.
↓
Press SWP3 (Enter) to enable the configuration changes.

2.



The current setting value will blink.
↓
The left figure shows that the current setting value is "60.0."
To decrease this value to 58.0, for example, press SWP2 (↓).
Press SWP1 (↑) to increase the value.

3.



When the desired value is displayed (58.0 in the example at left), press SWP3 (Enter).
↓
The displayed value will stop blinking and stay lit.
A lit LED indicates that the new setting has been saved.
* Pressing SWP1 (↑) or SWP2 (↓) will change the blinking setting value, but the change will not be saved until SWP3 (Enter) is pressed.
Press and hold SWP1 (↑) or SWP2 (↓) for one second or longer to fast forward through the numbers.

a Enter

14-3-3.System configuration

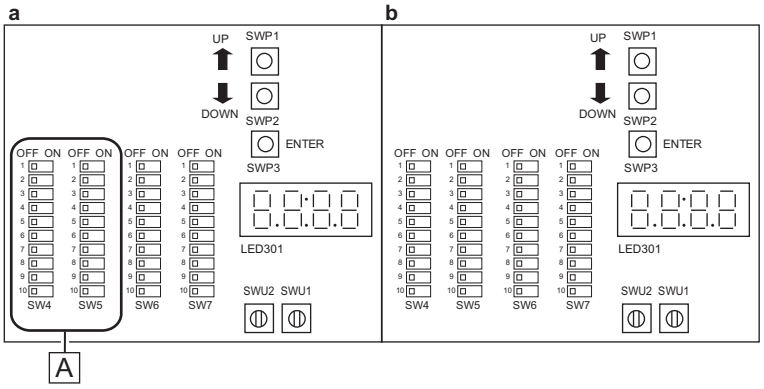
[1] Set the dip switches. (System setting)

Switch settings on the MAIN circuit

Set the dip switches (labeled A in the figure at right) that correspond to the items below, according to the local system.

- Water temperature control based on the external water temperature reading
- Analog signals from a remote location

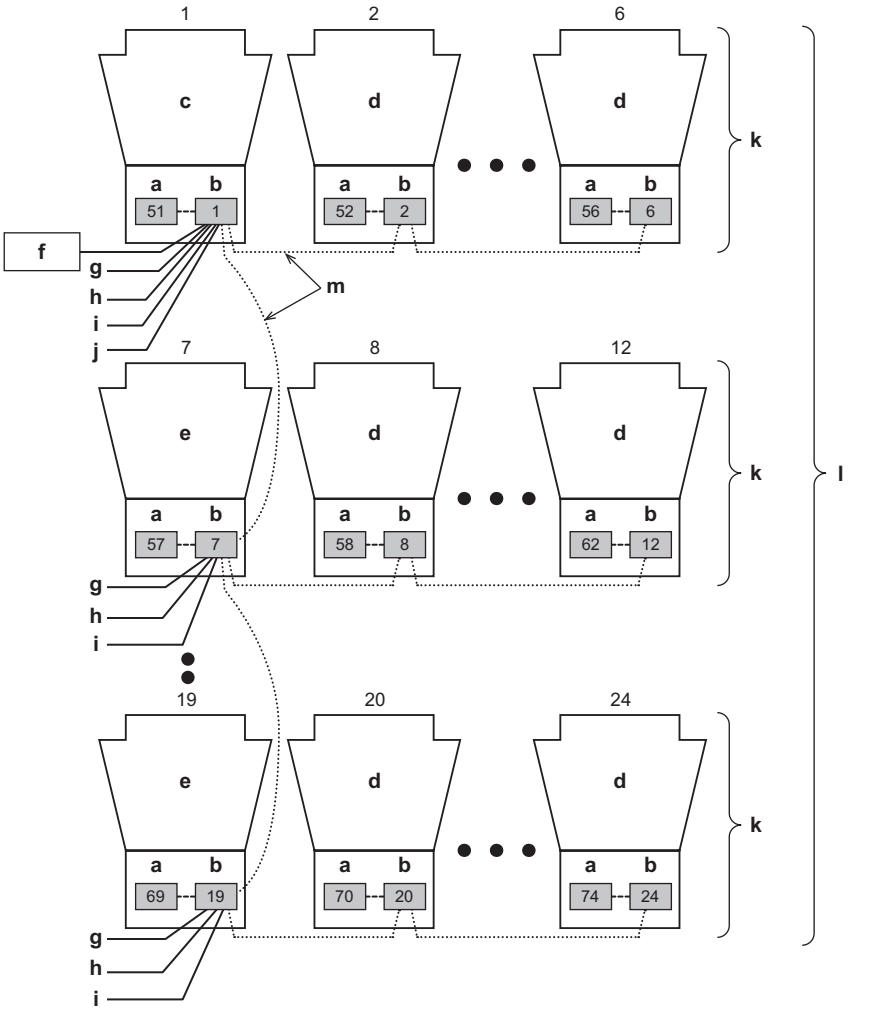
Refer to the following page(s) for detail.
"Factory Switch Settings (Dip switch settings table)" (p. 92)



a MAIN circuit board
b SUB circuit board

[2] Set the rotary switches. (Address setting)

(1) Example of address setting



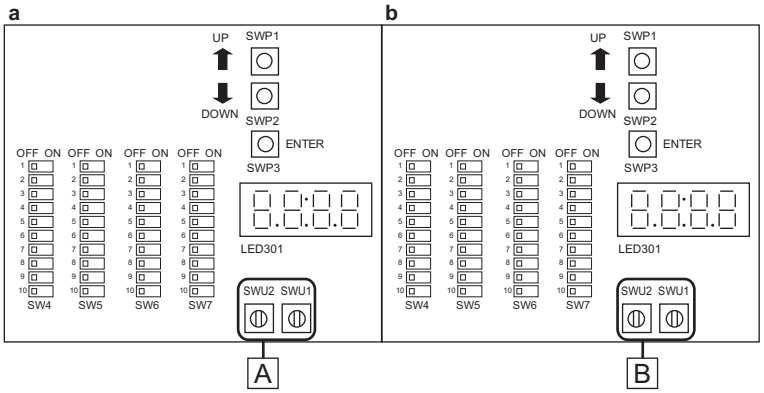
a SUB
b MAIN
c System leader unit
d Sub unit
e Group leader unit
f Field-supplied dry contact switch/ relay, remote controller or centralized controller
g External temperature sensor 1 (option)
h Flow switch
i Pump interlock
j External temperature sensor 2 (option)
k Simultaneous operating group (Max 6 units)
l Identical water system group (Max 24 units)
m M-NET line

Refer to the following page(s) for details about connecting the flow switch and the pump."Setting the pump system" (p. 104) The example system shows Pattern 1.

(2) Setting the switches on the system leader unit

Make sure the address of the MAIN circuit on the main unit is set to "1" (labeled A in the figure at right) and that the address of the SUB circuit on the main unit is set to "51" (labeled B in the figure at right).

The address of each SUB circuit should equal the sum of the MAIN circuit address on the same unit and 50.



a MAIN circuit board
b SUB circuit board

(3) Setting the switches on the group leader unit and the sub unit

MAIN circuit

Set the MAIN circuit addresses with the rotary switches. (labeled A in the figure). Set the 10's digit with SWU2, and set the 1's digit with SWU1. Assign sequential addresses to the MAIN circuit on all sub units starting with 2.

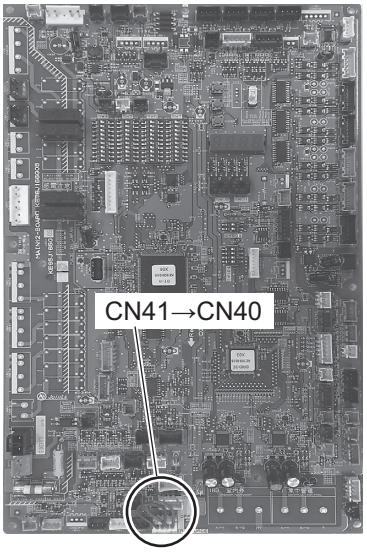
SUB circuit

Set the SUB circuit addresses with the rotary switches (labeled B in the figure). Set the 10's digit with SWU2, and set the 1's digit with SWU1. Assign sequential addresses to the SUB circuit on all sub units starting with 52.

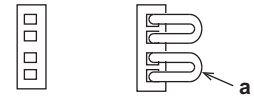
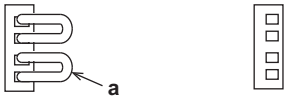
[3] Set the M-NET power supply.

When connecting a system leader unit and a group leader unit to a multiple units connection system, the connector connected to CN41 on the MAIN circuit board (Address 1) must be disconnected and then connected to CN40.

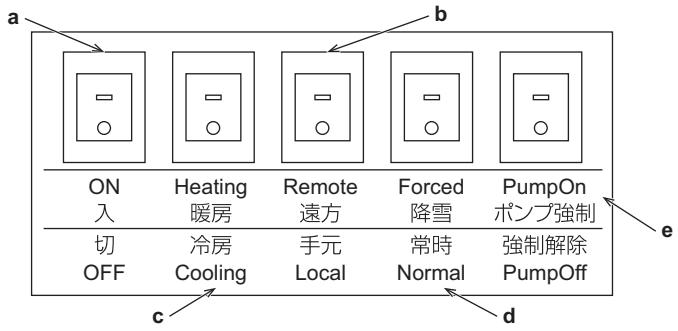
* Leave the connector connected to CN41 when using an AE-200, AE-C400A or EW-C50A as the centralized controller.



a Connector

Address 1	All addresses other than Address 1
Move the connector from CN41 to CN40.	Leave the connector connected to CN41.
	

(1) Selector switch settings

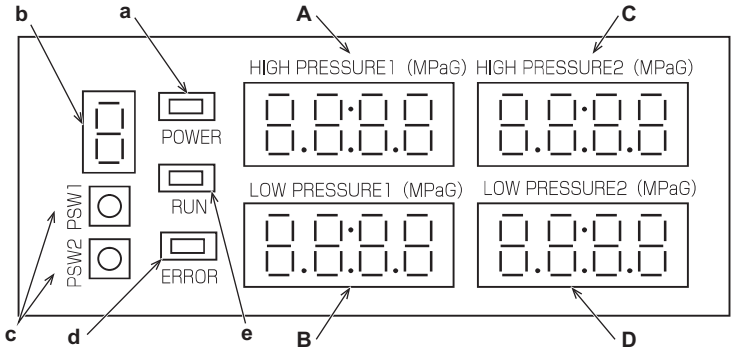


a [ON] Unit operation
[OFF] Unit stop
b [Remote] Controller operation
[Local] Local operation
c [Cooling] Cooling operation
[Heating] Heating operation
d [Forced] When the unit stops, fan operates.
[Normal] When the unit stops, fan does not operate.
e Not used

⚠ CAUTION

- Do not open the terminal cover, when selector switches are operated.

(2) Display

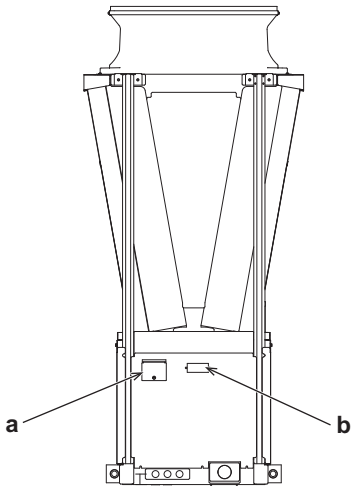


a Power light
b LED display (display mode: 0, 1, 2, 3)
c Push switch
d Error light
e Run light
A LED display
B LED display
C LED display
D LED display

DISPLAY MODE	A	B	C	D
0	Error code	Error detail code	Error module address	-
1	High pressure 1A (MPa)	Low pressure 1A (MPa)	High pressure 1B (MPa)	Low pressure 1B (MPa)
2	High pressure 2A (MPa)	Low pressure 2A (MPa)	High pressure 2B (MPa)	Low pressure 2B (MPa)
3	Inlet water temp. 1 (℃)	Inlet water temp. 2 (℃)	Outlet water temp. (℃)	Ambient temp. (℃)

(3) The positions of the selector switch and the display

Service side



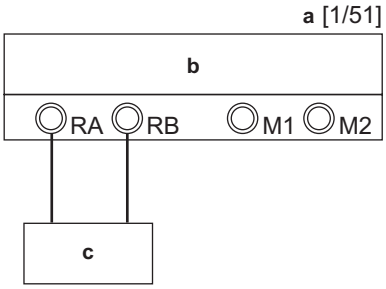
a Selector switch (Inside the unit)
b Display

14-3-4.Setting procedures

[1] System setting

Making the settings for the initial start-up process

(1) Single unit



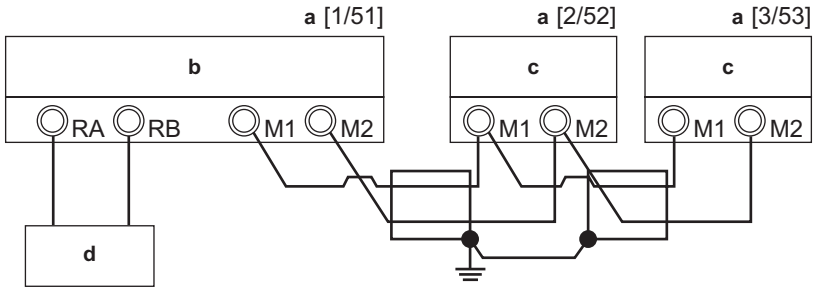
Setting address 1

1) Turn off the power.
2) System leader unit (Address 1 SW5-2, 5-3: ON)
3) Turn the power back on.
Address 1→ LED display [EEEE]
Address 51→ LED display [9999]
4) SW7: 1, 2, 3, 4 ON and ENTER for 5 seconds.
(Initializes the system)
Address 1→ LED display [9999] → [FFFF]
Address 51→ LED display [9999] → [____||_|]
5) SW7: 1, 2, 3, 4 OFF
Start-up process complete
Address 1→ LED display [____||_|]
Address 51→ LED display [____||_|]

- No settings are required for address 51.

a Address
b System leader unit
c Remote controller

(2) One system leader unit and two sub units (1 group, 3 units in the group)



a Address
b System leader unit
c Sub unit
d Remote controller

Setting address 1

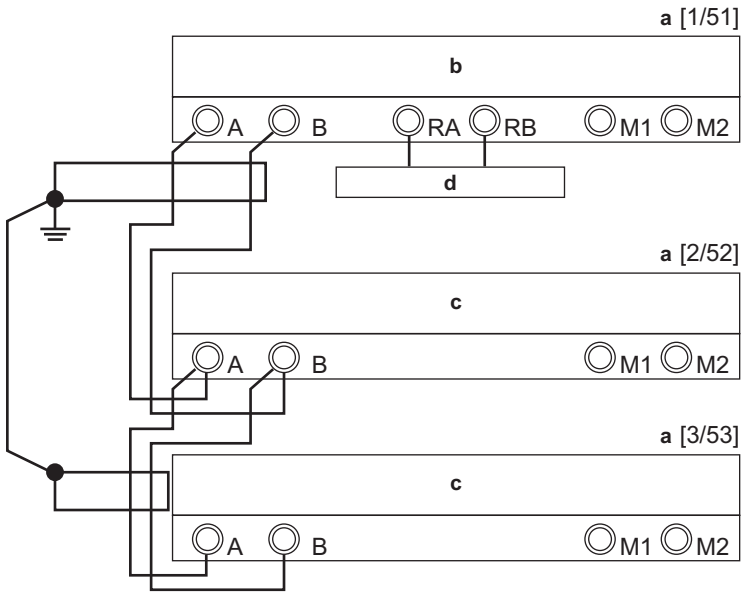
1) Turn off the power.
2) System leader unit (Address 1 SW5-2, 5-3: ON)
3) Turn the power back on.
Address 1 → LED display [EEEE]
Address 51 → LED display [9999]
4) Setting the number of units for the group
SW7: 1 ON
SW4: 1, 2, 3, 4, 8, 10 ON
Press ENTER once.
↓
Address 1→ LED display [1]
↓
Press UP twice.
↓
Address 1→ LED display [3]
↓
Press ENTER once.
SW4: 1, 2, 3, 4, 8, 10 OFF

- The default setting for the number of units in a group is 1.
The maximum number of units per group is 6.

5) SW7: 1, 2, 3, 4 ON and ENTER for 5 seconds.
(Initializes the system)
Address 1 → LED display [9999] → [FFFF]
Address 51 → LED display [9999] → [____||_|]
6) SW7: 1, 2, 3, 4 OFF
Start-up process complete
Address 1 → LED display [____||_|]
Address 51 → LED display [____||_|]

- No settings are required for any address other than for address 1.

(3) System leader unit and group leader unit (3 groups, 1 unit in each group)



a Address
b System leader unit
c Group leader unit
d Remote controller

Setting address 1

1) Turn off the power.
2) System leader unit (Address 1 SW5-2, 5-3: ON)
3) Turn the power back on.
Address 1 → LED display [EEEE]
Address 51 → LED display [9999]
4) Setting the number of units for each group

- The default setting for the number of units in a group is 1.

5) Setting the number of groups
SW7: 1 ON
SW4: 5, 8, 10 ON
Press ENTER once.
↓
Address 1 → LED display [1]
↓
Press UP twice.
↓
Address 1 → LED display [3]
↓
Press ENTER once.
SW4: 5, 8, 10, OFF

- The default setting for the number of units in a group is 1.
The maximum number of groups is 24.

Setting address 2

1) Turn off the power.
2) Group leader unit (SW5-2: ON)
3) Turn the power back on.
Address 2 → LED display [EEEE]
Address 52 → LED display [9999]
4) Setting the number of units for each group

- The default setting for the number of units in a group is 1.

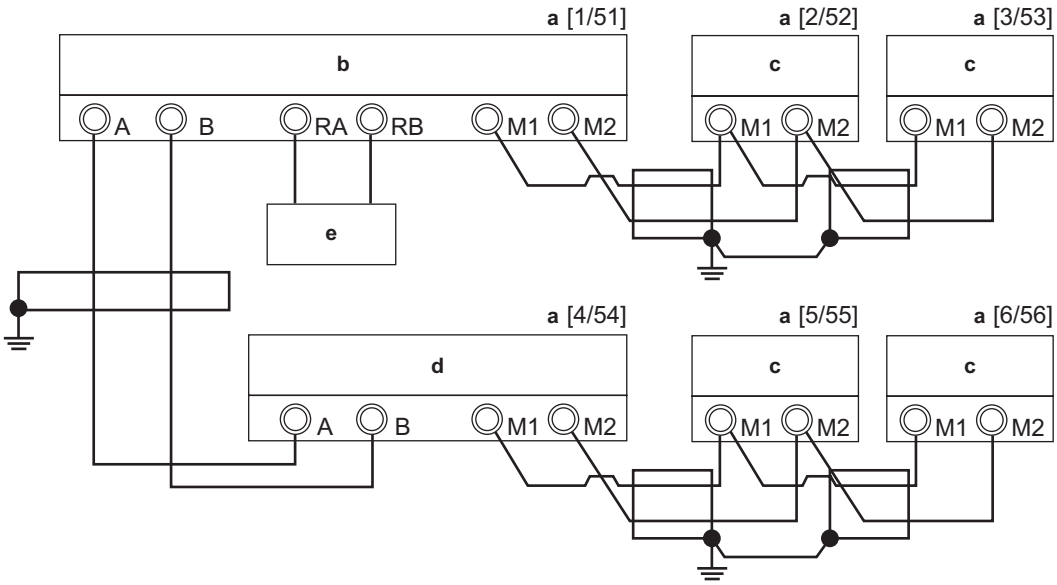
5) SW7: 1, 2, 3, 4 ON and ENTER for 5 seconds.
(Initializes the system)
Address 2 → LED display [9999] → [FFFF]
Address 52 → LED display [9999] → [____||_|]
6) SW7: 1, 2, 3, 4 OFF
Start-up process complete
Address 2 → LED display [____||_|]
Address 52 → LED display [____||_|]

- Address 3 (Group leader unit) is set in the same way as above.)

Setting address 1 (second time)

1) SW7: 1, 2, 3, 4 ON and ENTER for 5 seconds.
(Initializes the system. System leader unit initialized last)
Address 1→ LED display [9999] → [FFFF]
Address 51→ LED display [9999] → [____||_|]
2) SW7: 1, 2, 3, 4 OFF
Start-up process complete
Address 1→ LED display [____||_|]
Address 51→ LED display [____||_|]

(4) System leader unit, Group leader unit and Sub unit (2 groups, 3 units in each group)



a Address
b System leader unit
c Sub unit
d Group leader unit
e Remote controller

Setting address 1

1) Turn off the power.
2) System leader unit (Address 1 SW5-2, 5-3: ON)
3) Turn the power back on.
Address 1 → LED display [EEEE]
Address 51 → LED display [9999]
4) Setting the number of units for each group
SW7: 1 ON
SW4: 1, 2, 3, 4, 8, 10 ON
Press ENTER once.
↓
Address 1→ LED display [1]
↓
Press UP twice.
↓
Address 1→ LED display [3]
↓
Press ENTER once.
SW4: 1, 2, 3, 4, 8, 10 OFF

- The default setting for the number of units in a group is 1. The maximum number of units per group is 6.

5) Setting the number of groups
SW7: 1 ON
SW4: 5, 8, 10 ON
Press ENTER once.
↓
Address 1 → LED display [1]
↓
Press UP twice.
↓
Address 1→ LED display [2]
↓
Press ENTER once.
SW4: 5, 8, 10 OFF

- The default setting for the number of units in a group is 1. The maximum number of units per group is 24.

Setting address 4

1) Turn off the power.
2) Group leader unit (SW5-2: ON)
3) Turn the power back on.
Address 4 → LED display [EEEE]
Address 54 → LED display [9999]
4) Setting the number of units for each group
SW7: 1 ON
SW4: 1, 2, 3, 4, 8, 10 ON
Press ENTER once.
↓
Address 4→ LED display [1]
↓
Press UP twice.
↓
Address 4→ LED display [3]
↓
Press ENTER once.
SW4: 1, 2, 3, 4, 8, 10 OFF

- No group number settings are required for address 4 (Group leader unit).

5) SW7: 1, 2, 3, 4 ON and ENTER for 5 seconds.
(Initializes the system)
Address 4→ LED display [9999] → [FFFF]
Address 54→ LED display [9999] → [____||_|]
6) SW7: 1, 2, 3, 4 OFF
Start-up process complete
Address 4→ LED display [____||_|]
Address 54→ LED display [____||_|]

Setting address 1 (second time)

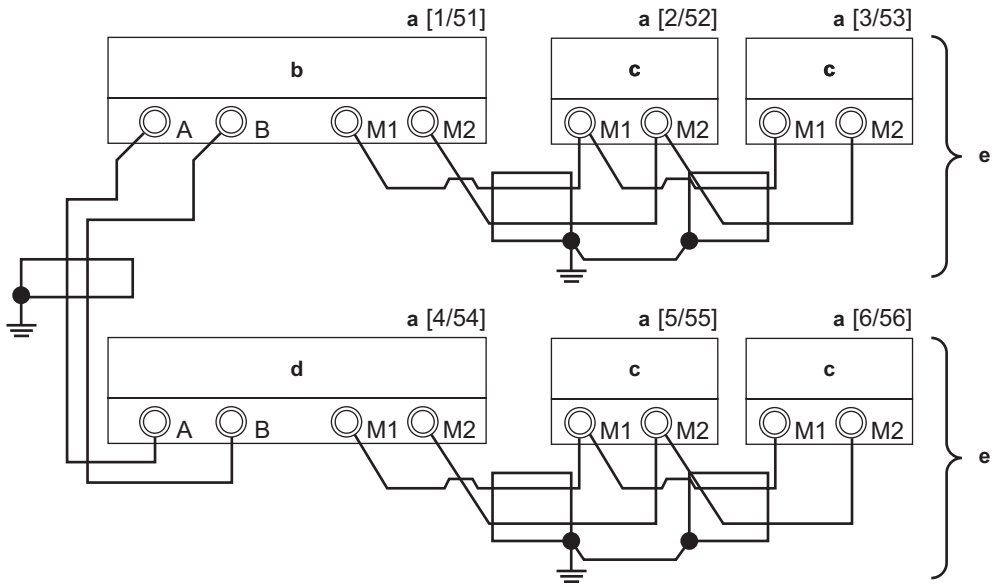
1) SW7: 1, 2, 3, 4 ON and ENTER for 5 seconds.
(Initializes the system. System leader unit initialized last)
Address 1→ LED display [9999] → [FFFF]
Address 51→ LED display [9999] → [____||_|]
2) SW7: 1, 2, 3, 4 OFF
Start-up process complete
Address 1→ LED display [____||_|]
Address 51→ LED display [____||_|]

- No settings are required for any address other than for addresses 1 and 4.

[2] Multiple unit control

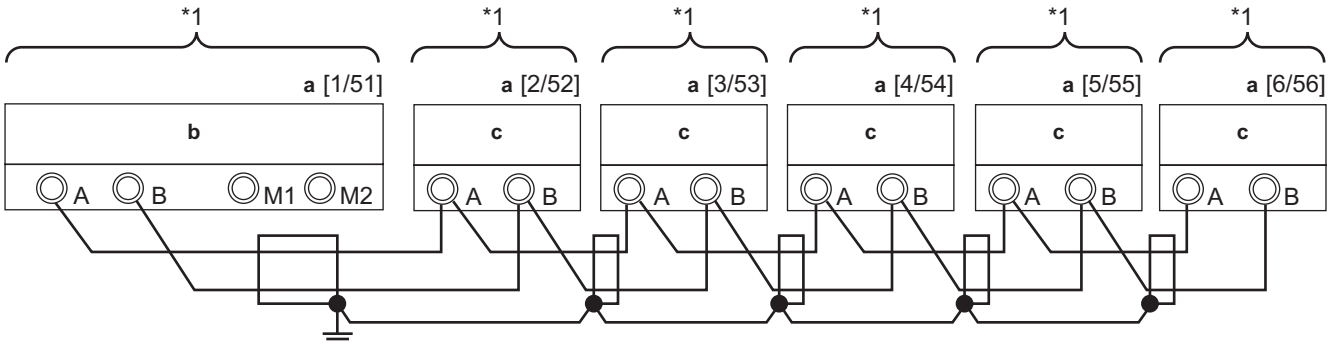
By setting SW5-6 to ON for address 1, optimum control of number of operating units will be performed.
All units will simultaneously operate when SW5-6 is set to OFF.

(1) System leader unit, group leader unit, and sub unit



a Address
b System leader unit
c Sub unit
d Group leader unit
e The unit by which the number of devices in the system is controlled

(2) System leader unit and group leader unit

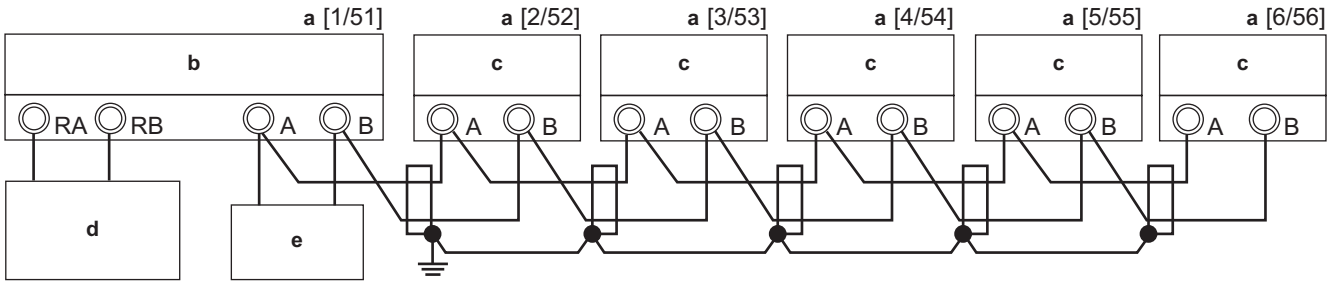


*1:The unit by which the number of devices in the system is controlled

a Address
b System leader unit (Address 1 SW5-6 ON)
c Group leader unit

[3] Example of system configuration

(1) Optimum control of number of operating units

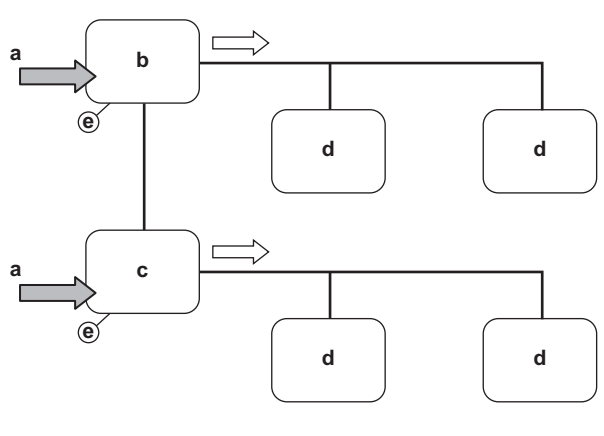
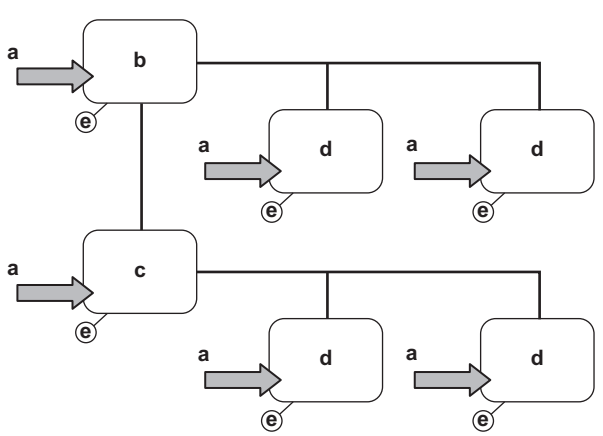


a Address
b System leader unit
c Group leader unit
d Remote controller (PAR-W31MAA)
e System controller (AE-200, AE-C400A, EW-C50A)

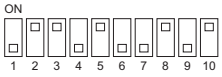
Setting item	SW7-1	DIPSW	SW4	Setting timing	System leader unit		Simultaneous operation Group leader unit		Simultaneous operation Group leader unit		Simultaneous operation Group leader unit		Simultaneous operation Group leader unit		Simultaneous operation Group leader unit	
					1		2		3		4		5		6	
					MAIN	SUB	MAIN	SUB	MAIN	SUB	MAIN	SUB	MAIN	SUB	MAIN	SUB
M-NET address	–	–	–	At a reset	1	51	2	52	3	53	4	54	5	55	6	56
M-NET power supply	–	–	–	–	CN40	CN41	CN41	CN41	CN41	CN41	CN41	CN41	CN41	CN41	CN41	CN41
System settings	–	5-2	–	At a reset	ON	–	ON	–	ON	–	ON	–	ON	–	ON	–
	–	5-3	–	At a reset	ON	–	OFF	–	OFF	–	OFF	–	OFF	–	OFF	–
Number of groups	ON	–		At a reset	6	–	1	–	1	–	1	–	1	–	1	–
Number of units per group	ON	–		At a reset	1	–	1	–	1	–	1	–	1	–	1	–
Multiple unit control	–	5-6		At a reset	ON	–	OFF	–	OFF	–	OFF	–	OFF	–	OFF	–

*1:The shaded cells indicate the settings that requires changes from the default settings.
*2:Some settings require the following after the settings were changed: A power reset, or setting SW7: 1, 2, 3, 4 ON, and pressing and holding ENTER for 5 seconds.
*3:When using an AE-200, AE-C400A or EW-C50A as the centralized controller, leave the M-NET power supply connector as it is.

[4] Setting the pump system

Pattern 1	Pattern 2
	

a Pump
b System leader unit
c Group leader unit
d Sub unit
e Flow switch

Setting item	SW7-1	DIPSW	SW4	Factory setting		Note
				MAIN	SUB	
Pump setting	ON	–		0	–	0: Pattern 1, 1: Pattern 2
Flow switch settings	ON	–		0	–	0: Pattern 1, 1: Pattern 2

*1:Pump settings must be made on the MAIN circuit on all units.
*2:Flow switch settings must be made on the MAIN circuit on all units.

14-3-5.Priority order of the water-temperature-setting-input-signal sources

Water temperature can be controlled by using the signals from the four types of input sources listed below. The setting for the item with higher priority will override the settings for the items with lower priorities. The water temperature will be controlled according to the temperature setting in the "Target water temperature" column that corresponds to a specific combination of the settings for the four items.

[1] No-voltage contact input K91-K93 ON: Heating

Priority 1	Priority 2	Priority 3	Priority 4			Target water temperature
No-voltage contact input K40-K41	Analog input or BMS (SW 5-9: ON)	No-voltage contact input K40-K42	Remote controller PAR-W31MAA Input from centralized controller AE-200, AE-C400A, EW-C50A or BMS (*2)			
Anti-freeze		Mode change	No remote controller	Manual setting	Schedule setting	
ON	Ineffective	Ineffective	–	Ineffective	Ineffective	25°C [77°F]
OFF	SW5-7: ON	Ineffective	–	Ineffective	Ineffective	Temperature setting for the analog signal input
	SW5-7: OFF	ON (Heating ECO)	–	Ineffective	Ineffective	Heating ECO
		OFF (Heating)	When no RC is used	–	–	Heating
			–	Anti-freeze	–	25°C [77°F]
			–	Heating ECO	–	Heating ECO
			–	Heating	–	Heating
			–	Cooling	–	Cooling
			–	–	When schedule has been set (*1)	Target water temp. is controlled according to the setting on the remote controller.

*1:EAHV can also set Cooling.
*2:AE-200, AE-C400A, EW-C50A and BMS cannot both be simultaneously connected. Only connect one or the other.

[2] No-voltage contact input K91-K93 OFF: Cooling

When the operation mode is Cooling, K40-K41 (Anti-freeze) and K40-K42 (Mode change) are disabled.

Priority 1	Priority 2	Priority 3			Target water temperature
Analog input or BMS (SW5-9: ON)	No-voltage contact input K01-K03	Remote controller PAR-W31MAA Input from centralized controller AE-200, AE-C400A, EW-C50A or BMS (*2)			
	Mode Change (Cooling ECO)	No remote controller	Manual setting	Schedule setting	
SW5-7: ON	Ineffective	–	Ineffective	Ineffective	Temperature setting for the analog signal input
SW5-7: OFF	ON (Cooling ECO)	–	Ineffective	Ineffective	Cooling ECO
	OFF (Cooling)	When no RC is used	–	–	Cooling
		–	Anti freeze	–	25°C [77°F]
		–	Heating ECO	–	Heating ECO
		–	Heating	–	Heating
		–	Cooling	–	Cooling
		–	–	When schedule has been set (*1)	Target water temp. is controlled according to the setting on the remote controller.

*1:EAHV can also set Heating or Heating ECO.
*2:AE-200, AE-C400A, EW-C50A and BMS cannot both be simultaneously connected. Only connect one or the other.

[3] Priority order of the operation signal sources

		No-voltage contact	Remote controller PAR-W31MAA	Input from centralized controller AE-200, AE-C400A, EW-C50A or BMS
Unit operation (Run/Stop)		The last setting has priority.		
Operation mode	Cooling *1	The last setting has priority.		
	Cooling ECO *1*2	OFF	Cooling ECO can not be set from the remote controller or the centralized controller.	
		ON		
	Heating *1	The last setting has priority.		
	Heating ECO *1*3	OFF	The last setting has priority.	
		ON	Ineffective	
	Anti-freeze *3	OFF	The last setting has priority.	
		ON	Ineffective	
Fan mode (The contact ON has priority.)		OFF	The last setting has priority.	
		ON	Ineffective	

*1:When the Anti-freeze contact is ON during heating operation, the setting change is ineffective.
*2:Changing by contact is effective during cooling operation.
*3:Changing by contact is effective during heating operation.

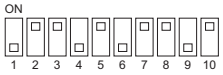
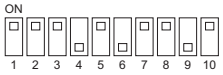
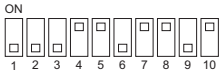
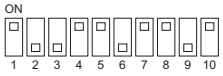
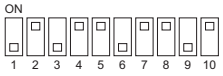
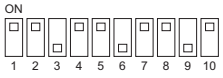
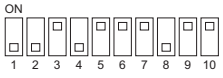
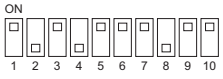
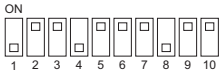
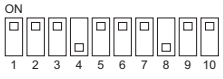
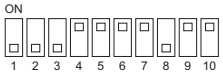
14-3-6.Water-temperature setting

Different water temperature settings can be set for different modes.

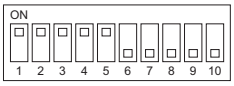
Set the dip switches on the circuit board as follows to make the settings for the items described in this section.

Press the push switch SWP3 to enable the configuration changes.
Press the push switches SWP1 (↑) or SWP2 (↓) to increase or decrease the value.
When the desired value is displayed, press SWP3 to save the setting value.

Settings table

No.	Dip switch setting *1	Dip switch setting (SW4)	Setting Item	Initial value	Unit *5	Setting			Setting change from an optional remote controller (PAR-W31MAA) *2
						Increments	Lower limit	Upper limit	
1	SW7-1 ON		Setting temp. 1 (Cooling mode) *3	7	ºC	0.1°C	4	30	Possible
2	SW7-1 ON		Setting temp. 2 (Cooling mode) *4	7	ºC	0.1°C	4	30	Possible
3	SW7-1 ON		Setting temp. 1 (Heating mode) *3	45	ºC	0.1°C	25	55	Possible
4	SW7-1 ON		Setting temp. 2 (Heating mode) *4	45	ºC	0.1°C	25	55	Possible
5	SW7-1 ON		Setting water temp. A at Heating ECO mode	52	ºC	0.1°C	25	55	Not possible
6	SW7-1 ON		Setting outdoor temp. A at Heating ECO mode	-7	ºC	0.1°C	-30	50	Not possible
7	SW7-1 ON		Setting water temp. B at Heating ECO mode	30	ºC	0.1°C	25	55	Not possible
8	SW7-1 ON		Setting outdoor temp. B at Heating ECO mode	12	ºC	0.1°C	-30	50	Not possible
9	SW7-1 ON		Setting water temp. C at Heating ECO mode	42	ºC	0.1°C	25	55	Not possible
10	SW7-1 ON		Setting outdoor temp. C at Heating ECO mode	2	ºC	0.1°C	-30	50	Not possible
11	SW7-2 ON		Setting water temp. D at Cooling ECO mode	11.5	ºC	0.1°C	4	30	Not possible
12	SW7-2 ON		Setting outdoor temp. D at Cooling ECO mode	20	ºC	0.1°C	-20	55	Not possible
13	SW7-2 ON		Setting water temp. E at Cooling ECO mode	7	ºC	0.1°C	4	30	Not possible
14	SW7-2 ON		Setting outdoor temp. E at Cooling ECO mode	35	ºC	0.1°C	-20	55	Not possible
15	SW7-2 ON		Setting water temp. F at Cooling ECO mode	10	ºC	0.1°C	4	30	Not possible
16	SW7-2 ON		Setting outdoor temp. F at Cooling ECO mode	25	ºC	0.1°C	-20	55	Not possible

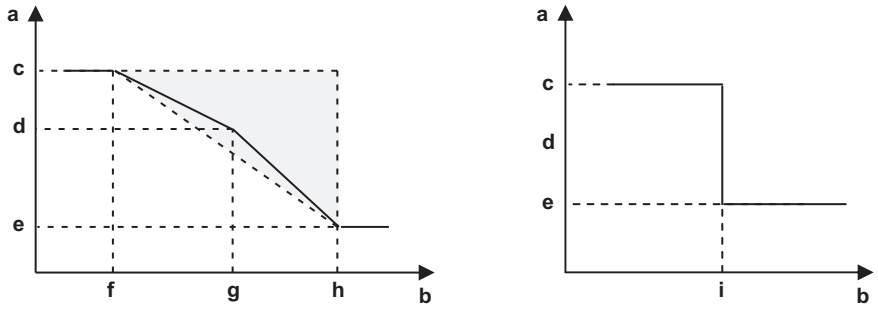
*1:Only the switches designated in the table must be set to ON. (The other switches must be OFF.)
*2:Temperature setting increments: 0.5ºC
*3:No-voltage contact KN51-KN61: OFF
*4:No-voltage contact KN51-KN61: ON
*5:It cannot be set in Fahrenheit.



The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

Heating ECO

When the outdoor temp. A and B are set to the same value, the Heating ECO line will be as follows.

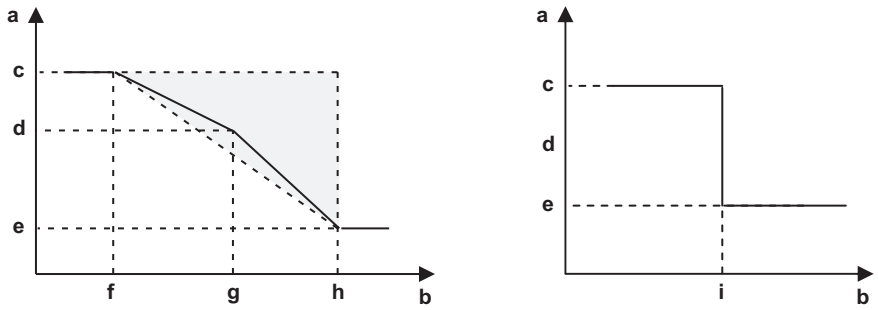


a Water temp.
b Outdoor temp.
c Setting water temp. A
d Setting water temp. C
e Setting water temp. B
f Setting outdoor temp. A
g Setting outdoor temp. C
h Setting outdoor temp. B
i Setting outdoor temp. A, B

*1:Always use a value for setting C that is between setting value A and setting value B.

Cooling ECO

When the outdoor temp. D and E are set to the same value, the Cooling ECO line will be as follows.



a Water temp.
b Outdoor temp.
c Setting water temp. D
d Setting water temp. F
e Setting water temp. E
f Setting outdoor temp. D
g Setting outdoor temp. F
h Setting outdoor temp. E
i Setting outdoor temp. D, E

*1:Always use a value for setting C that is between setting value D and setting value E.

14-3-7.Peak-demand control operation

Peak-demand control is a function used to control the power consumptions of the units.

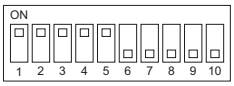
The compressor's maximum operating frequency will be controlled according to the peak-demand control signal.

Set the dip switches on the circuit board as follows to make the settings for the items described in this section.

Press the push switch SWP3 to enable the configuration changes.
Press the push switches SWP1 (↑) or SWP2 (↓) to increase or decrease the value.
When the desired value is displayed, press SWP3 to save the setting value.

Settings table

No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Setting Item	Initial value	Unit	Setting			Setting change from an optional remote controller (PAR-W31MAA)
						Increments	Lower limit	Upper limit	
1	ON		Peak-demand control signal input source	0	−	1	0	1	Not possible
2	ON		Maximum peak-demand capacity	100	%	1%	60	100	Possible



The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

14-3-8.Remote water temperature or capacity control ratio setting input signal type

When SW5-7 is ON, SW5-8 is OFF, and SW5-9 is OFF, external analog signals can be used to set the water temperatures.
When SW5-7 and SW5-8 are ON, external analog signals can be used to set the capacity control ratio.
Analog input type can be selected from the following four types:
4-20 mA
1-5 V
0-10 V
2-10 V

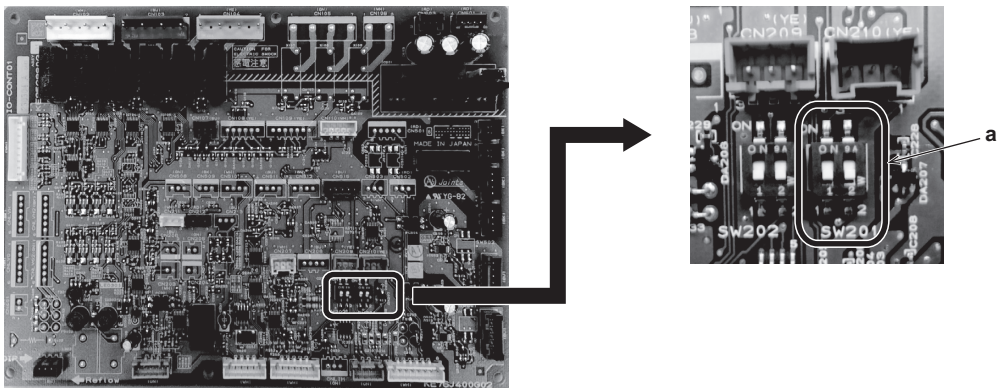
Select SW6-1 and SW6-2 to set the type of analog input signal from a remote location.

Set the dip switches on the circuit board as follows to change the settings.

	SW201-1	SW201-2	SW6-1	SW6-2
4-20 mA	ON	ON	OFF	OFF
1-5 V	OFF	ON	ON	OFF
0-10 V	OFF	OFF	OFF	ON
2-10 V	OFF	OFF	ON	ON

*1:Incorrectly setting SW201 may cause damage to the circuit board.

IO cont board **Enlarged view of operation area**



a Dip switch (SW201)

14-3-9.Setting the water temperature using analog signal input

When dip switch SW5-7 is set to ON (Enable external input), SW5-8 is set to OFF, and SW5-9 is set to OFF, the target water temperature varies with the preset temperatures A and B and the type of analog input signal.

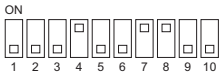
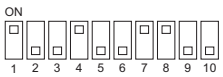
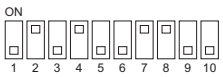
Set the dip switches on the circuit board as follows to make the settings for the items described in this section.

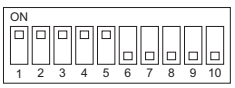
Press the push switch SWP3 to enable the configuration changes.
Press the push switches SWP1 (↑) or SWP2 (↓) to increase or decrease the value.
When the desired value is displayed, press SWP3 to save the setting value.

Settings table

No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Setting Item	Initial value	Unit *2	Setting			Setting change from an optional remote controller (PAR-W31MAA)
						Increments	Lower limit	Upper limit	
1	ON		Preset temp. A (Cooling)	4	ºC	1ºC	4	30	Not possible
2	ON		Preset temp. B (Cooling)	30	ºC	1ºC	4	30	Not possible
3	ON		Preset temp. A (Heating)	25	ºC	1ºC	25	55	Not possible
4	ON		Preset temp. B (Heating)	55	ºC	1ºC	25	55	Not possible

*1:Due to the resistance of the wire that is connected to the analog input, the preset temperature may not properly be sent. If this is the case, check the current value of the analog input, and adjust the output value of the connected signal output device.
Refer to the table below for how to display the value of the analog input.
*2:It cannot be set in Fahrenheit.

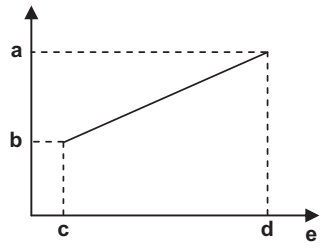
No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Monitorable items	Unit
1	OFF		Current value (4-20 mA)	mA
2	OFF		5V voltage value (1-5 V)	V
3	OFF		10V voltage value (0-10 V or 2-10 V)	V



The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

(1) When the water temperature setting input signal type is 4-20 mA

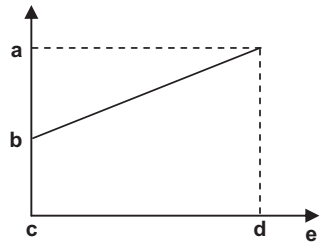
- External analog input signal of 4 mA: Preset temp. A
- External analog input signal of 20 mA: Preset temp. B
- External analog input signal of between 4 and 20 mA: the preset temperature will be linearly interpolated.



a Preset temp. B
b Preset temp. A
c 4 mA
d 20 mA
e Input current

(2) When the water temperature setting input signal type is 0-10 V

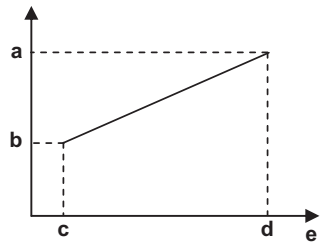
- External analog input signal of 0 V: Preset temp. A
- External analog input signal of 10 V: Preset temp. B
- External analog input signal of between 0 and 10 V: the preset temperature will be linearly interpolated.



a Preset temp. B
b Preset temp. A
c 0 V
d 10 V
e Input voltage

(3) When the water temperature setting input signal type is 1-5 V

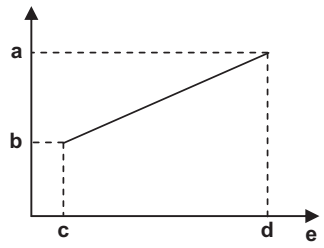
- External analog input signal of 1 V: Preset temp. A
- External analog input signal of 5 V: Preset temp. B
- External analog input signal of between 1 and 5 V: the preset temperature will be linearly interpolated.



a Preset temp. B
b Preset temp. A
c 1 V
d 5 V
e Input voltage

(4) When the water temperature setting input signal type is 2-10 V

- External analog input signal of 2 V: Preset temp. A
- External analog input signal of 10 V: Preset temp. B
- External analog input signal of between 2 and 10 V: the preset temperature will be linearly interpolated.



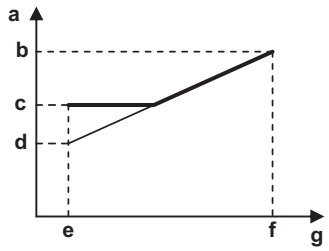
a Preset temp. B
b Preset temp. A
c 2 V
d 10 V
e Input voltage

14-3-10.Setting the capacity control ratio using analog signal input

When dip switch SW5-7 is set to ON (Enable external input), SW5-8 is set to ON, and SW5-9 is set to OFF, the capacity control ratio varies with the type of analog input signal.

(1) When the capacity control setting input signal type is 4-20 mA

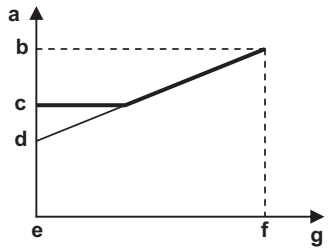
- External analog input signal of 4 mA: 0%
- External analog input signal of 20 mA: 100%
- External analog input signal of between 4 and 20 mA: the percent will be linearly interpolated.



a Load ratio
b 100%
c *%
d 0%
e 4 mA
f 20 mA
g Input current

(2) When the capacity control setting input signal type is 0-10 V

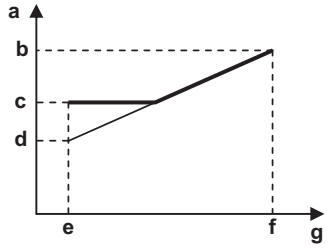
- External analog input signal of 0 V: 0%
- External analog input signal of 10 V: 100%
- External analog input signal of between 0 and 10 V: the percent will be linearly interpolated.



a Load ratio
b 100%
c *%
d 0%
e 0 V
f 10 V
g Input voltage

(3) When the capacity control setting input signal type is 1-5 V

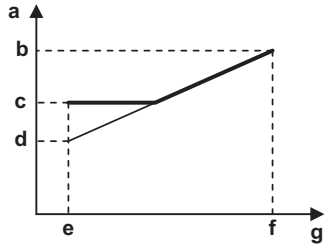
- External analog input signal of 1 V: 0%
- External analog input signal of 5 V: 100%
- External analog input signal of between 1 and 5 V: the percent will be linearly interpolated.



a Load ratio
b 100%
c *%
d 0%
e 1 V
f 5 V
g Input voltage

(4) When the capacity control setting input signal type is 2-10 V

- External analog input signal of 2 V: 0%
- External analog input signal of 10 V: 100%
- External analog input signal of between 2 and 10 V: the percent will be linearly interpolated.



a Load ratio
b 100%
c *%
d 0%
e 2 V
f 10 V
g Input voltage

*%: The compressor runs at the lowest frequency.

14-3-11.Setting the supplementary heater signal output conditions

A temperature at which the signal output to operate supplementary heaters can be selected.

Supplementary heater signal output conditions

The operation command signal is ON and at least one of the following two conditions is met.

1) Water-temperature control option (SW5-4) is set to OFF, the inlet water temperature drops below a set water temperature, and the outdoor temperature drops below a set outdoor temperature.
2) Water-temperature control option (SW5-4) is set to ON, the external water temperature sensor reading (TH117) drops below a set water temperature, and the outdoor temperature drops below a set outdoor temperature.

The supplementary heater signal is output from RP1-RP2.

Supplementary heater signal output stop conditions

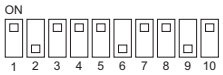
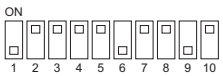
The operation command signal is OFF or at least one of the following two conditions is met.

1) The inlet water temperature is at or above a set water temperature +2°C [3.6°F] or the outdoor temperature is at or above a set outdoor temperature +2°C [3.6°F].
2) External water temperature sensor reading (TH117) is at or above a set water temperature +2°C [3.6°F].

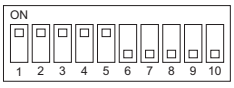
Set the dip switches on the circuit board as follows to make the settings for the items described in this section.

Press the push switch SWP3 to enable the configuration changes.
Press the push switches SWP1 (↑) or SWP2 (↓) to increase or decrease the value.
When the desired value is displayed, press SWP3 to save the setting value.

Settings table

No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Setting Item	Initial value	Unit *1	Setting			Setting change from an optional remote controller (PAR-W31MAA)
						Increments	Lower limit	Upper limit	
1	ON		Supplementary heater operation water temp.	40	ºC	0.1ºC	0	55	Not possible
2	ON		Supplementary heater operation outdoor temp.	−10	ºC	0.1ºC	−30	50	Not possible

*1:It cannot be set in Fahrenheit.



The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

14-3-12.Setting the drain pan heater signal output condition

A temperature at which the signal output to operate drain pan heaters can be selected.

Drain pan heater signal output condition

The following condition is met.

1) The outdoor temperature drops below a set outdoor temperature.

The drain pan signal is output from KB1-KB2.

Drain pan heater signal output stop condition

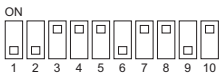
The following condition is met.

1) The outdoor temperature is at or above a set outdoor temperature +2ºC [3.6°F].

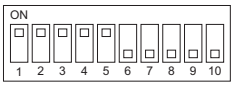
Set the dip switches on the circuit board as follows to make the settings for the items described in this section.

Press the push switch SWP3 to enable the configuration changes.
Press the push switches SWP1 (↑) or SWP2 (↓) to increase or decrease the value.
When the desired value is displayed, press SWP3 to save the setting value.

Settings table

No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Setting Item	Initial value	Unit *1	Setting			Setting change from an optional remote controller (PAR-W31MAA)
						Increments	Lower limit	Upper limit	
1	ON		Drain pan heater operation outdoor temp.	0	ºC	1ºC	−40	20	Not possible

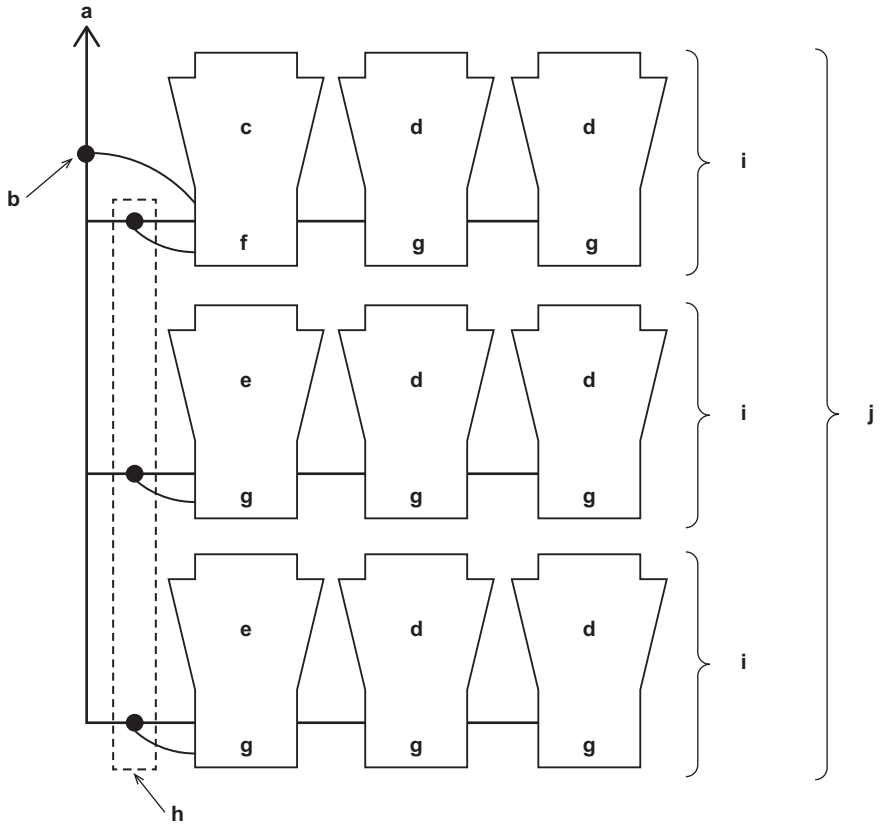
*1:It cannot be set in Fahrenheit.



The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

14-3-13.External temperature sensor control

An optional External temperature sensor (TW-TH16) is required.



a Outlet water
b External temperature sensor 2 (SW5-5 ON)
c System leader unit
d Sub unit
e Group leader unit
f SW5-5 ON, SW5-4 ON
g SW5-4 ON
h External temperature sensor 1 (SW5-4 ON)
i Simultaneous operating group
j Identical water system group

External temperature sensor 1
Used to control the water temperature of simultaneous operating group.

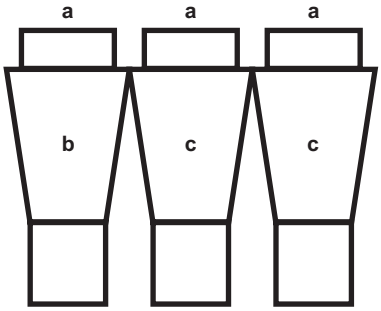
External temperature sensor 2
The water outlet temperature of each unit in the identical water system group is corrected to bring the water temperature at the merged section of the outlet water pipes toward the target temperature.

14-3-14.Demand operation

The demand function can reduce the power consumption.

Single unit control

In the case of single unit control, the unit is operated up to the specified demand limit.

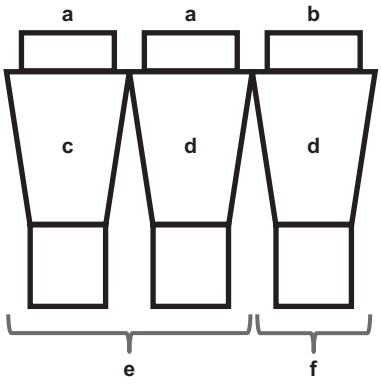


a 60%
b System leader unit
c Sub unit

Multiple unit control

In the case of multiple unit control, the number of operating units are limited by demand value.
When the demand value is 70%, the group operate such as below figure.

3 groups x demand 70% ≥ 2 groups operation (=2.1 (→ round down to the decimal point →) ≈2)



a 100%
b 0%
c System leader unit
d Group leader unit
e Operation
f Stop

*1: In the case of multiple unit control, the demand capacity may not actually be the capacity because it sets the number of operable units.

Other examples

Even if you set demand capacity to 90% in the case of 2 sets, the number of operable units will be only 1 (round down to the decimal point).

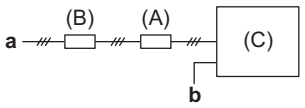
The operating capacity of one group is 50%.

(In the case of multiple unit control, the frequency of each unit is controlled within the range of 0 to 100% regardless of the demand capacity.)

15-1. Main Power Supply Wiring and Switch Capacity

Schematic Drawing of Wiring (Example)

(A) Switch (with current breaking capability)
(B) Current leakage breaker
(C) Unit



a 3 ~ 460 V
L_1, L_2, L_3
b PE

Main power supply wire size, switch capacities, and system impedance

Model	Minimum wire size (mm^2)			Current leakage breaker	Local switch (A)		No-fuse breaker (A)	Max. Permissive System Impedance
	Main cable	Branch	Ground		Capacity	Fuse		
EAHV-M040, 050YCL	38 (AWG 1)	–	38 (AWG 1)	125 A 200 mA 0.1 sec. or less	125	125	125	0.07 Ω

1) Use a dedicated power supply for each unit. Ensure that each unit is wired individually.
2) When installing wiring, consider ambient conditions (e.g., temperature).
3) The wire size is the minimum value for metal conduit wiring. If voltage drop is a problem, use a wire that is one size thicker.
Make sure the power-supply voltage does not drop more than 5%.
4) Specific wiring requirements should adhere to the wiring regulations of the region.
5) Power supply cords of appliances shall not be lighter than polychloroprene sheathed flexible cord (design 60245 IEC57).
6) A switch with at least 3 mm [1/8 in.] contact separation in each pole shall be provided by the Chilling unit installer.
7) Do not install a phase advancing capacitor on the motor. Doing so may damage the capacitor and result in fire.
8) Select a breaker in accordance with applicable local regulations.

⚠ WARNING

- **Be sure to use specified wires and ensure no external force is imparted to terminal connections. Loose connections may cause overheating and fire.**
- **Be sure to use the appropriate type of overcurrent protection switch. Note that overcurrent may include direct current.**

⚠ CAUTION

- **Some installation sites may require an installation of an earth leakage breaker for the inverter. If no earth leakage breaker is installed, there is a danger of electric shock.**
- **Only use properly rated breakers and fuses. Using a fuse or wire of the wrong capacity may cause malfunction or fire.**

Note:

- **This device is intended for the connection to a power supply system with a maximum permissible system impedance shown in the above table at the interface point (power service box) of the user's supply.**
- **Ensure that this device is connected only to a power supply system that fulfills the requirements above. If necessary, consult the public power supply company for the system impedance at the interface point.**
- **It is the responsibility of the installer or user of the equipment to ensure, in consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a shortcircuit power S_{SC} greater than or equal to S_{SC} (*1).**

*1

S_{SC} (MVA)
11.47

Control cable specifications

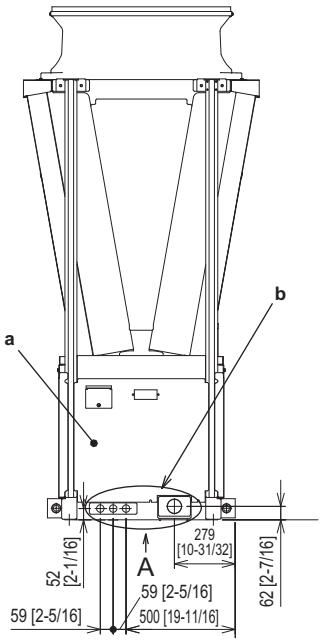
Remote controller cable	Size	0.3 mm^2 [22 AWG] (Max. 250 m [820 ft.] total)
	Recommended cable types	2-core sheathed cable
M-NET cable between units *2	Size	Min. 1.25 mm^2 [16 AWG] (Max. 200 m [656 ft.] total)
	Recommended cable types	Shielded cable CVVS, CPEVS or MVVS
External input wire size		Min. 0.3 mm^2 [22 AWG]
External output wire size		1.25 mm^2 [16 AWG]

*2 Use a CVVS or CPEVS cable (Max. total length of 250 m [820 ft.]) if there is a source of electrical interference nearby (e.g., factory) or the total length of control wiring exceeds 200 m [656 ft.].

15-2. Cable Connections

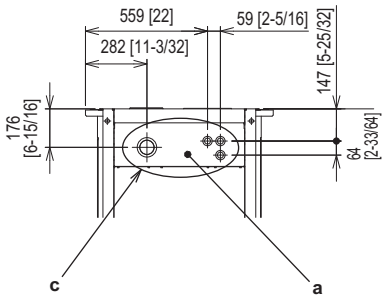
[1] Schematic Diagram of a Unit and Terminal Block Arrangement

Unit: mm [in.]



Service side

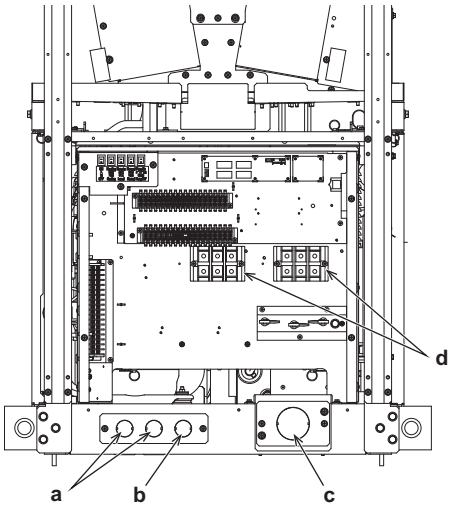
A (Service side)

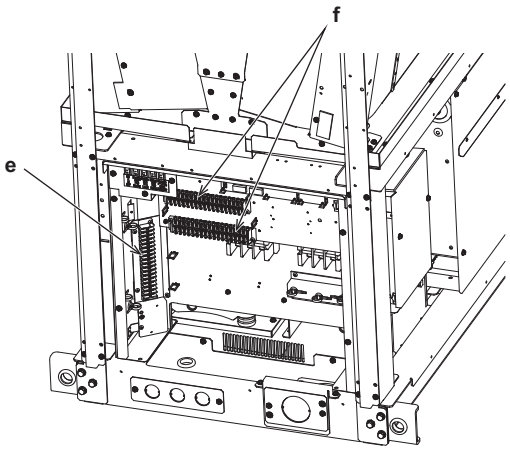


Unit bottom

a Terminal box
b Power supply wiring (from the side)
c Power supply wiring (from the bottom)

Detailed drawing





a ø34 [1-11/32] Control wiring under 30 VDC
b ø34 [1-11/32] Control wiring over 200 VAC
c ø66 [2-19/32] Power supply wiring
d Power supply terminal box (terminal size: M8)
e Control wiring under 240 VAC
f Control wiring under 230 VDC

1) Remove the front terminal box cover.
2) Wire the power supply and control wires. The terminal box is covered with a bush.
Cut the bush before connecting wires to the terminal box.
3) Fasten the power supply wires by the cable strap.
4) Secure the cable conduit, and then waterproof the area around the pipe with silicon, etc.
5) Reattach the terminal box cover.

15-3. Precautions when fastening screws

- Faulty contacts due to loose screws may cause overheating and fire.
- Using the circuit board while it is damaged may cause overheating and fire.

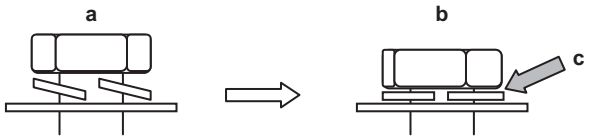
(1) Screw fastening torque

Power supply terminal block, M8 screw: 10 to 13.5 N·m

Use the following methods to check that the screws have been fastened.

1) Check that the spring washer is in a parallel position.

- If the screw is biting into the washer, simply fastening the screw to the specified torque cannot determine whether it has been installed properly.



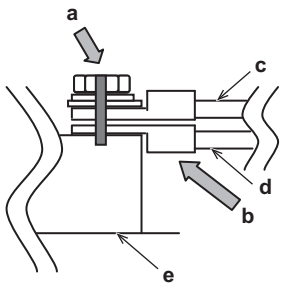
a Loose screws
b Properly installed
c Spring washer is in a **parallel position**

2) Check that the wiring does not move at the screw terminal.

(2) Take extra care not to ruin the screw thread due to fastening the screw at an angle.

- To prevent fastening the screw at an angle, install the round terminals so they are back to back.

(3) After fastening the screw, use a permanent marker to tick off the screw head, washer and terminal.



a Ticked with marker
b Install the round terminals so they are **back to back**.
c For transition wiring
d Power supply wiring
e Power supply terminal block

15-4. Installing the conduit tube

- Always use a conduit to run the power supply wiring.
- Select the conduit size based on the hole.
- The cable conduits must be prepared locally.
- Do not store the 24VDC or less low-voltage circuit and 100VAC or higher main circuit and control circuit cables in the same multi-core cable, or bundle them together.
- Attach cable conduits securely to the foundation, etc. to ensure that excessive loads are not applied to the power supply terminal box.
- Seal the area around the cable conduit connection to ensure that no water penetrates the cable conduit connection port.

⚠Warning

■ Do not use refrigerant other than the type indicated in the manuals provided with the unit and on the nameplate.
- Doing so may cause the unit or pipes to burst, or result in explosion or fire during use, repair, or at the time of disposal of the unit.
- It may also be in violation of applicable laws.
- MITSUBISHI ELECTRIC CORPORATION cannot be held responsible for malfunctions or accidents resulting from the use of the wrong type of refrigerant.

■ Our chilling units contain a fluorinated greenhouse gas, R32.

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