

Water-cooled Chilling Unit

e-series

MODEL

ERCV-M900YA

ERCV-M900YA × 2

DATA BOOK

*The model name is described as ERCV-M900YA in this DATABOOK.
However, the entire contents of this DATABOOK are also applied to ERCV-M900YAKR, the model name for Korea.

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ERCV-M900YA, ERCV-M900YA × 2

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1. Product Specifications

1-1. Specifications

When using water as evaporation side fluid (SW6-10: OFF Water setting)

Model		ERCV-M900YA	
Capacity change mode		Capacity priority	Efficiency priority
Power source		3-phase 4-wire 380-400-415V 50/60Hz	
Cooling capacity *1		kW	90.00
		kcal/h	77,400
		BTU/h	307,080
	Power input	kW	17.47
	EER		5.15
	IPLV *5		8.18
	Evaporation side water flow rate	m ³ /h	15.5
Cooling capacity (EN14511) *2	Condensation side water flow rate	m ³ /h	17.9
		kW	89.83
		kcal/h	77,254
		BTU/h	306,500
	Power input	kW	17.80
	EER		5.05
	SEER		7.66
Heating capacity *3	ηsc	%	303.4
	Evaporation side water flow rate	m ³ /h	15.5
	Condensation side water flow rate	m ³ /h	17.9
		kW	90.00
		kcal/h	77,400
		BTU/h	307,080
	Power input	kW	19.07
Heating capacity (EN14511) *4	COP		4.72
	Condensation side water flow rate	m ³ /h	15.5
	Evaporation side water flow rate	m ³ /h	21.5
		kW	90.12
		kcal/h	77,503
		BTU/h	307,489
	Power input	kW	19.53
Current input	COP		4.61
	SCOP Low/Medium *11		7.10/4.86
	ηsh Low/Medium	%	281.0/191.0
	Condensation side water flow rate	m ³ /h	15.5
	Evaporation side water flow rate	m ³ /h	21.5
	Cooling current 380-400-415V *1	A	29 - 27 - 26
	Heating current 380-400-415V *3	A	31 - 30 - 29
Water pressure drop *1	Maximum current	A	60
	Evaporation side	kPa	10
Temperature range (Cooling) *7	Condensation side	kPa	7
	Evaporation side water outlet	°C	4~30
Temperature range (Heating) *8*9		°F	39~86
	Condensation side water inlet	°C	9~50
		°F	48~122
	Condensation side water outlet	°C	20~60 *6
Circulating water volume range		°F	68~140
	Evaporation side water inlet	°C	9~35
Sound pressure level (measured in anechoic room) at 1m *1 *11		°F	48~95
	Condensation side	m ³ /h	7.7~25.8
Sound power level (measured in anechoic room) *1		m ³ /h	4.5~30.0 *10
	Evaporation side	m ³ /h	48
Diameter of water pipe (Evaporation side)	Inlet	mm (in)	65A (2 1/2B) housing type joint
	Outlet	mm (in)	65A (2 1/2B) housing type joint
Diameter of water pipe (Condensation side)	Inlet	mm (in)	65A (2 1/2B) housing type joint
	Outlet	mm (in)	65A (2 1/2B) housing type joint
External finish		Polyester powder coating steel plate	
External dimension H × W × D		mm	918 × 780 × 1350
Net weight		kg (lbs)	430 (948)
Design pressure	R32	MPa	4.15
	Water	MPa	1.0
Heat exchanger	Evaporation side	Stainless steel plate and copper brazing	
	Condensation side	Stainless steel plate and copper brazing	
Compressor	Type	Inverter scroll hermetic compressor	
	Maker	MITSUBISHI ELECTRIC CORPORATION	
	Starting method	Inverter	
	Quantity	2	
	Motor output	kW	8.3 × 2
	Lubricant	MEL46EH	
Protection	High pressure protection	High pressure Switch at 4.15MPa (601psi)	
	Inverter circuit	Over-heat protection, Over current protection	
	Compressor	Over-heat protection	
Refrigerant	Type × charge	R32 × 5.2(kg) × 2	
	Control	LEV	

1. Product Specifications

Notes:

- *1 Under normal cooling conditions at evaporation side water inlet temp 12°C (53.6°F) outlet temp 7°C (44.6°F) condensation side water inlet temp 30°C (86°F) outlet temp 35°C (95°F).
Pump input is not included in cooling capacity and power input.
- *2 Under normal cooling conditions at evaporation side water inlet temp 12°C (53.6°F) outlet temp 7°C (44.6°F) condensation side water inlet temp 30°C (86°F) outlet temp 35°C (95°F).
Pump input is included in cooling capacity and power input based on EN14511.
- *3 Under normal heating conditions at condensation side water inlet temp 40°C (104°F) outlet temp 45°C (113°F) evaporation side water inlet temp 10°C (50°F) outlet temp 7°C (44.6°F).
Pump input is not included in cooling capacity and power input.
- *4 Under normal heating conditions at condensation side water inlet temp 40°C (104°F) outlet temp 45°C (113°F) evaporation side water inlet temp 10°C (50°F) outlet temp 7°C (44.6°F).
Pump input is included in cooling capacity and power input based on EN14511.
- *5 IPLV is calculated in accordance with AHRI 551-591.
- *6 When using in condensation side water outlet is more than 55°C (131°F), please adjust the condensation inlet water temperature to 50°C (122°F) or less.
- *7 Please refer to 2-1-6 Operation temperature range.
- *8 Please refer to 2-1-6 Operation temperature range.
- *9 Please refer to 2-1-6 Operation temperature range.
- *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
- *10 Set the minimum water flow rate on the condensation side water to 8.0m³/h when the evaporation side water inlet temperature during operation is 15°C (59°F) or higher.
- *11 This value is not certified by Eurovent.

1. Product Specifications

When using brine as evaporation side fluid (SW6-10: ON Brine setting)

Model		ERCV-M900YA	
Power source		3-phase 4-wire 380-400-415V 50/60Hz	
Cooling capacity *1*5		kW	90.00
		kcal/h	77,400
		BTU/h	307,080
	Power input	kW	17.47
	EER		5.15
	Evaporation side brine flow rate	m ³ /h	17.2
Cooling capacity (EN14511) *2*5	Condensation side water flow rate	m ³ /h	17.9
		kW	89.73
		kcal/h	77,168
		BTU/h	306,159
	Power input	kW	17.91
	EER		5.01
Heating capacity *3*5	SEER		7.65
	nsc	%	303.0
	Evaporation side brine flow rate	m ³ /h	17.2
	Condensation side water flow rate	m ³ /h	17.9
		kW	80.00
		kcal/h	68,800
Heating capacity (EN14511) *4*5		BTU/h	272,960
	Power input	kW	22.13
	COP		3.62
	Condensation side water flow rate	m ³ /h	13.8
	Evaporation side brine flow rate	m ³ /h	19.1
		kW	80.10
Current input *5		kcal/h	68,886
		BTU/h	273,301
	Power input	kW	22.59
	COP		3.55
	SCOP Low/Medium *10		4.87/3.52
	nsh Low/Medium	%	192.0/138.0
Brine/Water pressure drop *1*5	Condensation side water flow rate	m ³ /h	13.8
	Evaporation side brine flow rate	m ³ /h	19.1
	Cooling current 380-400-415V *1	A	29 - 27 - 26
	Heating current 380-400-415V *3	A	36 - 34 - 33
Temperature range (Cooling) *5*7	Maximum current	A	60
	Evaporation side brine	kPa	17
	Condensation side water	kPa	7
	Evaporation side brine outlet	°C	-10~30
Temperature range (Heating) *5*8		°F	14~86
	Condensation side water inlet	°C	9~50
		°F	48~122
	Condensation side water outlet	°C	20~60 *6
Circulating brine/water volume range		°F	68~140
	Evaporation side brine	m ³ /h	-7~35
	Condensation side water	m ³ /h	19~95
		m ³ /h	7.7~28.7
Sound pressure level (measured in anechoic room) at 1m *1 *10		m ³ /h	4.5~30.0 *9
	Sound power level (measured in anechoic room) *1	dB (A)	53
	Diameter of water pipe (Evaporation side)	mm (in)	65A (2 1/2B) housing type joint
	Diameter of water pipe (Condensation side)	mm (in)	65A (2 1/2B) housing type joint
External finish	External dimension H × W × D	mm	918 × 780 × 1350
	Net weight	kg (lbs)	430 (948)
	Design pressure	MPa	4.15
	Water	MPa	1.0
Heat exchanger	Evaporation side		Stainless steel plate and copper brazing
	Condensation side		Stainless steel plate and copper brazing
Compressor	Type		Inverter scroll hermetic compressor
	Maker		mitsubishi electric corporation
	Starting method		Inverter
	Quantity		2
Protection	Motor output	kW	8.3 × 2
	Lubricant		MEL46EH
	High pressure protection		High pressure Switch at 4.15MPa (601psi)
	Inverter circuit		Over-heat protection, Over current protection
Refrigerant	Compressor		Over-heat protection
	Type × charge		R32 × 5.2(kg) × 2
Control			LEV

Notes:

*1 Under normal cooling conditions at evaporation side brine inlet temp 12°C (53.6°F) outlet temp 7°C (44.6°F) condensation side water inlet temp 30°C (86°F) outlet temp 35°C (95°F). Pump input is not included in cooling capacity and power input.

*2 Under normal cooling conditions at evaporation side brine inlet temp 12°C (53.6°F) outlet temp 7°C (44.6°F) condensation side water inlet temp 30°C (86°F) outlet temp 35°C (95°F). Pump input is included in cooling capacity and power input based on EN14511.

*3 Under normal heating conditions at condensation side water inlet temp 40°C (104°F) outlet temp 45°C (113°F) evaporation side brine inlet temp 0°C (32°F) outlet temp -3°C (26.6°F). Pump input is not included in cooling capacity and power input.

*4 Under normal heating conditions at condensation side water inlet temp 40°C (104°F) outlet temp 45°C (113°F) evaporation side brine inlet temp 0°C (32°F) outlet temp -3°C (26.6°F). Pump input is included in cooling capacity and power input based on EN14511.

*5 When using brine (ethylene glycol 35wt%) as evaporation side fluid.

*6 When using in condensation side water outlet is more than 55°C (131°F), please adjust the condensation inlet water temperature to 50°C (122°F) or less.

*7 Please refer to 2-1-6 Operation temperature range.

*8 Please refer to 2-1-6 Operation temperature range.

*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.

*9 Set the minimum water flow rate on the condensation side water to 8.0m³/h when the evaporation side brine inlet temperature during operation is 15°C (59°F) or higher.

*10 This value is not certified by Eurovent.

1. Product Specifications

When using water as evaporation side fluid (SW6-10: OFF Water setting)

Model		ERCVM900YA × 2	
Capacity change mode		Capacity priority	Efficiency priority
Power source		3-phase 4-wire 380-400-415V 50/60Hz	
Cooling capacity *1		kW	180.00
		kcal/h	154,800
		BTU/h	614,160
	Power input	kW	33.07
	EER		5.44
	IPLV *5		8.61
	Evaporation side water flow rate	m ³ /h	31.0
Cooling capacity (EN14511) *2	Condensation side water flow rate	m ³ /h	35.9
		kW	178.71
		kcal/h	153,691
		BTU/h	609,759
	Power input	kW	35.54
	EER		5.03
	Evaporation side water flow rate	m ³ /h	31.0
Heating capacity *3	Condensation side water flow rate	m ³ /h	35.9
		kW	180.00
		kcal/h	154,800
		BTU/h	614,160
	Power input	kW	37.22
	COP		4.84
	Condensation side water flow rate	m ³ /h	31.0
Heating capacity (EN14511) *4	Evaporation side water flow rate	m ³ /h	42.7
		kW	180.87
		kcal/h	155,548
		BTU/h	617,128
	Power input	kW	40.90
	COP		4.42
	Condensation side water flow rate	m ³ /h	31.0
Current input	Evaporation side water flow rate	m ³ /h	42.7
	Cooling current 380-400-415V *1	A	54 - 51 - 49
	Heating current 380-400-415V *3	A	61 - 58 - 56
	Maximum current	A	120
	Evaporation side	kPa	85
	Condensation side	kPa	66
	Evaporation side water outlet	°C	4~30
Temperature range (Cooling) *6		°F	39~86
	Condensation side water inlet	°C	9~50
		°F	48~122
	Condensation side water outlet	°C	20~55
		°F	68~131
	Evaporation side water inlet	°C	9~35
		°F	48~95
Temperature range (Heating) *7	Condensation side water outlet	m ³ /h	15.4~50.0
	Evaporation side	m ³ /h	9.0~50.0 *8
	Condensation side		
	Sound pressure level (measured in anechoic room) at 1m *1 *9	dB (A)	56
	Sound power level (measured in anechoic room) *1	dB (A)	75
	Diameter of water pipe (Evaporation side)	mm (in)	65A (2 1/2B) housing type joint
	Outlet	mm (in)	65A (2 1/2B) housing type joint
Diameter of water pipe (Condensation side)	Inlet	mm (in)	65A (2 1/2B) housing type joint
	Outlet	mm (in)	65A (2 1/2B) housing type joint
	External finish		Polyester powder coating steel plate
	External dimension H × W × D	mm	1836 × 780 × 1350
	Net weight	kg (lbs)	863 (1903)
	Design pressure	MPa	4.15
	R32	MPa	1.0
Water pressure drop *1	Evaporation side		Stainless steel plate and copper brazing
	Condensation side		Stainless steel plate and copper brazing
	Compressor	Type	Inverter scroll hermetic compressor
	Maker		MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Quantity		4
	Motor output	kW	8.3 × 4
Lubricant			MEL46EH
	High pressure protection		High pressure Switch at 4.15MPa (601psi)
	Inverter circuit		Over-heat protection, Over current protection
	Compressor		Over-heat protection
	Type × charge		R32 × 5.2(kg) × 4
	Control		LEV

Notes:

- *1 Under normal cooling conditions at evaporation side water inlet temp 12°C (53.6°F) outlet temp 7°C (44.6°F) condensation side water inlet temp 30°C (86°F) outlet temp 35°C (95°F). Pump input is not included in cooling capacity and power input.
- *2 Under normal cooling conditions at evaporation side water inlet temp 12°C (53.6°F) outlet temp 7°C (44.6°F) condensation side water inlet temp 30°C (86°F) outlet temp 35°C (95°F). Pump input is included in cooling capacity and power input based on EN14511.
- *3 Under normal heating conditions at condensation side water inlet temp 40°C (104°F) outlet temp 45°C (113°F) evaporation side water inlet temp 10°C (50°F) outlet temp 7°C (44.6°F). Pump input is not included in cooling capacity and power input.
- *4 Under normal heating conditions at condensation side water inlet temp 40°C (104°F) outlet temp 45°C (113°F) evaporation side water inlet temp 10°C (50°F) outlet temp 7°C (44.6°F). Pump input is included in cooling capacity and power input based on EN14511.
- *5 IPLV is calculated in accordance with AHRI 551-591.
- *6 Please refer to 2-1-6 Operation temperature range.
- *7 Please refer to 2-1-6 Operation temperature range.
- *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
- *8 Set the minimum water flow rate on the condensation side water to 16.0m³/h when the evaporation side water inlet temperature during operation is 15°C (59°F) or higher.
- *9 This value is not certified by Eurovent.

1. Product Specifications

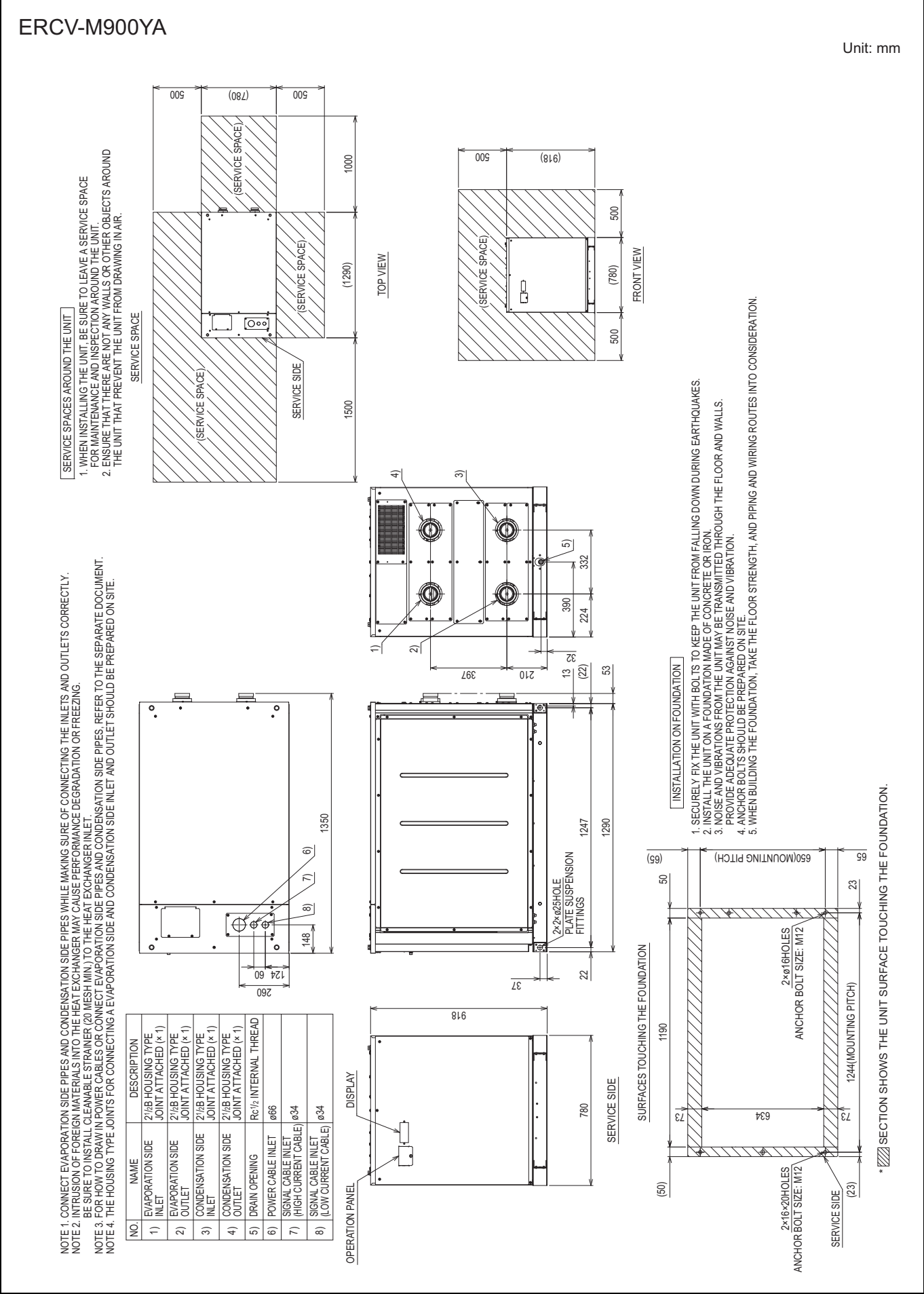
When using brine as evaporation side fluid (SW6-10: ON Brine setting)

Model		ERCV-M900YA × 2	
Power source		3-phase 4-wire 380-400-415V 50/60Hz	
Cooling capacity *1*5		kW	180.00
		kcal/h	154,800
		BTU/h	614,160
	Power input	kW	33.07
	EER		5.44
	Evaporation side brine flow rate	m ³ /h	34.5
Cooling capacity (EN14511) *2*5	Condensation side water flow rate	m ³ /h	35.9
		kW	177.72
		kcal/h	152,839
		BTU/h	606,381
	Power input	kW	36.53
	EER		4.87
Heating capacity *3*5	Evaporation side brine flow rate	m ³ /h	34.5
	Condensation side water flow rate	m ³ /h	35.9
		kW	160.00
		kcal/h	137,600
		BTU/h	545,920
	Power input	kW	43.39
Heating capacity (EN14511) *4*5	COP		3.69
	Condensation side water flow rate	m ³ /h	27.5
	Evaporation side brine flow rate	m ³ /h	38.4
		kW	160.69
		kcal/h	138,193
		BTU/h	548,274
Current input *5	Power input	kW	47.29
	COP		3.40
	Condensation side water flow rate	m ³ /h	27.5
	Evaporation side brine flow rate	m ³ /h	38.4
	Cooling current 380-400-415V *1	A	54 - 51 - 49
	Heating current 380-400-415V *3	A	71 - 67 - 65
Brine/Water pressure drop *1*5	Maximum current	A	120
	Evaporation side brine	kPa	149
	Condensation side water	kPa	66
Temperature range (Cooling) *5*6	Evaporation side brine outlet	°C	-10~30
		°F	14~86
	Condensation side water inlet	°C	9~50
		°F	48~122
Temperature range (Heating) *5*7	Condensation side water outlet	°C	20~55
		°F	68~131
	Evaporation side brine inlet	°C	-7~35
		°F	19~95
Circulating brine/water volume range	Evaporation side brine	m ³ /h	15.4~50.0
	Condensation side water	m ³ /h	9.0~50.0 *8
Sound pressure level (measured in anechoic room) at 1m *1 *9		dB (A)	56
Sound power level (measured in anechoic room) *1		dB (A)	75
Diameter of water pipe (Evaporation side)	Inlet	mm (in)	65A (2 1/2B) housing type joint
	Outlet	mm (in)	65A (2 1/2B) housing type joint
Diameter of water pipe (Condensation side)	Inlet	mm (in)	65A (2 1/2B) housing type joint
	Outlet	mm (in)	65A (2 1/2B) housing type joint
External finish		Polyester powder coating steel plate	
External dimension H × W × D		mm	1836 × 780 × 1350
Net weight		kg (lbs)	863 (1903)
Design pressure	R32	MPa	4.15
	Water	MPa	1.0
Heat exchanger	Evaporation side	Stainless steel plate and copper brazing	
	Condensation side	Stainless steel plate and copper brazing	
Compressor	Type	Inverter scroll hermetic compressor	
	Maker	MITSUBISHI ELECTRIC CORPORATION	
	Starting method	Inverter	
	Quantity	4	
	Motor output	kW	8.3 × 4
	Lubricant	MEL46EH	
Protection	High pressure protection	High pressure Switch at 4.15MPa (601psi)	
	Inverter circuit	Over-heat protection, Over current protection	
	Compressor	Over-heat protection	
Refrigerant	Type × charge	R32 × 5.2(kg) × 4	
	Control	LEV	

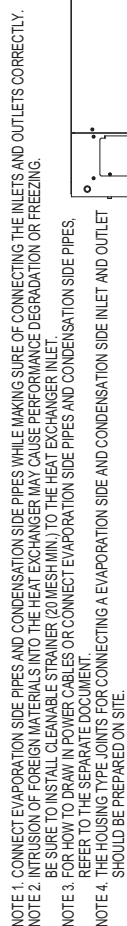
Notes:

- *1 Under normal cooling conditions at evaporation side brine inlet temp 12°C (53.6°F) outlet temp 7°C (44.6°F) condensation side water inlet temp 30°C (86°F) outlet temp 35°C (95°F). Pump input is not included in cooling capacity and power input.
- *2 Under normal cooling conditions at evaporation side brine inlet temp 12°C (53.6°F) outlet temp 7°C (44.6°F) condensation side water inlet temp 30°C (86°F) outlet temp 35°C (95°F). Pump input is included in cooling capacity and power input based on EN14511.
- *3 Under normal heating conditions at condensation side water inlet temp 40°C (104°F) outlet temp 45°C (113°F) evaporation side brine inlet temp 0°C (32°F) outlet temp -3°C (26.6°F). Pump input is not included in cooling capacity and power input.
- *4 Under normal heating conditions at condensation side water inlet temp 40°C (104°F) outlet temp 45°C (113°F) evaporation side brine inlet temp 0°C (32°F) outlet temp -3°C (26.6°F). Pump input is included in cooling capacity and power input based on EN14511.
- *5 When using brine (ethylene glycol 35wt%) as evaporation side fluid.
- *6 Please refer to 2-1-6 Operation temperature range.
- *7 Please refer to 2-1-6 Operation temperature range.
- *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.
- *8 Set the minimum water flow rate on the condensation side water to 16.0m³/h when the evaporation side brine inlet temperature during operation is 15°C (59°F) or higher.
- *9 This value is not certified by Eurovent.

1-2. External Dimensions

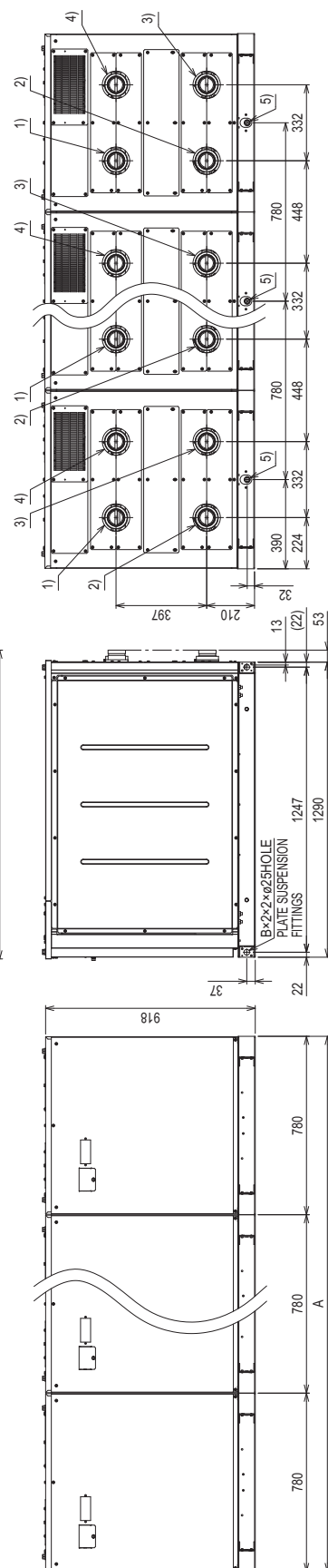


Unit: mm



NO.	NAME	DESCRIPTION
1)	EVAPORATION SIDE INLET	2 1/8" HOUSING TYPE JOINT ATTACHED (x 1)
2)	EVAPORATION SIDE OUTLET	2 1/8" HOUSING TYPE JOINT ATTACHED (x 1)
3)	CONDENSATION SIDE INLET	2 1/8" HOUSING TYPE JOINT ATTACHED (x 1)
4)	CONDENSATION SIDE OUTLET	2 1/8" HOUSING TYPE JOINT ATTACHED (x 1)
5)	DRAIN OPENING	RO 1/2" INTERNAL THREAD
6)	POWER CABLE INLET	ø66
7)	SIGNAL CABLE INLET (HIGH CURRENT CABLE)	ø34
8)	SIGNAL CABLE INLET (LOW CURRENT CABLE)	ø34

MODULE COUNT	A	B (HANGING HOLE COUNT)	C (FOUNDATION HOLE COUNT)
1 MODULE	780	1	1
2 MODULES	1560	2	2
3 MODULES	2340	3	3
4 MODULES	3120	4	4
5 MODULES	3900	5	5
6 MODULES	4680	6	6



1. Product Specifications

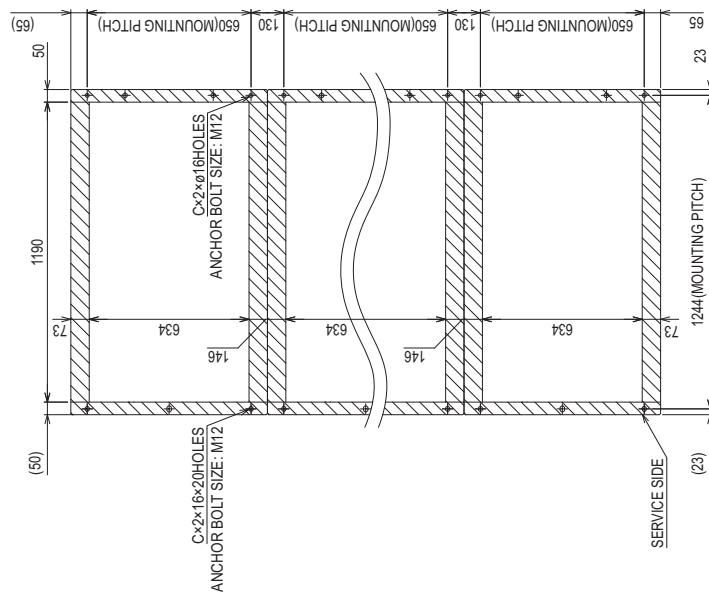
ERCV-M900YA

Unit: mm

INSTALLATION ON FOUNDATION

1. SECURELY FIX THE UNIT WITH BOLTS TO KEEP THE UNIT FROM FALLING DOWN DURING EARTHQUAKES.
2. INSTALL THE UNIT ON A FOUNDATION MADE OF CONCRETE OR IRON.
3. NOISE AND VIBRATIONS FROM THE UNIT MAY BE TRANSMITTED THROUGH THE FLOOR AND WALLS. PROVIDE ADEQUATE PROTECTION AGAINST NOISE AND VIBRATION.
4. ANCHOR BOLTS SHOULD BE PREPARED ON SITE.
5. WHEN BUILDING THE FOUNDATION, TAKE THE FLOOR STRENGTH, AND PIPING AND WIRING ROUTES INTO

SURFACES TOUCHING THE FOUNDATION

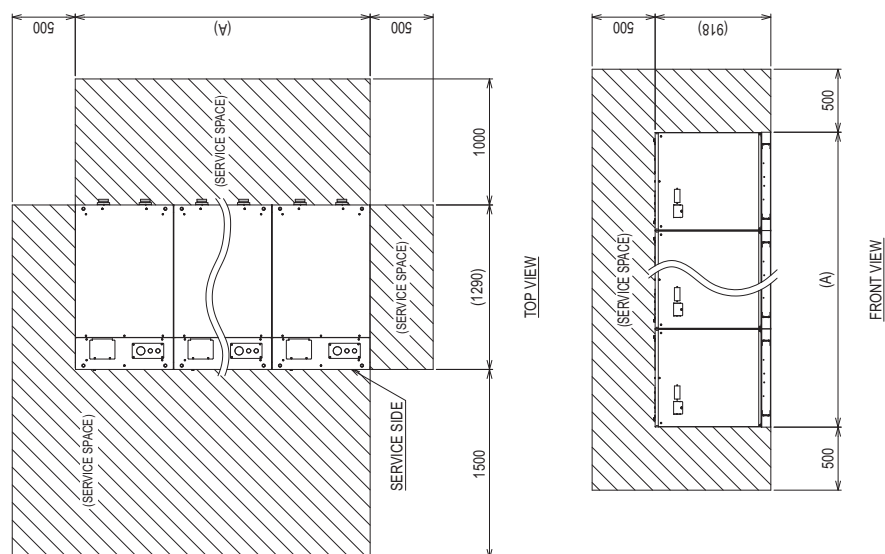


*  SECTION SHOWS THE UNIT SURFACE TOUCHING THE FOUNDATION.

SERVICE SPACES AROUND THE UNIT

1. WHEN INSTALLING THE UNIT, BE SURE TO LEAVE A SERVICE SPACE FOR MAINTENANCE AND INSPECTION AROUND THE UNIT.
2. ENSURE THAT THERE ARE NOT ANY WALLS OR OTHER OBJECTS AROUND THE UNIT THAT PREVENT THE UNIT FROM DRAWING IN AIR.

SERVICE SPACE



FRONT VIEW

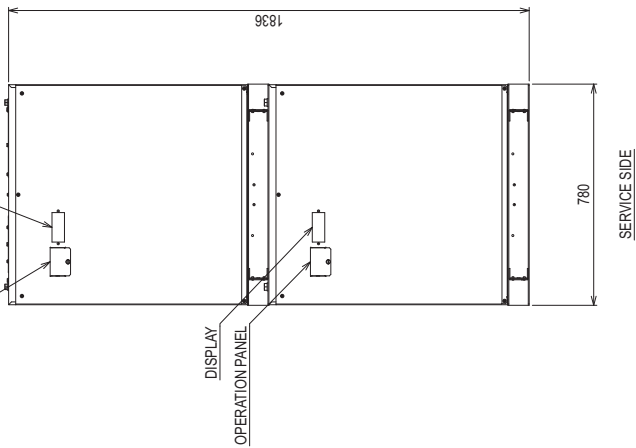
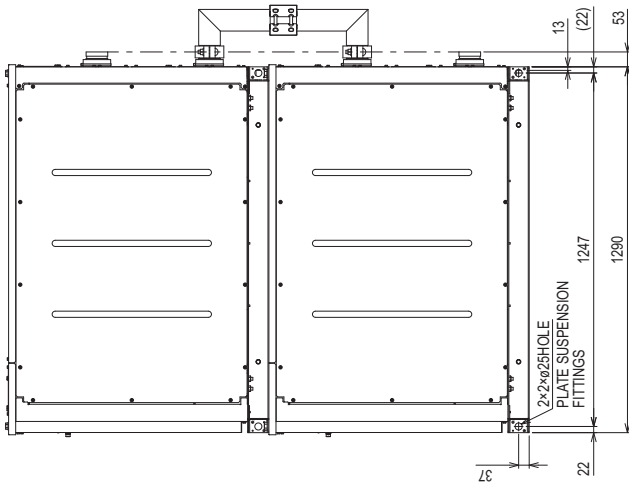
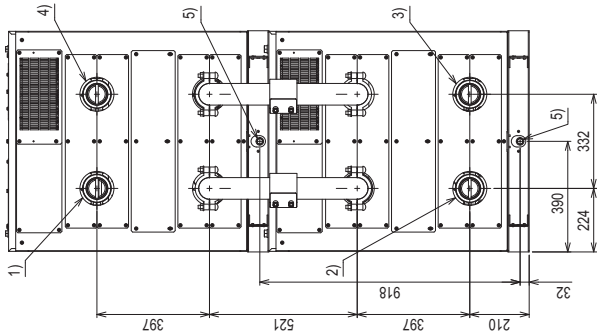
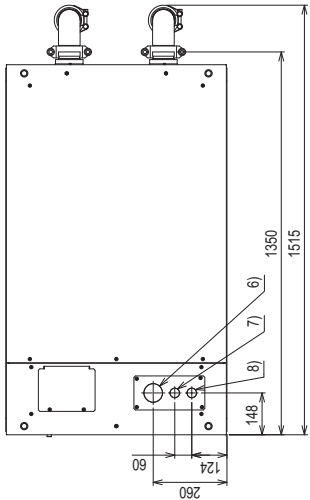
1. Product Specifications

ERCV-M900YA × 2

Unit: mm

NOTE 1. CONNECT EVAPORATION SIDE PIPES AND CONDENSATION SIDE 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 MIN.) TO THE HEAT EXCHANGER INLET.
NOTE 3. FOR HOW TO DRAW IN POWER CABLES OR CONNECT EVAPORATION SIDE PIPES AND CONDENSATION SIDE PIPES, REFER TO THE SEPARATE DOCUMENT.
NOTE 4. THE HOUSING TYPE JOINTS FOR CONNECTING A EVAPORATION SIDE AND CONDENSATION SIDE INLET AND OUTLET SHOULD BE PREPARED ON SITE.

NO.	NAME	DESCRIPTION
1)	EVAPORATION SIDE INLET	2 1/2B HOUSING TYPE JOINT ATTACHED (× 1)
2)	EVAPORATION SIDE OUTLET	2 1/2B HOUSING TYPE JOINT ATTACHED (× 1)
3)	CONDENSATION SIDE INLET	2 1/2B HOUSING TYPE JOINT ATTACHED (× 1)
4)	CONDENSATION SIDE OUTLET	2 1/2B HOUSING TYPE JOINT ATTACHED (× 1)
5)	DRAIN OPENING	Rc 1/2 INTERNAL THREAD
6)	POWER CABLE INLET	ø66
7)	SIGNAL CABLE INLET (HIGH CURRENT CABLE)	ø34
8)	SIGNAL CABLE INLET (LOW CURRENT CABLE)	ø34

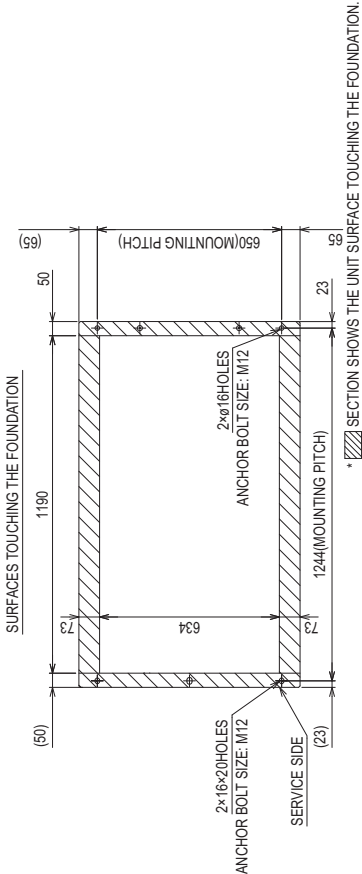


ERCV-M900YA × 2

Unit: mm

[INSTALLATION ON FOUNDATION]

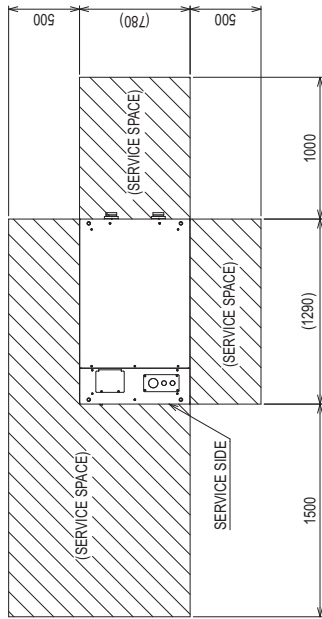
1. SECURELY FIX THE UNIT WITH BOLTS TO KEEP THE UNIT FROM FALLING DOWN DURING EARTHQUAKES.
2. INSTALL THE UNIT ON A FOUNDATION MADE OF CONCRETE OR IRON.
3. NOISE AND VIBRATIONS FROM THE UNIT MAY BE TRANSMITTED THROUGH THE FLOOR AND WALLS. PROVIDE ADEQUATE PROTECTION AGAINST NOISE AND VIBRATION.
4. ANCHOR BOLTS SHOULD BE PREPARED ON SITE.
5. WHEN BUILDING THE FOUNDATION, TAKE THE FLOOR STRENGTH, AND PIPING AND WIRING ROUTES INTO CONSIDERATION.



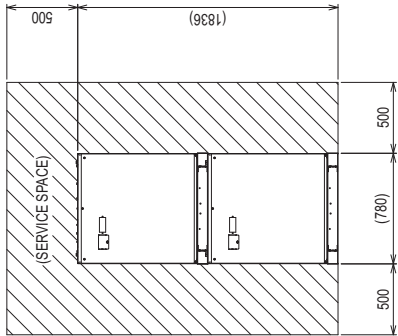
[SERVICE SPACES AROUND THE UNIT]

1. WHEN INSTALLING THE UNIT, BE SURE TO LEAVE A SERVICE SPACE FOR MAINTENANCE AND INSPECTION AROUND THE UNIT.
2. ENSURE THAT THERE ARE NOT ANY WALLS OR OTHER OBJECTS AROUND THE UNIT THAT PREVENT THE UNIT FROM DRAWING IN AIR.

SERVICE SPACE



TOP VIEW



FRONT VIEW

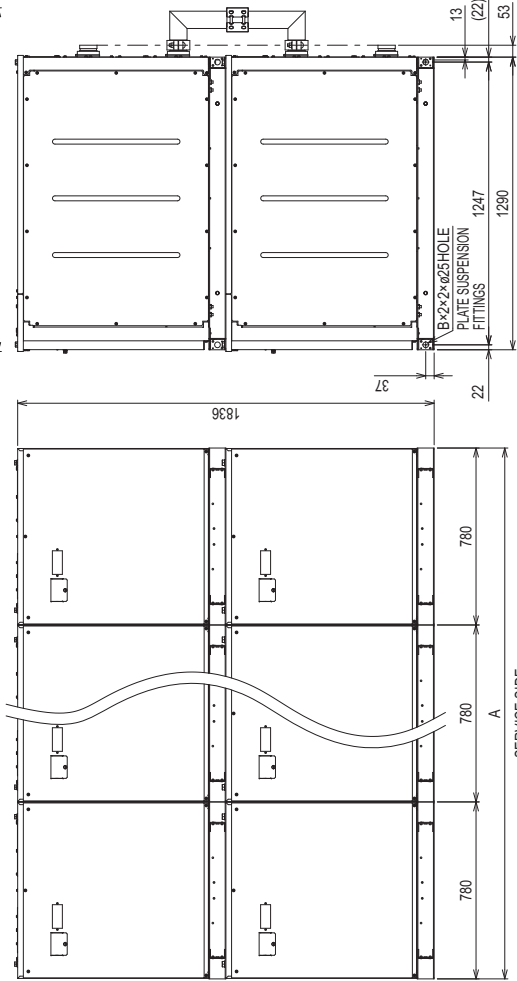
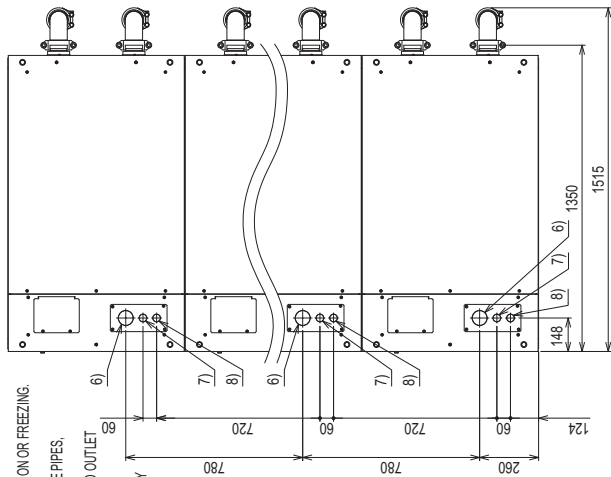
1. Product Specifications

ERCV-M900YA × 2

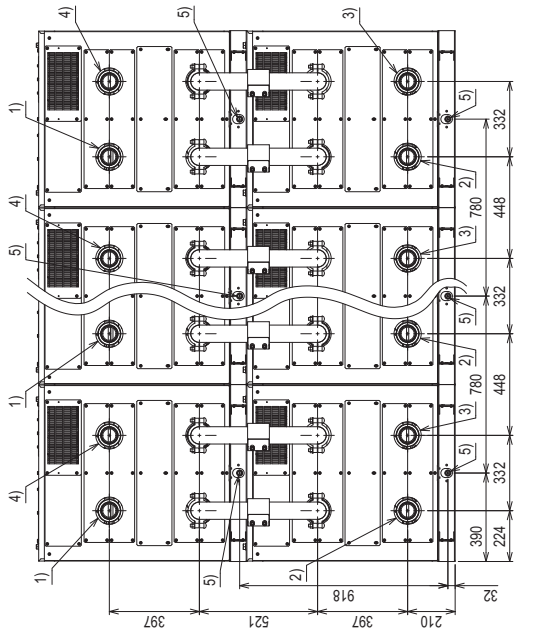
Unit: mm

NOTE 1. CONNECT EVAPORATION SIDE PIPES AND CONDENSATION SIDE 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 MIN.) TO THE HEAT EXCHANGER INLET.
NOTE 3. FOR HOW TO DRAW IN POWER CABLES OR CONNECT EVAPORATION SIDE PIPES AND CONDENSATION SIDE PIPES, REFER TO THE SEPARATE DOCUMENT.
NOTE 4. THE HOUSING TYPE JOINTS FOR CONNECTING A EVAPORATION SIDE AND CONDENSATION SIDE INLET AND OUTLET SHOULD BE PREPARED ON SITE.
NOTE 5. "1 MODULE" IN THE JOINED-TOP-BOTTOM UNITS SPECIFICATION IS IN THE STATE AS SHOWN IN THE FIGURE BELOW, WHICH SHOWS THE TOP AND BOTTOM UNITS JOINED TOGETHER WITH A SEPARATELY SOLD PART "ERJ0RK TOP-BOTTOM UNIT JOINING KIT".

NO.	NAME	DESCRIPTION
1)	EVAPORATION SIDE INLET	2 1/8 HOUSING TYPE JOINT ATTACHED (× 1)
2)	EVAPORATION SIDE OUTLET	2 1/8 HOUSING TYPE JOINT ATTACHED (× 1)
3)	CONDENSATION SIDE INLET	2 1/8 HOUSING TYPE JOINT ATTACHED (× 1)
4)	CONDENSATION SIDE OUTLET	2 1/8 HOUSING TYPE JOINT ATTACHED (× 1)
5)	DRAIN OPENING	Rc 1/2 INTERNAL THREAD
6)	POWER CABLE INLET	ø66
7)	SIGNAL CABLE INLET (HIGH CURRENT CABLE)	ø34
8)	SIGNAL CABLE INLET (LOW CURRENT CABLE)	ø34



MODULE COUNT	A	B	C
1 MODULE	780	1	1
2 MODULES	1560	2	2
3 MODULES	2340	3	3
4 MODULES	3120	4	4
5 MODULES	3900	5	5
6 MODULES	4680	6	6

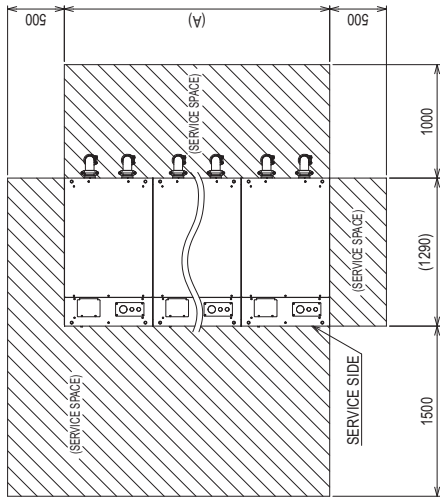


ERCV-M900YA × 2

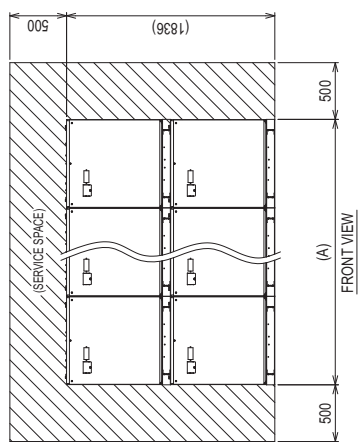
Unit: mm

SERVICE SPACES AROUND THE UNIT
1. WHEN INSTALLING THE UNIT, BE SURE TO LEAVE A SERVICE SPACE FOR MAINTENANCE AND INSPECTION AROUND THE UNIT.
2. ENSURE THAT THERE ARE NOT ANY WALLS OR OTHER OBJECTS AROUND THE UNIT THAT PREVENT THE UNIT FROM DRAWING IN AIR.

SERVICE SPACE



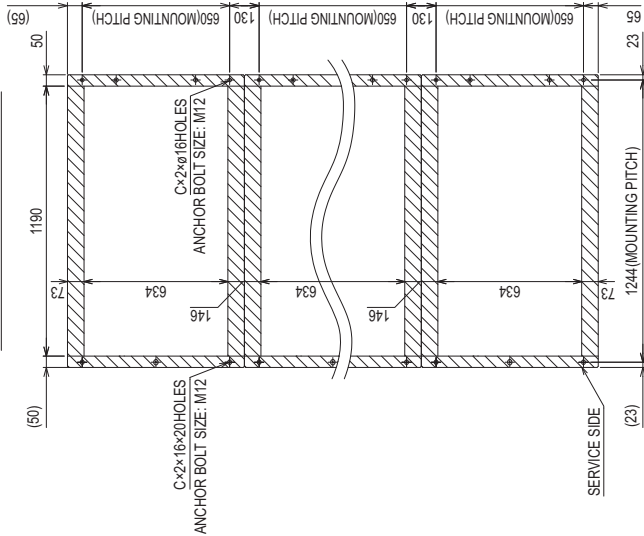
TOP VIEW



FRONT VIEW

INSTALLATION ON FOUNDATION
1. SECURELY FIX THE UNIT WITH BOLTS TO KEEP THE UNIT FROM FALLING DOWN DURING EARTHQUAKES.
2. INSTALL THE UNIT ON A FOUNDATION MADE OF CONCRETE OR IRON.
3. NOISE AND VIBRATIONS FROM THE UNIT MAY BE TRANSMITTED THROUGH THE FLOOR AND WALLS.
4. PROVIDE ADEQUATE PROTECTION AGAINST NOISE AND VIBRATION.
5. WHEN BUILDING THE FOUNDATION, TAKE THE FLOOR STRENGTH, AND PIPING AND WIRING ROUTES INTO CONSIDERATION.

SURFACES TOUCHING THE FOUNDATION

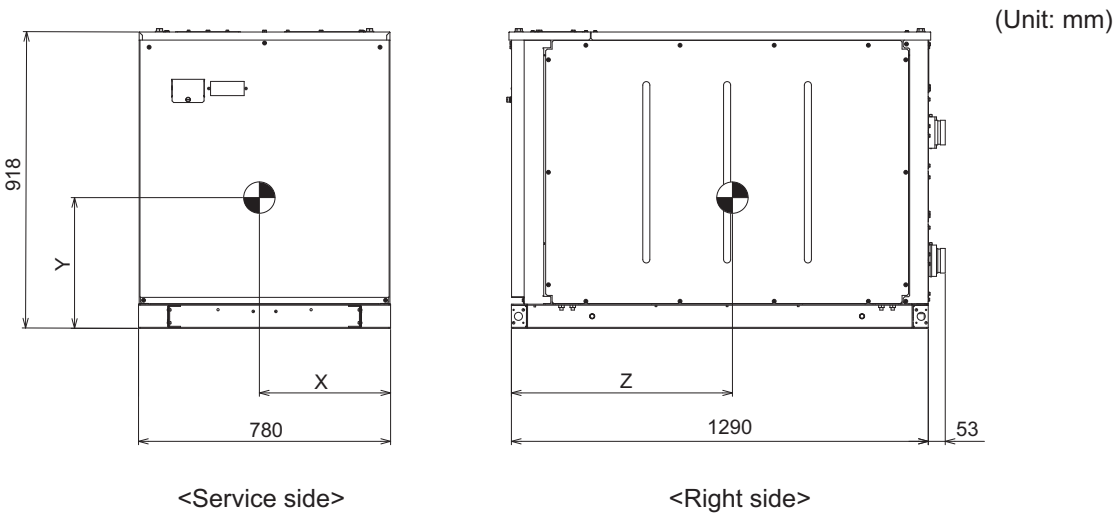


* SECTION SHOWS THE UNIT SURFACE TOUCHING THE FOUNDATION.

1-3. Center of Gravity

The center of gravity position is shown with the  mark.

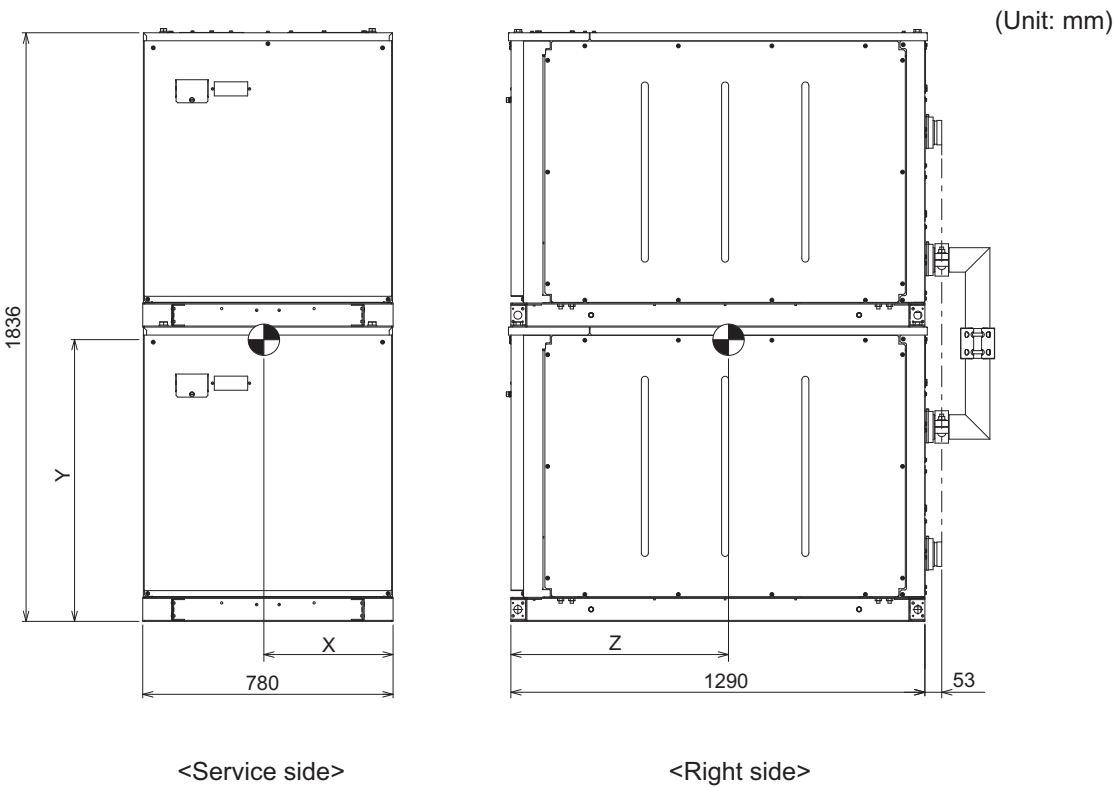
ERCV-M900YA



(Unit: mm)

Model	X	Y	Z
ERCV-M900YA	404	409	671

ERCV-M900YA × 2

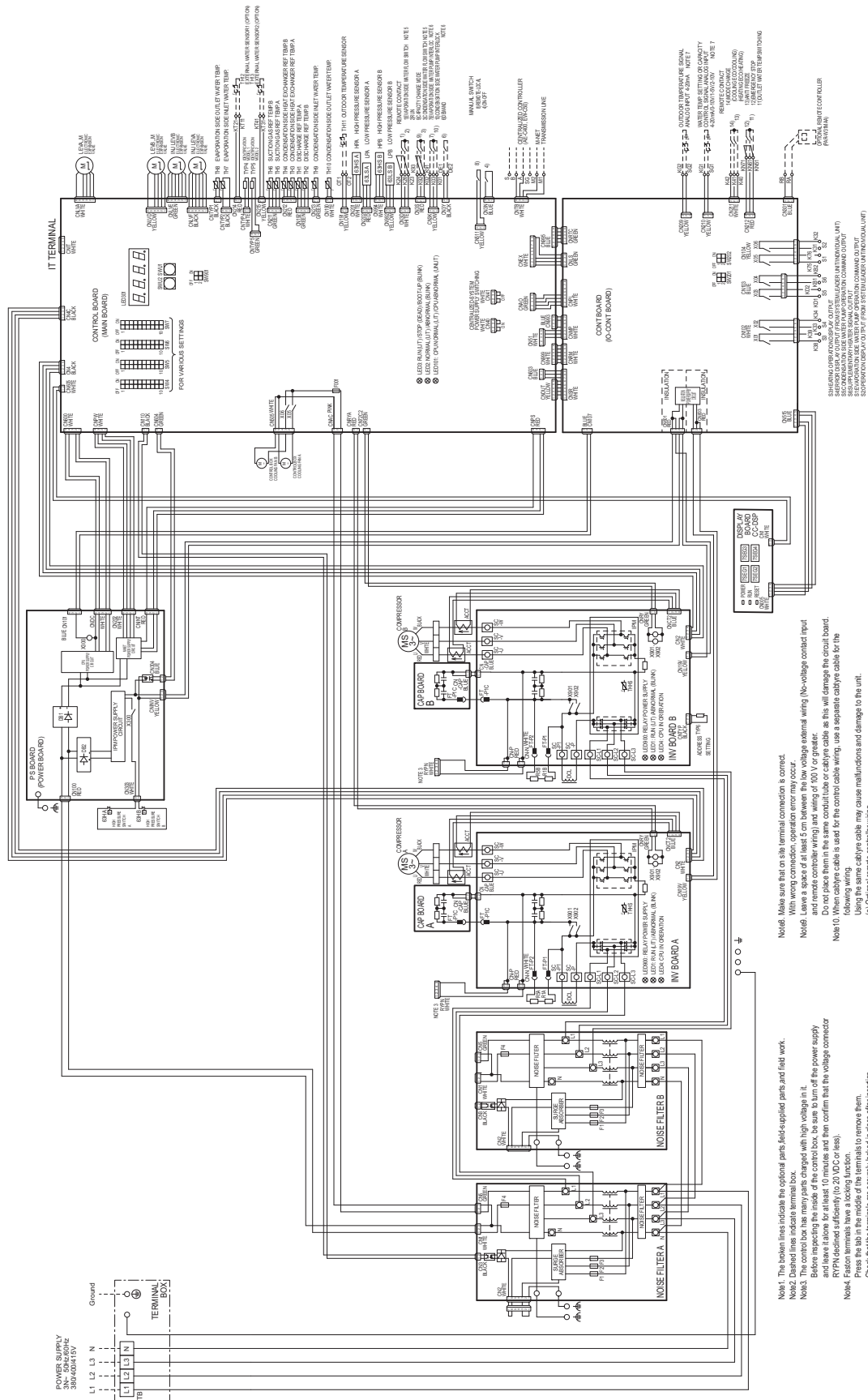


(Unit: mm)

Model	X	Y	Z
ERCV-M900YA × 2	404	868	684

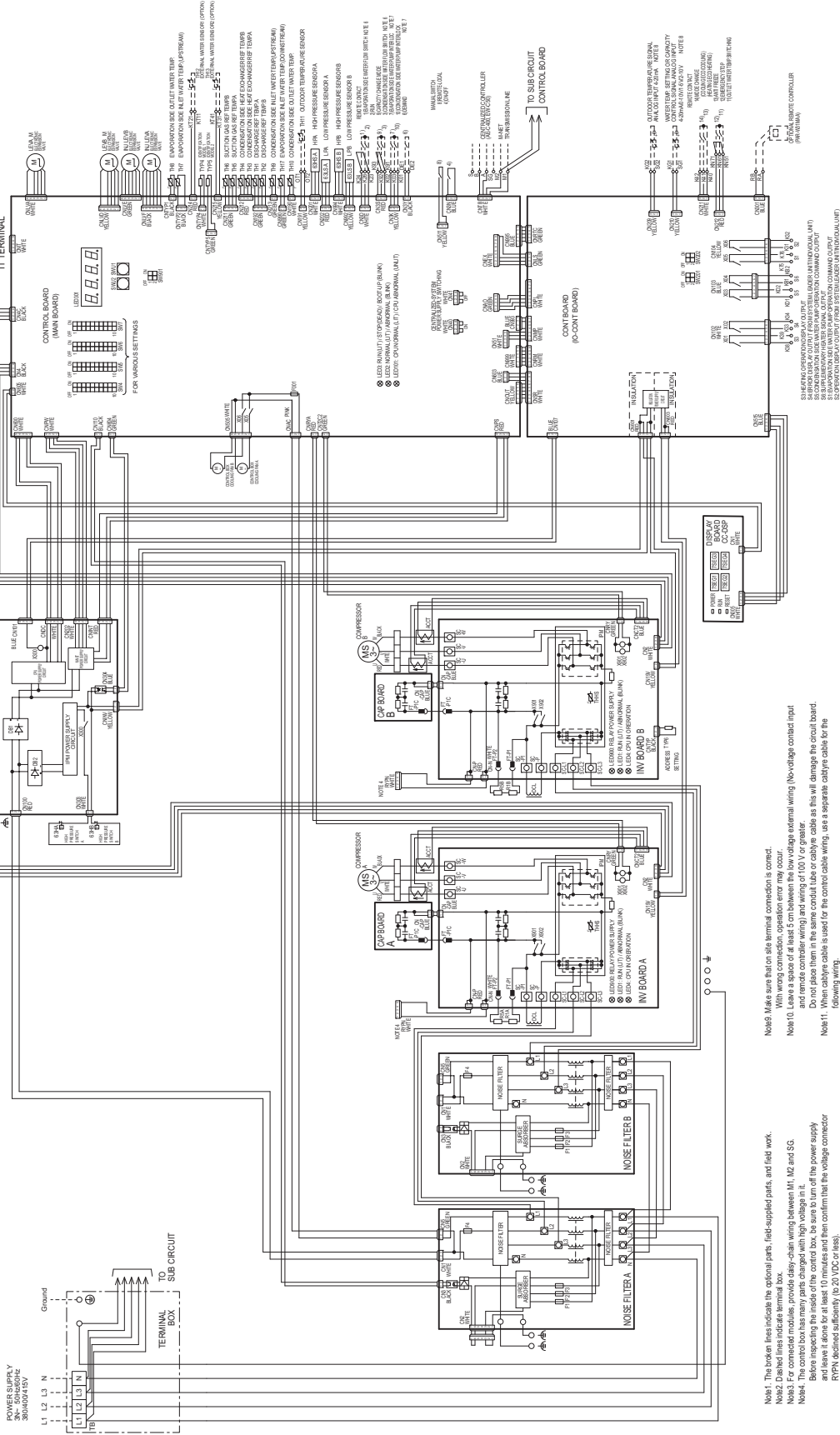
1-4. Electrical Wiring Diagrams

ERCV-M900YA



ERCV-M900YA × 2

MAIN CIRCUIT

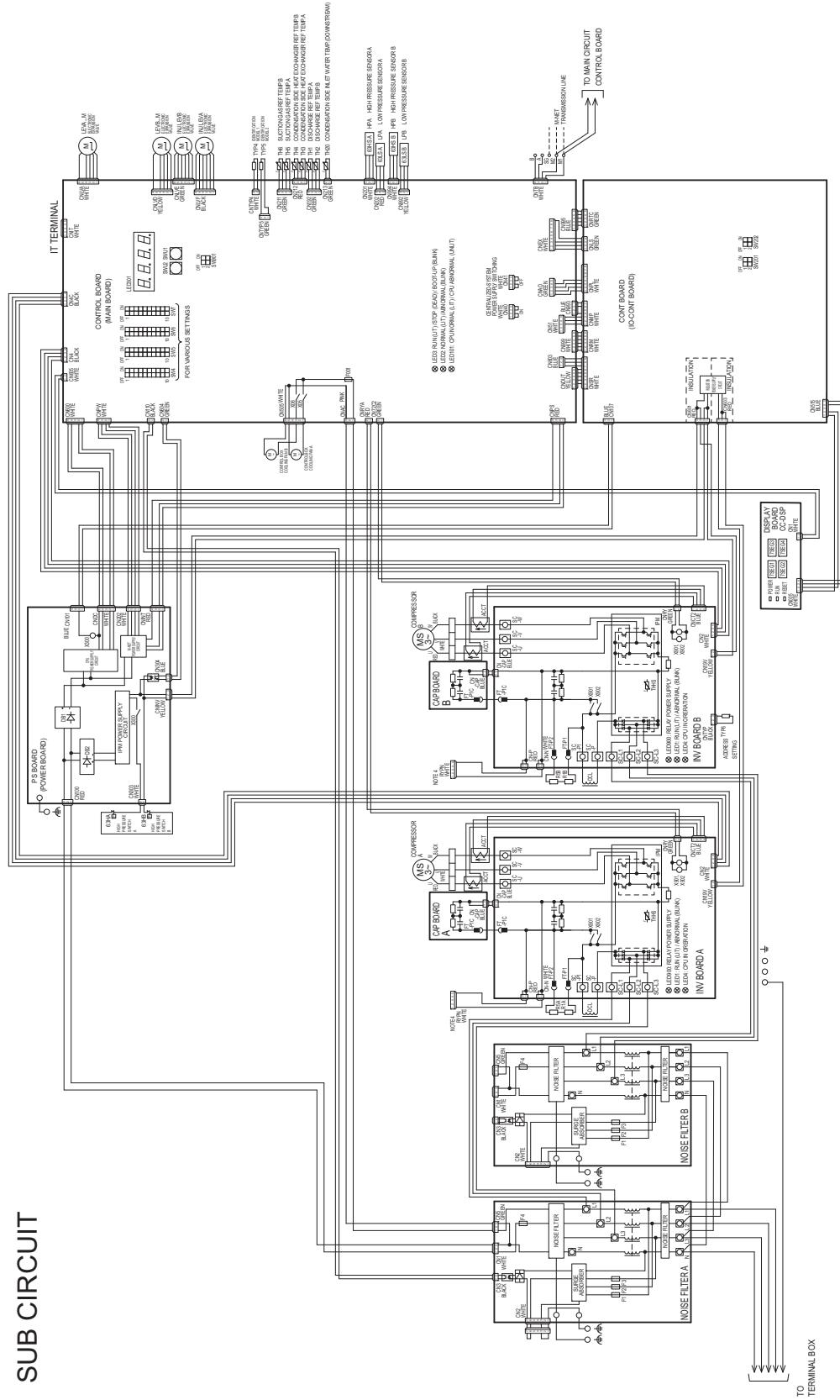


- Note1. The broken lines indicate the optional parts, field-supplied parts, and field work.
Note2. Dashed lines indicate terminal box.
Note3. The control box has many parts charged with high voltage in it.
Note4. Before inspecting the inside of the control box, be sure to turn off the power supply and leave it alone for at least 10 minutes and then confirm that the voltage connector is RYBN defined sufficiently (to 20 VDC or less).
Note5. P-fusion terminals have a locking function.
Note6. Press the pin in the middle of the terminals to remove them.
Note7. Be sure to connect the wires from terminals K02-K04 and K01-K03 to connect a flow switch.
Note8. A short-circuit may cause abnormal stop or malfunctions.
Note9. Use a 4-20 mA signal output device with insulation.
Note10. Feeding 30 mA or more current may damage the circuit board.

- Note11. Make sure that on site terminal connection is correct.
Note12. With wrong connection, operation error may occur.
Note13. Do not use the same cable for the control cable and the external wiring (No-voltage contact input and remote controller wiring) and wiring of 100 V or greater.
Note14. Do not place them in the same conduit tube or cable tray as this will damage the circuit board.
Note15. When cable tray is used for the control cable wiring, use a separate cable tray for the following wiring.
Note16. Using the same cable may cause malfunctions and damage to the unit.
Note17. (a) Optional remote controller wiring
(b) Remote controller wiring
(c) No-voltage contact output wiring
(d) Analog input wiring
Note18. Use No-voltage contact that takes 12 VDC 1 mA for No-voltage contact input.
Note19. Use No-voltage contact output that takes 200 VAC or lower and 10 VDC or higher 24 VDC or lower (10 mA or higher 1 A (resistive load), 0.6 A (inductive load) or lower).

ERCV-M900YA × 2

SUB CIRCUIT



1. Product Specifications

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.

External Input/Output (Main circuit)

Input type	Dry contact	ON (Close)	OFF (Open)	Terminal block
(a) EVAPORATION SIDE WATER PUMP INTERLOCK	Normal/Error	The unit is allowed to operate.	The unit will not operate.	K01-K02
(b) CONDENSATION SIDE WATER PUMP INTERLOCK	Normal/Error	The unit is allowed to operate.	The unit will not operate.	K01-K03
(c) EVAPORATION SIDE WATER FLOW SWITCH	Normal/Error	The unit is allowed to operate.	The unit will not operate.	K23-K24
(d) CONDENSATION SIDE WATER FLOW SWITCH	Normal/Error	The unit is allowed to operate.	The unit will not operate.	K91-K92
(e) 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
(f) ANTI FREEZE	On/Off	The unit will operate in the Anti-Freeze mode (with the target temperature 25°C) when the contact status of (e) "UNIT OPERATION" is "Stop" or the ON/OFF button on the remote controller is turned off.	The unit will operate according to the status of the "UNIT OPERATION" contact (item (e) above) or the ON/OFF command from the remote controller.	K40-K41
(g) MODE CHANGE*1	Cooling ECO/Cooling	Cooling ECO mode (Refer to page 111)	Cooling mode	K40-K42
	Heating ECO/Heating	Heating ECO mode (Refer to page 111)	Heating mode	
(h) OUTLET WATER TEMP. SWITCHING	2nd/1st	Setting temp 2 (Refer to page 110 Settings table)	Setting temp 1 (Refer to page 110 Settings table)	KN51-KN61
(i) CAPACITY CHANGE MODE	Efficiency priority/ Capacity priority	The unit will operate in the energy-efficient mode. (Efficiency priority mode)	The unit will operate at the maximum capacity setting. (Capacity priority mode)	K91-K93
(j) DEMAND	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
(k) EMERGENCY STOP	Release/Stop	The unit will operate according to the status of the "UNIT OPERATION" contact (item (e) above) or the ON/OFF command from the remote controller.	The compressor and pump will stop in an emergency.	KN51-KN71
Analog				Terminal block
Input type	Action			
(l) WATER TEMP. SETTING/ CAPACITY CONTROLL 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, 0-10 V, 1-5 V, or 2-10 V. * Use a 4-20 mA signal output device with insulation.			SG1(+)-KG1(-)
(m) OUTDOOR TEMPERATURE SIGNAL	For Cooling ECO/Heating ECO Input: 4-20 mA			SG2(+)-KG2(-)
(n) EXTERNAL WATER SENSOR 1 (option)	For simultaneous operating group Input: TH12			KT11-KT21
(o) EXTERNAL WATER SENSOR 2 (option)	For identical water system group Input: TH13			KT31-KT41
(p) OUTDOOR TEMPERATURE SENSOR	For Cooling ECO/Heating ECO Input: TH11			OT1-OT2

1. Product Specifications

Output type	Contact type	Conditions in which the contact closes (turns on)	Conditions in which the contact opens (turns off)	Terminal block
	(q) OPERATION INDICATOR (From system leader unit/Individual unit)	Close/Open The "UNIT OPERATION" contact (item (e) above) or the ON/OFF button on the remote controller is ON.	The "UNIT OPERATION" contact (item (e) above) or the ON/OFF button on the remote controller is OFF.	K31-K32
	(r) ERROR INDICATOR (From system leader unit/Individual unit)	Close/Open The unit in the system has made an abnormal stop.	During normal operation	K33-K34
	(s) HEATING OPERATION DISPLAY	Close/Open The unit is in heating mode.	The unit is in cooling mode.	K38-K39
	(t) EVAPORATION SIDE WATER PUMP OPERATION COMMAND	Close/Open The pump will operate according to the status of the "UNIT OPERATION" contact or the ON/OFF button on the remote controller button.	Under all conditions other than the ones listed on the left	K75-K76
	(u) CONDENSATION SIDE WATER PUMP OPERATION COMMAND	Close/Open The pump will operate according to the status of the "UNIT OPERATION" contact or the ON/OFF button on the remote controller button.	Under all conditions other than the ones listed on the left	KD1-KD2
	(v) 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 +2°C.	KB1-KB2
RC/M-NET	REMOTE CONTROLLER	PAR-W31MAA		RA-RB
	CENTRALIZED CONTROLLER	AE-C400, EW-C50		A-B
	M-NET	-		M1-M2

*1 Cooling: Control the evaporation side water temperature.
Heating: Control the condensation side water temperature.

1. Product Specifications

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	Evaporation side water pump interlock	K01-K02	Normal	Error	○	○	○*1
	Condensation side water pump interlock	K01-K03	Normal	Error	○	○	○*1
	Evaporation side water flow switch	K23-K24	Normal	Error	○	○	○*1
	Condensation side water flow switch	K91-K92	Normal	Error	○	○	○*1
	Run	K23-K26	Run	Stop	○	—	—
	Anti freeze	K40-K41	ON	OFF	○	—	—
	Mode change	K40-K42	Cooling ECO*3 /Heating ECO	Cooling /Heating	○	—	—
	Outlet water temp. switching	KN51-KN61	2nd	1st	○	—	—
	Capacity change mode *7	K91-K93	Efficiency priority	Capacity priority	○	—	—
	Demand	DE1-DE2	ON	OFF	○	—	—
	Emergency stop *6	KN51-KN71	Release	Stop	○	—	—
Analog input	Water temp. setting / Capacity control signal	SG1(+)-KG1(-)	4-20mA, 0-10V, 1-5V, 2-10V		○	—	—
	Outdoor temperature signal	SG2(+)-KG2(-)	4-20mA For Cooling ECO/Heating ECO		○	—	—
	External water sensor 1 (Option) TH12	KT11-KT21	For simultaneous operating group		○	○	—
	External water sensor 2 (Option) TH13	KT31-KT41	For identical water system group		○	—	—
	Outdoor temperature sensor TH11	OT1-OT2	For Cooling ECO/Heating ECO		○	—	—
No-voltage contact output	Operation display output *4 (From system leader unit/ Individual unit)	K31-K32	ON while the unit is operating		○	— / ○ *2	— / ○ *2
	Error display output *5 (From system leader unit/ Individual unit)	K33-K34	While abnormally stop is ON.		○	— / ○ *2	— / ○ *2
	Heating operation display output	K38-K39	Heating	Cooling	○	○	○
	Evaporation side water pump operation command output	K75-K76	ON while the unit is operating		○	○	○ *1
	Condensation side water pump operation command output	KD1-KD2	ON while the unit is operating		○	○	○ *1
	Supplementary heater signal output	KB1-KB2	During the low outdoor and water temperature is ON.		○	○	○
RC	Remote controller	RA-RB	PAR-W31MAA		○	—	—
	Centralized controller	A-B	AE-C400, EW-C50		○	—	—

○: Input and output signal is enabled.

—: Invalid

*1 Invalid when the one pump system

*2 System leader unit/Individual unit

*3 Refer to the following page for information about the settings of Cooling ECO and Heating ECO. (page 111)

*4 Refer to the following page for information about the settings of Operation display output. (page 125)

*5 Refer to the following page for information about the settings of Error display output. (page 125)

*6 Always use a ventilation system on site in conjunction with the unit.

If the ventilation system in the machine room fails, stop the unit.

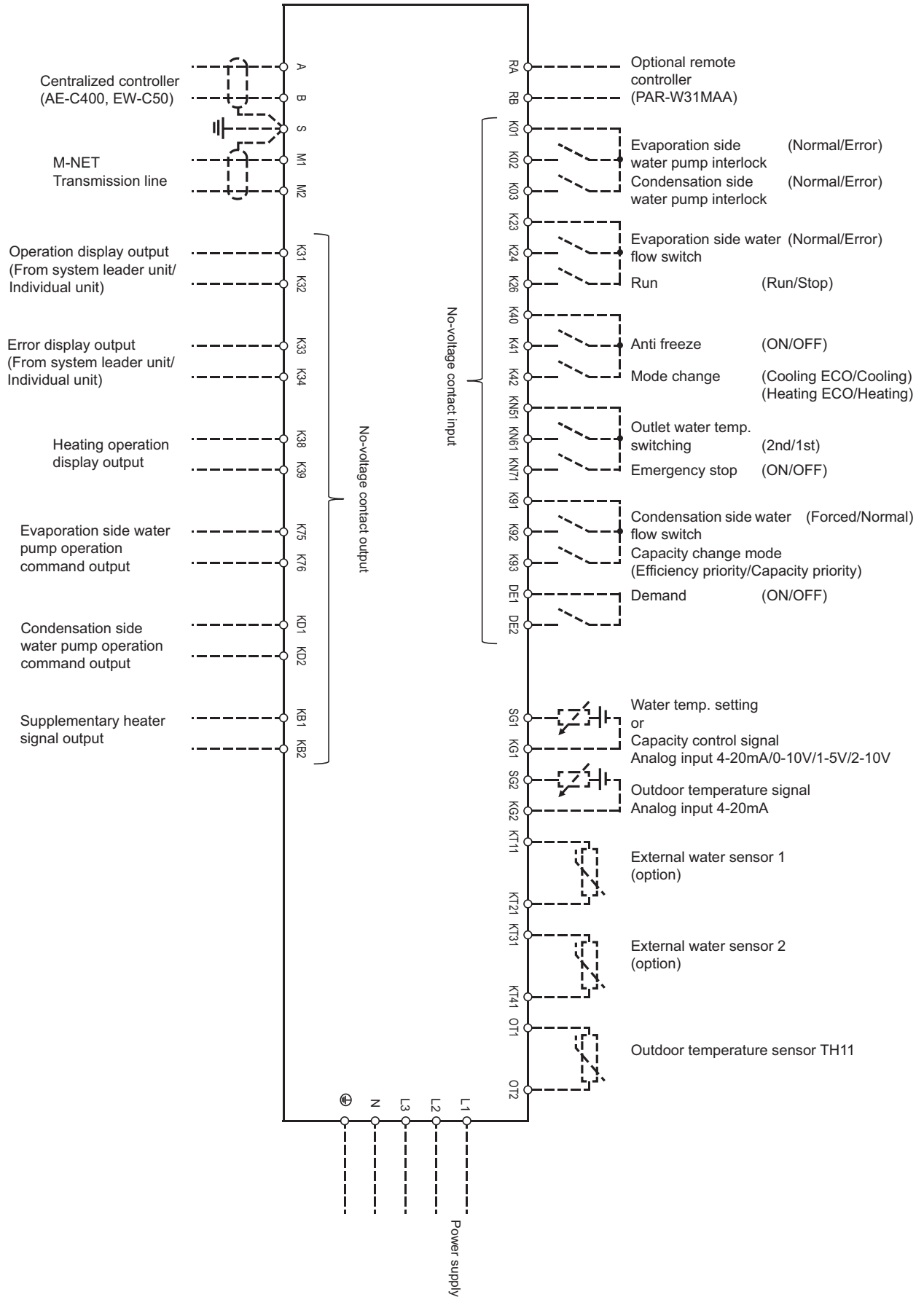
Remove the short circuit wire between the terminals KN51-KN71 to connect.

Refer to the following page information about ventilation equipment. (page 65)

*7 The capacity change mode is available only when SW6-10 is turned OFF (water setting).

1. Product Specifications

External signal interface (Main circuit)



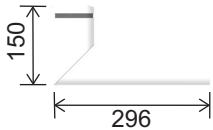
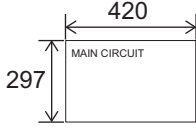
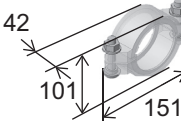
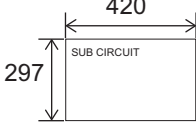
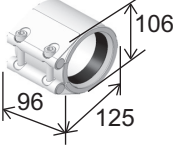
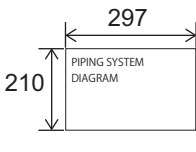
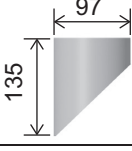
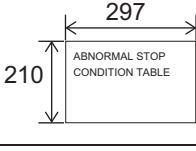
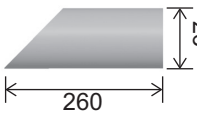
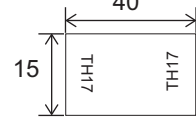
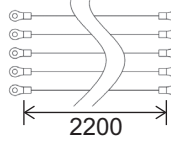
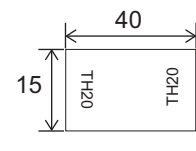
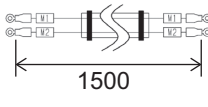
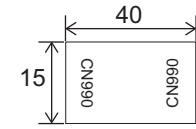
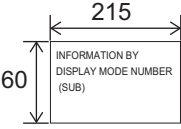
1. Product Specifications

1-5. Optional parts

1-5-1. Top-Bottom unit Joining Kit ER-01RK

Refer to Installation/Instructions Manual.

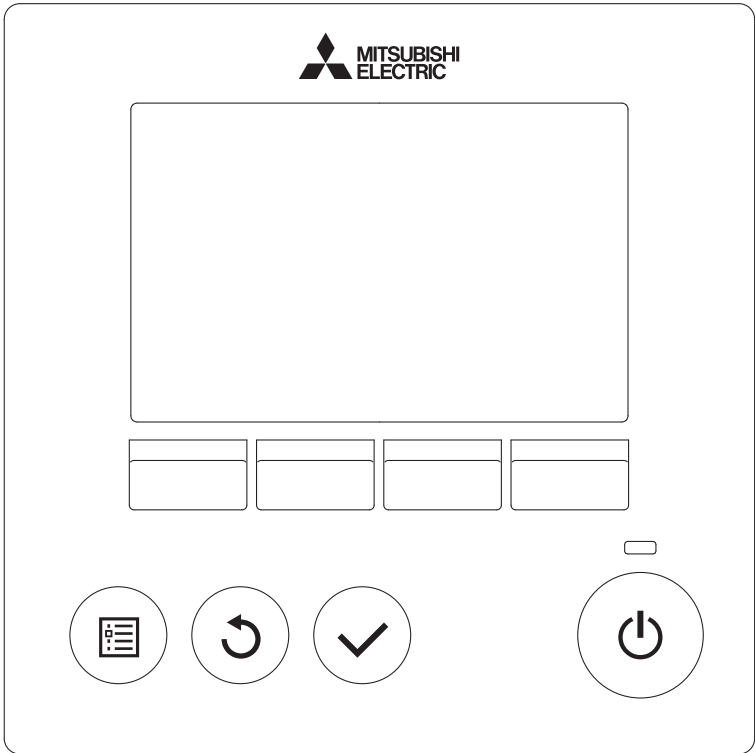
(Unit: mm)

No.	Parts	Shape/Size	Quantity	No.	Parts	Shape/Size	Quantity
1	Coupling water pipe		4	9	Electrical wiring diagram nameplate 1		1
2	Housing joint		4	10	Electrical wiring diagram nameplate 2		1
3	Pipe coupling		2	11	Refrigerant circuit diagram nameplate		2
4	Pipe cover 1 (10 mm thick)		4	12	Error code		2
5	Pipe cover 2 (10 mm thick)		4	13	Thermistor label (TH17)		1
6	Power wire		1	14	Thermistor label (TH20)		1
7	M-NET wire		1	15	Connector label (CN990)		1
8	LED indicator nameplate (Sub unit only)		1	16	Tie band		26 (Spare: 12)

1. Product Specifications

1-5-2. Remote controller PAR-W31MAA

Refer to 6-1. PAR-W31MAA specifications.



1. Product Specifications

1-5-3. External water temperature sensor TW-TH16

1. Parts that are required to install an external water temperature sensor
 - (1) External water temperature sensor
 - (2) Wiring to connect the sensor and the unit*
 - (3) Wiring terminals to connect the wiring to the sensor and the terminal block on the unit
(Four for M4 screws)*

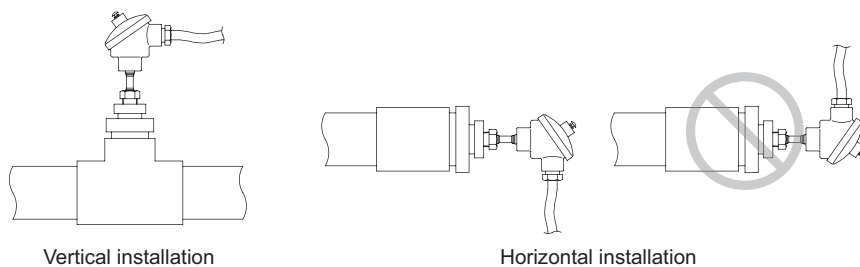
* Items (1) and (2) are field supplied.

Wire specifications

Wire size	2-core cable Min. 1.25 mm ²
Type	CVVS or CPEVS
Maximum length	20 m

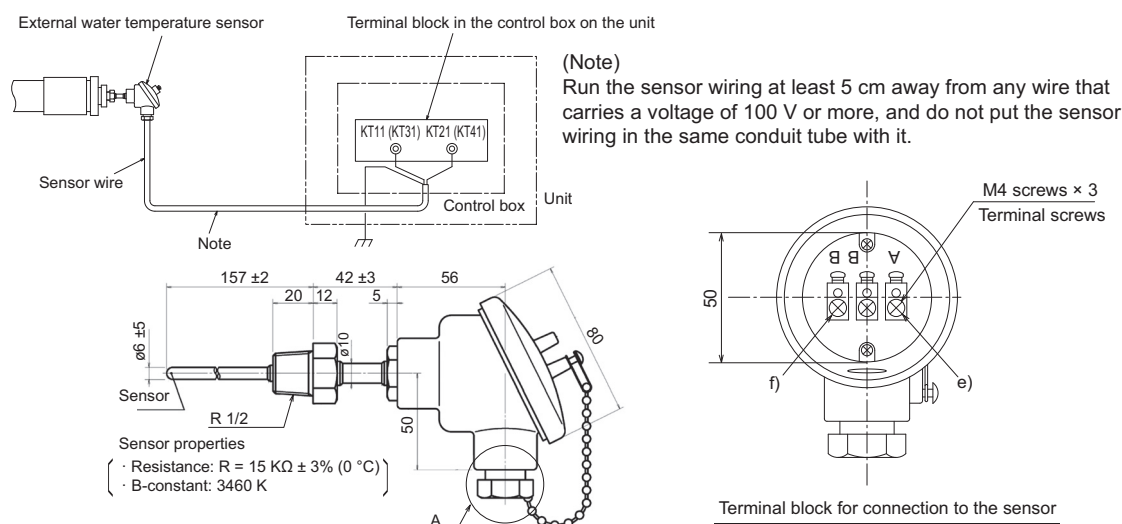
2. Installing the external water temperature sensor

- ♦ 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.



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.



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 b) through d) as shown in the figure at right. Attach M4 terminals (field-supplied) to the wires, and connect them to e) and f) (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.)

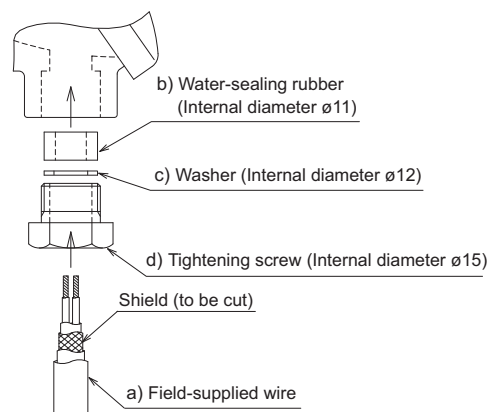
After the wire is connected, securely tighten the tightening screw d), and then caulk the gap between the wire a) and the tightening screw to keep water from entering.

*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 or below.



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

2. Product Data

2-1. Capacity tables

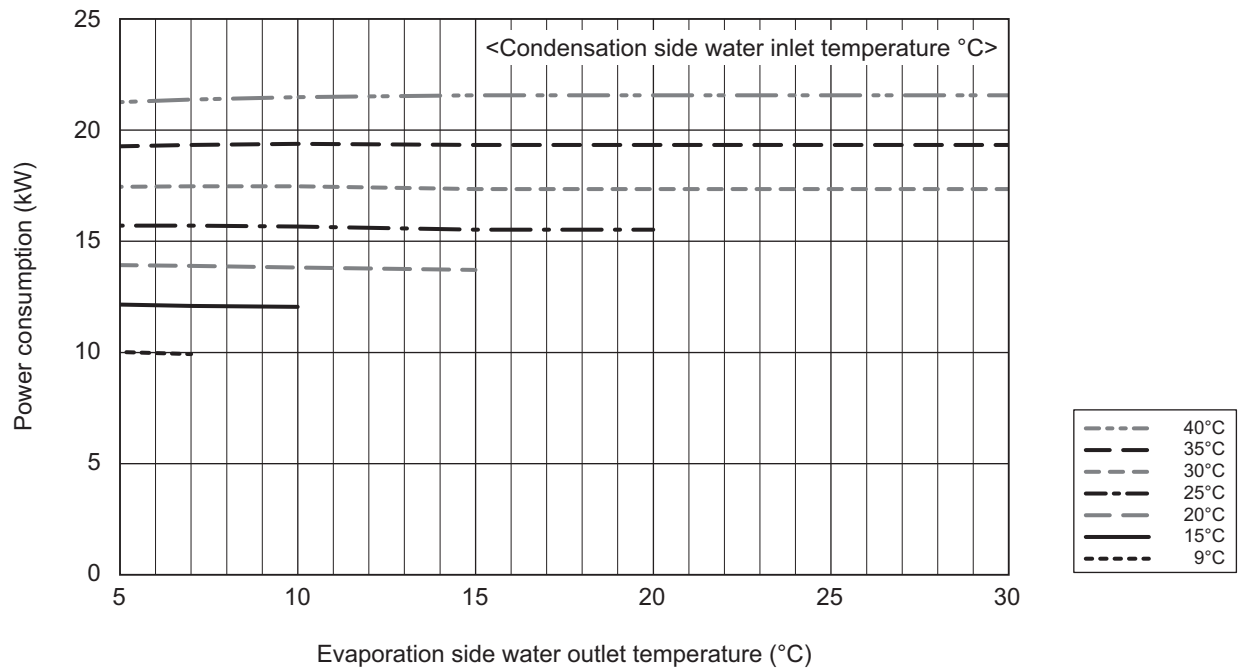
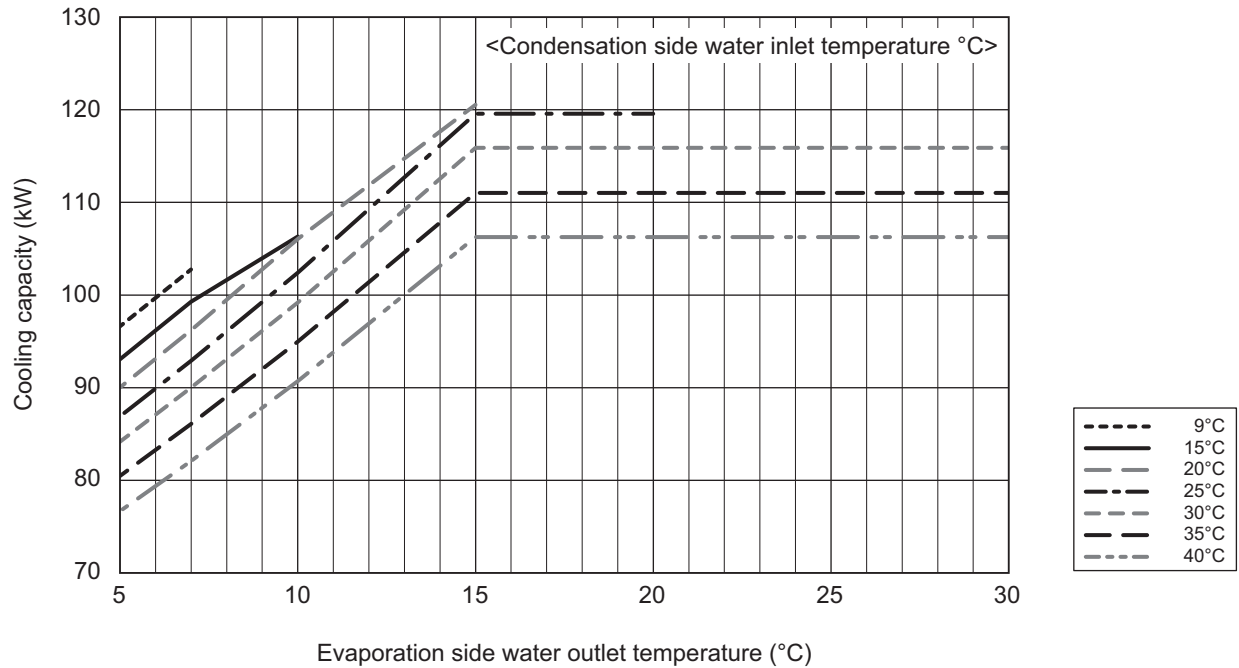
2-1-1. Correction by temperature

ERCV-M900YA

Cooling Capacity [Water (SW6-10: OFF)]

Condensation side water inlet/outlet 5°C difference

Evaporation side water inlet/outlet 5°C difference

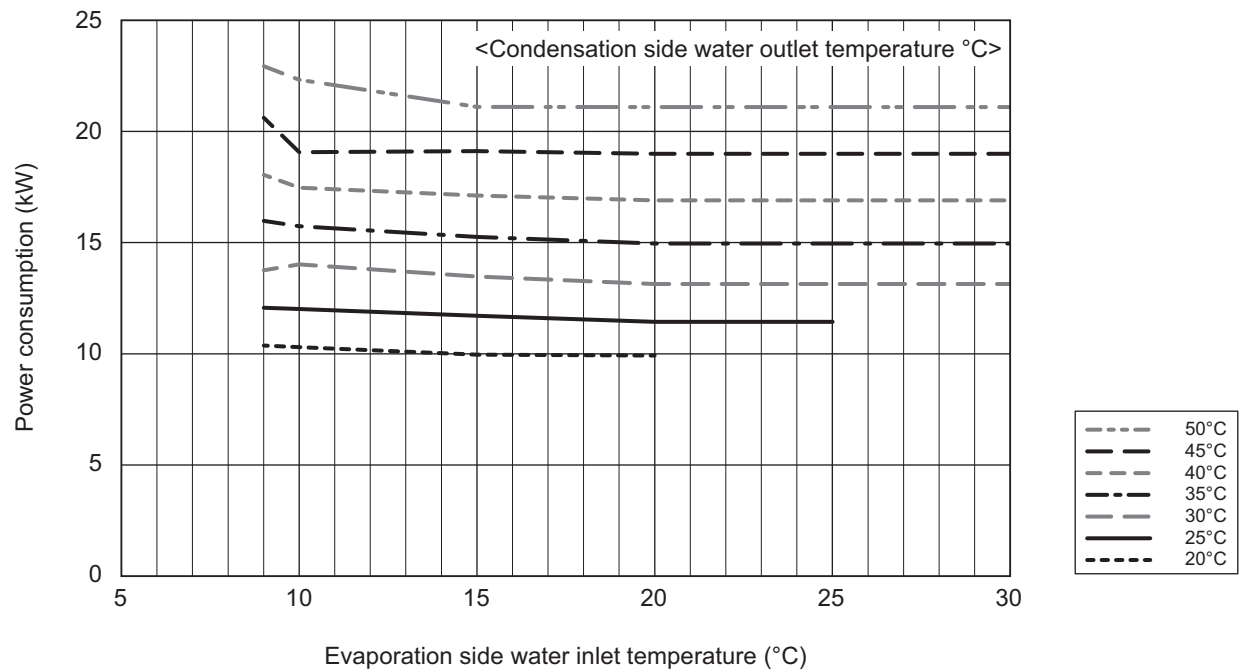
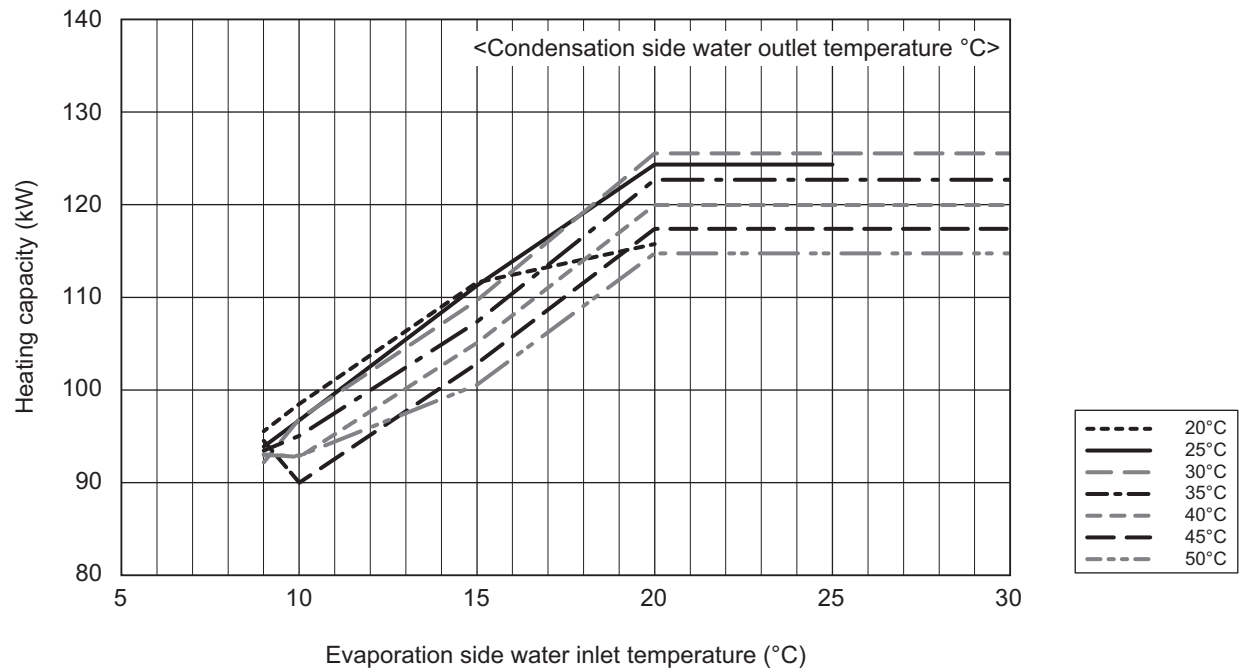


* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA, ERCV-M900YA×2

ERCV-M900YA
Heating Capacity [Water (SW6-10: OFF)]
Evaporation side water inlet/outlet 3°C difference
Condensation side water inlet/outlet 5°C difference



* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

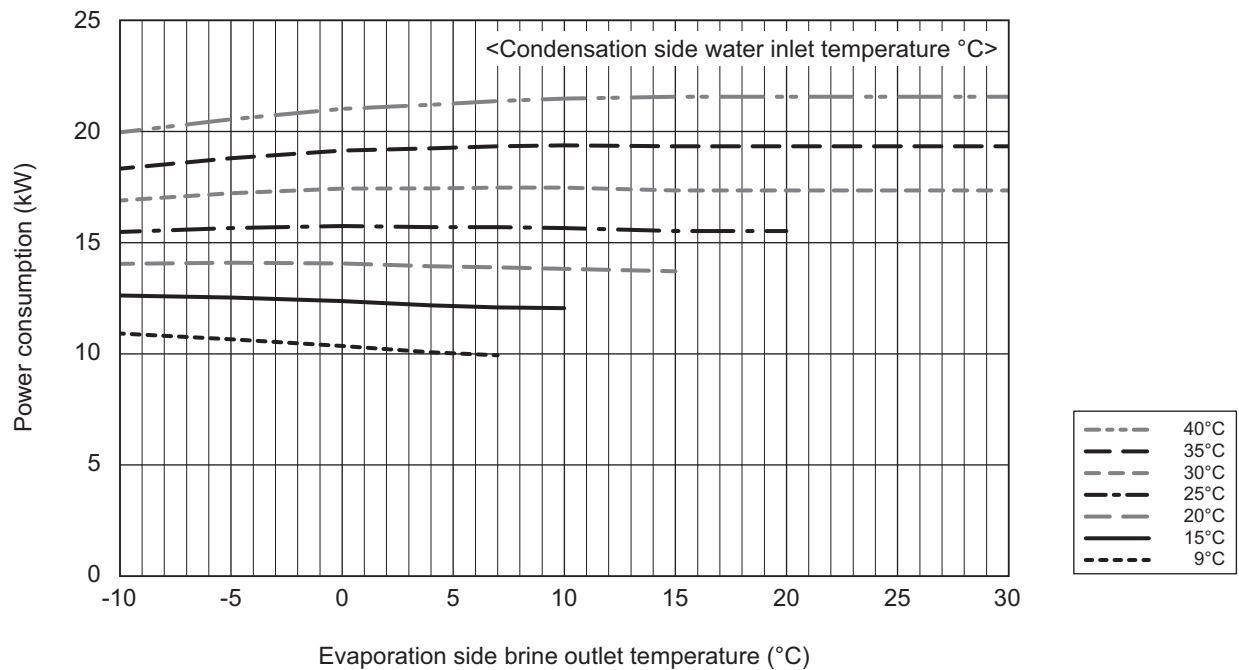
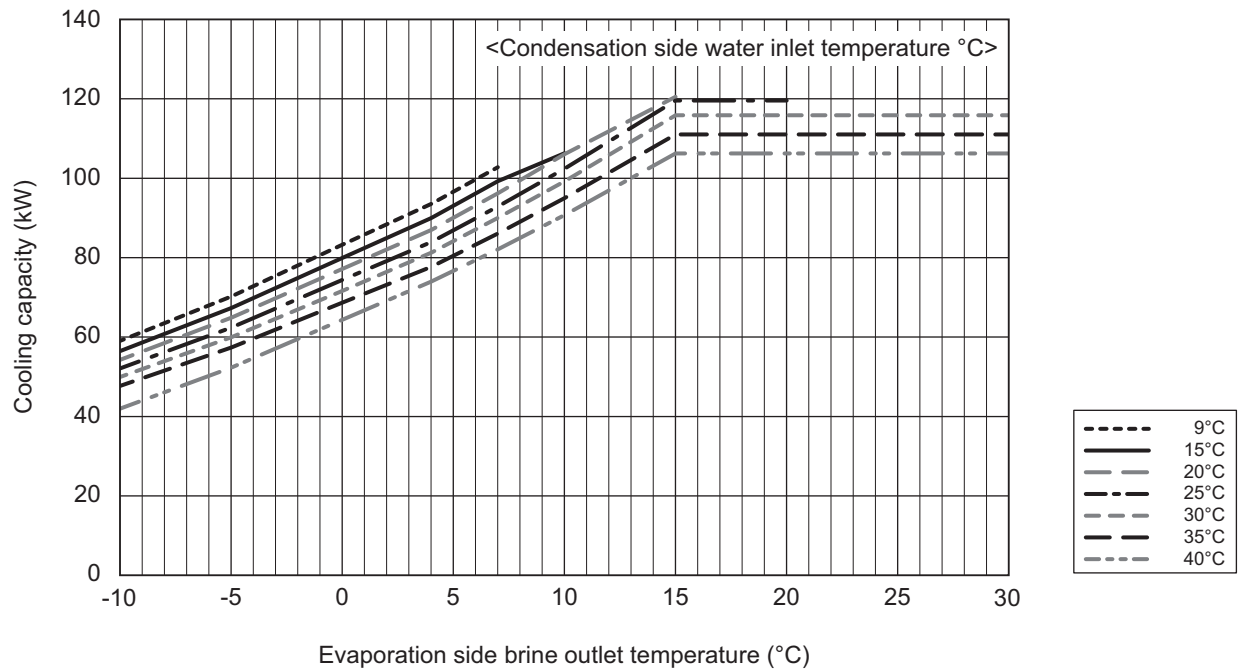
2. Product Data

ERCV-M900YA

Cooling Capacity [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Condensation side water inlet/outlet 5°C difference

Evaporation side brine inlet/outlet 5°C difference



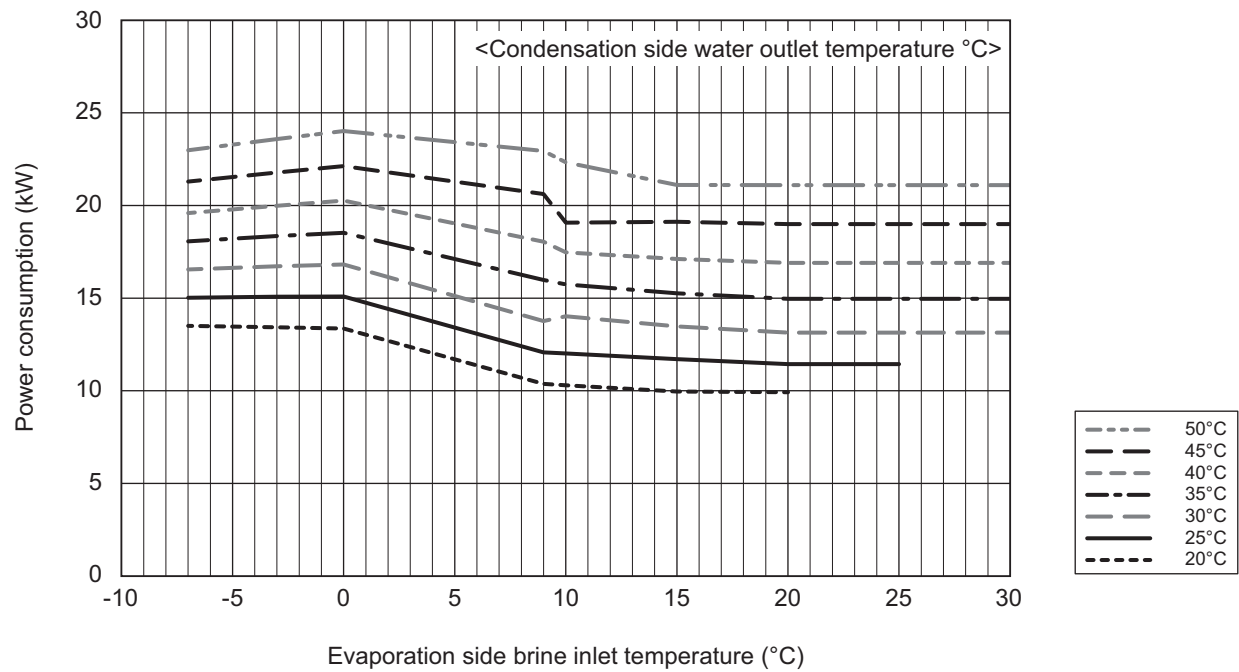
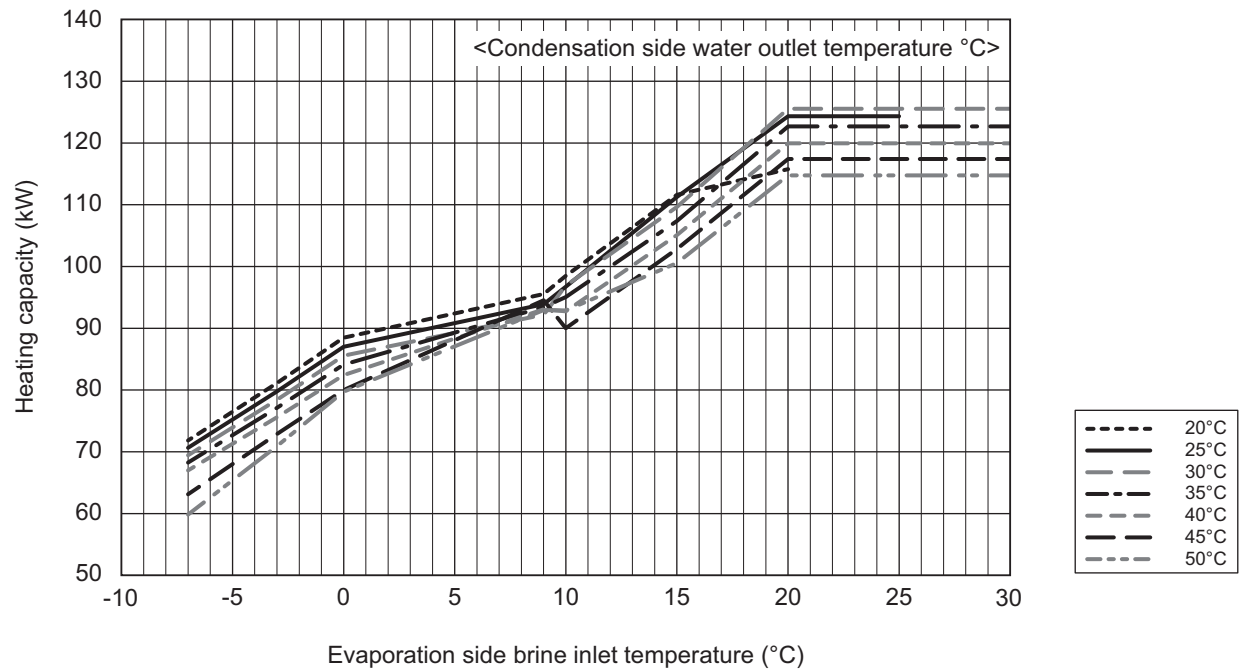
* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA, ERCV-M900YA×2

ERCV-M900YA

Heating Capacity [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]
Evaporation side brine inlet/outlet 3°C difference
Condensation side water inlet/outlet 5°C difference



* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

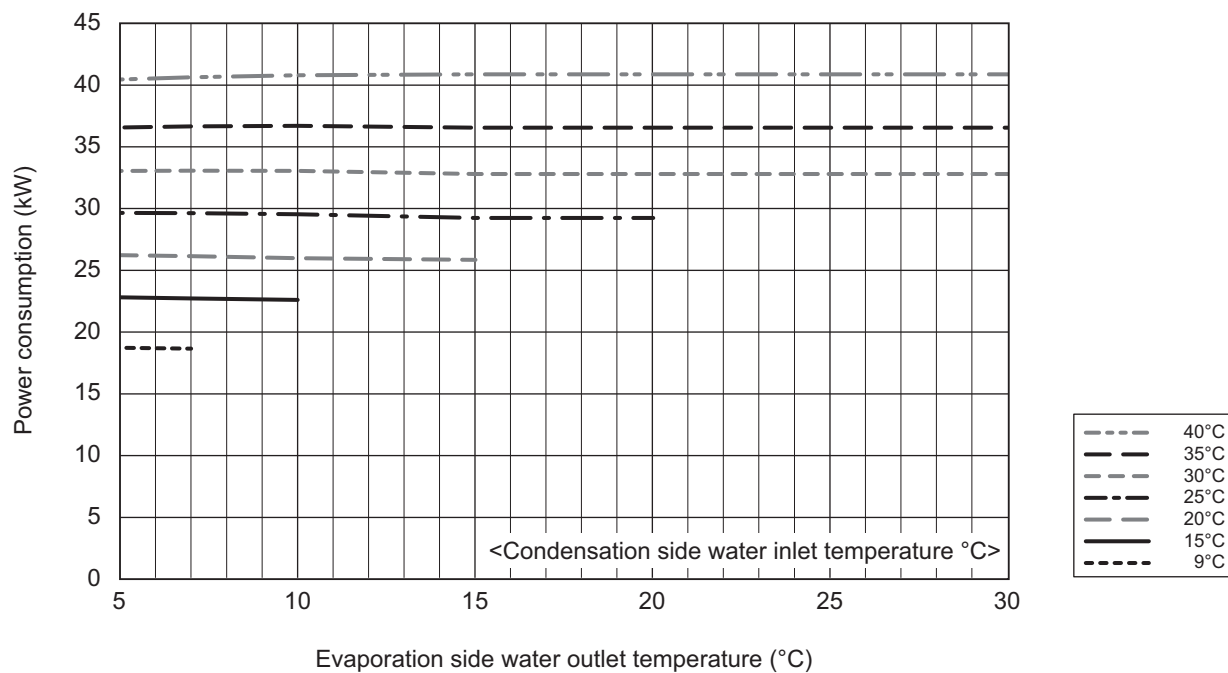
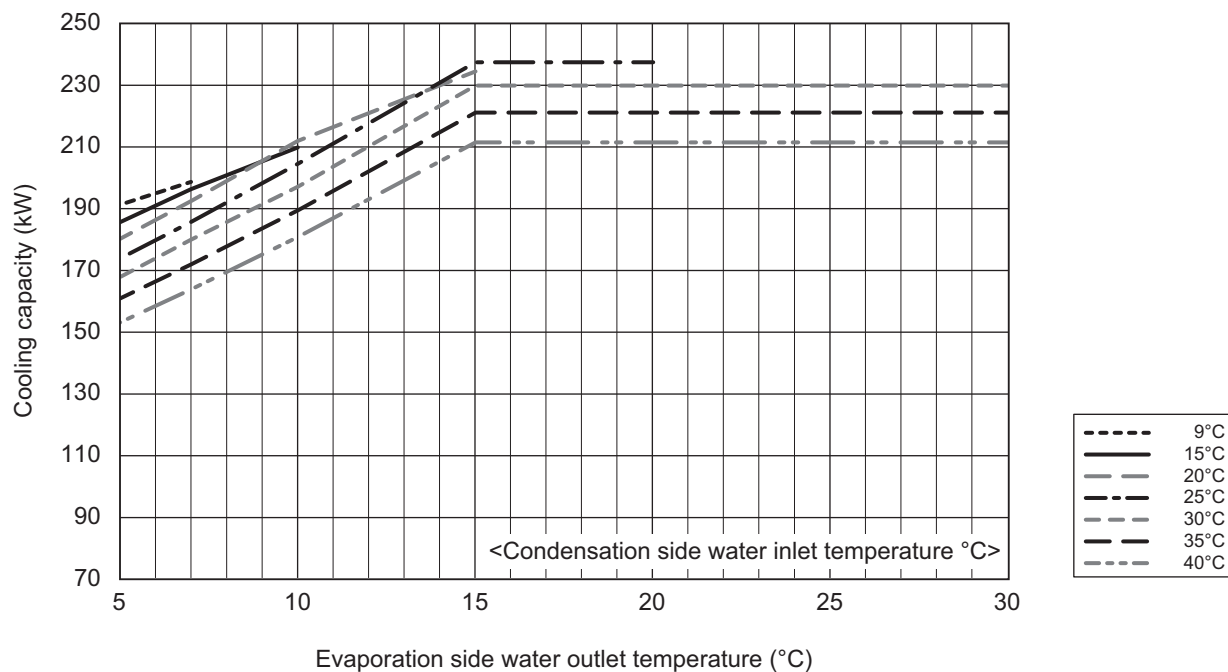
2. Product Data

ERCV-M900YA × 2

Cooling Capacity [Water (SW6-10: OFF)]

Condensation side water inlet/outlet 5°C difference

Evaporation side water inlet/outlet 5°C difference

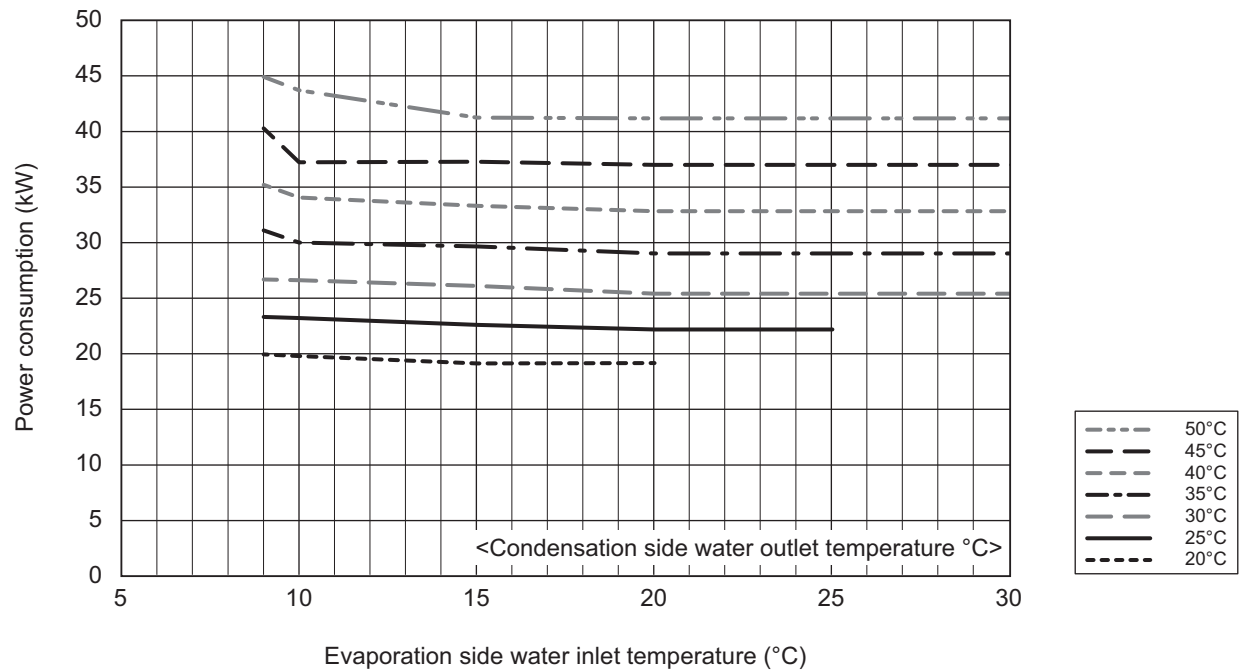
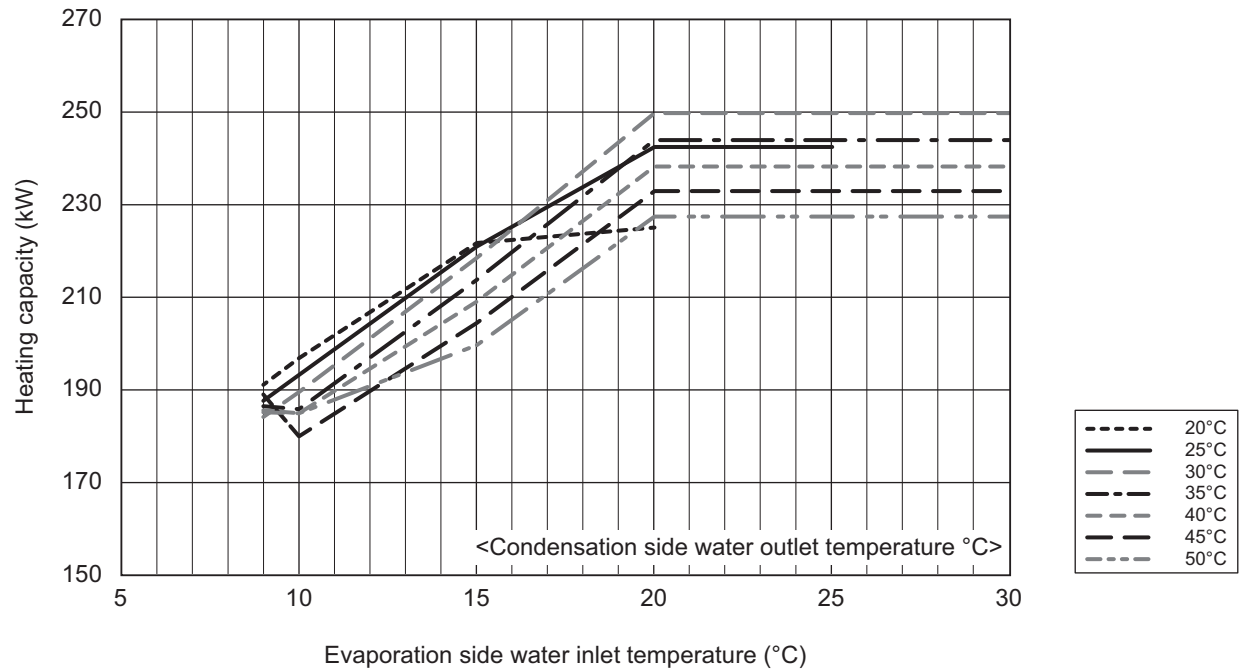


* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA, ERCV-M900YA×2

ERCV-M900YA × 2
Heating Capacity [Water (SW6-10: OFF)]
Evaporation side water inlet/outlet 3°C difference
Condensation side water inlet/outlet 5°C difference



* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

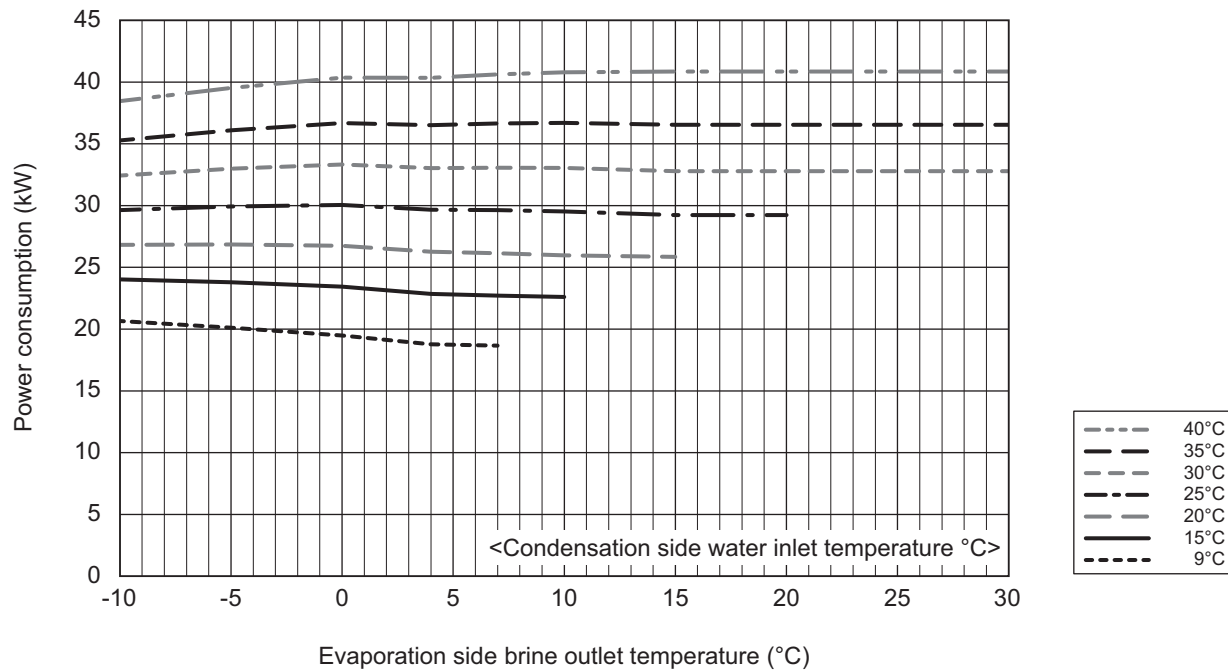
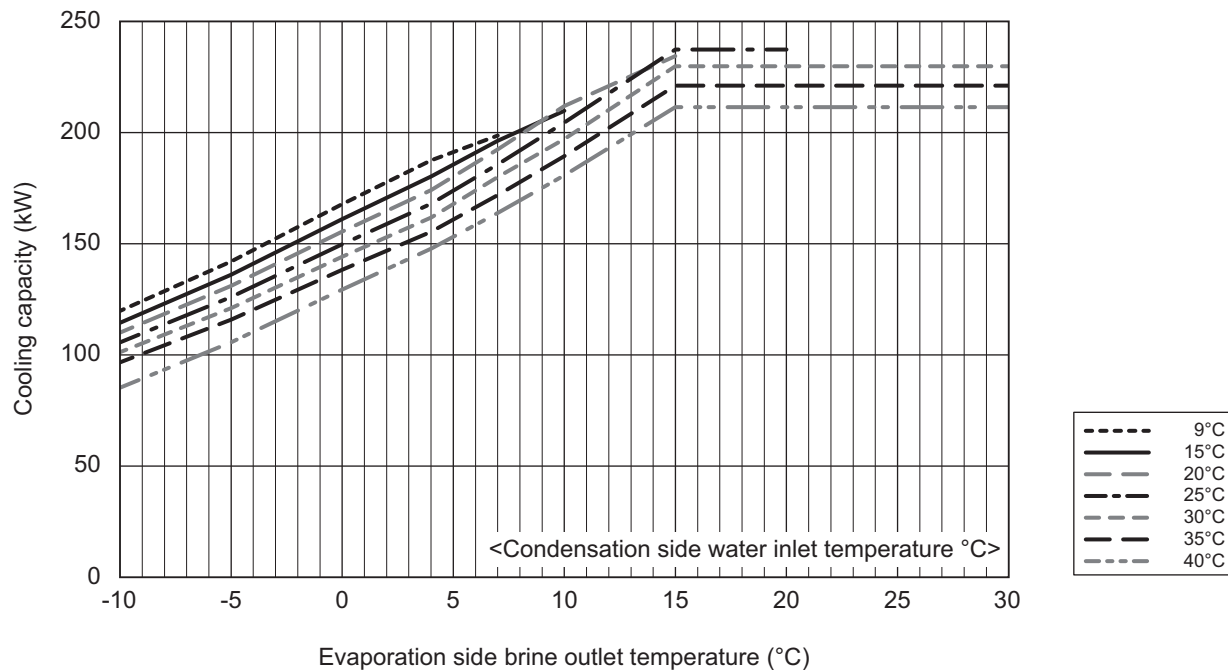
2. Product Data

ERCV-M900YA × 2

Cooling Capacity [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Condensation side water inlet/outlet 5°C difference

Evaporation side brine inlet/outlet 5°C difference



* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.ltc.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

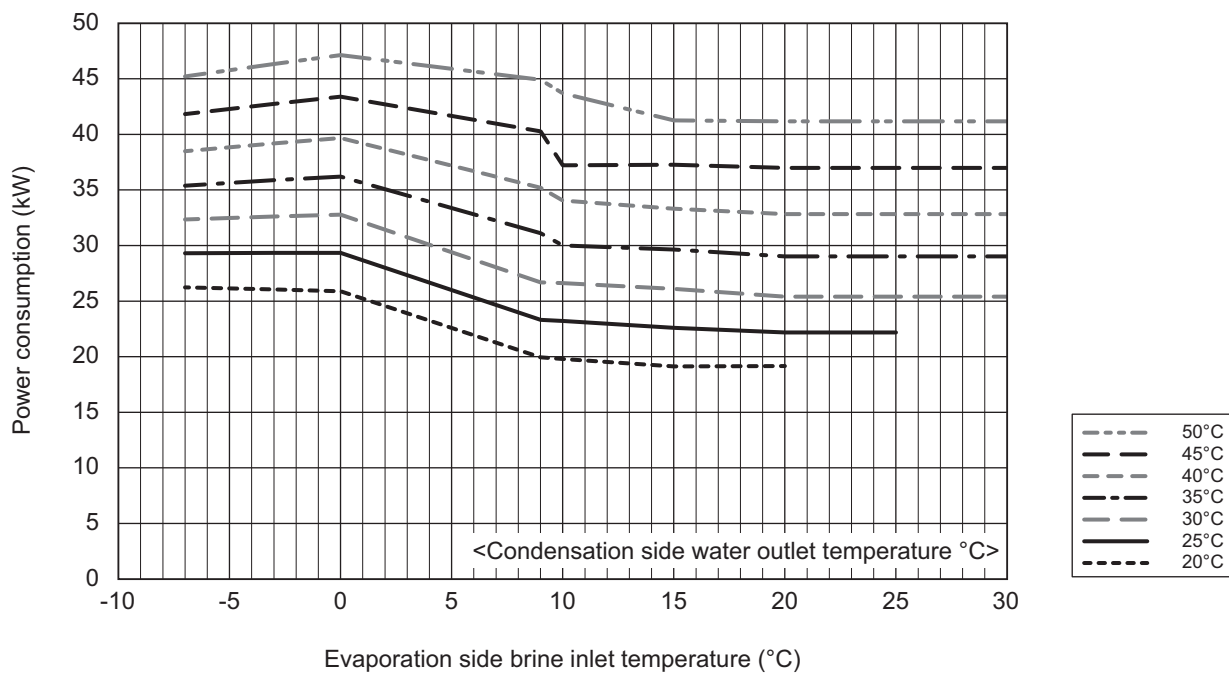
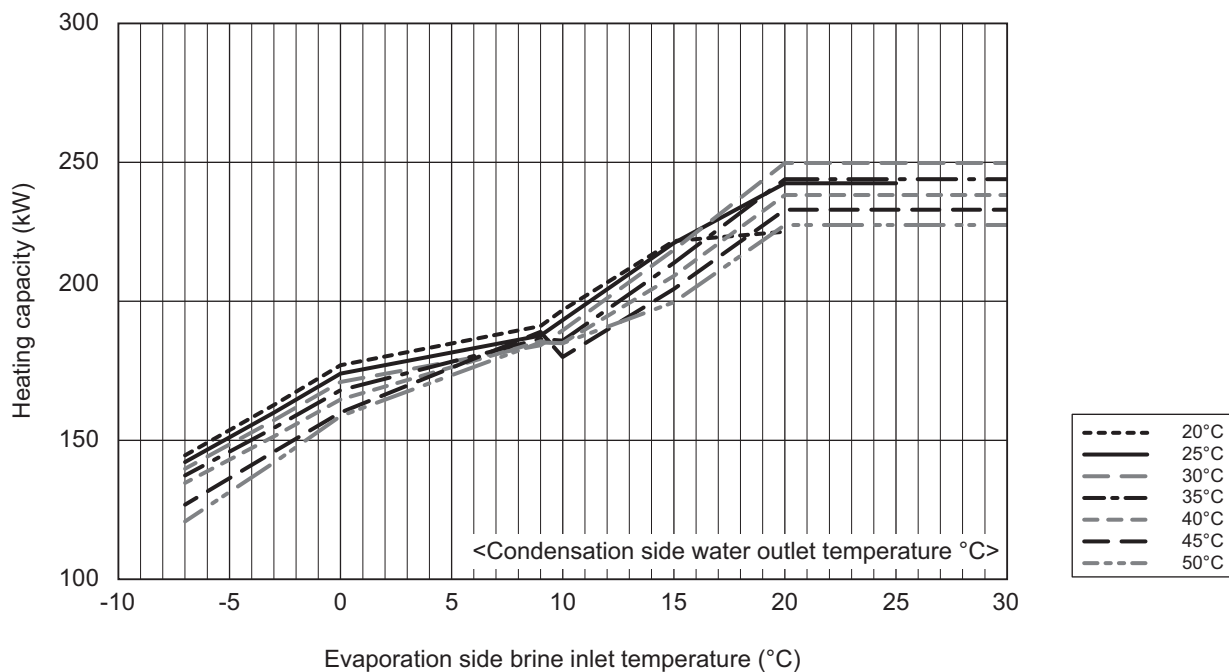
2. Product Data

ERCV-M900YA × 2

Heating Capacity [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Evaporation side brine inlet/outlet 3°C difference

Condensation side water inlet/outlet 5°C difference



* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA

Cooling capacity [Water (SW6-10: OFF)]:

Condensation side water inlet/outlet 5°C difference

Evaporation side water inlet/outlet 5°C difference

Capacity change mode: Capacity priority

MODEL			ERCV-M900YA								
Evaporation side water outlet temperature (°C)	Condensation side water inlet temperature (°C)		9	15	20	25	30	35	40	45	50
4	Cooling capacity	kW	93.6	90.0	87.0	83.9	81.3	77.7	74.0	70.3	66.6
	Power consumption	kW	10.07	12.18	13.94	15.70	17.44	19.24	21.20	23.17	25.14
	Evaporation side water flow rate	m³/h	16.1	15.5	15.0	14.4	14.0	13.4	12.7	12.1	11.5
	Condensation side water flow rate	m³/h	17.5	17.1	16.9	16.6	16.4	16.0	15.6	15.2	14.9
	Evaporation side water pressure drop	kPa	10	10	9	8	8	7	7	6	6
	Condensation side water pressure drop	kPa	7	7	7	6	6	6	6	5	5
7	Cooling capacity	kW	102.8	99.3	96.2	92.9	90.0	86.1	82.1	78.1	74.1
	Power consumption	kW	9.93	12.09	13.89	15.70	17.47	19.33	21.37	23.41	25.45
	Evaporation side water flow rate	m³/h	17.7	17.1	16.5	16.0	15.5	14.8	14.1	13.4	12.7
	Condensation side water flow rate	m³/h	19.0	18.7	18.4	18.1	17.9	17.4	17.0	16.6	16.2
	Evaporation side water pressure drop	kPa	12	11	11	10	10	9	8	7	7
	Condensation side water pressure drop	kPa	8	8	8	7	7	7	7	6	6
10	Cooling capacity	kW	-	106.3	106.1	102.4	99.2	95.0	90.7	86.4	82.2
	Power consumption	kW	-	12.05	13.82	15.66	17.47	19.38	21.48	23.59	25.70
	Evaporation side water flow rate	m³/h	-	18.3	18.2	17.6	17.1	16.3	15.6	14.9	14.1
	Condensation side water flow rate	m³/h	-	19.9	20.1	19.7	19.4	19.0	18.5	18.1	17.6
	Evaporation side water pressure drop	kPa	-	13	13	12	11	10	10	9	8
	Condensation side water pressure drop	kPa	-	9	9	9	8	8	8	7	7
15	Cooling capacity	kW	-	-	120.5	119.6	115.9	111.0	106.3	101.5	96.7
	Power consumption	kW	-	-	13.71	15.52	17.35	19.33	21.56	23.78	26.00
	Evaporation side water flow rate	m³/h	-	-	20.7	20.6	19.9	19.1	18.3	17.5	16.6
	Condensation side water flow rate	m³/h	-	-	22.6	22.7	22.3	21.7	21.2	20.7	20.2
	Evaporation side water pressure drop	kPa	-	-	16	16	15	14	13	12	11
	Condensation side water pressure drop	kPa	-	-	11	11	11	10	10	10	9
20	Cooling capacity	kW	-	-	-	119.6	115.9	111.0	106.3	101.5	96.7
	Power consumption	kW	-	-	-	15.52	17.35	19.33	21.56	23.78	26.00
	Evaporation side water flow rate	m³/h	-	-	-	20.6	19.9	19.1	18.3	17.5	16.6
	Condensation side water flow rate	m³/h	-	-	-	22.7	22.3	21.7	21.2	20.7	20.2
	Evaporation side water pressure drop	kPa	-	-	-	16	15	14	13	12	11
	Condensation side water pressure drop	kPa	-	-	-	11	11	10	10	10	9
25	Cooling capacity	kW	-	-	-	-	115.9	111.0	106.3	101.5	96.7
	Power consumption	kW	-	-	-	-	17.35	19.33	21.56	23.78	26.00
	Evaporation side water flow rate	m³/h	-	-	-	-	19.9	19.1	18.3	17.5	16.6
	Condensation side water flow rate	m³/h	-	-	-	-	22.3	21.7	21.2	20.7	20.2
	Evaporation side water pressure drop	kPa	-	-	-	-	15	14	13	12	11
	Condensation side water pressure drop	kPa	-	-	-	-	11	10	10	10	9
30	Cooling capacity	kW	-	-	-	-	115.9	111.0	106.3	101.5	96.7
	Power consumption	kW	-	-	-	-	17.35	19.33	21.56	23.78	26.00
	Evaporation side water flow rate	m³/h	-	-	-	-	19.9	19.1	18.3	17.5	16.6
	Condensation side water flow rate	m³/h	-	-	-	-	22.3	21.7	21.2	20.7	20.2
	Evaporation side water pressure drop	kPa	-	-	-	-	15	14	13	12	11
	Condensation side water pressure drop	kPa	-	-	-	-	11	10	10	10	9

* Pump doesn't include.

* When using in condensation side water outlet is more than 55°C, please adjust the condensation inlet water temperature to 50°C or less.

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA

Heating capacity [Water (SW6-10: OFF)]:

Evaporation side water inlet/outlet 3°C difference

Condensation side water inlet/outlet 5°C difference

Capacity change mode: Capacity priority

MODEL			ERCV-M900YA						
Condensation side water outlet temperature (°C)	Evaporation side water inlet temperature (°C)		9	10	15	20	25	30	35
20	Heating capacity	kW	95.6	98.5	111.6	115.8	-	-	-
	Power consumption	kW	10.37	10.30	9.96	9.92	-	-	-
	Evaporation side water flow rate	m³/h	25.0	25.8	25.8	25.8	-	-	-
	Condensation side water flow rate	m³/h	16.4	16.9	19.2	19.9	-	-	-
	Evaporation side water pressure drop	kPa	23	24	24	24	-	-	-
	Condensation side water pressure drop	kPa	6	7	8	9	-	-	-
25	Heating capacity	kW	93.9	96.7	111.3	124.3	124.3	-	-
	Power consumption	kW	12.07	12.02	11.71	11.44	11.44	-	-
	Evaporation side water flow rate	m³/h	24.2	25.0	25.8	25.8	25.8	-	-
	Condensation side water flow rate	m³/h	16.1	16.6	19.1	21.4	21.4	-	-
	Evaporation side water pressure drop	kPa	22	23	24	24	24	-	-
	Condensation side water pressure drop	kPa	6	6	8	10	10	-	-
30	Heating capacity	kW	92.2	96.9	109.7	125.6	125.6	125.6	-
	Power consumption	kW	13.76	14.02	13.48	13.14	13.14	13.14	-
	Evaporation side water flow rate	m³/h	23.3	24.6	25.8	25.8	25.8	25.8	-
	Condensation side water flow rate	m³/h	15.9	16.7	18.9	21.6	21.6	21.6	-
	Evaporation side water pressure drop	kPa	20	22	24	24	24	24	-
	Condensation side water pressure drop	kPa	6	6	8	10	10	10	-
35	Heating capacity	kW	93.5	95.1	107.4	122.7	122.7	122.7	122.7
	Power consumption	kW	15.98	15.74	15.26	14.96	14.96	14.96	14.96
	Evaporation side water flow rate	m³/h	23.2	23.7	25.8	25.8	25.8	25.8	25.8
	Condensation side water flow rate	m³/h	16.1	16.3	18.5	21.1	21.1	21.1	21.1
	Evaporation side water pressure drop	kPa	20	21	24	24	24	24	24
	Condensation side water pressure drop	kPa	6	6	8	10	10	10	10
40	Heating capacity	kW	93.1	92.8	105.1	120.0	120.0	120.0	120.0
	Power consumption	kW	18.05	17.47	17.12	16.90	16.90	16.90	16.90
	Evaporation side water flow rate	m³/h	22.6	22.6	25.8	25.8	25.8	25.8	25.8
	Condensation side water flow rate	m³/h	16.0	16.0	18.1	20.6	20.6	20.6	20.6
	Evaporation side water pressure drop	kPa	19	19	24	24	24	24	24
	Condensation side water pressure drop	kPa	6	6	7	9	9	9	9
45	Heating capacity	kW	94.5	90.0	102.9	117.4	117.4	117.4	117.4
	Power consumption	kW	20.62	19.07	19.12	19.00	19.00	19.00	19.00
	Evaporation side water flow rate	m³/h	22.4	21.5	25.2	25.8	25.8	25.8	25.8
	Condensation side water flow rate	m³/h	16.3	15.5	17.7	20.2	20.2	20.2	20.2
	Evaporation side water pressure drop	kPa	19	17	23	24	24	24	24
	Condensation side water pressure drop	kPa	6	6	7	9	9	9	9
50	Heating capacity	kW	93.0	92.9	100.6	114.8	114.8	114.8	114.8
	Power consumption	kW	22.94	22.33	21.11	21.10	21.10	21.10	21.10
	Evaporation side water flow rate	m³/h	21.4	21.6	24.1	25.8	25.8	25.8	25.8
	Condensation side water flow rate	m³/h	16.0	16.0	17.3	19.7	19.7	19.7	19.7
	Evaporation side water pressure drop	kPa	17	18	22	24	24	24	24
	Condensation side water pressure drop	kPa	6	6	7	9	9	9	9
55	Heating capacity	kW	92.2	92.0	98.1	111.9	111.9	111.9	111.9
	Power consumption	kW	25.38	24.74	23.14	23.23	23.23	23.23	23.23
	Evaporation side water flow rate	m³/h	20.6	20.7	22.9	25.8	25.8	25.8	25.8
	Condensation side water flow rate	m³/h	15.8	15.8	16.9	19.2	19.2	19.2	19.2
	Evaporation side water pressure drop	kPa	16	16	20	24	24	24	24
	Condensation side water pressure drop	kPa	6	6	7	8	8	8	8

* Pump doesn't include.

* When using in condensation side water outlet is more than 55°C, please adjust the condensation inlet water temperature to 50°C or less.

* Hatching area shows evaporation side water inlet/outlet temperature difference over 3°C.

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA

Cooling capacity [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Condensation side water inlet/outlet 5°C difference

Evaporation side brine inlet/outlet 5°C difference

MODEL			ERCV-M900YA								
Evaporation side brine outlet temperature (°C)	Condensation side water inlet temperature (°C)		9	15	20	25	30	35	40	45	50
-10	Cooling capacity	kW	59.1	56.5	54.3	52.1	49.9	47.7	42.0	36.2	30.5
	Power consumption	kW	10.91	12.62	14.05	15.48	16.90	18.33	19.96	21.59	23.22
	Evaporation side brine flow rate	m³/h	11.5	11.0	10.6	10.1	9.7	9.3	8.2	7.7	7.7
	Condensation side water flow rate	m³/h	11.7	11.5	11.3	11.1	10.9	10.7	10.0	9.2	8.5
	Evaporation side brine pressure drop	kPa	7	7	6	6	5	5	4	3	3
	Condensation side water pressure drop	kPa	3	3	3	3	3	3	3	2	2
-5	Cooling capacity	kW	70.2	67.3	64.9	62.4	59.9	57.4	52.3	47.3	42.2
	Power consumption	kW	10.65	12.53	14.10	15.66	17.22	18.80	20.55	22.31	24.06
	Evaporation side brine flow rate	m³/h	13.6	13.0	12.5	12.1	11.6	11.1	10.1	9.1	8.2
	Condensation side water flow rate	m³/h	13.6	13.3	13.1	12.9	12.7	12.5	11.8	11.2	10.6
	Evaporation side brine pressure drop	kPa	10	9	9	8	7	7	6	5	4
	Condensation side water pressure drop	kPa	4	4	4	4	4	4	4	3	3
0	Cooling capacity	kW	83.3	80.0	77.2	74.4	71.6	68.7	64.4	60.0	55.7
	Power consumption	kW	10.35	12.37	14.06	15.75	17.43	19.14	21.02	22.90	24.77
	Evaporation side brine flow rate	m³/h	16.0	15.4	14.9	14.3	13.8	13.2	12.4	11.6	10.7
	Condensation side water flow rate	m³/h	15.8	15.5	15.2	15.0	14.7	14.5	14.0	13.5	13.0
	Evaporation side brine pressure drop	kPa	14	13	12	11	10	9	8	7	6
	Condensation side water pressure drop	kPa	6	6	5	5	5	5	5	4	4
4	Cooling capacity	kW	93.6	90.0	87.0	83.9	81.3	77.7	74.0	70.3	66.6
	Power consumption	kW	10.07	12.18	13.94	15.70	17.44	19.24	21.20	23.17	25.14
	Evaporation side brine flow rate	m³/h	18.0	17.3	16.7	16.1	15.6	14.9	14.2	13.5	12.8
	Condensation side water flow rate	m³/h	17.5	17.1	16.9	16.6	16.4	16.0	15.6	15.2	14.9
	Evaporation side brine pressure drop	kPa	17	16	15	14	13	12	11	10	9
	Condensation side water pressure drop	kPa	7	7	7	6	6	6	6	5	5
7	Cooling capacity	kW	102.8	99.3	96.2	92.9	90.0	86.1	82.1	78.1	74.1
	Power consumption	kW	9.93	12.09	13.89	15.70	17.47	19.33	21.37	23.41	25.45
	Evaporation side brine flow rate	m³/h	19.7	19.0	18.4	17.8	17.2	16.5	15.7	15.0	14.2
	Condensation side water flow rate	m³/h	19.0	18.7	18.4	18.1	17.9	17.4	17.0	16.6	16.2
	Evaporation side brine pressure drop	kPa	21	20	19	18	17	15	14	13	12
	Condensation side water pressure drop	kPa	8	8	8	7	7	7	7	6	6
10	Cooling capacity	kW	-	106.3	106.1	102.4	99.2	95.0	90.7	86.4	82.2
	Power consumption	kW	-	12.05	13.82	15.66	17.47	19.38	21.48	23.59	25.70
	Evaporation side brine flow rate	m³/h	-	20.3	20.3	19.6	19.0	18.2	17.3	16.5	15.7
	Condensation side water flow rate	m³/h	-	19.9	20.1	19.7	19.4	19.0	18.5	18.1	17.6
	Evaporation side brine pressure drop	kPa	-	21	21	19	18	17	15	14	13
	Condensation side water pressure drop	kPa	-	9	9	9	8	8	8	7	7
15	Cooling capacity	kW	-	-	120.5	119.6	115.9	111.0	106.3	101.5	96.7
	Power consumption	kW	-	-	13.71	15.52	17.35	19.33	21.56	23.78	26.00
	Evaporation side brine flow rate	m³/h	-	-	23.0	22.8	22.1	21.2	20.3	19.3	18.4
	Condensation side water flow rate	m³/h	-	-	22.6	22.7	22.3	21.7	21.2	20.7	20.2
	Evaporation side brine pressure drop	kPa	-	-	26	25	24	22	20	18	17
	Condensation side water pressure drop	kPa	-	-	11	11	11	10	10	10	9
20	Cooling capacity	kW	-	-	-	119.6	115.9	111.0	106.3	101.5	96.7
	Power consumption	kW	-	-	-	15.52	17.35	19.33	21.56	23.78	26.00
	Evaporation side brine flow rate	m³/h	-	-	-	22.7	22.0	21.1	20.2	19.3	18.4
	Condensation side water flow rate	m³/h	-	-	-	22.7	22.3	21.7	21.2	20.7	20.2
	Evaporation side brine pressure drop	kPa	-	-	-	24	23	21	19	18	16
	Condensation side water pressure drop	kPa	-	-	-	11	11	10	10	10	9
25	Cooling capacity	kW	-	-	-	-	115.9	111.0	106.3	101.5	96.7
	Power consumption	kW	-	-	-	-	17.35	19.33	21.56	23.78	26.00
	Evaporation side brine flow rate	m³/h	-	-	-	-	22.0	21.1	20.2	19.3	18.4
	Condensation side water flow rate	m³/h	-	-	-	-	22.3	21.7	21.2	20.7	20.2
	Evaporation side brine pressure drop	kPa	-	-	-	-	22	20	19	17	16
	Condensation side water pressure drop	kPa	-	-	-	-	11	10	10	10	9
30	Cooling capacity	kW	-	-	-	-	115.9	111.0	106.3	101.5	96.7
	Power consumption	kW	-	-	-	-	17.35	19.33	21.56	23.78	26.00
	Evaporation side brine flow rate	m³/h	-	-	-	-	22.0	21.1	20.2	19.3	18.4
	Condensation side water flow rate	m³/h	-	-	-	-	22.3	21.7	21.2	20.7	20.2
	Evaporation side brine pressure drop	kPa	-	-	-	-	21	20	18	17	15
	Condensation side water pressure drop	kPa	-	-	-	-	11	10	10	10	9

* Pump doesn't include.

* When using in condensation side water outlet is more than 55°C, please adjust the condensation inlet water temperature to 50°C or less.

* Hatching area shows evaporation side brine inlet/outlet temperature difference under 5°C.

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA

Heating capacity [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Evaporation side brine inlet/outlet 3°C difference

Condensation side water inlet/outlet 5°C difference

ERCV-M900YA, ERCV-M900YA×2

MODEL			ERCV-M900YA									
Condensation side water outlet temperature (°C)	Evaporation side brine inlet temperature (°C)		-7	-3	0	9	10	15	20	25	30	35
20	Heating capacity	kW	71.8	81.1	88.5	95.6	98.5	111.6	115.8	-	-	-
	Power consumption	kW	13.50	13.43	13.36	10.37	10.30	9.96	9.92	-	-	-
	Evaporation side brine flow rate	m³/h	18.9	21.7	23.9	27.9	28.7	28.7	28.7	-	-	-
	Condensation side water flow rate	m³/h	12.4	14.0	15.2	16.4	16.9	19.2	19.9	-	-	-
	Evaporation side brine pressure drop	kPa	20	26	34	39	43	40	39	-	-	-
	Condensation side water pressure drop	kPa	4	5	5	6	7	8	9	-	-	-
25	Heating capacity	kW	70.7	79.8	87.0	93.9	96.7	111.3	124.3	124.3	-	-
	Power consumption	kW	15.02	15.08	15.09	12.07	12.02	11.71	11.44	11.44	-	-
	Evaporation side brine flow rate	m³/h	18.2	20.9	23.1	26.9	27.8	28.7	28.7	28.7	-	-
	Condensation side water flow rate	m³/h	12.2	13.7	15.0	16.1	16.6	19.1	21.4	21.4	-	-
	Evaporation side brine pressure drop	kPa	18	24	32	37	41	40	39	37	-	-
	Condensation side water pressure drop	kPa	4	5	5	6	6	8	10	10	-	-
30	Heating capacity	kW	69.5	78.4	85.6	92.2	96.9	109.7	125.6	125.6	125.6	-
	Power consumption	kW	16.55	16.72	16.82	13.76	14.02	13.48	13.14	13.14	13.14	-
	Evaporation side brine flow rate	m³/h	17.4	20.1	22.2	26.0	27.4	28.7	28.7	28.7	28.7	-
	Condensation side water flow rate	m³/h	11.9	13.5	14.7	15.9	16.7	18.9	21.6	21.6	21.6	-
	Evaporation side brine pressure drop	kPa	17	22	29	34	39	40	39	37	36	-
	Condensation side water pressure drop	kPa	4	4	5	6	6	8	10	10	10	-
35	Heating capacity	kW	68.3	77.1	84.1	93.5	95.1	107.4	122.7	122.7	122.7	122.7
	Power consumption	kW	18.07	18.35	18.53	15.98	15.74	15.26	14.96	14.96	14.96	14.96
	Evaporation side brine flow rate	m³/h	16.7	19.3	21.3	25.8	26.4	28.7	28.7	28.7	28.7	28.7
	Condensation side water flow rate	m³/h	11.7	13.3	14.5	16.1	16.3	18.5	21.1	21.1	21.1	21.1
	Evaporation side brine pressure drop	kPa	16	20	27	34	37	40	39	37	36	35
	Condensation side water pressure drop	kPa	3	4	5	6	6	8	10	10	10	10
40	Heating capacity	kW	67.0	75.6	82.4	93.1	92.8	105.1	120.0	120.0	120.0	120.0
	Power consumption	kW	19.59	19.99	20.27	18.05	17.47	17.12	16.90	16.90	16.90	16.90
	Evaporation side brine flow rate	m³/h	15.9	18.4	20.4	25.2	25.2	28.7	28.7	28.7	28.7	28.7
	Condensation side water flow rate	m³/h	11.5	13.0	14.2	16.0	16.0	18.1	20.6	20.6	20.6	20.6
	Evaporation side brine pressure drop	kPa	14	19	25	32	34	40	39	37	36	35
	Condensation side water pressure drop	kPa	3	4	5	6	6	7	9	9	9	9
45	Heating capacity	kW	63.1	72.9	80.0	94.5	90.0	102.9	117.4	117.4	117.4	117.4
	Power consumption	kW	21.29	21.78	22.13	20.62	19.07	19.12	19.00	19.00	19.00	19.00
	Evaporation side brine flow rate	m³/h	14.2	17.1	19.1	25.0	23.9	27.9	28.7	28.7	28.7	28.7
	Condensation side water flow rate	m³/h	10.9	12.5	13.8	16.3	15.5	17.7	20.2	20.2	20.2	20.2
	Evaporation side brine pressure drop	kPa	11	16	22	32	31	38	39	37	36	35
	Condensation side water pressure drop	kPa	3	4	5	6	6	7	9	9	9	9
50	Heating capacity	kW	59.8	70.9	79.7	93.0	92.9	100.6	114.8	114.8	114.8	114.8
	Power consumption	kW	22.98	23.59	24.02	22.94	22.33	21.11	21.10	21.10	21.10	21.10
	Evaporation side brine flow rate	m³/h	12.0	15.1	17.6	23.9	24.0	26.7	28.7	28.7	28.7	28.7
	Condensation side water flow rate	m³/h	10.3	12.2	13.7	16.0	16.0	17.3	19.7	19.7	19.7	19.7
	Evaporation side brine pressure drop	kPa	8	13	19	29	31	35	39	37	36	35
	Condensation side water pressure drop	kPa	3	4	5	6	6	7	9	9	9	9
55	Heating capacity	kW	56.5	67.7	76.7	92.2	92.0	98.1	111.9	111.9	111.9	111.9
	Power consumption	kW	24.76	25.5	26.01	25.38	24.74	23.14	23.23	23.23	23.23	23.23
	Evaporation side brine flow rate	m³/h	9.8	12.8	15.3	23.0	23.1	25.4	28.7	28.7	28.7	28.7
	Condensation side water flow rate	m³/h	9.7	11.6	13.2	15.8	15.8	16.9	19.2	19.2	19.2	19.2
	Evaporation side brine pressure drop	kPa	5	9	15	27	29	32	39	37	36	35
	Condensation side water pressure drop	kPa	3	3	4	6	6	7	8	8	8	8

* Pump doesn't include.

* When using in condensation side water outlet is more than 55°C, please adjust the condensation inlet water temperature to 50°C or less.

* Hatching area shows evaporation side brine inlet/outlet temperature difference over 3°C.

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

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2. Product Data

ERCV-M900YA × 2

Cooling capacity [Water (SW6-10: OFF)]:

Condensation side water inlet/outlet 5°C difference

Evaporation side water inlet/outlet 5°C difference

Capacity change mode: Capacity priority

MODEL			ERCV-M900YA × 2								
Evaporation side water outlet temperature (°C)	Condensation side water inlet temperature (°C)		9	15	20	25	30	35	40	45	50
4	Cooling capacity	kW	187.6	180.3	174.2	168.0	161.8	155.4	147.8	140.2	132.6
	Power consumption	kW	18.77	22.85	26.26	29.66	33.04	36.52	40.35	44.18	48.01
	Evaporation side water flow rate	m³/h	32.3	31.0	30.0	28.9	27.8	26.7	25.4	24.1	22.8
	Condensation side water flow rate	m³/h	35.1	34.5	33.9	33.3	32.7	32.1	31.3	30.5	29.8
	Evaporation side water pressure drop	kPa	92	85	81	75	70	65	60	54	49
	Condensation side water pressure drop	kPa	63	61	59	57	56	54	51	49	47
7	Cooling capacity	kW	198.7	196.3	192.5	185.7	180.0	171.9	163.9	155.8	147.7
	Power consumption	kW	18.66	22.72	26.14	29.63	33.07	36.65	40.62	44.59	48.56
	Evaporation side water flow rate	m³/h	34.2	33.8	33.1	31.9	31.0	29.6	28.2	26.8	25.4
	Condensation side water flow rate	m³/h	37.0	37.2	37.0	36.4	35.9	35.0	34.1	33.3	32.4
	Evaporation side water pressure drop	kPa	102	100	96	90	85	79	72	66	60
	Condensation side water pressure drop	kPa	70	71	70	68	66	63	60	57	55
10	Cooling capacity	kW	-	209.8	211.9	204.5	197.1	189.5	180.8	172.2	163.6
	Power consumption	kW	-	22.61	25.98	29.53	33.05	36.70	40.79	44.88	48.98
	Evaporation side water flow rate	m³/h	-	36.1	36.5	35.2	33.9	32.6	31.1	29.6	28.1
	Condensation side water flow rate	m³/h	-	39.5	40.4	39.6	38.8	38.0	37.1	36.2	35.3
	Evaporation side water pressure drop	kPa	-	113	115	108	101	94	86	79	72
	Condensation side water pressure drop	kPa	-	79	82	79	76	74	70	67	64
15	Cooling capacity	kW	-	-	234.5	237.4	229.9	221.1	211.5	201.9	192.2
	Power consumption	kW	-	-	25.85	29.24	32.79	36.55	40.86	45.17	49.48
	Evaporation side water flow rate	m³/h	-	-	40.3	40.8	39.5	38.0	36.4	34.7	33.1
	Condensation side water flow rate	m³/h	-	-	44.2	45.2	44.4	43.4	42.4	41.3	40.3
	Evaporation side water pressure drop	kPa	-	-	138	141	133	124	115	105	96
	Condensation side water pressure drop	kPa	-	-	98	102	99	94	90	86	82
20	Cooling capacity	kW	-	-	-	237.4	229.9	221.1	211.5	201.9	192.2
	Power consumption	kW	-	-	-	29.24	32.79	36.55	40.86	45.17	49.48
	Evaporation side water flow rate	m³/h	-	-	-	40.8	39.5	38.0	36.4	34.7	33.1
	Condensation side water flow rate	m³/h	-	-	-	45.2	44.4	43.4	42.4	41.3	40.3
	Evaporation side water pressure drop	kPa	-	-	-	141	133	124	115	105	96
	Condensation side water pressure drop	kPa	-	-	-	102	99	94	90	86	82
25	Cooling capacity	kW	-	-	-	-	229.9	221.1	211.5	201.9	192.2
	Power consumption	kW	-	-	-	-	32.79	36.55	40.86	45.17	49.48
	Evaporation side water flow rate	m³/h	-	-	-	-	39.5	38.0	36.4	34.7	33.1
	Condensation side water flow rate	m³/h	-	-	-	-	44.4	43.4	42.4	41.3	40.3
	Evaporation side water pressure drop	kPa	-	-	-	-	133	124	115	105	96
	Condensation side water pressure drop	kPa	-	-	-	-	99	94	90	86	82
30	Cooling capacity	kW	-	-	-	-	229.9	221.1	211.5	201.9	192.2
	Power consumption	kW	-	-	-	-	32.79	36.55	40.86	45.17	49.48
	Evaporation side water flow rate	m³/h	-	-	-	-	39.5	38.0	36.4	34.7	33.1
	Condensation side water flow rate	m³/h	-	-	-	-	44.4	43.4	42.4	41.3	40.3
	Evaporation side water pressure drop	kPa	-	-	-	-	133	124	115	105	96
	Condensation side water pressure drop	kPa	-	-	-	-	99	94	90	86	82

* Pump doesn't include.

* When using in condensation side water outlet is more than 55°C, please adjust the condensation inlet water temperature to 50°C or less.

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA × 2

Heating capacity [Water (SW6-10: OFF)]:

Evaporation side water inlet/outlet 3°C difference

Condensation side water inlet/outlet 5°C difference

Capacity change mode: Capacity priority

MODEL			ERCV-M900YA × 2						
Condensation side water outlet temperature (°C)	Evaporation side water inlet temperature (°C)		9	10	15	20	25	30	35
20	Heating capacity	kW	191.1	196.8	221.7	225.1	-	-	-
	Power consumption	kW	19.95	19.80	19.13	19.16	-	-	-
	Evaporation side water flow rate	m³/h	49.9	50.0	50.0	50.0	-	-	-
	Condensation side water flow rate	m³/h	32.9	33.9	38.1	38.7	-	-	-
	Evaporation side water pressure drop	kPa	206	206	206	206	-	-	-
	Condensation side water pressure drop	kPa	56	59	74	76	-	-	-
25	Heating capacity	kW	187.7	193.2	221.0	242.5	242.5	-	-
	Power consumption	kW	23.32	23.21	22.60	22.18	22.18	-	-
	Evaporation side water flow rate	m³/h	48.1	49.7	50.0	50.0	50.0	-	-
	Condensation side water flow rate	m³/h	32.3	33.2	38.0	41.7	41.7	-	-
	Evaporation side water pressure drop	kPa	192	204	206	206	206	-	-
	Condensation side water pressure drop	kPa	54	57	74	88	88	-	-
30	Heating capacity	kW	184.2	189.6	218.5	249.8	249.8	249.8	-
	Power consumption	kW	26.69	26.62	26.10	25.40	25.40	25.40	-
	Evaporation side water flow rate	m³/h	46.3	47.9	50.0	50.0	50.0	50.0	-
	Condensation side water flow rate	m³/h	31.7	32.6	37.6	43.0	43.0	43.0	-
	Evaporation side water pressure drop	kPa	179	191	206	206	206	206	-
	Condensation side water pressure drop	kPa	52	55	72	93	93	93	-
35	Heating capacity	kW	186.5	185.8	213.8	244.0	244.0	244.0	244.0
	Power consumption	kW	31.11	30.01	29.65	29.03	29.03	29.03	29.03
	Evaporation side water flow rate	m³/h	46.0	46.1	50.0	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	32.1	32.0	36.8	42.0	42.0	42.0	42.0
	Evaporation side water pressure drop	kPa	177	177	206	206	206	206	206
	Condensation side water pressure drop	kPa	54	53	69	89	89	89	89
40	Heating capacity	kW	185.6	185.0	209.1	238.3	238.3	238.3	238.3
	Power consumption	kW	35.20	34.05	33.31	32.83	32.83	32.83	32.83
	Evaporation side water flow rate	m³/h	44.8	44.9	50.0	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	31.9	31.8	36.0	41.0	41.0	41.0	41.0
	Evaporation side water pressure drop	kPa	168	169	206	206	206	206	206
	Condensation side water pressure drop	kPa	53	53	66	85	85	85	85
45	Heating capacity	kW	189.0	180.0	204.5	232.9	232.9	232.9	232.9
	Power consumption	kW	40.28	37.22	37.27	36.99	36.99	36.99	36.99
	Evaporation side water flow rate	m³/h	44.5	42.7	49.7	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	32.5	31.0	35.2	40.1	40.1	40.1	40.1
	Evaporation side water pressure drop	kPa	166	154	204	206	206	206	206
	Condensation side water pressure drop	kPa	55	50	64	81	81	81	81
50	Heating capacity	kW	185.2	185.0	199.7	227.4	227.4	227.4	227.4
	Power consumption	kW	44.92	43.70	41.25	41.18	41.18	41.18	41.18
	Evaporation side water flow rate	m³/h	42.4	42.6	47.4	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	31.9	31.8	34.3	39.1	39.1	39.1	39.1
	Evaporation side water pressure drop	kPa	152	153	187	206	206	206	206
	Condensation side water pressure drop	kPa	53	53	61	78	78	78	78
55	Heating capacity	kW	183.3	183.9	194.6	221.5	221.5	221.5	221.5
	Power consumption	kW	49.76	47.65	45.31	45.44	45.44	45.44	45.44
	Evaporation side water flow rate	m³/h	40.6	41.4	45.1	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	31.5	31.6	33.5	38.1	38.1	38.1	38.1
	Evaporation side water pressure drop	kPa	140	145	170	206	206	206	206
	Condensation side water pressure drop	kPa	52	52	58	74	74	74	74

* Pump doesn't include.

* When using in condensation side water outlet is more than 55°C, please adjust the condensation inlet water temperature to 50°C or less.

* Hatching area shows evaporation side water inlet/outlet temperature difference over 3°C.

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

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2. Product Data

ERCV-M900YA × 2

Cooling capacity [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Condensation side water inlet/outlet 5°C difference

Evaporation side brine inlet/outlet 5°C difference

MODEL			ERCV-M900YA × 2								
Evaporation side brine outlet temperature (°C)	Condensation side water inlet temperature (°C)		9	15	20	25	30	35	40	45	50
-10	Cooling capacity	kW	119.8	114.5	110.1	105.7	101.3	96.7	85.3	73.9	62.5
	Power consumption	kW	20.66	24.02	26.83	29.64	32.44	35.28	38.46	41.64	44.82
	Evaporation side brine flow rate	m³/h	23.3	22.3	21.4	20.5	19.7	18.8	16.6	15.4	15.4
	Condensation side water flow rate	m³/h	23.8	23.3	23.0	22.6	22.2	21.8	20.4	18.9	17.5
	Evaporation side brine pressure drop	kPa	87	81	75	70	65	60	49	43	43
	Condensation side water pressure drop	kPa	31	30	29	28	27	26	23	20	18
-5	Cooling capacity	kW	142.0	136.1	131.1	126.0	121.1	115.8	105.7	95.6	85.4
	Power consumption	kW	20.12	23.80	26.86	29.93	32.99	36.10	39.52	42.94	46.37
	Evaporation side brine flow rate	m³/h	27.5	26.3	25.3	24.4	23.4	22.4	20.4	18.5	16.5
	Condensation side water flow rate	m³/h	27.6	27.1	26.6	26.2	25.8	25.3	24.1	22.9	21.6
	Evaporation side brine pressure drop	kPa	113	104	97	91	85	78	67	56	46
	Condensation side water pressure drop	kPa	41	39	38	37	36	35	32	29	26
0	Cooling capacity	kW	167.8	161.1	155.5	149.8	144.2	138.3	129.4	120.6	111.7
	Power consumption	kW	19.48	23.44	26.74	30.05	33.33	36.69	40.36	44.03	47.69
	Evaporation side brine flow rate	m³/h	32.3	31.0	29.9	28.8	27.8	26.6	24.9	23.2	21.5
	Condensation side water flow rate	m³/h	31.9	31.3	30.8	30.3	29.8	29.3	28.3	27.3	26.4
	Evaporation side brine pressure drop	kPa	145	135	126	118	111	102	91	80	70
	Condensation side water pressure drop	kPa	53	51	50	48	47	45	42	40	37
4	Cooling capacity	kW	187.6	180.3	174.2	168.0	161.8	155.4	147.8	140.2	132.6
	Power consumption	kW	18.77	22.85	26.26	29.66	33.04	36.52	40.35	44.18	48.01
	Evaporation side brine flow rate	m³/h	36.0	34.6	33.4	32.2	31.1	29.8	28.4	26.9	25.5
	Condensation side water flow rate	m³/h	35.1	34.5	33.9	33.3	32.7	32.1	31.3	30.5	29.8
	Evaporation side brine pressure drop	kPa	171	159	150	140	131	122	111	101	92
	Condensation side water pressure drop	kPa	63	61	59	57	56	54	51	49	47
7	Cooling capacity	kW	198.7	196.3	192.5	185.7	180.0	171.9	163.9	155.8	147.7
	Power consumption	kW	18.66	22.72	26.14	29.63	33.07	36.65	40.62	44.59	48.56
	Evaporation side brine flow rate	m³/h	38.1	37.6	36.9	35.6	34.5	32.9	31.4	29.8	28.3
	Condensation side water flow rate	m³/h	37.0	37.2	37.0	36.4	35.9	35.0	34.1	33.3	32.4
	Evaporation side brine pressure drop	kPa	179	175	169	158	149	137	126	115	104
	Condensation side water pressure drop	kPa	70	71	70	68	66	63	60	57	55
10	Cooling capacity	kW	-	209.8	211.9	204.5	197.1	189.5	180.8	172.2	163.6
	Power consumption	kW	-	22.61	25.98	29.53	33.05	36.70	40.79	44.88	48.98
	Evaporation side brine flow rate	m³/h	-	40.1	40.5	39.1	37.7	36.2	34.6	32.9	31.3
	Condensation side water flow rate	m³/h	-	39.5	40.4	39.6	38.8	38.0	37.1	36.2	35.3
	Evaporation side brine pressure drop	kPa	-	199	203	190	178	165	152	138	126
	Condensation side water pressure drop	kPa	-	79	82	79	76	74	70	67	64
15	Cooling capacity	kW	-	-	234.5	237.4	229.9	221.1	211.5	201.9	192.2
	Power consumption	kW	-	-	25.85	29.24	32.79	36.55	40.86	45.17	49.48
	Evaporation side brine flow rate	m³/h	-	-	44.7	45.3	43.8	42.2	40.3	38.5	36.6
	Condensation side water flow rate	m³/h	-	-	44.2	45.2	44.4	43.4	42.4	41.3	40.3
	Evaporation side brine pressure drop	kPa	-	-	233	239	224	209	192	177	161
	Condensation side water pressure drop	kPa	-	-	98	102	99	94	90	86	82
20	Cooling capacity	kW	-	-	-	237.4	229.9	221.1	211.5	201.9	192.2
	Power consumption	kW	-	-	-	29.24	32.79	36.55	40.86	45.17	49.48
	Evaporation side brine flow rate	m³/h	-	-	-	45.2	43.7	42.1	40.2	38.4	36.6
	Condensation side water flow rate	m³/h	-	-	-	45.2	44.4	43.4	42.4	41.3	40.3
	Evaporation side brine pressure drop	kPa	-	-	-	227	214	199	183	168	154
	Condensation side water pressure drop	kPa	-	-	-	102	99	94	90	86	82
25	Cooling capacity	kW	-	-	-	-	229.9	221.1	211.5	201.9	192.2
	Power consumption	kW	-	-	-	-	32.79	36.55	40.86	45.17	49.48
	Evaporation side brine flow rate	m³/h	-	-	-	-	43.7	42.0	40.2	38.4	36.5
	Condensation side water flow rate	m³/h	-	-	-	-	44.4	43.4	42.4	41.3	40.3
	Evaporation side brine pressure drop	kPa	-	-	-	-	204	189	174	160	146
	Condensation side water pressure drop	kPa	-	-	-	-	99	94	90	86	82
30	Cooling capacity	kW	-	-	-	-	229.9	221.1	211.5	201.9	192.2
	Power consumption	kW	-	-	-	-	32.79	36.55	40.86	45.17	49.48
	Evaporation side brine flow rate	m³/h	-	-	-	-	43.6	42.0	40.2	38.3	36.5
	Condensation side water flow rate	m³/h	-	-	-	-	44.4	43.4	42.4	41.3	40.3
	Evaporation side brine pressure drop	kPa	-	-	-	-	193	180	166	152	139
	Condensation side water pressure drop	kPa	-	-	-	-	99	94	90	86	82

* Pump doesn't include.

* When using in condensation side water outlet is more than 55°C, please adjust the condensation inlet water temperature to 50°C or less.

* Hatching area shows evaporation side brine inlet/outlet temperature difference under 5°C.

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA × 2

Heating capacity [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Evaporation side brine inlet/outlet 3°C difference

Condensation side water inlet/outlet 5°C difference

ERCV-M900YA, ERCV-M900YA×2

MODEL			ERCV-M900YA × 2									
Condensation side water outlet temperature (°C)	Evaporation side brine inlet temperature (°C)		-7	-3	0	9	10	15	20	25	30	35
20	Heating capacity	kW	144.6	162.7	177.0	191.1	196.8	221.7	225.1	-	-	-
	Power consumption	kW	26.24	26.06	25.89	19.95	19.80	19.13	19.16	-	-	-
	Evaporation side brine flow rate	m³/h	38.3	43.8	48.1	50.0	50.0	50.0	50.0	-	-	-
	Condensation side water flow rate	m³/h	24.9	28.0	30.4	32.9	33.9	38.1	38.7	-	-	-
	Evaporation side brine pressure drop	kPa	214	266	304	310	297	295	282	-	-	-
	Condensation side water pressure drop	kPa	34	42	48	56	59	74	76	-	-	-
25	Heating capacity	kW	142.2	160.0	174.0	187.7	193.2	221.0	242.5	242.5	-	-
	Power consumption	kW	29.30	29.34	29.34	23.32	23.21	22.60	22.18	22.18	-	-
	Evaporation side brine flow rate	m³/h	36.8	42.1	46.3	50.0	50.0	50.0	50.0	50.0	-	-
	Condensation side water flow rate	m³/h	24.5	27.5	29.9	32.3	33.2	38.0	41.7	41.7	-	-
	Evaporation side brine pressure drop	kPa	199	247	283	310	297	295	282	269	-	-
	Condensation side water pressure drop	kPa	33	40	47	54	57	74	88	88	-	-
30	Heating capacity	kW	139.8	157.2	171.0	184.2	189.6	218.5	249.8	249.8	249.8	-
	Power consumption	kW	32.35	32.62	32.78	26.69	26.62	26.10	25.40	25.40	25.40	-
	Evaporation side brine flow rate	m³/h	35.2	40.4	44.5	50.0	50.0	50.0	50.0	50.0	50.0	-
	Condensation side water flow rate	m³/h	24.0	27.0	29.4	31.7	32.6	37.6	43.0	43.0	43.0	-
	Evaporation side brine pressure drop	kPa	183	229	263	310	297	295	282	269	257	-
	Condensation side water pressure drop	kPa	31	39	46	52	55	72	93	93	93	-
35	Heating capacity	kW	137.4	154.5	168.0	186.5	185.8	213.8	244.0	244.0	244.0	244.0
	Power consumption	kW	35.39	35.88	36.20	31.11	30.01	29.65	29.03	29.03	29.03	29.03
	Evaporation side brine flow rate	m³/h	33.7	38.7	42.7	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	23.6	26.6	28.9	32.1	32.0	36.8	42.0	42.0	42.0	42.0
	Evaporation side brine pressure drop	kPa	169	212	244	310	297	295	282	269	257	244
	Condensation side water pressure drop	kPa	30	38	44	54	53	69	89	89	89	89
40	Heating capacity	kW	134.7	151.4	164.7	185.6	185.0	209.1	238.3	238.3	238.3	238.3
	Power consumption	kW	38.48	39.19	39.68	35.20	34.05	33.31	32.83	32.83	32.83	32.83
	Evaporation side brine flow rate	m³/h	32.1	36.9	40.8	49.9	50.0	50.0	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	23.2	26.0	28.3	31.9	31.8	36.0	41.0	41.0	41.0	41.0
	Evaporation side brine pressure drop	kPa	155	194	224	309	297	295	282	269	257	244
	Condensation side water pressure drop	kPa	30	36	42	53	53	66	85	85	85	85
45	Heating capacity	kW	126.8	145.9	160.0	189.0	180.0	204.5	232.9	232.9	232.9	232.9
	Power consumption	kW	41.82	42.74	43.39	40.28	37.22	37.27	36.99	36.99	36.99	36.99
	Evaporation side brine flow rate	m³/h	28.7	34.3	38.4	49.6	47.6	50.0	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	21.8	25.1	27.5	32.5	31.0	35.2	40.1	40.1	40.1	40.1
	Evaporation side brine pressure drop	kPa	126	170	200	306	271	295	282	269	257	244
	Condensation side water pressure drop	kPa	26	34	40	55	50	64	81	81	81	81
50	Heating capacity	kW	120.8	141.9	158.7	185.2	185.0	199.7	227.4	227.4	227.4	227.4
	Power consumption	kW	45.21	46.34	47.14	44.92	43.70	41.25	41.18	41.18	41.18	41.18
	Evaporation side brine flow rate	m³/h	24.4	30.3	35.0	47.2	47.4	50.0	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	20.8	24.4	27.3	31.9	31.8	34.3	39.1	39.1	39.1	39.1
	Evaporation side brine pressure drop	kPa	95	135	169	279	269	295	282	269	257	244
	Condensation side water pressure drop	kPa	24	32	40	53	53	61	78	78	78	78
55	Heating capacity	kW	114.7	136.0	152.8	183.3	183.9	194.6	221.5	221.5	221.5	221.5
	Power consumption	kW	48.79	50.12	51.08	49.76	47.65	45.31	45.44	45.44	45.44	45.44
	Evaporation side brine flow rate	m³/h	20.2	25.9	30.4	45.3	46.1	50.0	50.0	50.0	50.0	50.0
	Condensation side water flow rate	m³/h	19.7	23.4	26.3	31.5	31.6	33.5	38.1	38.1	38.1	38.1
	Evaporation side brine pressure drop	kPa	68	102	131	258	255	295	282	269	257	244
	Condensation side water pressure drop	kPa	22	30	37	52	52	58	74	74	74	74

* Pump doesn't include.

* When using in condensation side water outlet is more than 55°C, please adjust the condensation inlet water temperature to 50°C or less.

* Hatching area shows evaporation side brine inlet/outlet temperature difference over 3°C.

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

2-1-2. Capacity table

ERCV-M900YA

EER for cooling [Water (SW6-10: OFF)]

Evaporation side water flow rate 15.5 m³/h, Condensation side water flow rate 17.9 m³/h

Cooling capacity	Condensation side water inlet temp. (°C)	Evaporation side water outlet temp. (°C)						
		4	7	10	15	20	25	30
90kW (100%)	9	9.53	11.19	-	-	-	-	-
	15	-	8.56	9.74	-	-	-	-
	20	-	7.08	8.16	10.60	-	-	-
	25	-	5.96	6.76	8.61	8.61	-	-
	30	-	5.15	5.77	7.15	7.15	7.15	7.15
	35	-	-	4.93	5.96	5.96	5.96	5.96
	40	-	-	4.22	5.02	5.02	5.02	5.02
	45	-	-	-	4.30	4.30	4.30	4.30
67.5kW (75%)	50	-	-	-	3.73	3.73	3.73	3.73
	9	11.38	14.42	-	-	-	-	-
	15	8.30	10.06	12.05	-	-	-	-
	20	6.72	7.89	9.27	12.57	-	-	-
	25	5.59	6.43	7.44	9.60	9.60	-	-
	30	4.78	5.43	6.19	7.75	7.75	7.75	7.75
	35	4.10	4.59	5.16	6.32	6.32	6.32	6.32
	40	3.51	3.90	4.34	5.24	5.24	5.24	5.24
45kW (50%)	45	3.04	3.35	3.71	4.42	4.42	4.42	4.42
	50	-	2.91	3.21	3.79	3.79	3.79	3.79
	9	14.61	20.09	-	-	-	-	-
	15	9.70	12.03	14.95	-	-	-	-
	20	7.48	8.91	10.74	15.36	-	-	-
	25	6.02	6.99	8.18	11.08	11.08	-	-
	30	5.04	5.75	6.61	8.57	8.57	8.57	8.57
	35	4.23	4.77	5.39	6.73	6.73	6.73	6.73
22.5kW (25%)	40	3.55	3.96	4.42	5.39	5.39	5.39	5.39
	45	3.03	3.35	3.71	4.43	4.43	4.43	4.43
	50	2.61	2.88	3.17	3.73	3.73	3.73	3.73
	9	14.71	20.45	-	-	-	-	-
	15	9.74	12.16	15.10	-	-	-	-
	20	7.50	8.96	10.82	15.52	-	-	-
	25	7.43	7.01	8.21	11.14	11.14	-	-
	30	5.31	5.78	6.64	8.65	8.65	8.65	8.65
	35	4.37	4.79	5.40	6.76	6.76	6.76	6.76
	40	3.49	3.81	4.43	5.40	5.40	5.40	5.40
	45	2.88	3.15	3.41	4.45	4.45	4.45	4.45
	50	2.42	2.65	2.90	3.74	3.74	3.74	3.74

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

ERCV-M900YA

COP for heating [Water (SW6-10: OFF)]

Condensation side water flow rate 15.5 m³/h, Evaporation side water flow rate 21.5 m³/h

Heating capacity	Evaporation side water inlet temp. (°C)	Condensation side water outlet temp. (°C)							
		20	25	30	35	40	45	50	55
90kW (100%)	9	9.35	7.83	6.71	5.86	5.16	4.58	4.05	3.62
	10	9.77	8.14	6.98	6.06	5.31	4.72	4.16	3.71
	15	12.30	10.06	8.40	7.16	6.19	5.38	4.74	4.21
	20	14.73	12.82	10.48	8.66	7.31	6.24	5.42	4.76
	25	-	12.82	10.48	8.66	7.31	6.24	5.42	4.76
	30	-	-	10.48	8.66	7.31	6.24	5.42	4.76
	35	-	-	-	8.66	7.31	6.24	5.42	4.76
77.5kW (75%)	9	10.21	8.28	6.94	5.97	5.19	4.57	3.98	3.54
	10	10.78	8.66	7.27	6.21	5.35	4.66	4.08	3.62
	15	14.80	11.25	9.01	7.46	6.31	5.37	4.66	4.10
	20	22.13	14.93	11.31	9.07	7.49	6.26	5.36	4.65
	25	-	14.93	11.31	9.07	7.49	6.26	5.36	4.65
	30	-	-	11.31	9.07	7.49	6.26	5.36	4.65
	35	-	-	-	9.07	7.49	6.26	5.36	4.65
45kW (50%)	9	11.17	8.72	7.12	6.00	5.13	4.51	3.80	3.35
	10	11.75	9.11	7.41	6.22	5.29	4.64	3.90	3.42
	15	16.01	11.69	9.11	7.43	6.19	5.19	4.46	3.87
	20	24.06	15.68	11.54	9.04	7.33	6.03	5.11	4.37
	25	-	15.68	11.54	9.04	7.33	6.03	5.11	4.37
	30	-	-	11.54	9.04	7.33	6.03	5.11	4.37
	35	-	-	-	9.04	7.33	6.03	5.11	4.37
22.5kW (25%)	9	11.03	8.62	7.05	5.94	5.07	4.49	3.75	3.32
	10	11.54	8.97	7.35	6.16	5.22	4.62	3.85	3.38
	15	15.63	11.42	8.96	7.31	6.08	5.11	4.40	3.81
	20	22.96	15.20	11.25	8.82	7.17	5.92	5.03	4.29
	25	-	15.20	11.25	8.82	7.17	5.92	5.03	4.29
	30	-	-	11.25	8.82	7.17	5.92	5.03	4.29
	35	-	-	-	8.82	7.17	5.92	5.03	4.29

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

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2. Product Data

ERCV-M900YA

EER for cooling [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Evaporation side brine flow rate 17.2 m³/h, Condensation side water flow rate 17.9 m³/h

Cooling capacity	Condensation side water inlet temp. (°C)	Evaporation side brine outlet temp. (°C)									
		-10	-5	0	4	7	10	15	20	25	30
90kW (100%)	9	-	-	-	9.53	11.19	-	-	-	-	-
	15	-	-	-	-	8.56	9.74	-	-	-	-
	20	-	-	-	-	7.08	8.16	10.60	-	-	-
	25	-	-	-	-	5.96	6.76	8.61	8.61	-	-
	30	-	-	-	-	5.15	5.77	7.14	7.14	7.14	7.14
	35	-	-	-	-	-	4.93	5.96	5.96	5.96	5.96
	40	-	-	-	-	-	4.22	5.02	5.02	5.02	5.02
	45	-	-	-	-	-	-	4.30	4.30	4.30	4.30
	50	-	-	-	-	-	-	3.73	3.73	3.73	3.73
67.5kW (75%)	9	-	6.68	8.64	11.38	14.42	-	-	-	-	-
	15	-	-	6.68	8.30	10.06	12.05	-	-	-	-
	20	-	-	5.56	6.72	7.89	9.27	12.57	-	-	-
	25	-	-	4.73	5.59	6.43	7.43	9.60	9.60	-	-
	30	-	-	4.09	4.79	5.43	6.19	7.75	7.75	7.74	7.74
	35	-	-	3.57	4.10	4.59	5.16	6.32	6.32	6.32	6.32
	40	-	-	-	3.51	3.90	4.34	5.23	5.23	5.23	5.23
	45	-	-	-	3.04	3.35	3.71	4.42	4.42	4.42	4.42
	50	-	-	-	-	2.91	3.21	3.79	3.79	3.79	3.79
45kW (50%)	9	5.98	7.60	10.25	14.61	20.09	-	-	-	-	-
	15	4.70	5.80	7.39	9.70	12.03	14.95	-	-	-	-
	20	3.96	4.79	5.93	7.48	8.91	10.74	15.36	-	-	-
	25	3.39	4.05	4.91	6.02	6.99	8.18	11.06	11.06	-	-
	30	2.94	3.47	4.15	5.04	5.75	6.61	8.57	8.57	8.57	8.57
	35	2.59	3.03	3.57	4.23	4.77	5.39	6.73	6.73	6.73	6.73
	40	-	2.51	3.01	3.55	3.96	4.42	5.39	5.39	5.39	5.39
	45	-	2.10	2.57	3.03	3.35	3.71	4.43	4.43	4.43	4.43
	50	-	-	2.20	2.61	2.88	3.17	3.73	3.73	3.73	3.73
22.5kW (25%)	9	8.62	10.56	14.61	14.71	20.45	-	-	-	-	-
	15	5.94	6.94	8.86	9.74	12.16	15.10	-	-	-	-
	20	4.60	5.29	6.56	7.50	8.96	10.82	15.52	-	-	-
	25	3.66	4.24	5.14	7.43	7.01	8.21	11.14	11.14	-	-
	30	3.00	3.48	4.17	5.31	5.78	6.64	8.65	8.65	8.65	8.65
	35	2.51	2.95	3.49	4.37	4.79	5.40	6.74	6.74	6.74	6.74
	40	1.98	2.34	2.83	3.49	3.81	4.43	5.40	5.40	5.40	5.40
	45	1.59	1.91	2.34	2.88	3.15	3.41	4.45	4.45	4.45	4.45
	50	1.27	1.59	1.97	2.42	2.65	2.90	3.74	3.74	3.74	3.74

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2. Product Data

ERCV-M900YA

COP for heating [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Condensation side water flow rate 13.8 m³/h, Evaporation side brine flow rate 19.1 m³/h

Heating capacity	Evaporation side brine inlet temp. (°C)	Condensation side water outlet temp. (°C)							
		20	25	30	35	40	45	50	55
80kW (100%)	-7	-	-	-	-	-	-	-	-
	-5	-	-	-	-	-	-	-	-
	0	6.54	5.69	5.03	4.50	4.04	3.62	-	-
	9	9.58	7.95	6.77	5.88	5.16	4.57	4.02	3.59
	10	10.05	8.29	7.07	6.11	5.32	4.70	4.12	3.68
	15	12.99	10.39	8.56	7.23	6.21	5.37	4.71	4.17
	20	17.09	13.77	10.83	8.82	7.37	6.24	5.39	4.72
	25	-	13.77	10.84	8.82	7.37	6.24	5.39	4.72
	30	-	-	10.84	8.82	7.37	6.24	5.39	4.72
60kW (75%)	35	-	-	-	8.82	7.37	6.24	5.39	4.72
	-7	5.27	4.62	4.10	3.68	3.32	2.89	-	-
	-5	5.62	4.89	4.32	3.86	3.46	3.06	2.72	2.41
	0	6.69	5.71	4.96	4.38	3.90	3.44	3.15	2.80
	9	10.58	8.46	7.02	5.99	5.18	4.54	3.93	3.49
	10	11.21	8.88	7.33	6.21	5.34	4.65	4.03	3.57
	15	14.89	11.26	8.97	7.43	6.28	5.33	4.60	4.03
	20	22.22	15.04	11.34	9.04	7.43	6.19	5.28	4.58
	25	-	15.04	11.34	9.04	7.43	6.19	5.28	4.58
40kW (50%)	30	-	-	11.34	9.04	7.43	6.19	5.28	4.58
	35	-	-	-	9.04	7.43	6.19	5.28	4.58
	-7	5.52	4.70	4.07	3.58	3.18	2.73	2.36	2.05
	-5	5.85	4.96	4.27	3.76	3.32	2.89	2.52	2.19
	0	6.92	5.76	4.90	4.26	3.74	3.25	2.92	2.56
	9	11.20	8.71	7.07	5.94	5.07	4.46	3.73	3.28
	10	11.83	9.09	7.38	6.15	5.22	4.58	3.83	3.35
	15	15.81	11.53	8.99	7.33	6.11	5.11	4.38	3.79
	20	23.39	15.33	11.30	8.85	7.18	5.93	5.02	4.30
20kW (25%)	25	-	15.33	11.30	8.85	7.18	5.93	5.02	4.30
	30	-	-	11.30	8.85	7.18	5.93	5.02	4.30
	35	-	-	-	8.85	7.18	5.93	5.02	4.30
	-7	5.62	4.57	3.85	3.30	2.87	2.40	2.03	1.72
	-5	5.78	4.72	4.06	3.46	2.99	2.57	2.16	1.84
	0	5.38	4.44	2.95	3.89	3.40	2.85	2.55	2.14
	9	11.05	8.58	6.99	5.87	5.00	4.44	3.68	3.25
	10	11.63	8.97	7.30	6.10	5.14	4.57	3.77	3.31
	15	15.38	11.24	8.81	7.19	5.99	5.03	4.32	3.72
	20	22.22	14.81	10.99	8.62	7.02	5.80	4.94	4.21
	25	-	14.81	10.99	8.62	7.02	5.80	4.94	4.21
	30	-	14.81	10.99	8.62	7.02	5.80	4.94	4.21
	35	-	-	10.99	8.62	7.02	5.80	4.94	4.21

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2. Product Data

ERCV-M900YA × 2

EER for cooling [Water (SW6-10: OFF)]

Evaporation side water flow rate 31.0 m³/h, Condensation side water flow rate 35.9 m³/h

Cooling capacity	Condensation side water inlet temp. (°C)	Evaporation side water outlet temp. (°C)						
		4	7	10	15	20	25	30
180kW (100%)	9	10.28	11.49	-	-	-	-	-
	15	7.93	9.03	10.30	-	-	-	-
	20	-	7.54	8.73	11.17	-	-	-
	25	-	6.32	7.19	9.20	9.20	-	-
	30	-	5.44	6.07	7.54	7.54	7.54	7.54
	35	-	-	5.19	6.30	6.30	6.30	6.30
	40	-	-	4.43	5.28	5.28	5.28	5.28
	45	-	-	-	4.50	4.50	4.50	4.50
135kW (75%)	50	-	-	-	3.89	3.89	3.89	3.89
	9	12.40	16.00	-	-	-	-	-
	15	8.91	10.80	12.97	-	-	-	-
	20	7.15	8.42	9.93	13.60	-	-	-
	25	5.93	6.81	7.89	10.26	10.26	-	-
	30	5.02	5.69	6.48	8.13	8.13	8.13	8.13
	35	4.32	4.82	5.42	6.65	6.65	6.65	6.65
	40	3.69	4.08	4.54	5.48	5.48	5.48	5.48
90kW (50%)	45	3.19	3.51	3.87	4.61	4.61	4.61	4.61
	50	-	3.04	3.34	3.93	3.93	3.93	3.93
	9	15.99	22.06	-	-	-	-	-
	15	10.39	12.88	16.04	-	-	-	-
	20	7.94	9.47	11.48	16.25	-	-	-
	25	6.35	7.38	8.66	11.70	11.70	-	-
	30	5.23	5.98	6.85	8.87	8.87	8.87	8.87
	35	4.42	4.99	5.64	7.05	7.05	7.05	7.05
45kW (25%)	40	3.70	4.12	4.61	5.62	5.62	5.62	5.62
	45	3.14	3.48	3.85	4.61	4.61	4.61	4.61
	50	2.70	2.98	3.28	3.86	3.86	3.86	3.86
	9	14.56	20.27	-	-	-	-	-
	15	9.66	12.03	15.00	-	-	-	-
	20	7.44	8.88	10.71	15.36	-	-	-
	25	5.98	6.96	8.14	11.03	11.03	-	-
	30	6.24	5.73	6.59	8.57	8.57	8.57	8.57
	35	4.61	4.75	5.36	6.69	6.69	6.69	6.69
	40	3.68	4.36	4.39	5.35	5.35	5.35	5.35
	45	3.02	3.39	3.69	4.40	4.40	4.40	4.40
	50	2.54	2.83	3.11	3.70	3.70	3.70	3.70

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2. Product Data

ERCV-M900YA × 2
COP for heating [Water (SW6-10: OFF)]

Condensation side water flow rate 31.0 m³/h, Evaporation side water flow rate 42.7 m³/h

Heating capacity	Evaporation side water inlet temp. (°C)	Condensation side water outlet temp. (°C)							
		20	25	30	35	40	45	50	55
180kW (100%)	9	9.73	8.10	6.92	6.01	5.28	4.69	4.12	3.68
	10	10.19	8.43	7.17	6.21	5.44	4.84	4.23	3.85
	15	12.81	10.41	8.68	7.36	6.34	5.49	4.83	4.28
	20	14.74	13.06	10.86	8.91	7.49	6.37	5.51	4.83
	25	-	13.06	10.86	8.91	7.49	6.37	5.51	4.83
	30	-	-	10.86	8.91	7.49	6.37	5.51	4.83
	35	-	-	-	8.91	7.49	6.37	5.51	4.83
135kW (75%)	9	10.74	8.64	7.19	6.15	5.33	4.70	4.06	3.60
	10	11.36	9.04	7.48	6.36	5.49	4.79	4.17	3.72
	15	15.77	11.80	9.36	7.69	6.48	5.50	4.76	4.17
	20	24.24	15.75	11.74	9.34	7.68	6.41	5.46	4.72
	25	-	15.75	11.74	9.34	7.68	6.41	5.46	4.72
	30	-	-	11.74	9.34	7.68	6.41	5.46	4.72
	35	-	-	-	9.34	7.68	6.41	5.46	4.72
90kW (50%)	9	11.86	9.16	7.42	6.22	5.30	4.65	3.91	3.42
	10	12.53	9.58	7.71	6.43	5.46	4.77	4.01	3.50
	15	17.41	12.48	9.62	7.76	6.44	5.38	4.59	3.97
	20	26.87	16.95	12.23	9.49	7.67	6.30	5.29	4.52
	25	-	16.95	12.23	9.49	7.67	6.30	5.29	4.52
	30	-	-	12.23	9.49	7.67	6.30	5.29	4.52
	35	-	-	-	9.49	7.67	6.30	5.29	4.52
45kW (25%)	9	10.82	8.47	6.92	5.83	4.98	4.41	3.68	3.26
	10	11.36	8.82	7.22	6.06	5.13	4.54	3.78	3.32
	15	15.36	11.25	8.79	7.18	5.97	5.02	4.32	3.74
	20	22.61	15.00	11.03	8.67	7.03	5.81	4.94	4.21
	25	-	15.00	11.03	8.67	7.03	5.81	4.94	4.21
	30	-	-	11.03	8.67	7.03	5.81	4.94	4.21
	35	-	-	-	8.67	7.03	5.81	4.94	4.21

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2. Product Data

ERCV-M900YA × 2

EER for cooling [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Evaporation side brine flow rate 34.5 m³/h, Condensation side water flow rate 35.9 m³/h

Cooling capacity	Condensation side water inlet temp. (°C)	Evaporation side brine outlet temp. (°C)									
		-10	-5	0	4	7	10	15	20	25	30
180kW (100%)	9	-	-	-	10.29	11.49	-	-	-	-	-
	15	-	-	-	7.89	9.03	10.30	-	-	-	-
	20	-	-	-	-	7.54	8.73	11.17	-	-	-
	25	-	-	-	-	6.32	7.19	9.19	9.19	-	-
	30	-	-	-	-	5.44	6.07	7.54	7.53	7.53	7.53
	35	-	-	-	-	-	5.19	6.30	6.30	6.30	6.30
	40	-	-	-	-	-	4.43	5.28	5.28	5.28	5.28
	45	-	-	-	-	-	-	4.50	4.50	4.50	4.50
	50	-	-	-	-	-	-	3.89	3.89	3.89	3.89
135kW (75%)	9	-	7.17	9.34	12.40	16.00	-	-	-	-	-
	15	-	-	7.14	8.92	10.80	12.97	-	-	-	-
	20	-	-	5.91	7.15	8.42	9.93	13.58	-	-	-
	25	-	-	5.01	5.93	6.81	7.89	10.26	10.25	-	-
	30	-	-	4.31	5.02	5.69	6.48	8.12	8.12	8.12	8.12
	35	-	-	3.75	4.32	4.82	5.42	6.65	6.65	6.65	6.65
	40	-	-	-	3.69	4.08	4.54	5.48	5.48	5.48	5.48
	45	-	-	-	3.19	3.51	3.87	4.61	4.61	4.61	4.61
	50	-	-	-	-	3.04	3.34	3.93	3.93	3.93	3.93
90kW (50%)	9	6.40	8.16	11.14	15.99	22.06	-	-	-	-	-
	15	5.00	6.16	7.92	10.39	12.88	16.04	-	-	-	-
	20	4.19	5.06	6.30	7.94	9.47	11.48	16.25	-	-	-
	25	3.58	4.26	5.18	6.35	7.38	8.66	11.70	11.70	-	-
	30	3.10	3.64	4.35	5.24	5.98	6.85	8.87	8.87	8.87	8.87
	35	2.72	3.17	3.74	4.43	4.99	5.64	7.05	7.05	7.05	7.05
	40	-	2.62	3.13	3.70	4.12	4.61	5.61	5.61	5.61	5.61
	45	-	2.18	2.65	3.14	3.48	3.85	4.60	4.60	4.60	4.60
	50	-	-	2.26	2.70	2.98	3.28	3.86	3.86	3.86	3.86
45kW (25%)	9	8.82	11.17	10.16	14.56	20.18	-	-	-	-	-
	15	6.13	7.45	10.69	9.66	12.03	14.95	-	-	-	-
	20	4.77	5.70	7.59	7.44	8.88	10.71	15.36	-	-	-
	25	3.81	4.52	5.78	5.98	6.94	8.12	11.03	11.03	-	-
	30	3.11	3.70	4.60	6.25	5.73	6.58	8.57	8.57	8.57	8.57
	35	2.62	3.12	3.82	4.62	4.74	5.35	6.69	6.69	6.69	6.69
	40	2.09	2.50	3.06	3.68	4.36	4.39	5.34	5.34	5.34	5.34
	45	1.69	2.04	2.51	3.03	3.39	3.68	4.40	4.40	4.40	4.40
	50	1.36	1.70	2.09	2.54	2.83	3.11	3.70	3.70	3.70	3.70

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2. Product Data

ERCV-M900YA × 2

COP for heating [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

Condensation side water flow rate 27.5 m³/h, Evaporation side brine flow rate 38.4 m³/h

Heating capacity	Evaporation side brine inlet temp. (°C)	Condensation side water outlet temp. (°C)							
		20	25	30	35	40	45	50	55
160kW (100%)	-7	-	-	-	-	-	-	-	-
	-5	-	-	-	-	-	-	-	-
	0	6.87	5.94	5.21	4.63	4.14	3.69	-	-
	9	10.03	8.26	7.00	6.05	5.29	4.68	4.09	3.65
	10	10.53	8.61	7.26	6.25	5.45	4.83	4.20	3.80
	15	13.64	10.80	8.86	7.44	6.37	5.49	4.79	4.23
	20	17.32	14.23	11.25	9.09	7.56	6.37	5.48	4.78
	25	-	14.23	11.25	9.09	7.56	6.37	5.48	4.78
	30	-	-	11.25	9.09	7.56	6.37	5.48	4.78
120kW (75%)	-7	5.48	4.78	4.22	3.77	3.39	2.93	-	-
	-5	5.85	5.06	4.45	3.96	3.54	3.10	2.75	2.44
	0	7.00	5.93	5.13	4.51	4.00	3.52	3.19	2.83
	9	11.23	8.87	7.30	6.20	5.34	4.69	4.02	3.56
	10	11.89	9.32	7.61	6.41	5.50	4.80	4.12	3.65
	15	15.89	11.82	9.34	7.68	6.46	5.47	4.71	4.11
	20	24.34	15.89	11.79	9.32	7.63	6.34	5.38	4.65
	25	-	15.89	11.79	9.32	7.63	6.34	5.38	4.65
	30	-	-	11.79	9.32	7.63	6.34	5.38	4.65
80kW (50%)	-7	5.80	4.91	4.24	3.72	3.30	2.81	2.45	2.15
	-5	6.16	5.18	4.46	3.90	3.44	2.98	2.60	2.28
	0	7.38	6.08	5.15	4.45	3.90	3.38	3.01	2.64
	9	12.12	9.27	7.46	6.23	5.30	4.63	3.88	3.38
	10	12.84	9.71	7.76	6.44	5.46	4.75	3.97	3.46
	15	17.39	12.42	9.58	7.74	6.43	5.36	4.55	3.92
	20	26.49	16.63	11.99	9.32	7.55	6.19	5.20	4.45
	25	-	16.63	11.99	9.32	7.55	6.19	5.20	4.45
	30	-	-	11.99	9.32	7.55	6.19	5.20	4.45
40kW (25%)	-7	5.84	4.83	4.08	3.51	3.06	2.63	2.24	1.92
	-5	6.16	5.08	4.29	3.70	3.22	2.81	2.40	2.07
	0	6.66	5.55	4.73	4.12	3.60	3.12	2.80	2.39
	9	10.84	8.44	6.87	5.76	4.91	4.36	3.61	3.19
	10	11.40	8.79	7.18	6.00	5.05	4.48	3.71	3.25
	15	15.09	11.05	8.66	7.07	5.87	4.93	4.24	3.66
	20	21.98	14.49	10.78	8.47	6.88	5.68	4.85	4.14
	25	-	14.49	10.78	8.47	6.88	5.68	4.85	4.14
	30	-	14.49	10.78	8.47	6.88	5.68	4.85	4.14
40kW (25%)	-7	5.84	4.83	4.08	3.51	3.06	2.63	2.24	1.92
	-5	6.16	5.08	4.29	3.70	3.22	2.81	2.40	2.07
	0	6.66	5.55	4.73	4.12	3.60	3.12	2.80	2.39
	9	10.84	8.44	6.87	5.76	4.91	4.36	3.61	3.19
	10	11.40	8.79	7.18	6.00	5.05	4.48	3.71	3.25
	15	15.09	11.05	8.66	7.07	5.87	4.93	4.24	3.66
	20	21.98	14.49	10.78	8.47	6.88	5.68	4.85	4.14
	25	-	14.49	10.78	8.47	6.88	5.68	4.85	4.14
	30	-	14.49	10.78	8.47	6.88	5.68	4.85	4.14
40kW (25%)	-7	5.84	4.83	4.08	3.51	3.06	2.63	2.24	1.92
	-5	6.16	5.08	4.29	3.70	3.22	2.81	2.40	2.07
	0	6.66	5.55	4.73	4.12	3.60	3.12	2.80	2.39
	9	10.84	8.44	6.87	5.76	4.91	4.36	3.61	3.19
	10	11.40	8.79	7.18	6.00	5.05	4.48	3.71	3.25
	15	15.09	11.05	8.66	7.07	5.87	4.93	4.24	3.66
	20	21.98	14.49	10.78	8.47	6.88	5.68	4.85	4.14
	25	-	14.49	10.78	8.47	6.88	5.68	4.85	4.14
	30	-	14.49	10.78	8.47	6.88	5.68	4.85	4.14
40kW (25%)	-7	5.84	4.83	4.08	3.51	3.06	2.63	2.24	1.92
	-5	6.16	5.08	4.29	3.70	3.22	2.81	2.40	2.07
	0	6.66	5.55	4.73	4.12	3.60	3.12	2.80	2.39
	9	10.84	8.44	6.87	5.76	4.91	4.36	3.61	3.19
	10	11.40	8.79	7.18	6.00	5.05	4.48	3.71	3.25
	15	15.09	11.05	8.66	7.07	5.87	4.93	4.24	3.66
	20	21.98	14.49	10.78	8.47	6.88	5.68	4.85	4.14
	25	-	14.49	10.78	8.47	6.88	5.68	4.85	4.14
	30	-	14.49	10.78	8.47	6.88	5.68	4.85	4.14

* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.

Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

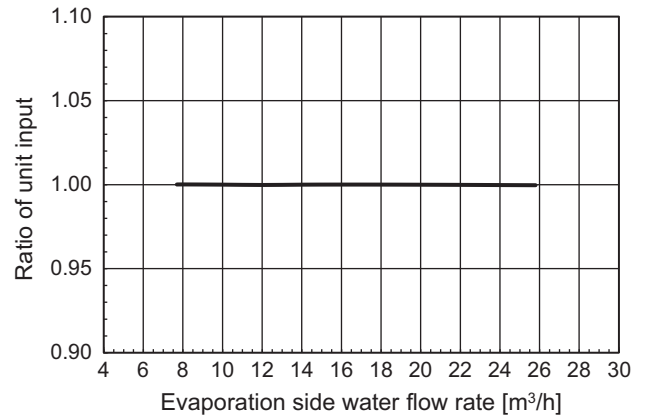
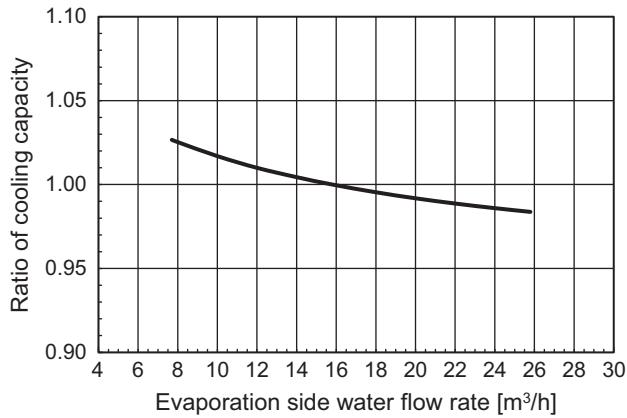
2-1-3. Correction by water flow rate

ERCV-M900YA

Cooling [Water (SW6-10: OFF)]

Condensation side water inlet temperature 30°C

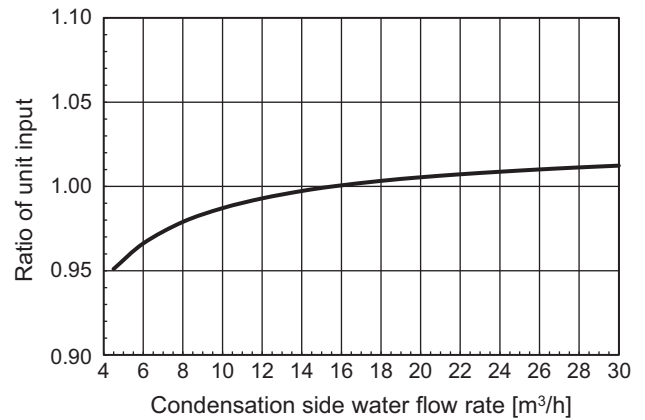
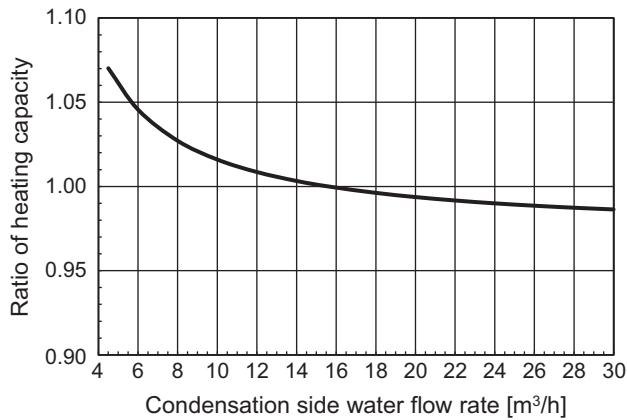
Evaporation side water outlet temperature 7°C



Heating [Water (SW6-10: OFF)]

Evaporation side water inlet temperature 10°C

Condensation side water outlet temperature 45°C



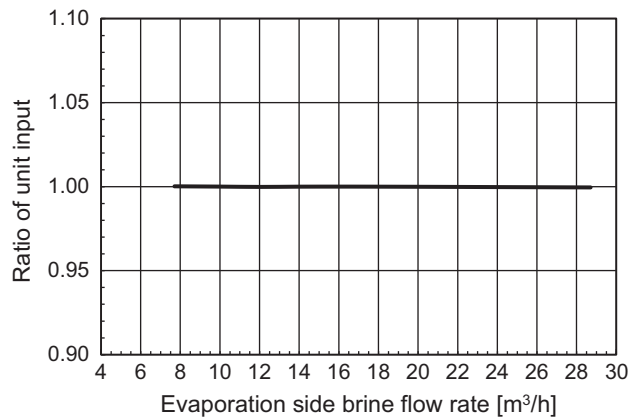
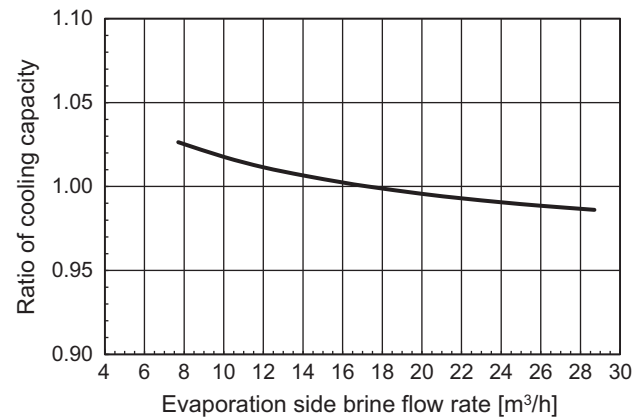
* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2. Product Data

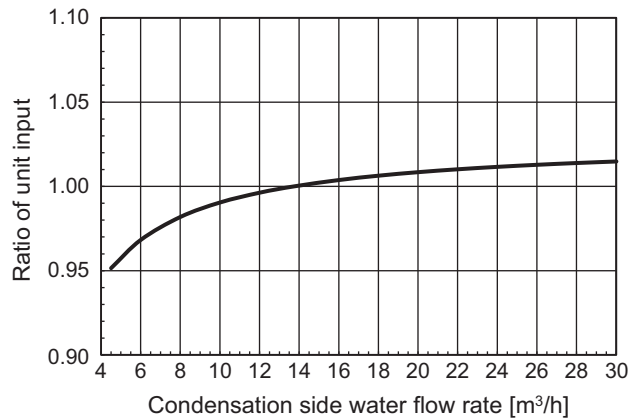
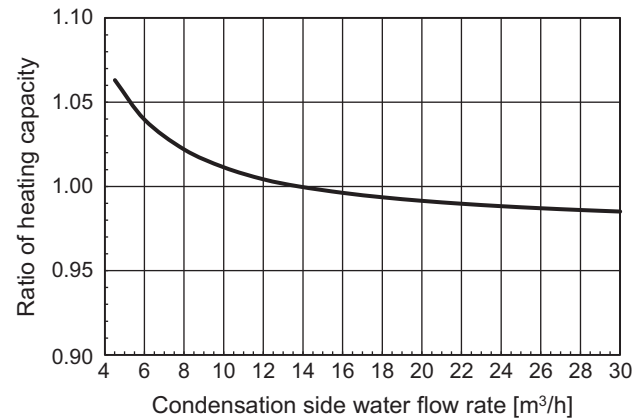
ERCV-M900YA, ERCV-M900YA×2

ERCV-M900YA

Cooling [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]
Condensation side water inlet temperature 30°C
Evaporation side brine outlet temperature 7°C



Heating [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]
Evaporation side brine inlet temperature 0°C
Condensation side water outlet temperature 45°C



* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

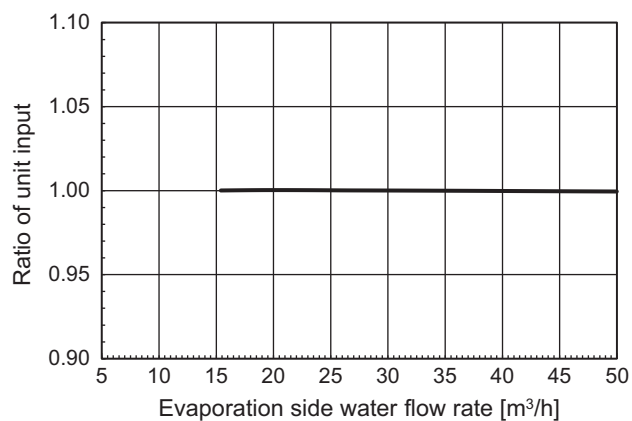
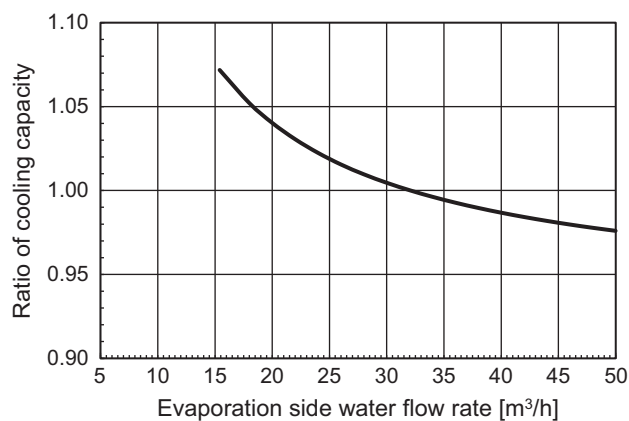
2. Product Data

ERCV-M900YA × 2

Cooling [Water (SW6-10: OFF)]

Condensation side water inlet temperature 30°C

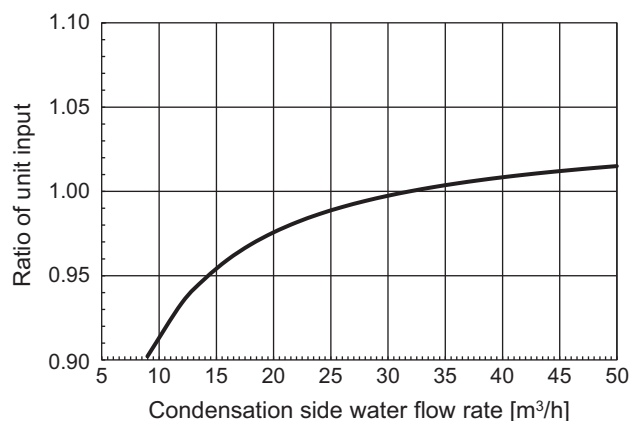
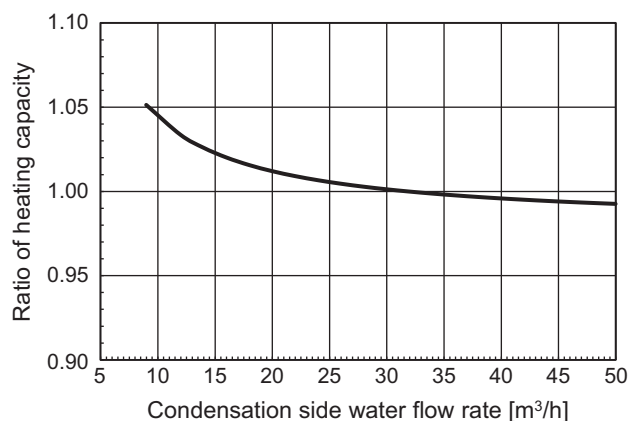
Evaporation side water outlet temperature 7°C



Heating [Water (SW6-10: OFF)]

Evaporation side water inlet temperature 10°C

Condensation side water outlet temperature 45°C

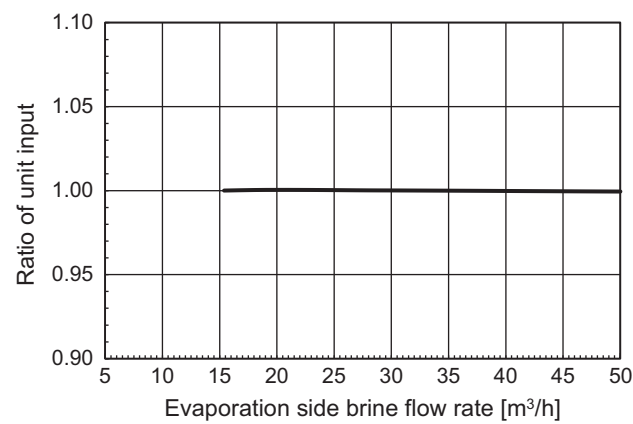
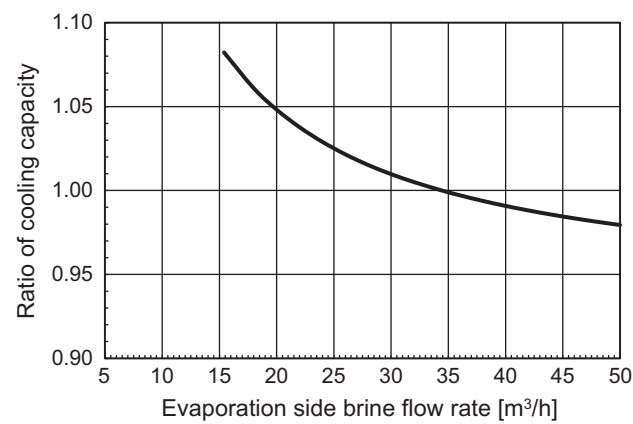


* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

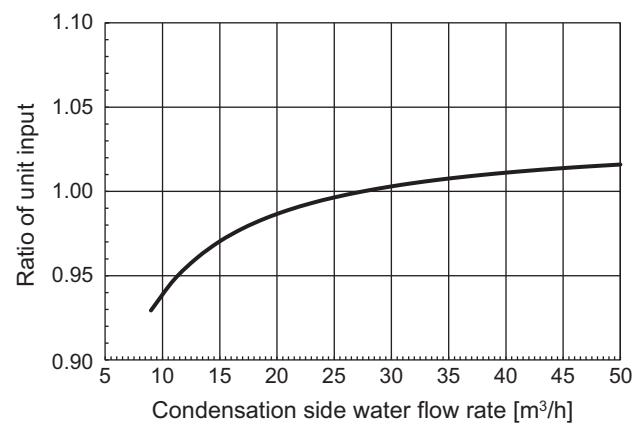
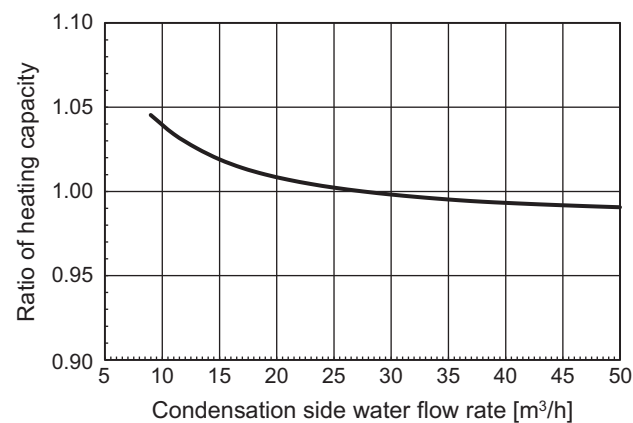
2. Product Data

ERCV-M900YA, ERCV-M900YA×2

ERCV-M900YA × 2
Cooling [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]
Condensation side water inlet temperature 30°C
Evaporation side brine outlet temperature 7°C



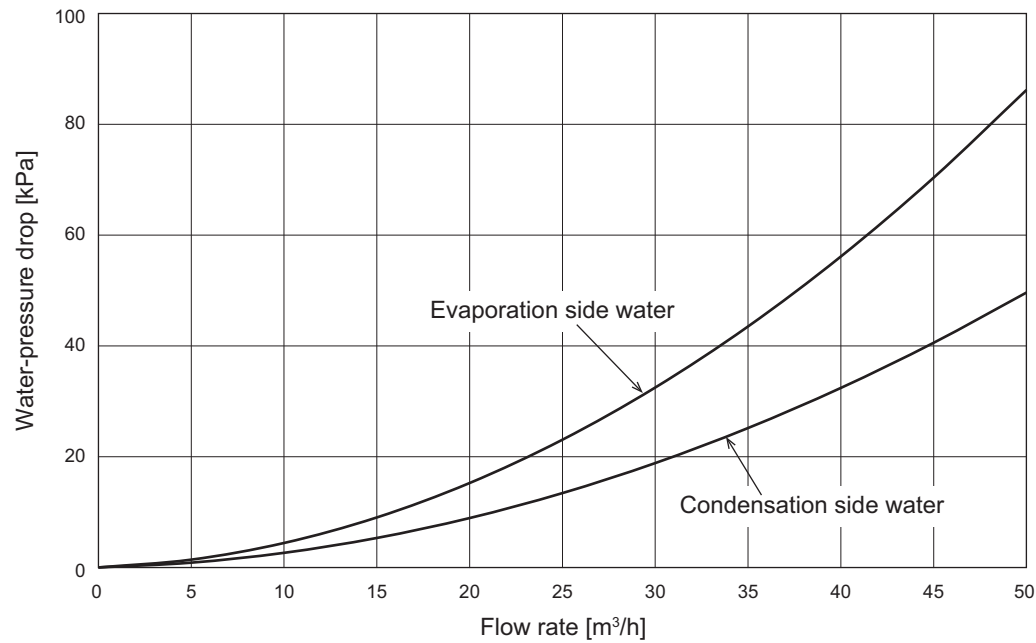
Heating [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]
Evaporation side brine inlet temperature 0°C
Condensation side water outlet temperature 45°C



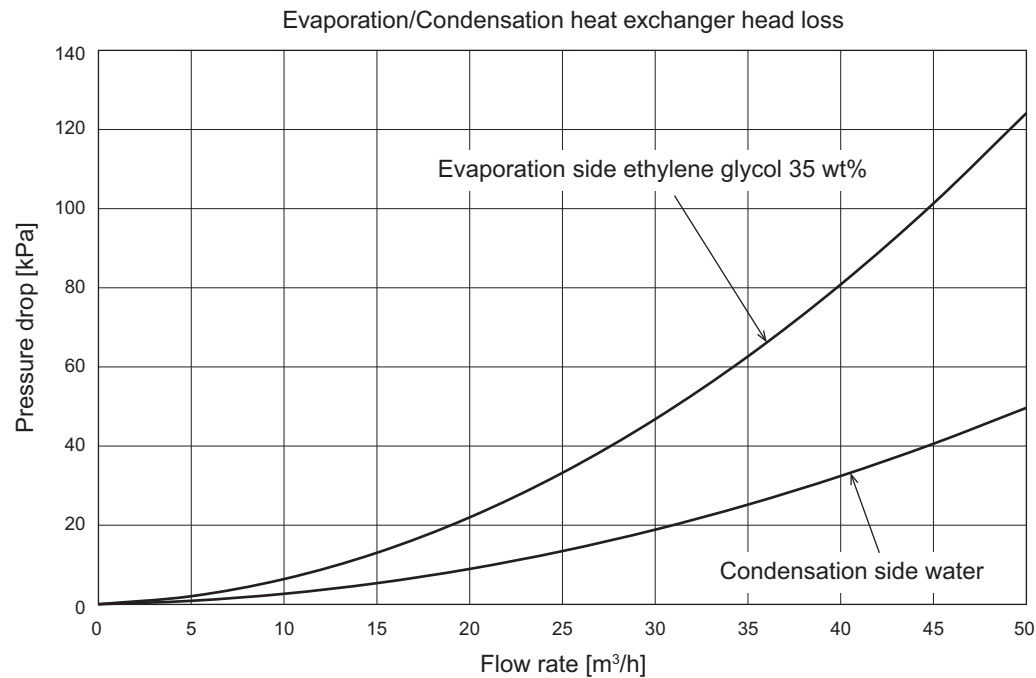
* When making a calculation under the temperature conditions other than the ones listed here, use the calculation sheet.
Calculation sheet is available for download from NEXT2 at <http://next2.lic.idc-t.melco.co.jp/cgi-melco/cdl.cgi?key=inp49576>.

2-1-4. Water pressure drop

ERCV-M900YA
[Water (SW6-10: OFF)]



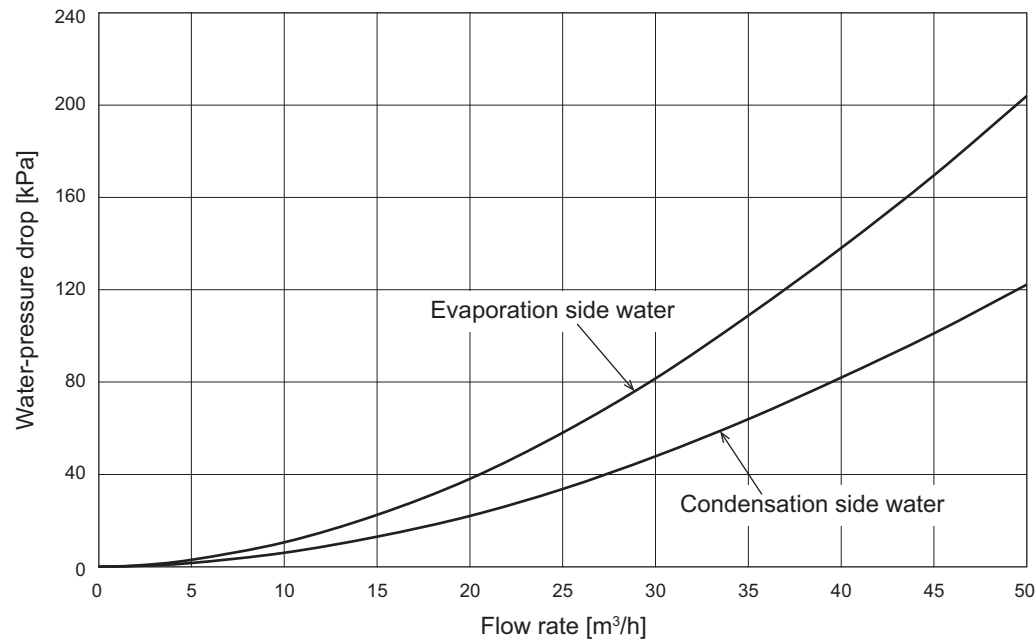
ERCV-M900YA
[Brine: Ethylene glycol 35 wt% (SW6-10: ON)]



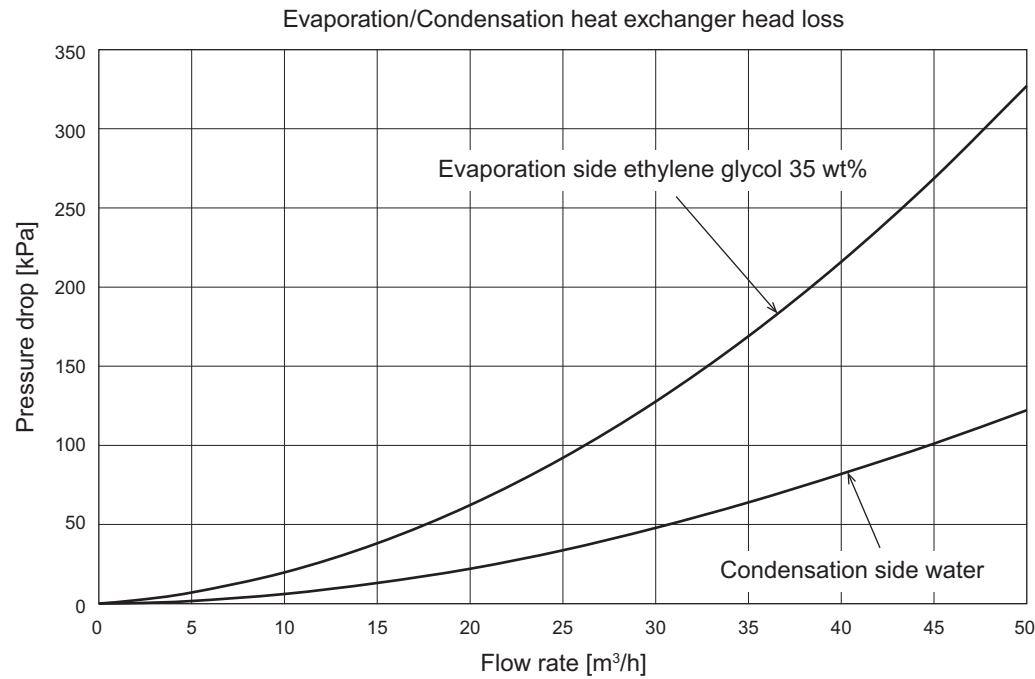
2. Product Data

ERCV-M900YA × 2
[Water (SW6-10: OFF)]

ERCV-M900YA, ERCV-M900YA×2

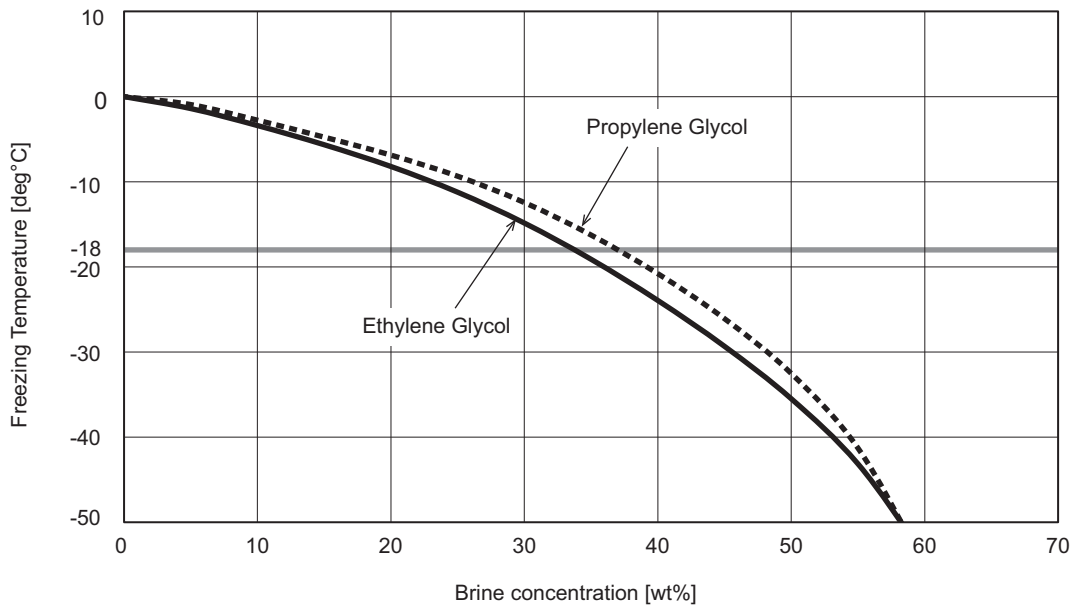


ERCV-M900YA × 2
[Brine: Ethylene glycol 35 wt% (SW6-10: ON)]



2-1-5. Characteristics of the brine

Brine concentration is decided by the freezing temperature. First, it is necessary to decide the freezing temperature and find out brine concentration which will correspond to the freezing temperature.

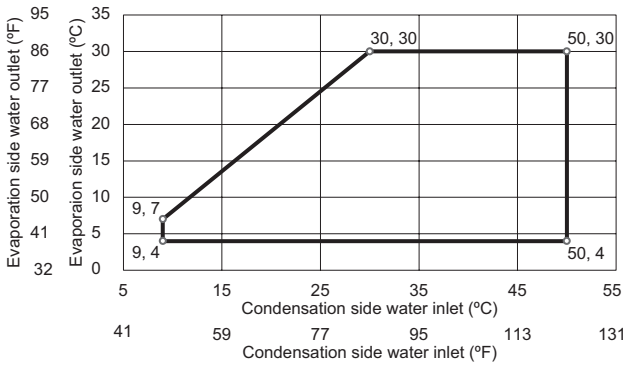


Note;
The graph was referred from chemical company data.
But Freezing Temperature condition will be slightly different based on each company.
Please confirm detail data to the chemical company directly.
It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -18deg°C or less.

2-1-6. Operation temperature range

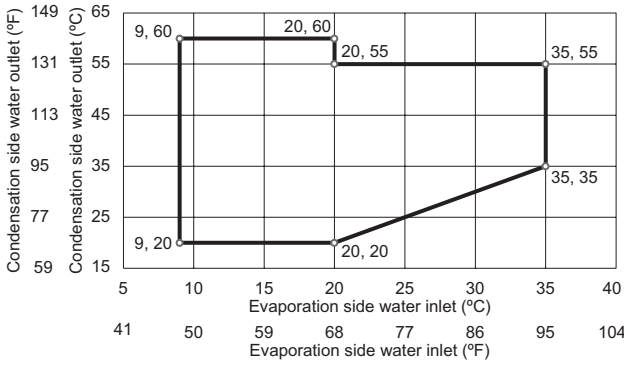
Cooling mode [Water (SW6-10: OFF)]

ERCV-M900YA [Capacity priority/Efficiency priority]
ERCV-M900YA × 2 [Capacity priority/Efficiency priority]

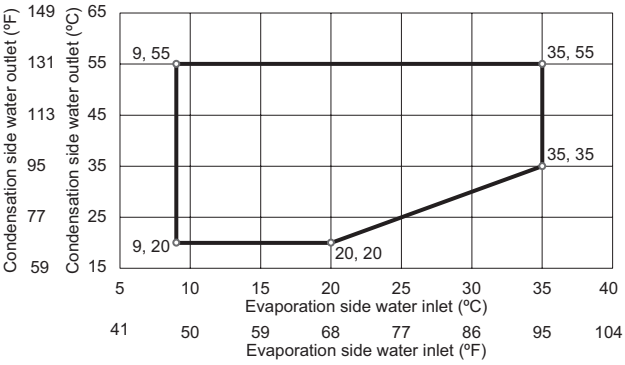


Heating mode [Water (SW6-10: OFF)]

ERCV-M900YA [Capacity priority]



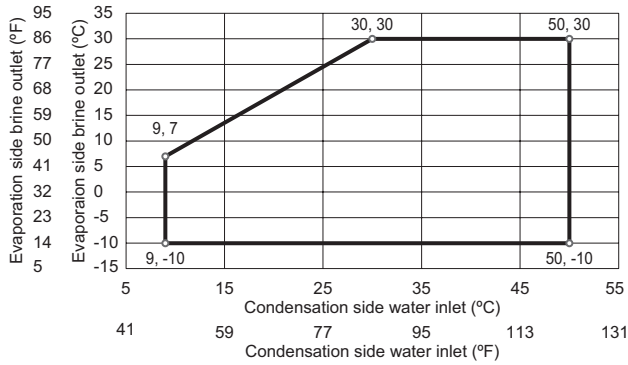
ERCV-M900YA [Efficiency priority]
ERCV-M900YA × 2 [Capacity priority/Efficiency priority]



2. Product Data

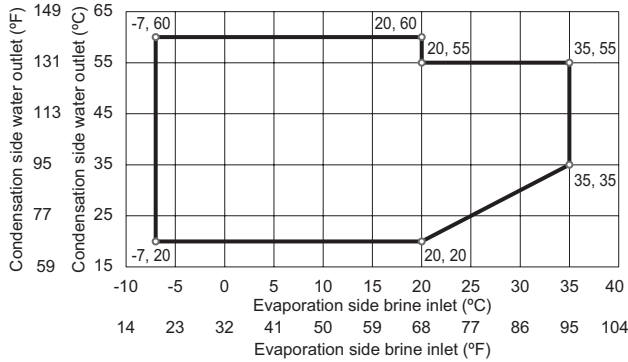
Cooling mode [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

ERCV-M900YA
ERCV-M900YA × 2

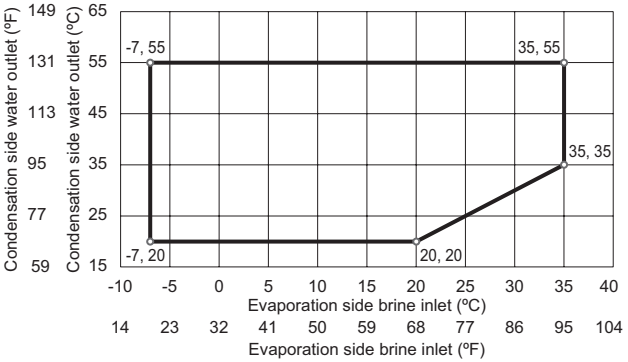


Heating mode [Brine: Ethylene glycol 35 wt% (SW6-10: ON)]

ERCV-M900YA

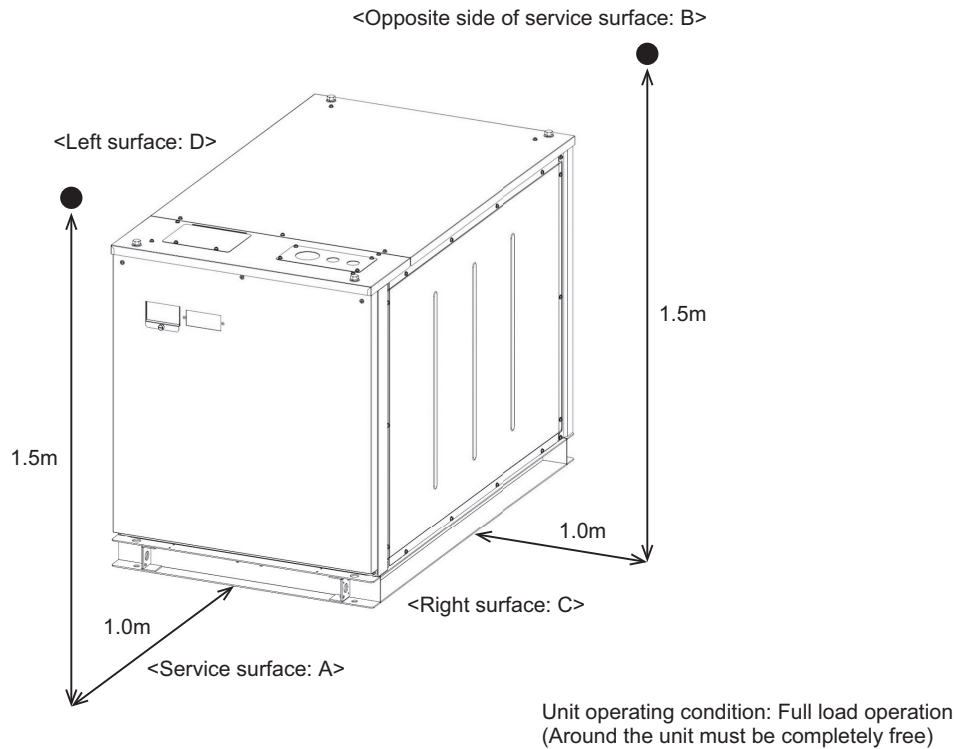


ERCV-M900YA × 2



2-2. Sound pressure levels

Measurement condition
ERCV-M900YA



Sound pressure level
The following values are the planned value.

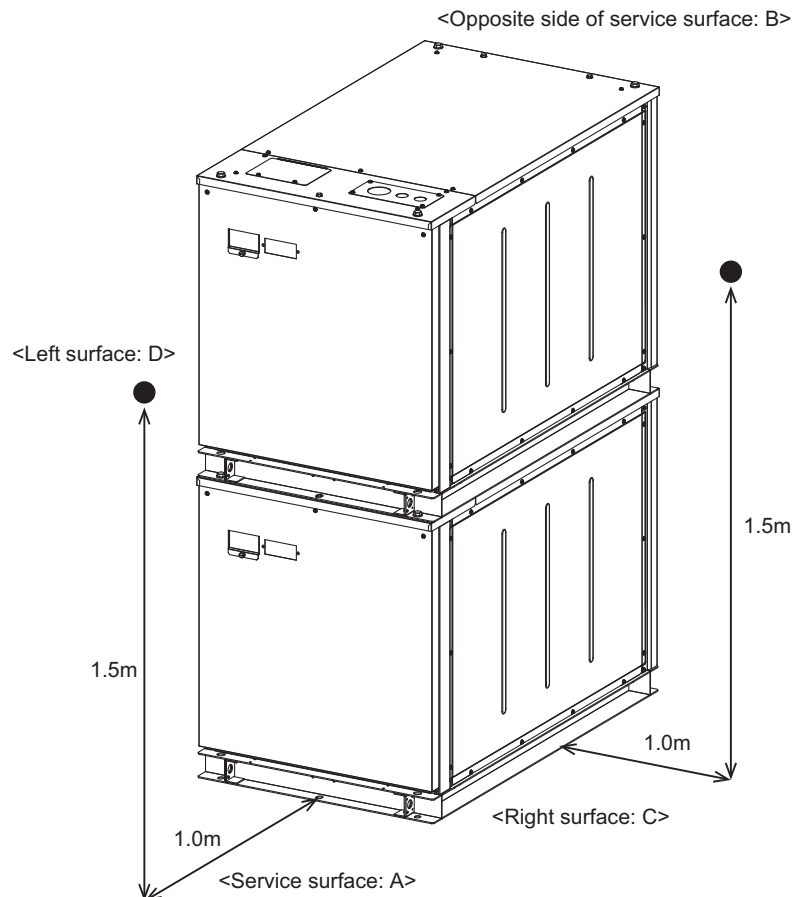
Sound pressure level dB <A> (anechoic room level)		
Measurement location	ERCV-M900YA	
Capacity change mode	Capacity priority	Efficiency priority
Service surface: A	53	48
Opposite side of service surface: B	57	50
Right surface: C	54	47
Left surface: D	53	47

* 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.

* Under normal cooling conditions at evaporation side water/brine inlet temp. 12°C (53.6°F) outlet temp. 7°C (44.6°F) condensation side water inlet temp. 30°C (86°F) outlet temp. 35°C (95°F)

2. Product Data

Measurement condition
ERCV-M900YA × 2



Unit operating condition: Full load operation
(Around the unit must be completely free)

Sound pressure level

The following values are the planned value.

Sound pressure level dB <A> (anechoic room level)		
Measurement location	ERCV-M900YA × 2	
Capacity change mode	Capacity priority	Efficiency priority
Service surface: A	56	51
Opposite side of service surface: B	60	53
Right surface: C	57	50
Left surface: D	56	50

* 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.)

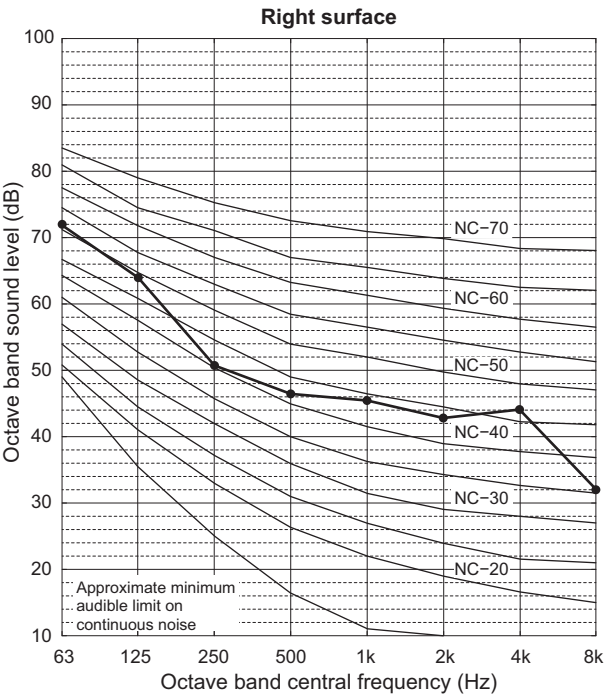
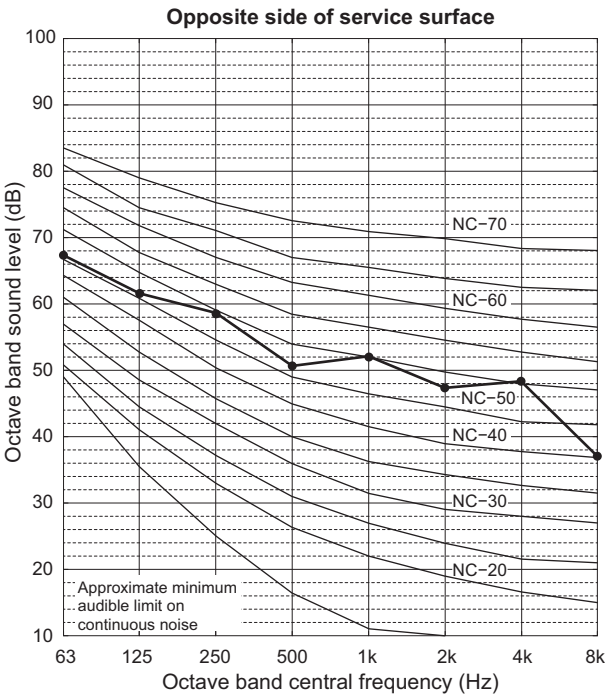
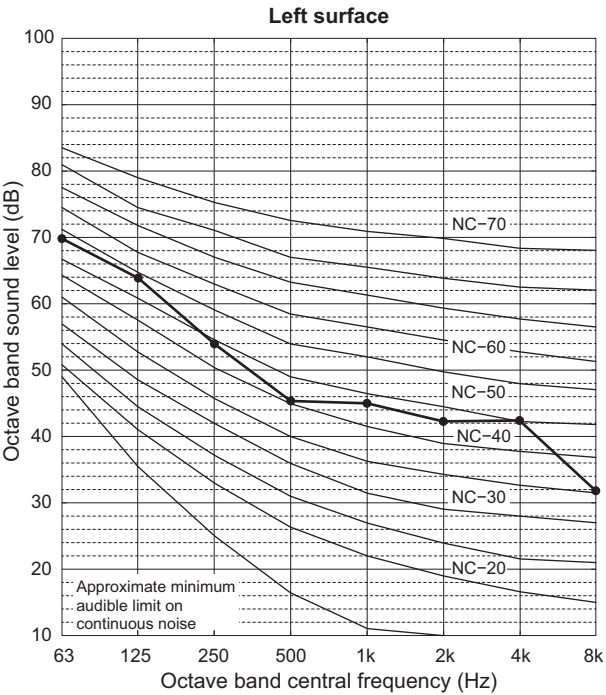
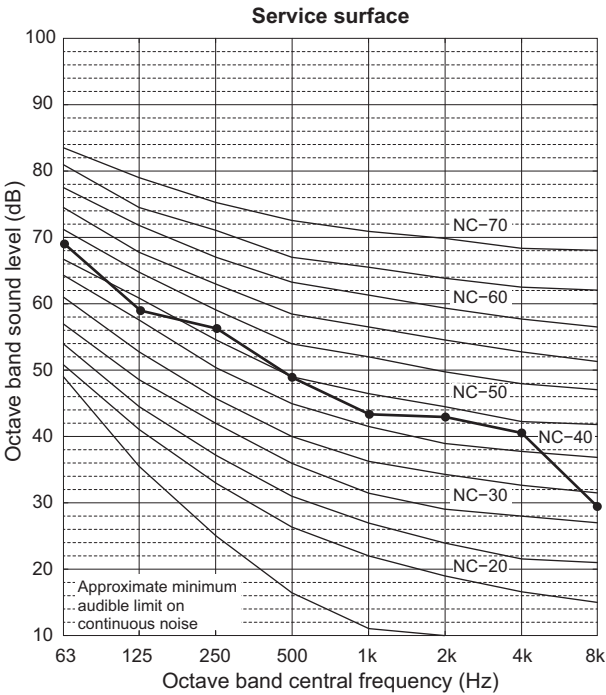
Regarding the installation, consider the effect of echo sound, implement soundproof treatment as necessary.

* Under normal cooling conditions at evaporation side water/brine inlet temp. 12°C (53.6°F) outlet temp. 7°C (44.6°F) condensation side water inlet temp. 30°C (86°F) outlet temp. 35°C (95°F)

2. Product Data

ERCV-M900YA (Capacity priority mode)

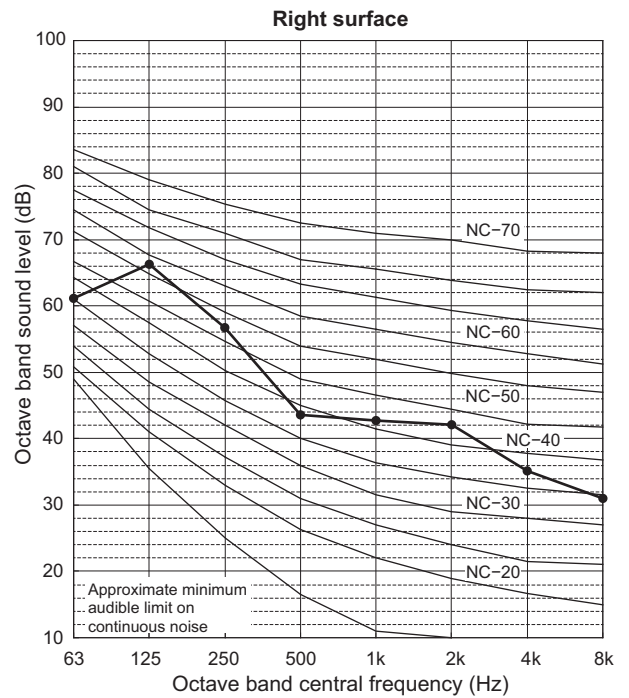
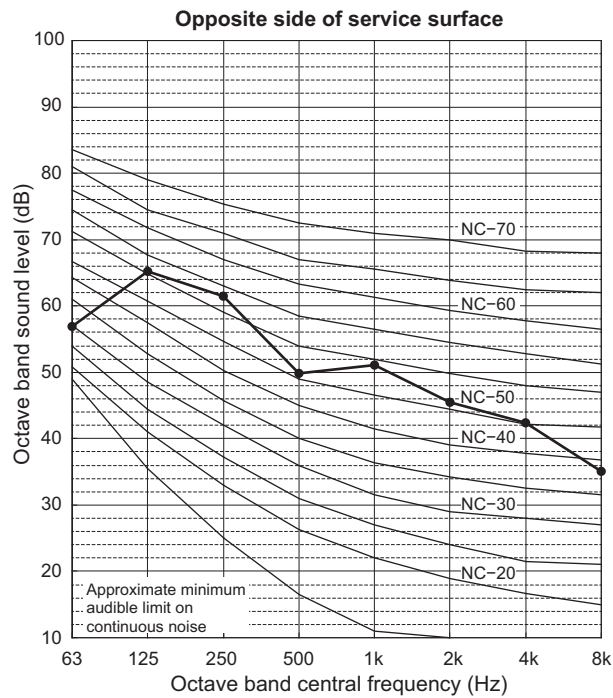
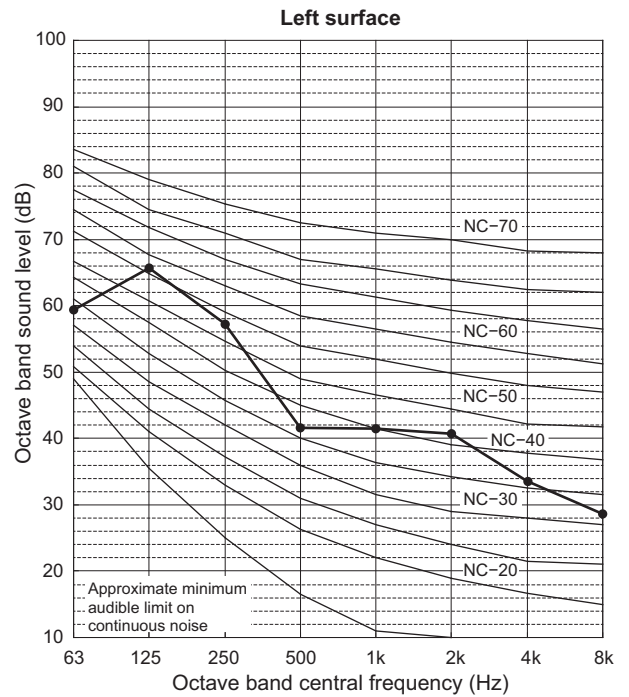
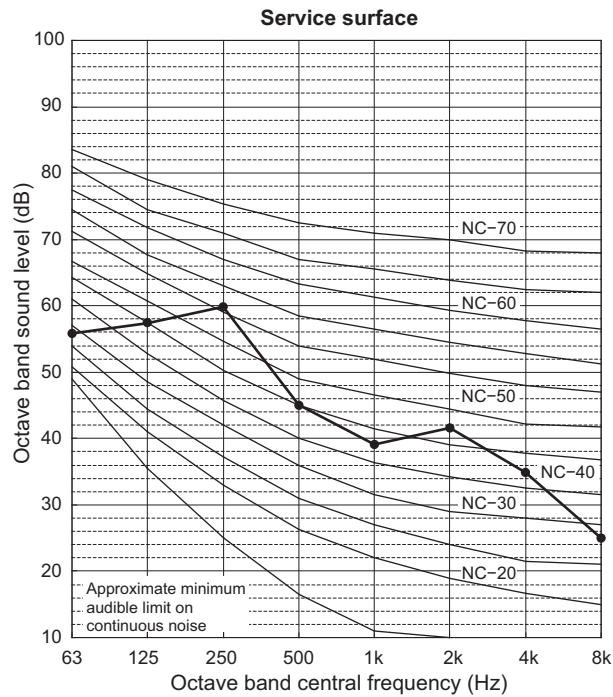
ERCV-M900YA, ERCV-M900YA×2



2. Product Data

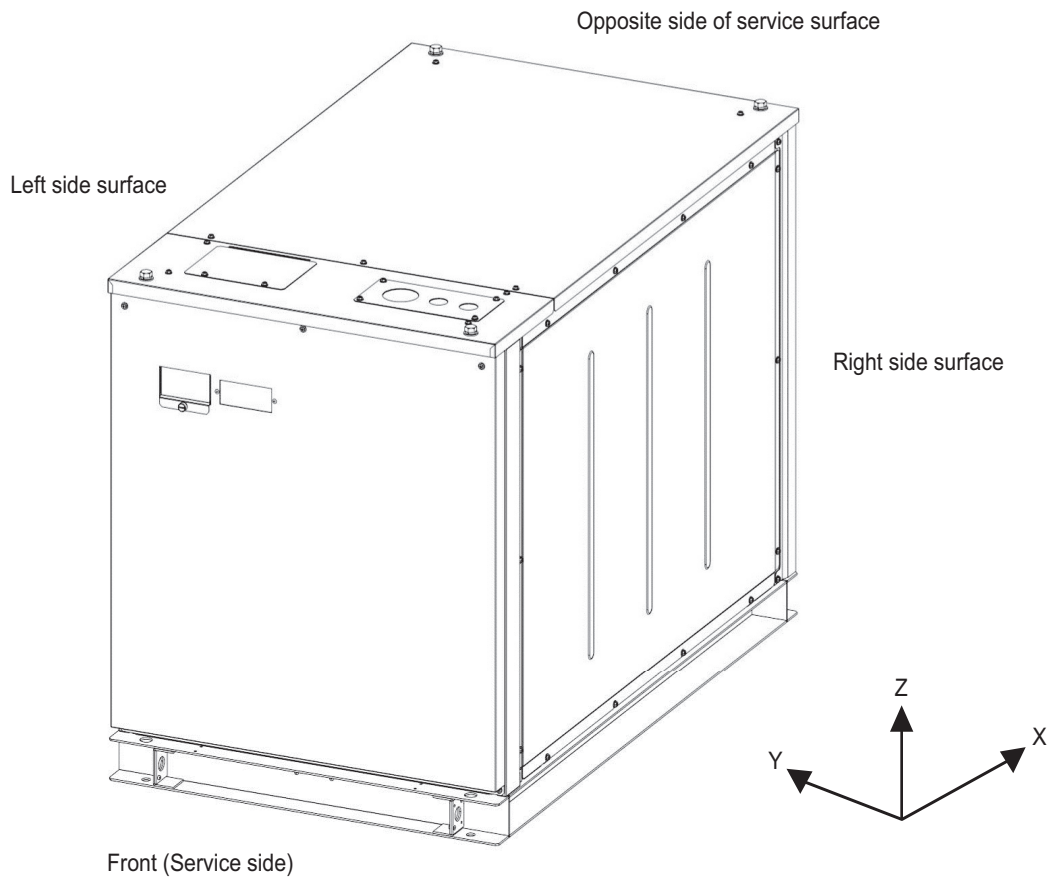
ERCV-M900YA (Efficiency priority mode)

ERCV-M900YA, ERCV-M900YA×2



2-3. Vibration levels

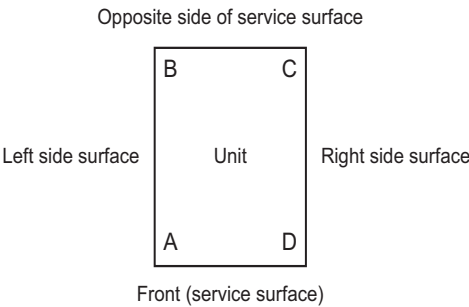
ERCV-M900YA



unit: μm (one side amplitude effective value)

	X	Y	Z
A	30	54	32
B	31	28	8
C	35	25	7
D	37	49	18

* 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

3. Installation

3-1. Selecting the Installation Site

3-1-1. Installation Conditions

Select the installation site in consultation with the client.

This product is for exclusive use in a machine room with a ventilation equipment.

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

- Appliances are not accessible to the general public.
- Limit the installation to a place where the general public cannot touch the product.
- 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.
- Water from the unit can be drained properly.
- The space requirements (specified on page 64) are met.
- Do not install this product in a location where water or dust can enter.

Weight

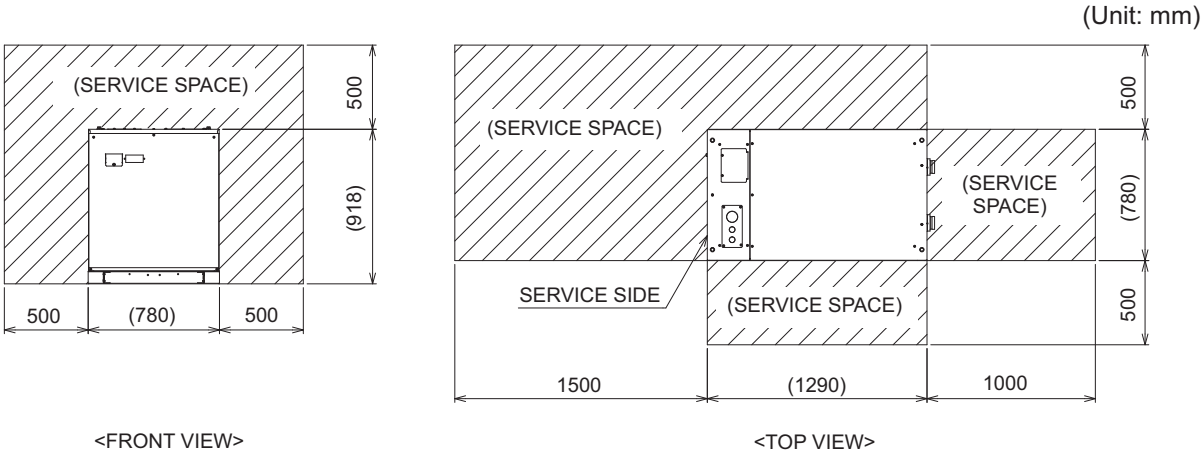
	Net weight (kg)	Operating weight (kg)
ERCV	430	473
ERCV × 2	863	962

3-1-2. Installation Space Requirement

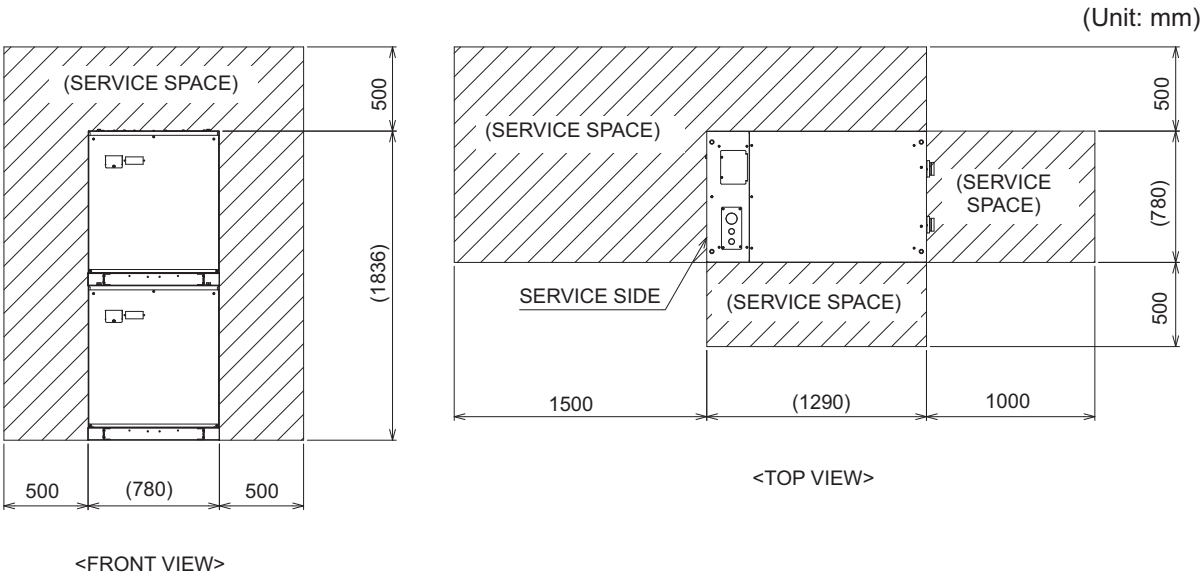
1. Single unit installation

(1) Required space

ERCV-M900YA



ERCV-M900YA × 2

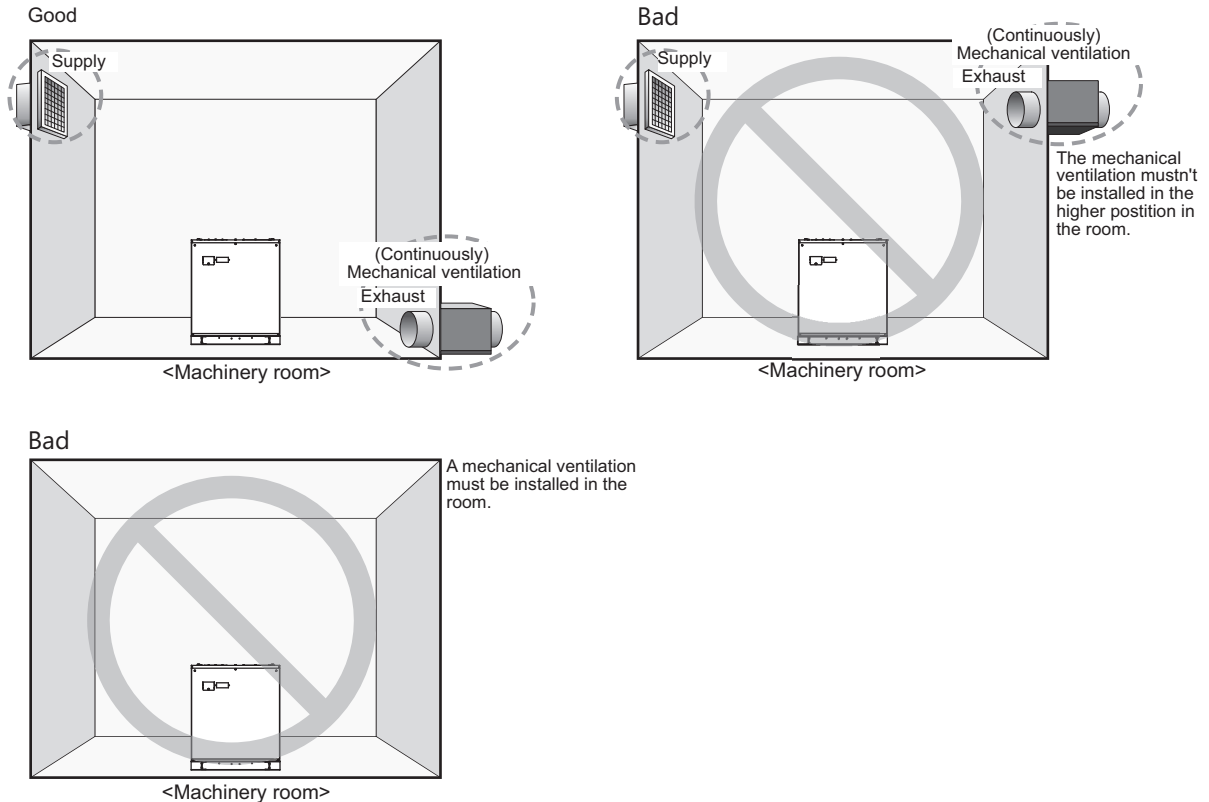


3. Installation

This unit is for exclusive use in a machine room with ventilation equipment.

As shown in the figure below, install the unit in a machine room with ventilation equipment.

*The requirements listed below were established based on IEC60335-2-40 (ver.6) and ISO5149 (2014).



* The same installation restrictions apply to ERCV-M900YA × 2.

<Regulatory requirements for mechanical ventilation>

- 1) Mechanical ventilation shall be operated continuously or be switched on by the refrigerant detection system. <IEC/GG.11.3.4><ISO-3/6.3.3.3>
- 2) During the continuous operation of the fan, the airflow shall be detected or monitored continuously. If the airflow is reduced, the unit operation shall be stopped, or alarm shall be turned on. <IEC/GG.8.3.1>
- 3) When the ventilation system is interlocked with the sensor, even if the detected value of concentration becomes lower than the one for alert, the ventilation system shall continue to operate more than 5 minutes after the detection and air conditioning unit shall stop operation. <IEC/GG.8.3.1>
- 4) Air volume of ventilation <ISO-3/6.3.3.1>
 $Q = 10/RCL \text{ (Refrigerant Concentration Limit)} \approx 164 \text{ m}^3/\text{h}$
- 5) The position of the mechanical ventilation openings <IEC/GG.11.3.3><ISO-3/5.13.1><ISO-3/5.13.5><ISO-3/6.3.3.2>
 The upper edge of the ventilation opening shall be located equal or below the refrigerant release point.
 For floor standing units, the lower edge of the opening shall be more than 100 mm above the floor.
 The exhaust ventilation openings shall be located a sufficient distance from intake openings to prevent re-circulation to the occupied space.
- 6) (For machinery room) Ventilation route shall be designed to avoid leakage of refrigerant to the neighbouring rooms, corridors and so on. <ISO-3/5.2>
- 7) (For machinery room) Exterior openings shall not be situated within 2 m of building emergency exit staircases or other building openings, e.g. windows, doors, ventilation inlets, etc. <ISO-3/5.7>
- 8) (For machinery room) The ventilation system shall be independent of any other ventilation system. <ISO-3/5.13.1>
- 9) The air conditioner and mechanical ventilation shall use different electrical power supply. <ISO-3/7.2 and 8.2>

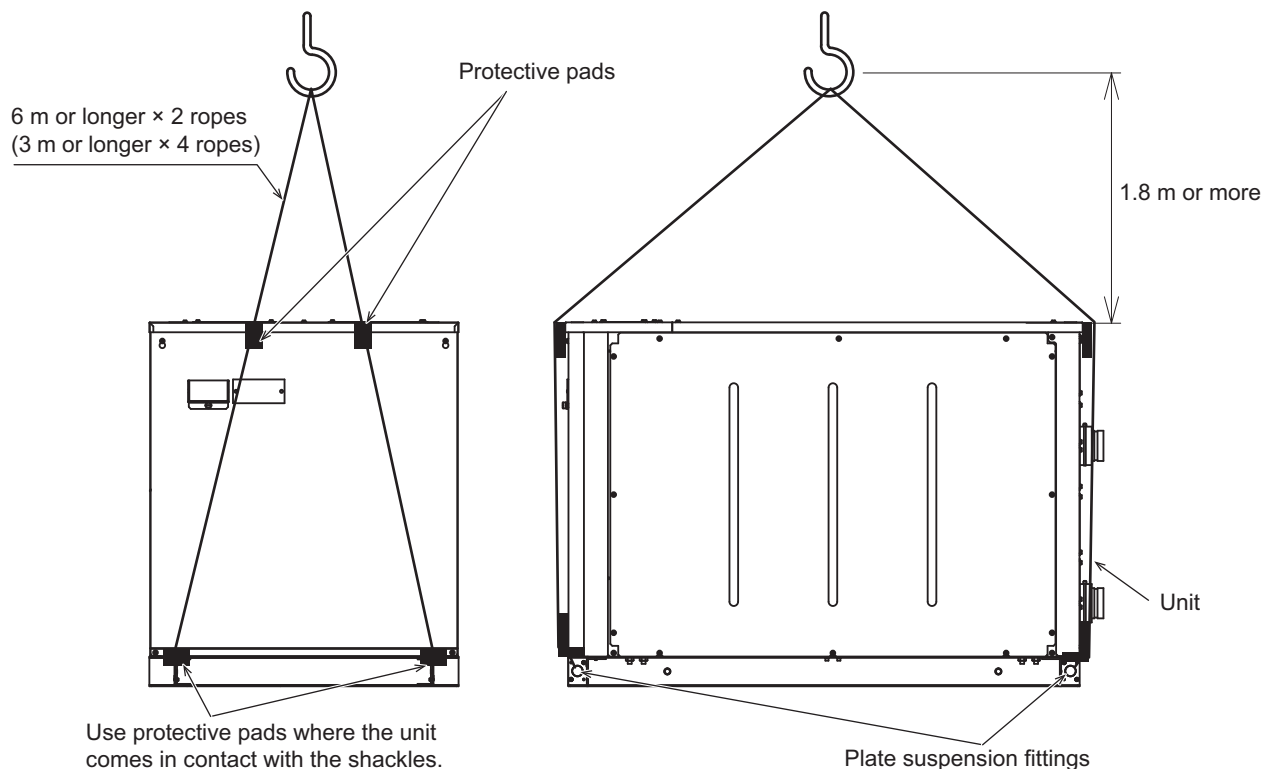
3. Installation

3-2. Unit Installation

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

3-2-1. Product suspension method

ERCV-M900YA, ERCV-M900YA×2



- 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 6 m or longer. (Use four ropes that are 3 m 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 sections "Center of Gravity" (page 14), and suspend the unit while taking care to prevent a deviated center of gravity.

⚠ 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.**

3. Installation

3-2-2. 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:

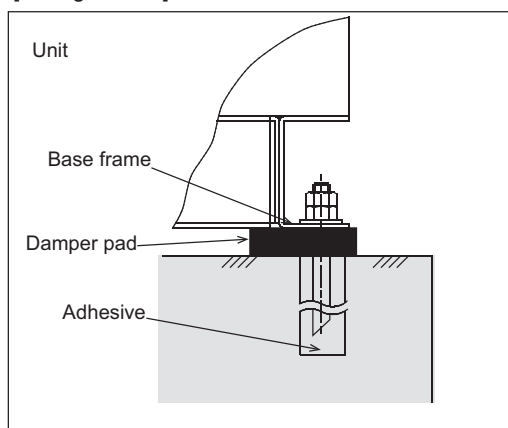
- **Be sure to install the unit on a surface strong enough to withstand its weight to keep the unit from falling down and causing injury.**
- **Provide adequate protection against earthquakes. Improper installation may cause the unit to fall down, resulting in personal injury.**

When building the foundation, take the floor strength, and piping and wiring routes into consideration.

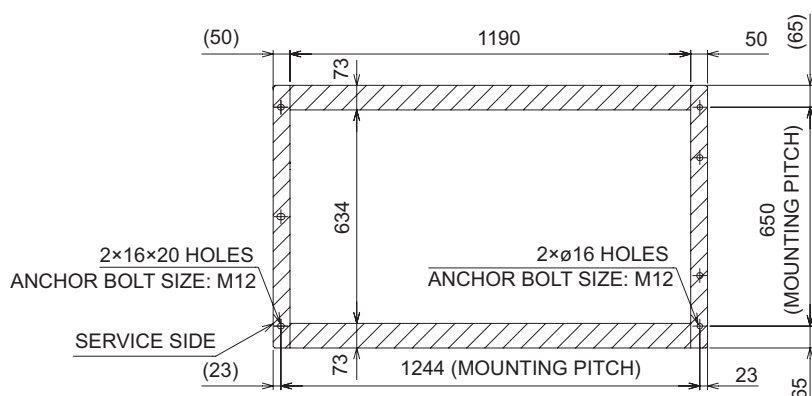
When using damper pads, be sure to attach them to all corners of the unit.

Bolt size	Number
M12	4

[Enlarged view]



(Unit: mm)



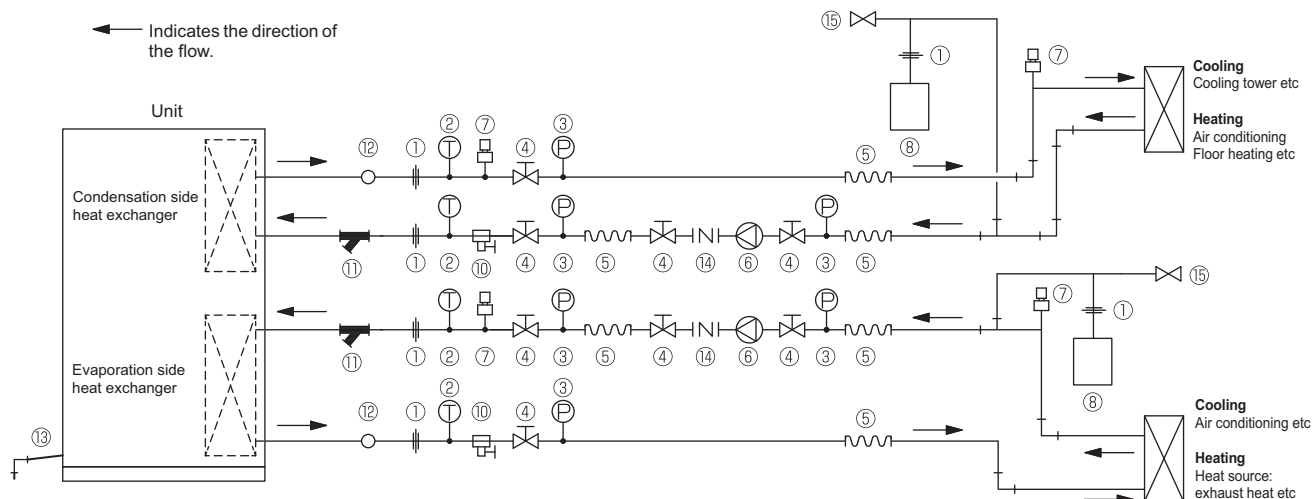
* SECTION SHOWS THE UNIT SURFACE TOUCHING THE FOUNDATION.

4-1-1. Schematic Piping Diagram and Piping System Components

Please build the condensation side and evaporation side water circuits 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 5°C/10 minutes.

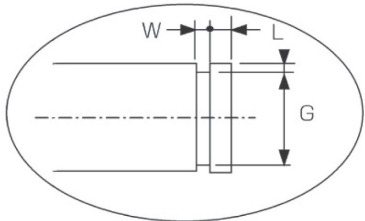
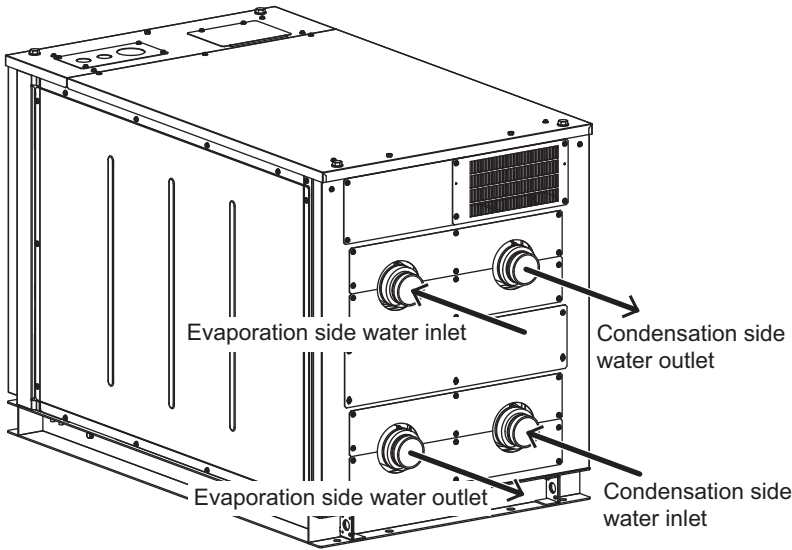


①	Union joints/flange joints	Required to allow for a replacement of equipment.
②	Thermometer	Required to check the performance and monitor the operation of the units.
③	Water pressure gauge	Recommended for checking the operation status.
④	Valve	Required to allow for a replacement or cleaning of the flow adjuster.
⑤	Flexible joint	Recommended to prevent the noise and vibration from the pump from being transmitted.
⑥	Pump	Use a pump that is large enough to compensate for the total water pressure loss and supply sufficient water to the unit.
⑦	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.
⑧	Closed expansion tank	Install a closed expansion tank to accommodate expanded water and to supply water.
⑨	Water pipe	Use pipes that allow for easy air purging, and provide adequate insulation.
⑩	Drain valve	Install drain valves so that water can be drained for servicing.
⑪	Strainer	Install a strainer near the unit to keep foreign materials from entering the water-side head exchanger.
⑫	Flow switch	Required to protect the unit.
⑬	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.
⑭	Check valve	Required to prevent the backward flow.
⑮	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.

4. System Design

4-1-2. Water piping attachment

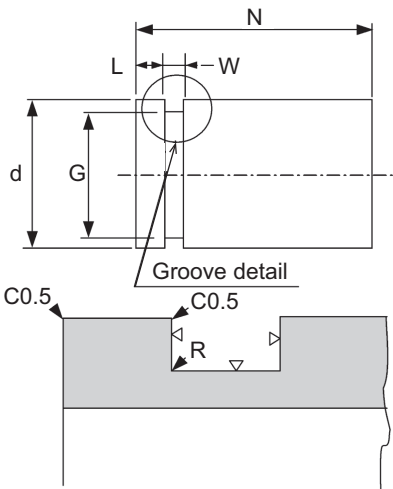
ERCV-M900YA



The dimension of the groove pipe at the chiller side

<Opposite side of service side>

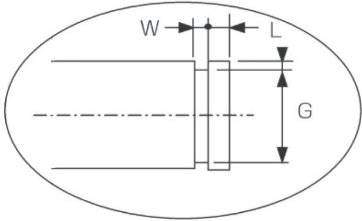
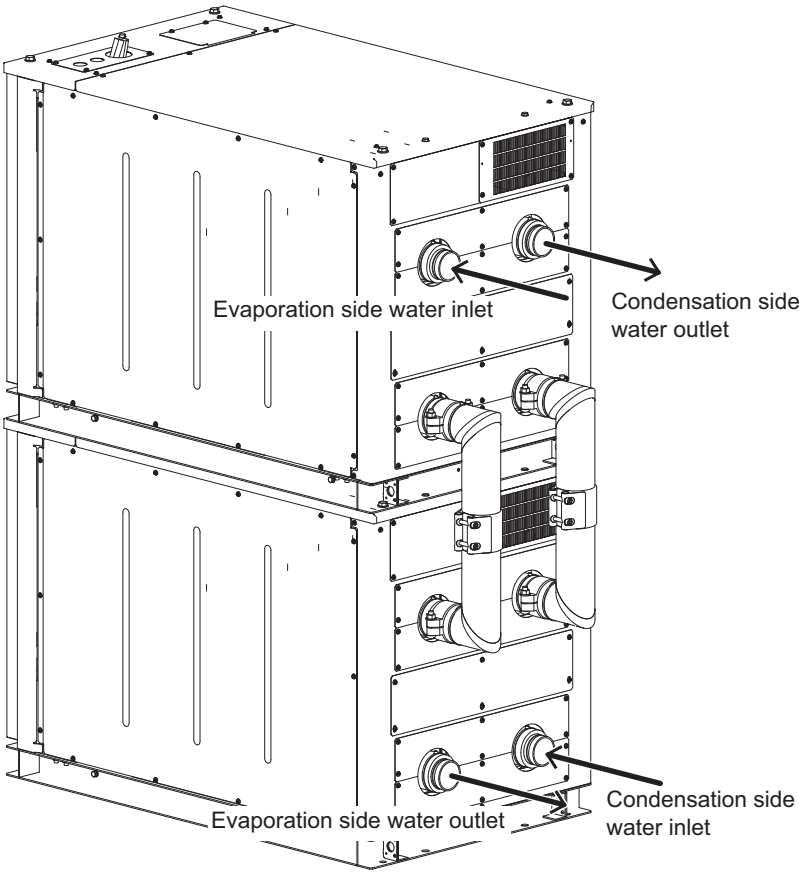
Groove specifications



(Unit: mm)	
Pipe size	
2-1/2B (65A)	
d	ø76.1
G	ø72.2 ⁺⁰ _{-0.4}
W	8.7 ⁺⁰ _{-0.7}
L	15.88 ⁺⁰ _{-0.7}
N	50
R	1.0

ERCV-M900YA, ERCV-M900YA×2

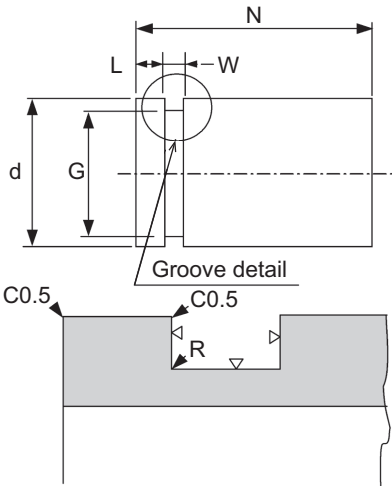
ERCV-M900YA × 2



The dimension of the groove pipe at the chiller side

<Opposite side of service side>

Groove specifications



(Unit: mm)	
Pipe size	
2-1/2B (65A)	
d	ø76.1
G	ø72.2 ⁺⁰ _{-0.4}
W	8.7 ⁺⁰ _{-0.7}
L	15.88 ⁺⁰ _{-0.7}
N	50
R	1.0

4. System Design

4-1-3. 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.

When using an open heat storage tank, install a water-to-water heat exchanger, and use a closed-loop circuit. 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. ≤ 60°C		Higher mid-range temperature water system Water Temp. > 60°C		Tendency	
		Recirculating water	Make-up water	Recirculating water	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C)	7.0 - 8.0	7.0 - 8.0	7.0 - 8.0	7.0 - 8.0	○	○
	Electric conductivity (mS/m) (25°C)	30 or less	30 or less	30 or less	30 or less	○	○
	(μS/cm) (25°C)	[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 SO ₄ 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		○
Reference items	Ionic silica (mg SiO ₂ /ℓ)	30 or less	30 or less	30 or less	30 or less		○
	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	0.1 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 an air conditioner (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.

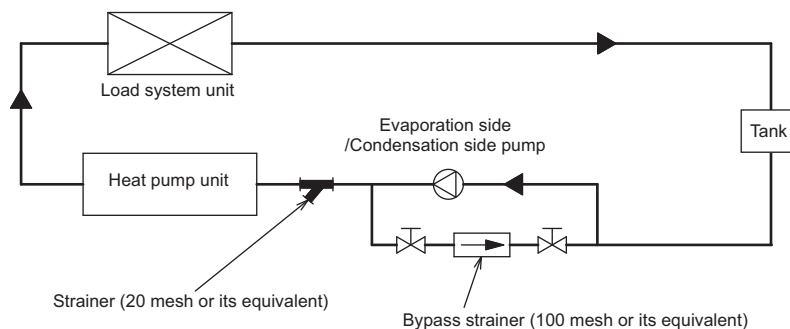
4. System Design

(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.



(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 65°C 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.

When considering reusing the existing piping, check for rust. Replace the piping if it is severely rusted.

4-1-4. Installing the Strainer and Flow Switch

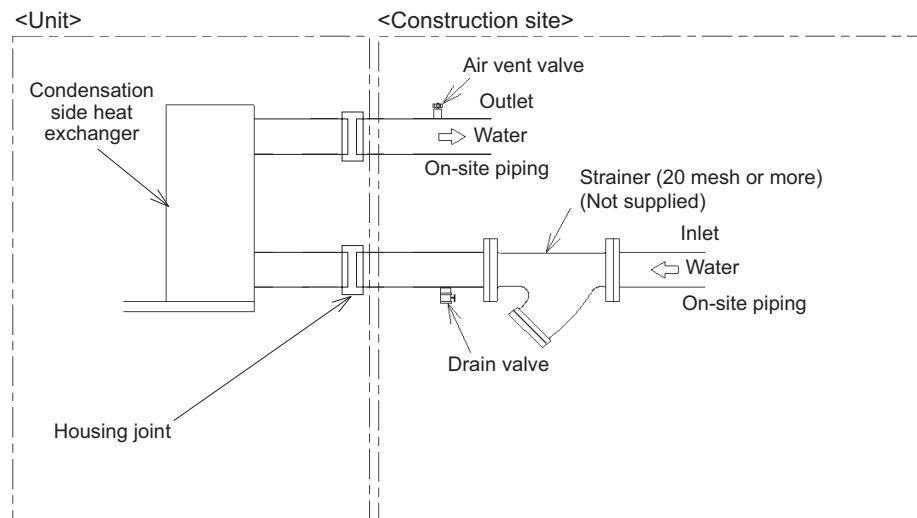
<1> Installing the strainer

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.



* The figure shows an example of strainer installation on the condensation side. Take the same procedure for the evaporation side.

<2> Installing a flow switch

ERCV-M900YA

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.

Evaporation side water

Minimum flow rate = 7.7 m³/h (128 L/min)

Unit usage range (water flow rate): 7.7 - 25.8* m³/h

*SW6-10: ON (Brine setting): 28.7 m³/h

Condensation side water

Minimum flow rate = 4.5 m³/h (75 L/min)

Unit usage range (water flow rate): 4.5 - 30.0 m³/h

ERCV-M900YA × 2

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.

Evaporation side water

Minimum flow rate = 15.4 m³/h (256 L/min)

Unit usage range (water flow rate): 15.4 - 50.0 m³/h

Condensation side water

Minimum flow rate = 9.0 m³/h (150 L/min)

Unit usage range (water flow rate): 9.0 - 50.0 m³/h

4-1-5. Ensuring enough water in the water circuit

ERCV-M900YA

<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. 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 evaporation side water (ℓ)	Minimum amount of condensation side water (ℓ)
ERCV-M900YA	300	350

(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)

Pipe size					
2 1/2B (65A)	3B (80A)	4B (100A)	5B (125A)	6B (150A)	8B (200A)
3.77	5.16	8.87	13.23	18.91	32.44

The amount of water that can be held in the heat source unit (ℓ)

Model	Evaporation side	Condensation side
ERCV-M900YA	18	25

(2) Inlet/Outlet pipe connection size and material

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

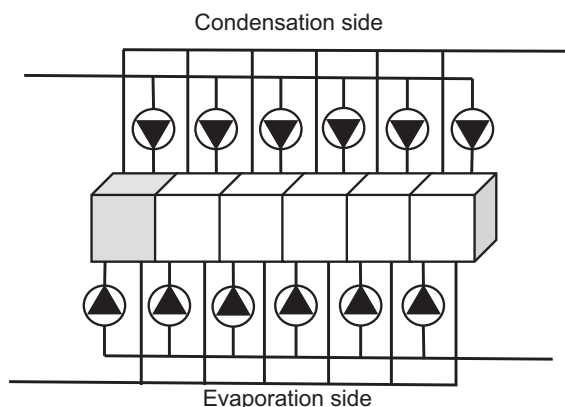
Inlet/Outlet pipe connection size

Inlet pipe connection (Evaporation side/Condensation side)	Outlet pipe connection (Evaporation side/Condensation side)
65A housing type joint (Field-supplied housing joint)	65A housing type joint (Field-supplied housing joint)

<2> Required amount of water (for multiple units)

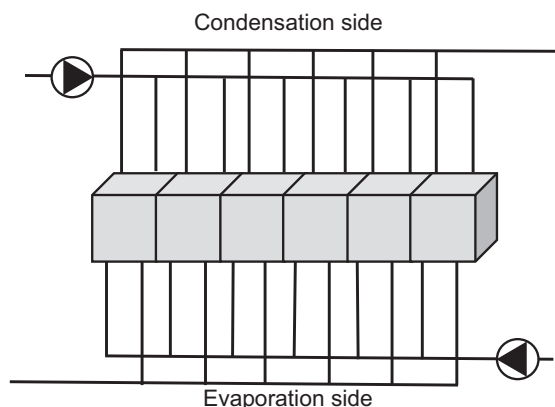
When one unit is in operation during low load by the function to control the number of units in operation

→The total amount of water required by the system is equivalent to the amount for one unit (value for a single unit)



When there are no changes in the number of units in operation during low load by the function to control the number of units in operation (simultaneous operation control)

→The total amount of water required by the system is equivalent to the amount for the total number of units



4. System Design

ERCV-M900YA × 2

<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. 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 evaporation side water (ℓ)	Minimum amount of condensation side water (ℓ)
ERCV-M900YA × 2	600	700

(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)

Pipe size					
2 1/2B (65A)	3B (80A)	4B (100A)	5B (125A)	6B (150A)	8B (200A)
3.77	5.16	8.87	13.23	18.91	32.44

The amount of water that can be held in the heat source unit (ℓ)

Model	Evaporation side	Condensation side
ERCV-M900YA × 2	43	56

(2) Inlet/Outlet pipe connection size and material

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

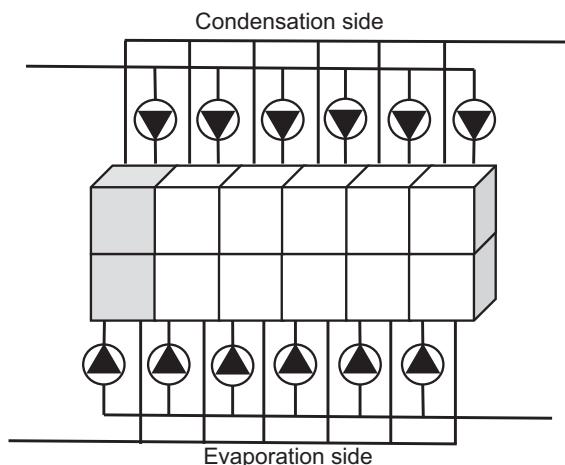
Inlet/Outlet pipe connection size

Inlet pipe connection (Evaporation side/Condensation side)	Outlet pipe connection (Evaporation side/Condensation side)
65A housing type joint (Field-supplied housing joint)	65A housing type joint (Field-supplied housing joint)

<2> Required amount of water (for multiple units)

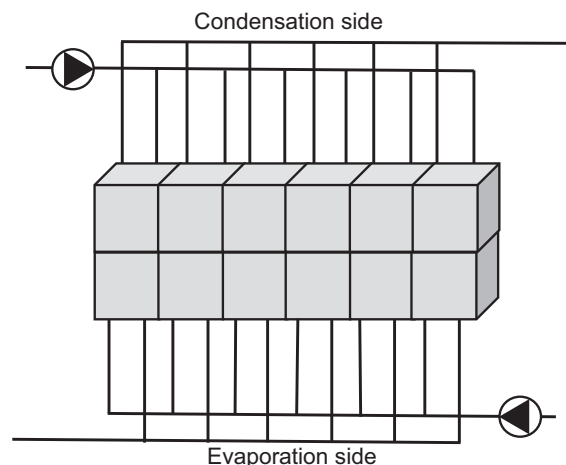
When one unit is in operation during low load by the function to control the number of units in operation

→The total amount of water required by the system is equivalent to the amount for one unit (value for a single unit)



When there are no changes in the number of units in operation during low load by the function to control the number of units in operation (simultaneous operation control)

→The total amount of water required by the system is equivalent to the amount for the total number of units

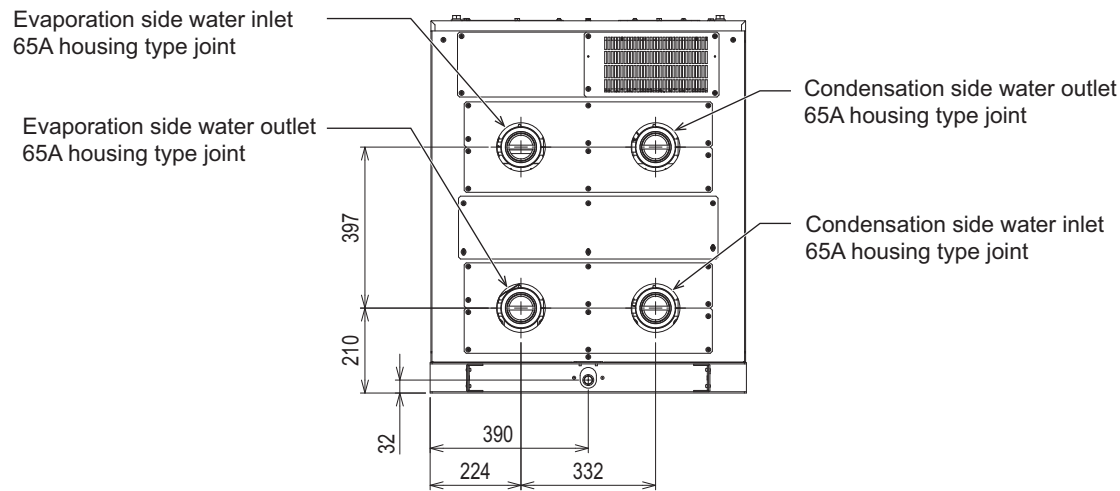


4-1-6. Water Piping Size and Location

ERCV-M900YA

ERCV-M900YA, ERCV-M900YA×2

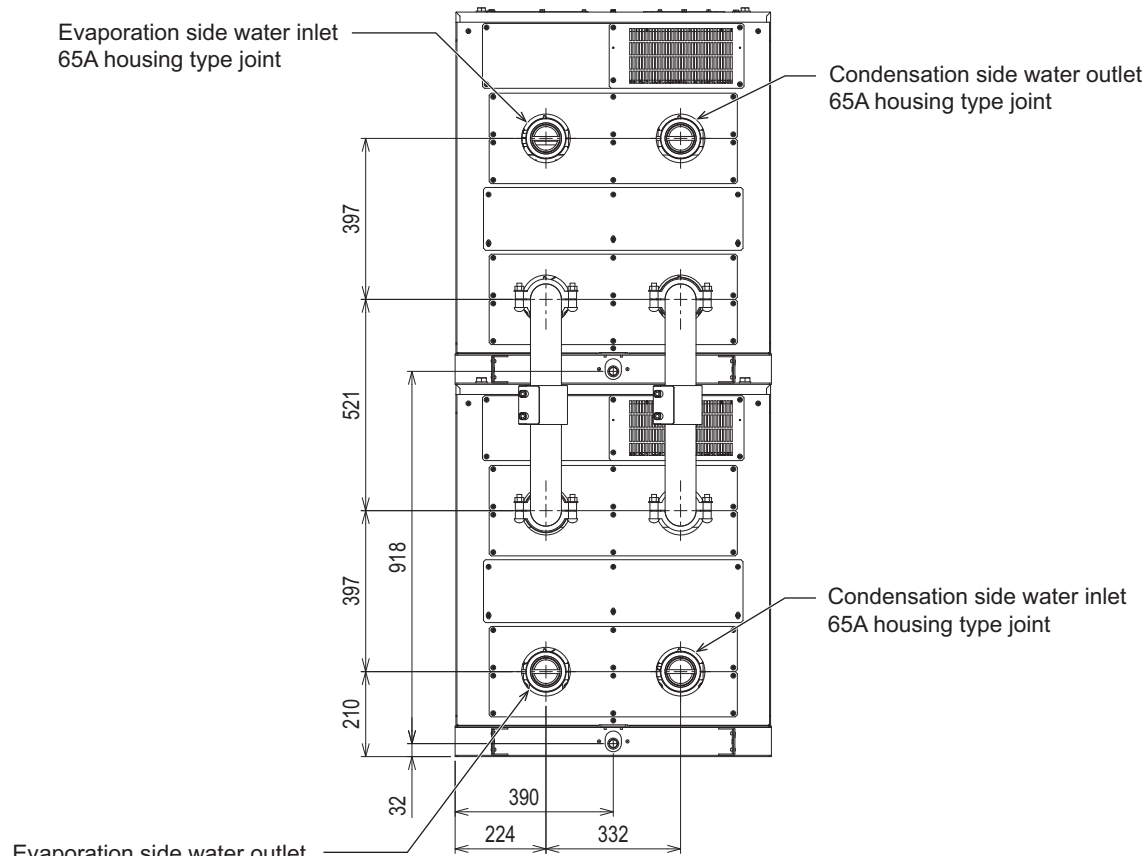
(Unit: mm)



<Opposite side of service side>

ERCV-M900YA × 2

(Unit: mm)



<Opposite side of service side>

5. Wiring Design

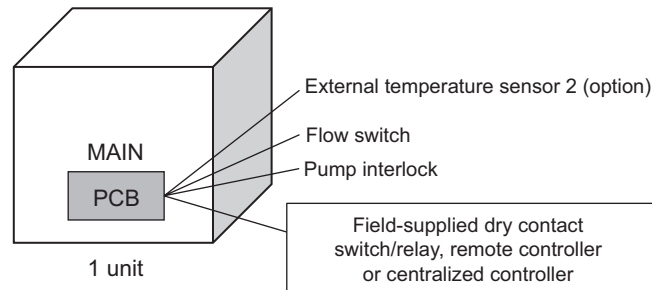
5-1. System Configurations

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

5-1-1. Schematic Diagrams of Individual and Multiple Units Connection Systems

ERCV-M900YA

(1) Individual system

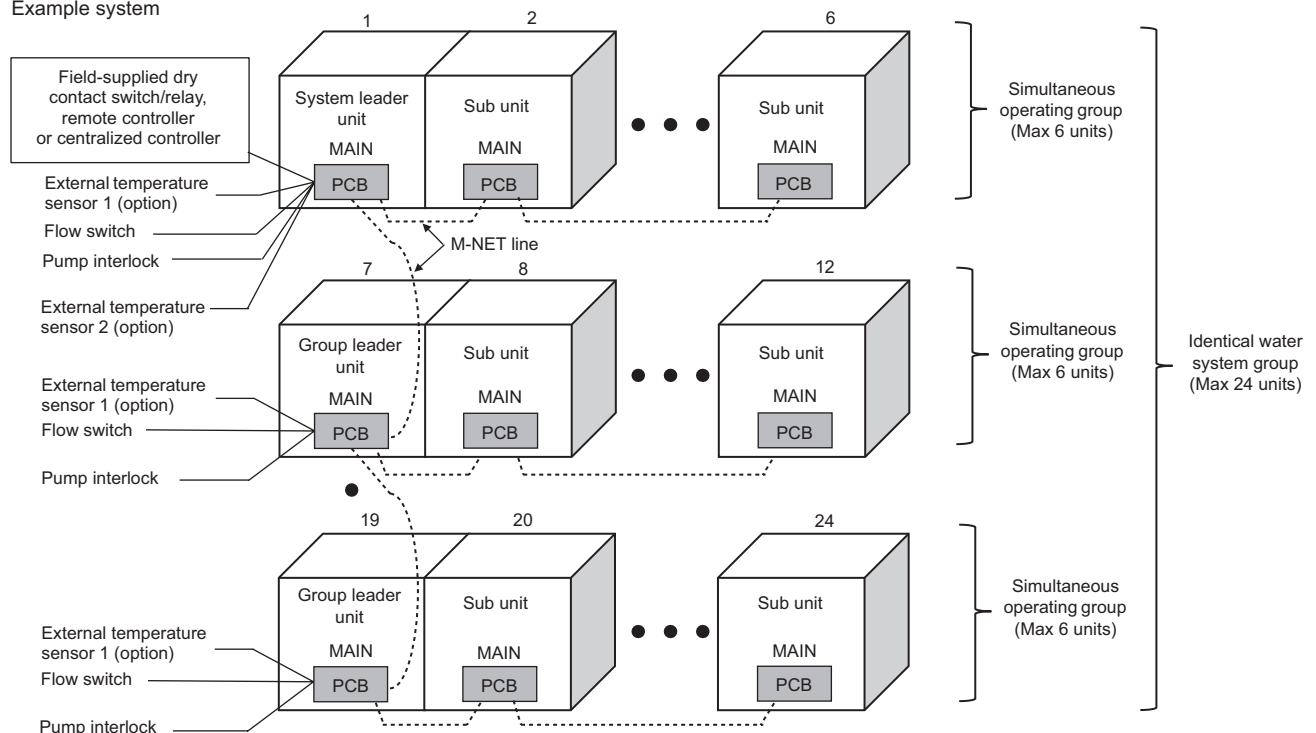


Refer to the sections "Switch Types and the Factory Settings" on page 79 and "Configuring the Settings" (page 85) for further details.

(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.

Example system

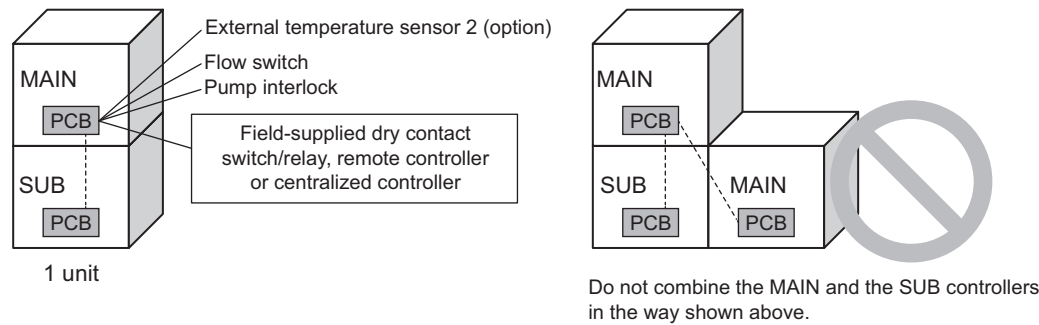


Refer to the sections "Switch Types and the Factory Settings" on page 79 and "Configuring the Settings" (page 85) for further details.

*Refer to the section "Setting the pump system" for the flow switch and pump connections.
(The example system shows Pattern 1.)

ERCV-M900YA × 2

(1) Individual system

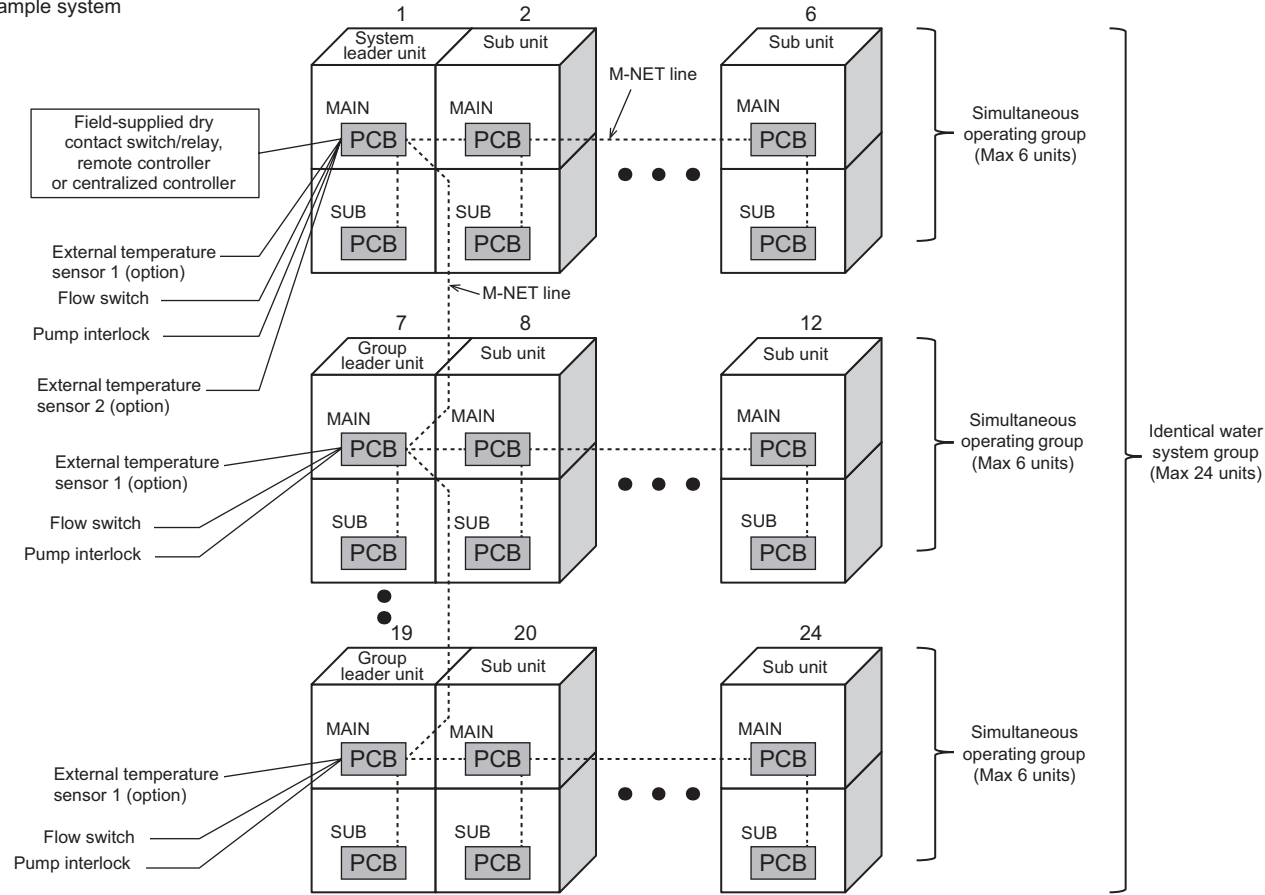


Refer to the sections "Switch Types and the Factory Settings" on page 79 and "Configuring the Settings" (page 85) for further details.

(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.

Example system



Refer to the sections "Switch Types and the Factory Settings" on page 79 and "Configuring the Settings" (page 85) for further details.

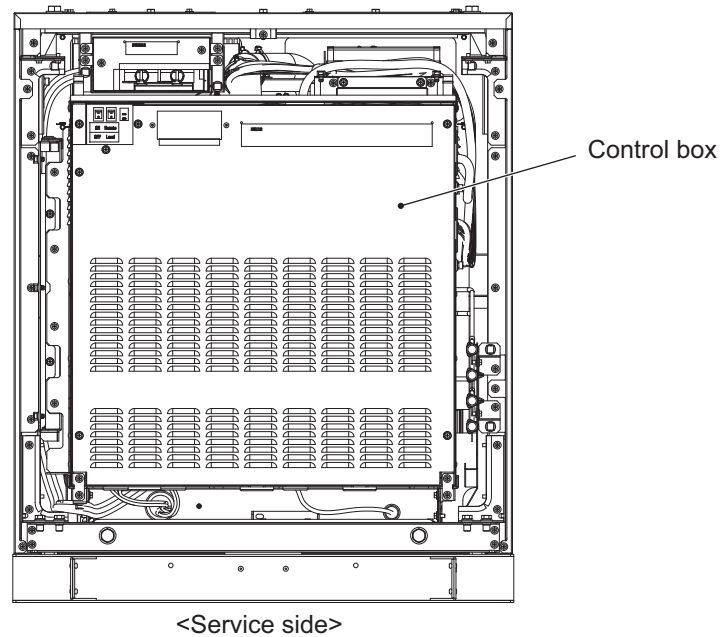
*Refer to the section "Setting the pump system" for the flow switch and pump connections.
(The example system shows Pattern 1.)

*ERCV-M900YA and ERCV-M900YA×2 cannot be included in the same system.

5-1-2. Switch Types and the Factory Settings

ERCV-M900YA

(1) Switch names and functions

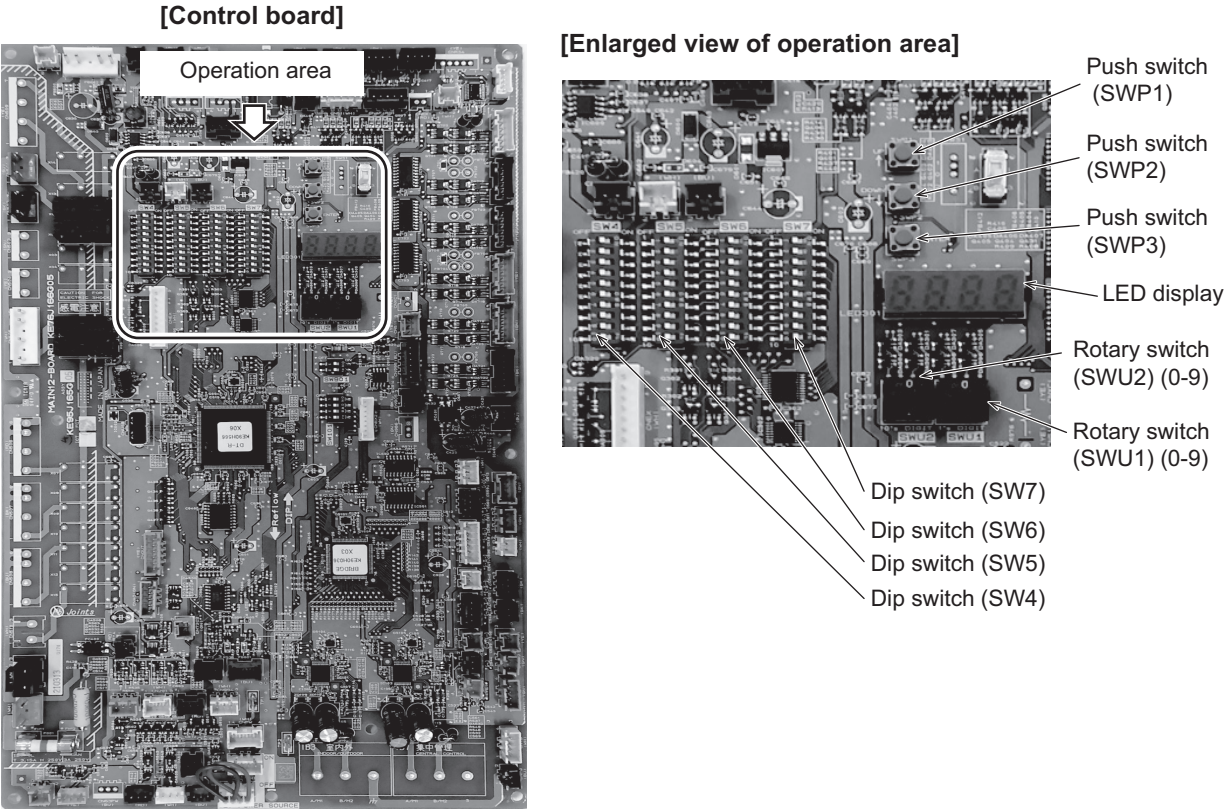


There are three main ways to set the settings as follows:

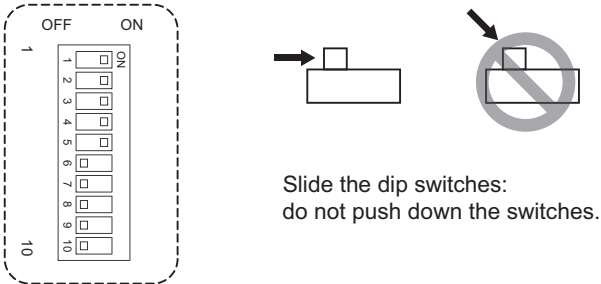
- ① Dip switches (SW4 - SW7)
- ② Dip switches used in combination with the push switches
- ③ Rotary switches

See below for how these switches are used to set certain items.

Different types of switches on the PCB



			Initial Setting
			MAIN circuit
Rotary switch	SWU1	Sets the 1's digit of the unit address.	"1"
	SWU2	Sets the 10's digit of the unit address.	"0"
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.	-



Example: on the upper figure.
1 to 5 are "ON" and 6 to 10 are
"OFF".

5. Wiring Design

(2) Factory Switch Settings (Dip switch settings table)

			Factory setting							
SW		Function	Usage	MAIN 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	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	Set the operation mode cooling or heating mode.	OFF	Cooling mode	Heating mode	Required	Required	Required	At a reset
	2	System setting	Set the duties to each unit.	OFF	System leader unit : ON ON Group leader unit : ON OFF Sub unit : OFF 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 TH12	Required	Required	Required	At a reset
	5	Water-temperature control 2 (option)	Selects target temperature correction control. (Identical water system group) (Disabled when SW5-7 and SW5-8 are set to ON)	OFF	OFF	ON (External water sensor 2 TH13 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 *1		OFF	No input from BMS	Input from BMS	Required	Fixed OFF	Fixed OFF	At a reset
	10	BMS Group setting		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	1 / 2 4-20mA : OFF OFF 1-5V : ON OFF 0-10V : OFF ON 2-10V : ON ON		Required	Fixed OFF	Fixed OFF	At a reset
	2									
	3	Outdoor temperature input	Selects when using Cooling ECO or Heating ECO function.	OFF	3 / 4 No outdoor temperature : OFF OFF Outdoor temp. analog input : ON OFF 4-20mA input : OFF ON It terminal : OFF ON Outdoor temp. input TH11 *2 : ON ON		Required	Fixed OFF	Fixed OFF	At a reset
	4									
	5	Model setting		OFF	Leave the setting as it is.		Fixed OFF	Fixed OFF	Fixed OFF	Any time
	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	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	Water/Brine setting		OFF	Water	Brine	Required	Required	Required	At a reset

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

*2 Use the following recommended products or similar products for the outdoor temperature thermistor.
Recommended product t-mac 500-51791

Relationship between resistance value Rt (kΩ) and temperature t (°C)

$$R_t = 1.07 \exp \left\{ 3978 \left(\frac{1}{273+t} - \frac{1}{358} \right) \right\}$$

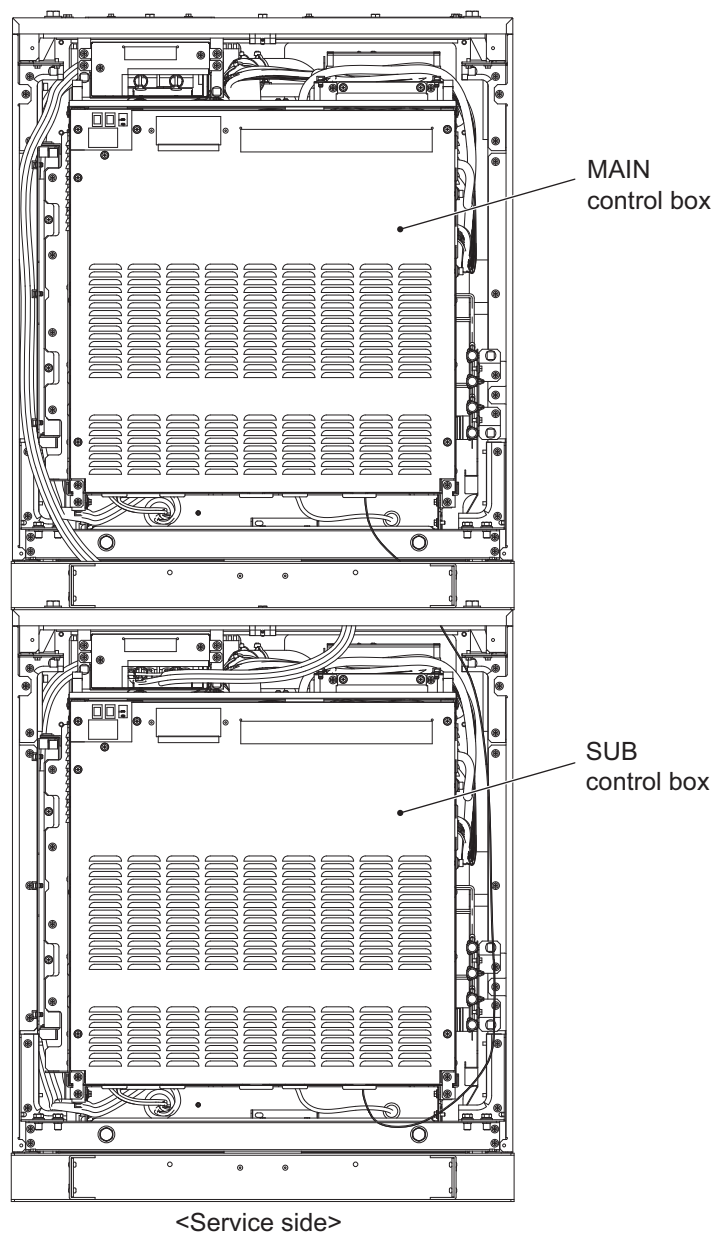
- Select the thermistor taking note of the tolerance in the resistance values.
- Use shielded cable for the wiring.

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

ERCV-M900YA × 2

(1) Switch names and functions

ERCV-M900YA, ERCV-M900YA×2



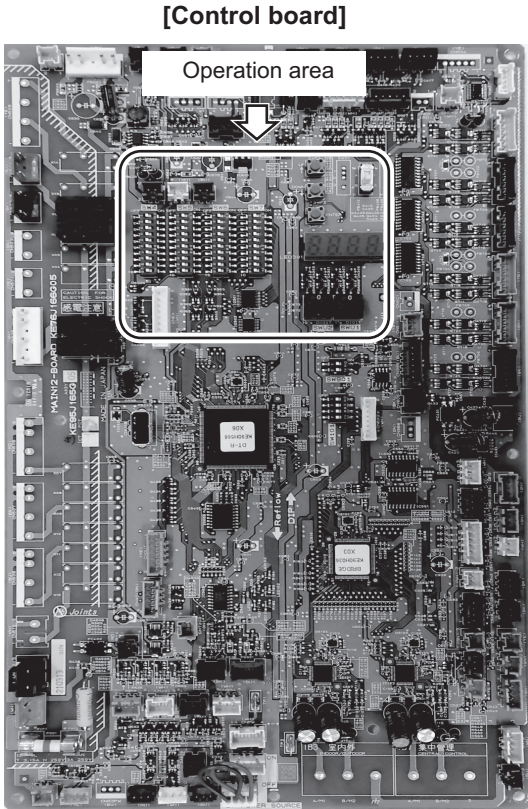
There are three main ways to set the settings as follows:

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

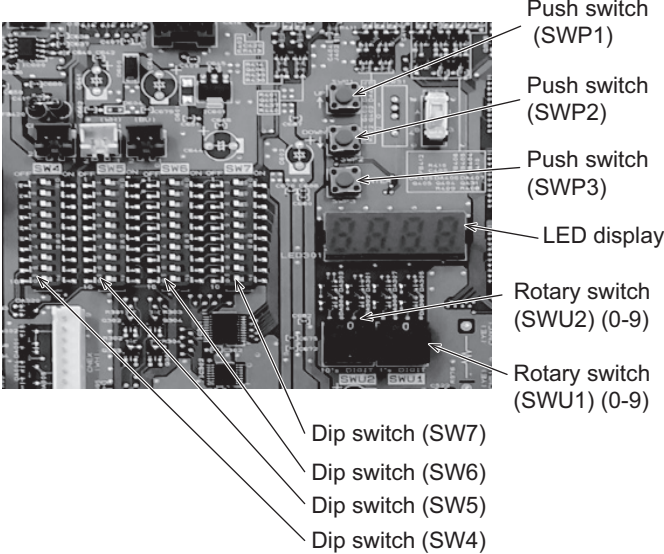
See below for how these switches are used to set certain items.

5. Wiring Design

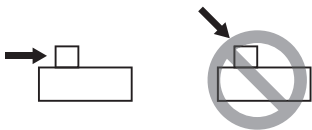
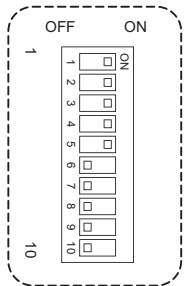
Different types of switches on the PCB



[Enlarged view of operation area]



			Initial Setting
			MAIN/SUB circuit
Rotary switch	SWU1	Sets the 1's digit of the unit address.	"1"
	SWU2	Sets the 10's digit of the unit address.	"0"
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.	-



Slide the dip switches:
do not push down the switches.

Example: on the upper figure.
1 to 5 are "ON" and 6 to 10 are
"OFF".

5. Wiring Design

(2) Factory Switch Settings (Dip switch settings table)

			Factory setting							
SW		Function	Usage	MAIN/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	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	Set the operation mode cooling or heating mode.	OFF *3	Cooling mode	Heating mode	Required	Required	Required	At a reset
	2	System setting	Set the duties to each unit.	OFF	2 / 3 System leader unit : ON ON Group leader unit : ON OFF Sub unit : OFF 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 TH12	Required	Required	Required	At a reset
	5	Water-temperature control 2 (option)	Selects target temperature correction control. (Identical water system group) (Disabled when SW5-7 and SW5-8 are set to ON)	OFF	OFF	ON (External water sensor 2 TH13 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 *1		OFF	No input from BMS	Input from BMS	Required	Fixed OFF	Fixed OFF	At a reset
	10	BMS Group setting		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	1 / 2 4-20mA : OFF OFF 1-5V : ON OFF 0-10V : OFF ON 2-10V : ON ON		Required	Fixed OFF	Fixed OFF	At a reset
	2									
	3	Outdoor temperature input	Selects when using Cooling ECO or Heating ECO function.	OFF	3 / 4 No outdoor temperature : OFF OFF Outdoor temp. analog input : ON OFF 4-20mA input : OFF ON It terminal : OFF ON Outdoor temp. input TH11 *2 : ON ON		Required	Fixed OFF	Fixed OFF	At a reset
	4									
	5	Model setting	Selects ERCV-M900YA or ERCV-M900YA × 2	OFF *3	ERCV-M900YA	ERCV-M900YA × 2	Required	Required	Required	At a reset
	6	Model setting		OFF	Leave the setting as it is.		Fixed OFF	Fixed OFF	Fixed OFF	Any time
	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 *3	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	Water/Brine setting		OFF *3	Water	Brine	Required	Required	Required	At a reset

*1 Connection to a BMS requires an installation of Procon A1M/A1M+ (MODBUS® interface), which is available from MITSUBISHI ELECTRIC UK.

Use a BMS with insulation.

*2 Use the following recommended products or similar products for the outdoor temperature thermistor.

*3 When changing the settings, ensure they are applied to both the MAIN circuit and the SUB circuit.

Recommended product t-mac 500-51791

Relationship between resistance value Rt (kΩ) and temperature t (°C)

$$R_t = 1.07 \exp \left\{ 3978 \left(\frac{1}{273+t} - \frac{1}{358} \right) \right\}$$

- Select the thermistor taking note of the tolerance in the resistance values.
- Use shielded cable for the wiring.

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

5. Wiring Design

5-1-3. Configuring the Settings

The settings must be set only by a qualified personnel.

1. System configuration

ERCV-M900YA

(1) Set the dip switches.

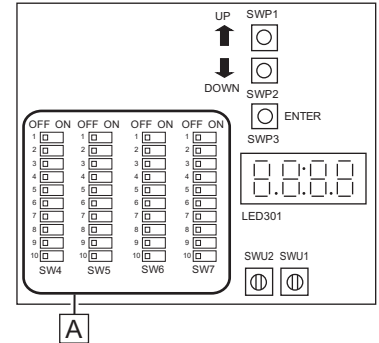
Switch settings on the MAIN circuit

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

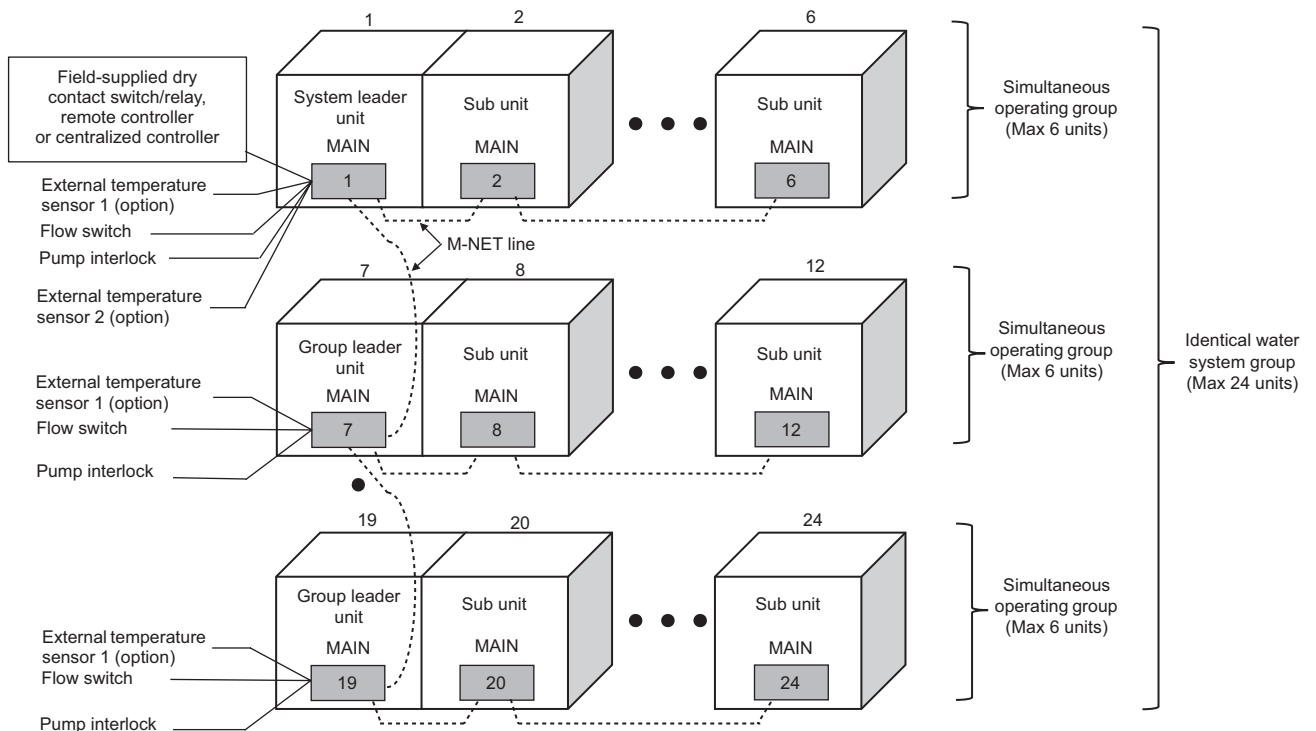
Refer to "Dip switch settings table" (page 81) for further details.

MAIN circuit board



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

Example of address setting

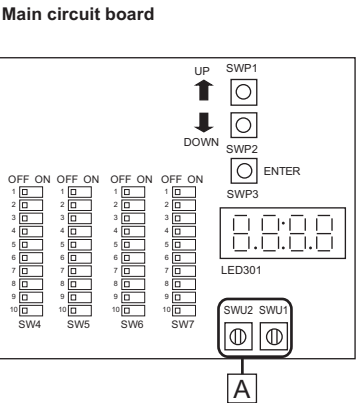


*Refer to the section "Setting the pump system" for the flow switch and pump connections.
(The example system shows Pattern 1.)

5. Wiring Design

Setting the switches on the system leader unit

Make sure the address of the MAIN circuit on the main module is set to "1" (labeled A in the figure at right).



Setting the switches on the group leader unit

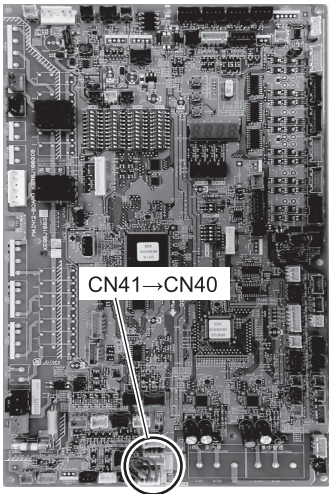
MAIN circuit

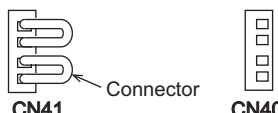
Set the MAIN circuit addresses with the rotary switches. (labeled A in the figure). Set the 10's digit with SWU2, and set the 1's digit with SWU1. Assign sequential addresses to the MAIN circuit on all sub modules starting with 2.

(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.

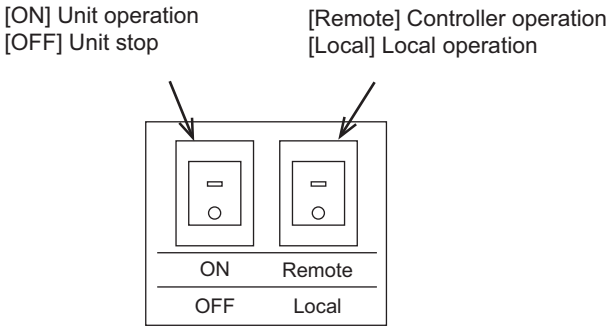
*Leave the connector connected to CN41 when using an AE-C400, EW-C50 as the centralized controller.



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

5. Wiring Design

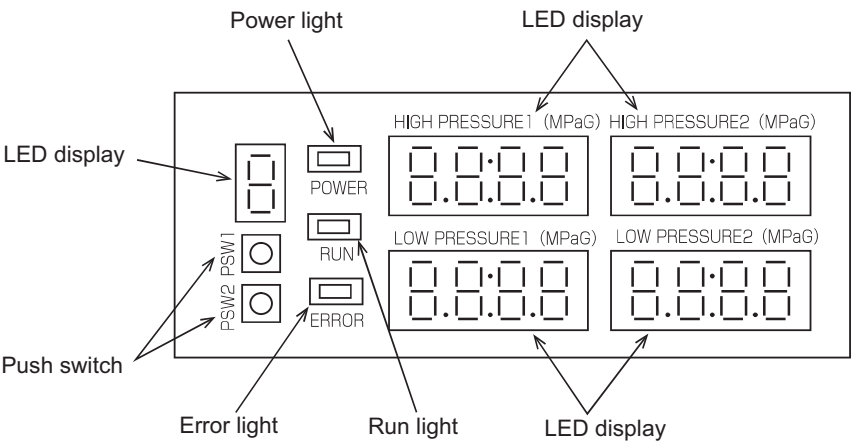
Selector switch settings



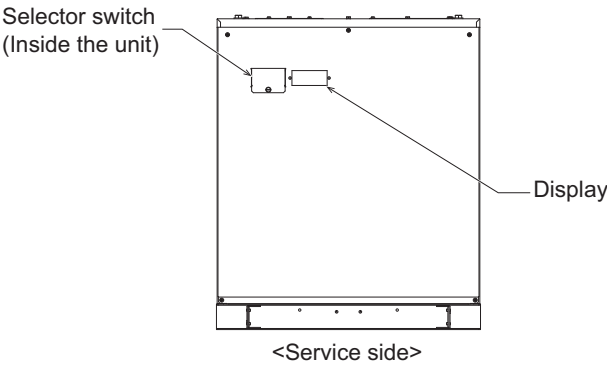
CAUTION

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

Display



The positions of the selector switch and the display



ERCV-M900YA × 2

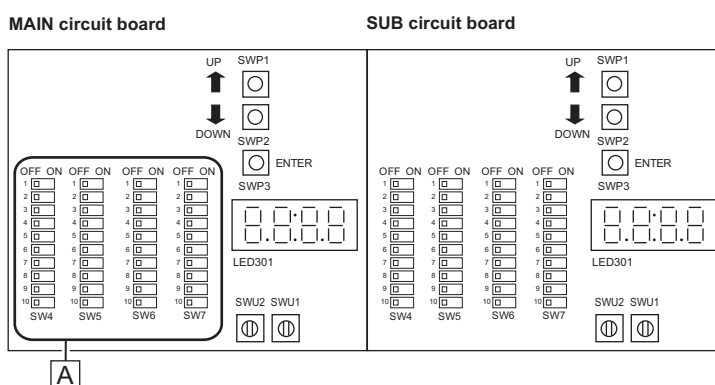
(1) Set the dip switches.

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.

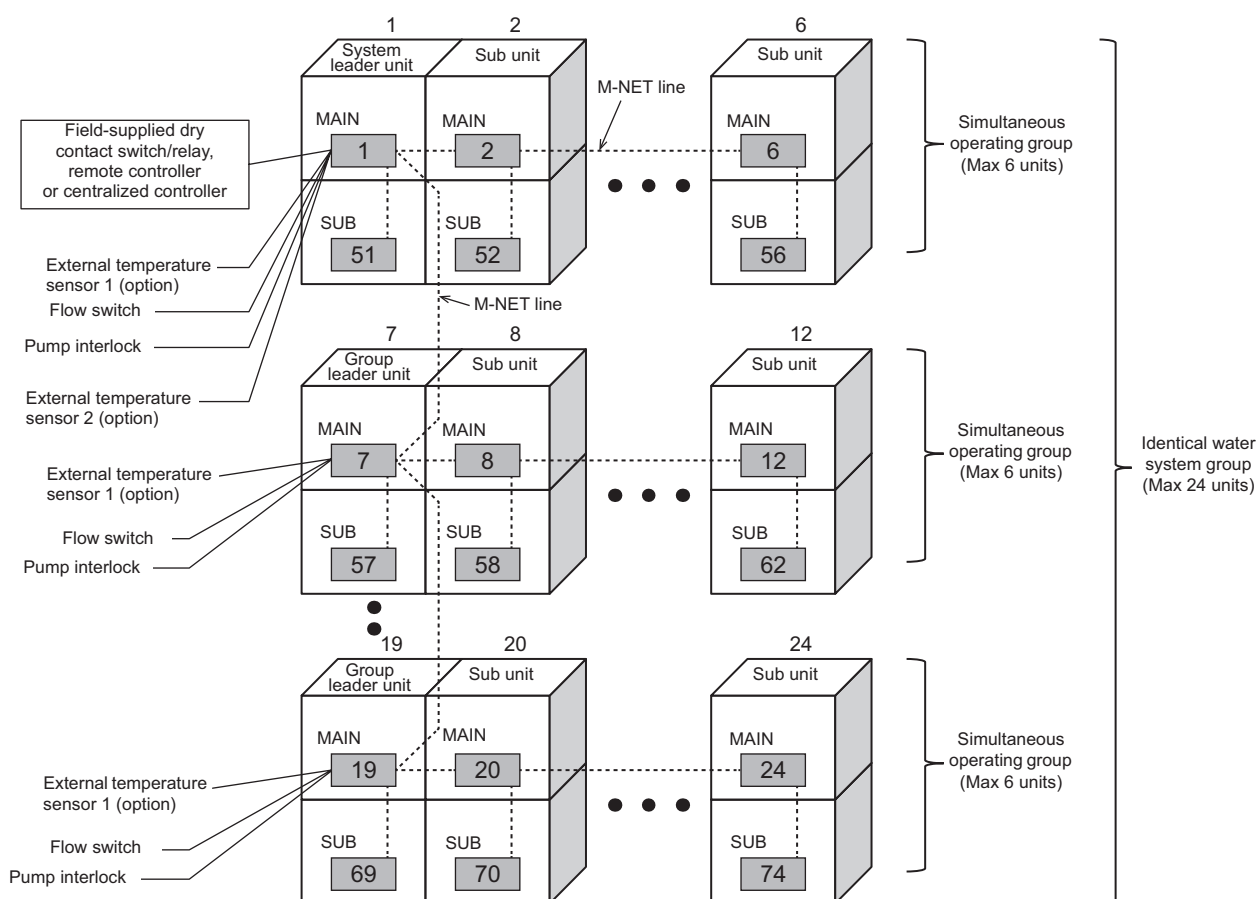
- Water temperature control based on the external water temperature reading
- Analog signals from a remote location

Refer to "Dip switch settings table" (page 84) for further details.



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

Example of address setting



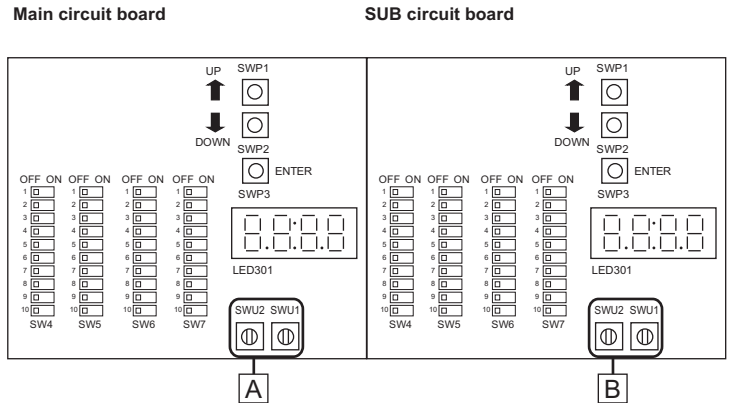
*Refer to the section "Setting the pump system" for the flow switch and pump connections.
(The example system shows Pattern 1.)

5. Wiring Design

Setting the switches on the system leader unit

Make sure the address of the MAIN circuit on the main module is set to "1" (labeled A in the figure at right) and that the address of the SUB circuit on the main module 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 module and 50.



Setting the switches on the group leader 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 modules starting with 2.

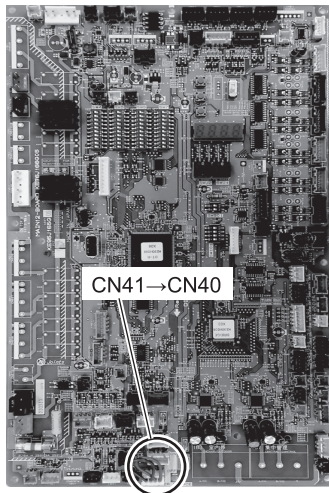
SUB circuit

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 modules starting with 52.

(3) Set the M-NET power supply.

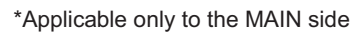
When connecting a system leader unit and a group leader unit to a multiple units connection system, the connector connected to CN41 on the MAIN circuit board (Address 1) must be disconnected and then connected to CN40.

*Leave the connector connected to CN41 when using an AE-C400, EW-C50 as the centralized controller.



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

[ON] Unit operation	[Remote] Controller operation
[OFF] Unit stop	[Local] Local operation



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

The diagram shows a control panel with the following components and labels:

- Power light:** Points to a rectangular indicator light labeled "POWER".
- LED display:** Points to a vertical stack of three push switches on the left, labeled "PSW1", "PSW2", and "PSW3".
- Run light:** Points to a rectangular indicator light labeled "RUN".
- Error light:** Points to a rectangular indicator light labeled "ERROR".
- LED display:** Points to four digital displays arranged in a 2x2 grid:
 - Top-left: "HIGH PRESSURE1 (MPaG)"
 - Top-right: "HIGH PRESSURE2 (MPaG)"
 - Bottom-left: "LOW PRESSURE1 (MPaG)"
 - Bottom-right: "LOW PRESSURE2 (MPaG)"
- Push switch:** Points to the "PSW1" switch.

The diagram shows the service side of the unit, which consists of two main vertical sections. Each section has a selector switch at the top and a display at the bottom. The selector switch is labeled "Selector switch (Inside the unit)" and the display is labeled "Display". The bottom section is also labeled "Selector switch (Inside the unit) (Not used)". The entire unit is labeled "<Service side>" at the bottom.

ERCV-M900YA, ERCV-M900YA × 2

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.

Dip switch setting SW5-1 OFF: Cooling *¹

Priority 1	Priority 2	Priority 3			Target water temperature
Analog input or BMS (SW5-9: ON)	No-voltage contact input K40-42	Remote controller PAR-W31MAA Input from centralized controller AE-C400, EW-C50 or BMS (*2)			
	Mode Change	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
		-	Cooling	-	Cooling
		-	-	When schedule has been set	Target water temp is controlled according to the setting on the remote controller.

*¹ Control the evaporation side water temperature.

*² AE-C400, EW-C50 and BMS cannot both be simultaneously connected. Only connect one or the other.

Dip switch setting SW5-1 ON: Heating *¹

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 K40-42	Remote controller PAR-W31MAA Input from centralized controller AE-C400, EW-C50 or BMS (*2)			
Anti-freeze		Mode change	No remote controller	Manual setting	Schedule setting	
ON	Ineffective	Ineffective	-	Ineffective	Ineffective	25°C
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
			-	Heating ECO	-	Heating ECO
			-	Heating	-	Heating
			-	-	When schedule has been set	Target water temp is controlled according to the setting on the remote controller.

*¹ Control the condensation side water temperature.

*² AE-C400, EW-C50 and BMS cannot both be simultaneously connected. Only connect one or the other.

ERCV-M900YA, ERCV-M900YA*2

Priority order of the operation signal sources

		No-voltage contact	Remote controller PAR-W31MAA	Input from centralized controller AE-C400, EW-C50 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	
ECO mode (The contact ON has priority)		OFF	-	Effective*4
		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.
*4 ECO mode cannot be set from centralized controller.

5. Wiring Design

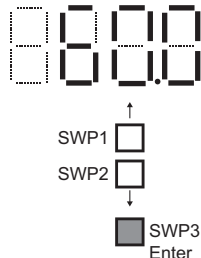
2. Making the settings

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

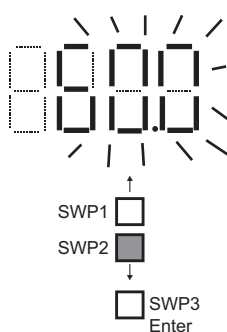


Normally a value of setting item appears on the display.



Press SWP3 (Enter) to enable the configuration changes.

②

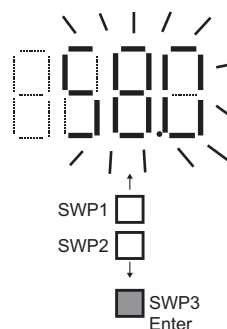


The current setting value will blink.



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.

5. Wiring Design

(2) Table of settings items

ERCV-M900YA

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
					System	Group	Sub	
1	SW7-1 ON		Setting temp. 1 (Cooling mode) *3	7°C	○	—	—	Range 4–30°C (-10–30°C) *8
2	SW7-1 ON		Setting temp. 2 (Cooling mode) *3	7°C	○	—	—	Range 4–30°C (-10–30°C) *8
3	SW7-1 ON		Setting temp. 1 (Heating mode) *4	45°C	○	—	—	Range 20–60°C *7
4	SW7-1 ON		Setting temp. 2 (Heating mode) *4	45°C	○	—	—	Range 20–60°C *7
5	SW7-2 ON		Setting water temp. A at Cooling ECO mode *3	11.5°C	○	—	—	Range 4–30°C (-10–30°C) *8
6	SW7-2 ON		Setting outdoor temp. A at Cooling ECO mode *3	20°C	○	—	—	Range -20–55°C
7	SW7-2 ON		Setting water temp. B at Cooling ECO mode *3	7°C	○	—	—	Range 4–30°C (-10–30°C) *8
8	SW7-2 ON		Setting outdoor temp. B at Cooling ECO mode *3	35°C	○	—	—	Range -20–55°C
9	SW7-2 ON		Setting water temp. C at Cooling ECO mode *3	10°C	○	—	—	Range 4–30°C (-10–30°C) *8
10	SW7-2 ON		Setting outdoor temp. C at Cooling ECO mode *3	25°C	○	—	—	Range -20–55°C
11	SW7-1 ON		Setting water temp. D at Heating ECO mode *4	52°C	○	—	—	Range 20–60°C *7
12	SW7-1 ON		Setting outdoor temp. D at Heating ECO mode *4	-7°C	○	—	—	Range -30–50°C
13	SW7-1 ON		Setting water temp. E at Heating ECO mode *4	30°C	○	—	—	Range 20–60°C *7
14	SW7-1 ON		Setting outdoor temp. E at Heating ECO mode *4	12°C	○	—	—	Range -30–50°C
15	SW7-1 ON		Setting water temp. F at Heating ECO mode *4	42°C	○	—	—	Range 20–60°C *7
16	SW7-1 ON		Setting outdoor temp. F at Heating ECO mode *4	2°C	○	—	—	Range -30–50°C
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%

5. Wiring Design

No.	Dip switch setting *1	Dip switch setting (SW4) *2	Setting Item	Default	Need or non-need to set the setting *5			Notes
					System	Group	Sub	
19	SW7-1 ON		Preset temp. A (Cooling) *3	4°C	○	—	—	Range 4–30°C (-10–30°C) *8
20	SW7-1 ON		Preset temp. B (Cooling) *3	30°C	○	—	—	Range 4–30°C (-10–30°C) *8
21	SW7-1 ON		Preset temp. A (Heating) *4	25°C	○	—	—	Range 20–60°C *7
22	SW7-1 ON		Preset temp. B (Heating) *4	55°C	○	—	—	Range 20–60°C *7
23	SW7-1 ON		Supplementary heater operation water temp. *4	15°C	○	○	○	Range 0–55°C
24	SW7-1 ON		Thermo differential 1 (Cooling mode) *3, *6	3°C	○	○	○	Range 0.2–5°C
25	SW7-1 ON		Thermo differential 2 (Cooling mode) *3, *6	2°C	○	○	○	Range 0.2–5°C
26	SW7-1 ON		Thermo differential 1 (Heating mode) *4, *6	3°C	○	○	○	Range 0.2–5°C
27	SW7-1 ON		Thermo differential 2 (Heating mode) *4, *6	2°C	○	○	○	Range 0.2–5°C
28	SW7-1 ON		Year setting	-	○	—	—	
29	SW7-1 ON		Month/Date setting	-	○	—	—	
30	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

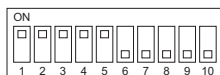
Group: Group leader unit

Sub: Sub unit

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

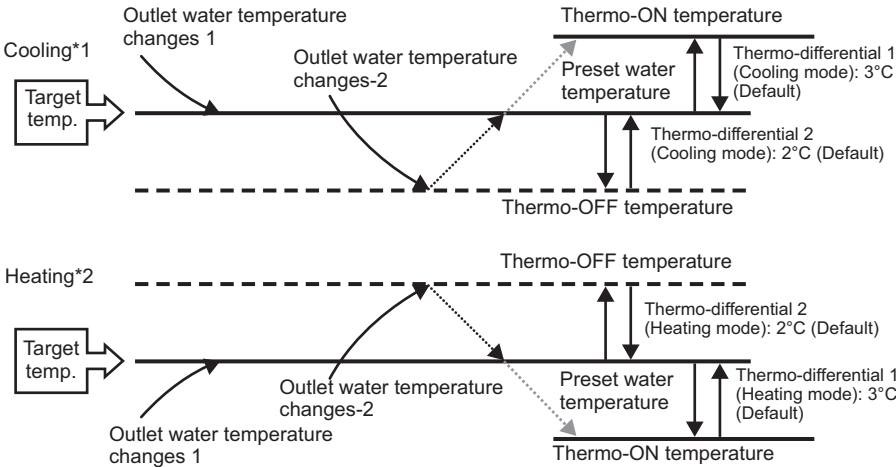
*7: Maximum 60°C. When the target water temperature exceeds 55°C and the Efficiency priority mode (No-voltage contact K91-93: ON) is enabled, the maximum temperature for this setting will be limited to 55°C.

*8: Applicable only when SW6-10 is set to ON. (Brine setting)



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

ERCV-M900YA, ERCV-M900YA*2



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.

*1 Control the evaporation side water temperature.
*2 Control the condensation side water temperature.

5. Wiring Design

ERCV-M900YA × 2

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.

					Need or non-need to set the setting *5						
No.	Dip switch setting *1	Dip switch setting (SW4) *2	Setting Item	Default	System		Group		Sub		Notes
					M	S	M	S	M	S	
1	SW7-1 ON		Setting temp. 1 (Cooling mode) *3	7°C	○	—	—	—	—	—	Range 4–30°C (-10–30°C) *7
2	SW7-1 ON		Setting temp. 2 (Cooling mode) *3	7°C	○	—	—	—	—	—	Range 4–30°C (-10–30°C) *7
3	SW7-1 ON		Setting temp. 1 (Heating mode) *4	45°C	○	—	—	—	—	—	Range 20–55°C
4	SW7-1 ON		Setting temp. 2 (Heating mode) *4	45°C	○	—	—	—	—	—	Range 20–55°C
5	SW7-2 ON		Setting water temp. A at Cooling ECO mode *3	11.5°C	○	—	—	—	—	—	Range 4–30°C (-10–30°C) *7
6	SW7-2 ON		Setting outdoor temp. A at Cooling ECO mode *3	20°C	○	—	—	—	—	—	Range -20–55°C
7	SW7-2 ON		Setting water temp. B at Cooling ECO mode *3	7°C	○	—	—	—	—	—	Range 4–30°C (-10–30°C) *7
8	SW7-2 ON		Setting outdoor temp. B at Cooling ECO mode *3	35°C	○	—	—	—	—	—	Range -20–55°C
9	SW7-2 ON		Setting water temp. C at Cooling ECO mode *3	10°C	○	—	—	—	—	—	Range 4–30°C (-10–30°C) *7
10	SW7-2 ON		Setting outdoor temp. C at Cooling ECO mode *3	25°C	○	—	—	—	—	—	Range -20–55°C
11	SW7-1 ON		Setting water temp. D at Heating ECO mode *4	52°C	○	—	—	—	—	—	Range 20–55°C
12	SW7-1 ON		Setting outdoor temp. D at Heating ECO mode *4	-7°C	○	—	—	—	—	—	Range -30–50°C
13	SW7-1 ON		Setting water temp. E at Heating ECO mode *4	30°C	○	—	—	—	—	—	Range 20–55°C
14	SW7-1 ON		Setting outdoor temp. E at Heating ECO mode *4	12°C	○	—	—	—	—	—	Range -30–50°C
15	SW7-1 ON		Setting water temp. F at Heating ECO mode *4	42°C	○	—	—	—	—	—	Range 20–55°C
16	SW7-1 ON		Setting outdoor temp. F at Heating ECO mode *4	2°C	○	—	—	—	—	—	Range -30–50°C
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%

5. Wiring Design

					Need or non-need to set the setting *5							
No.	Dip switch setting *1	Dip switch setting (SW4) *2	Setting Item	Default	System		Group		Sub		Notes	
					M	S	M	S	M	S		
19	SW7-1 ON	ON 12345678910	Preset temp. A (Cooling) *3	4°C	○	—	—	—	—	—	—	Range 4–30°C (-10–30°C) *7
20	SW7-1 ON	ON 12345678910	Preset temp. B (Cooling) *3	30°C	○	—	—	—	—	—	—	Range 4–30°C (-10–30°C) *7
21	SW7-1 ON	ON 12345678910	Preset temp. A (Heating) *4	25°C	○	—	—	—	—	—	—	Range 20–55°C
22	SW7-1 ON	ON 12345678910	Preset temp. B (Heating) *4	55°C	○	—	—	—	—	—	—	Range 20–55°C
23	SW7-1 ON	ON 12345678910	Supplementary heater operation water temp. *4	15°C	○	—	○	—	○	—	—	Range 0–55°C
24	SW7-1 ON	ON 12345678910	Thermo differential 1 (Cooling mode) *3, *6	3°C	○	—	○	—	○	—	—	Range 0.2–5°C
25	SW7-1 ON	ON 12345678910	Thermo differential 2 (Cooling mode) *3, *6	2°C	○	—	○	—	○	—	—	Range 0.2–5°C
26	SW7-1 ON	ON 12345678910	Thermo differential 1 (Heating mode) *4, *6	3°C	○	—	○	—	○	—	—	Range 0.2–5°C
27	SW7-1 ON	ON 12345678910	Thermo differential 2 (Heating mode) *4, *6	2°C	○	—	○	—	○	—	—	Range 0.2–5°C
28	SW7-1 ON	ON 12345678910	Year setting	-	○	—	—	—	—	—	—	
29	SW7-1 ON	ON 12345678910	Month/Date setting	-	○	—	—	—	—	—	—	
30	SW7-1 ON	ON 12345678910	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

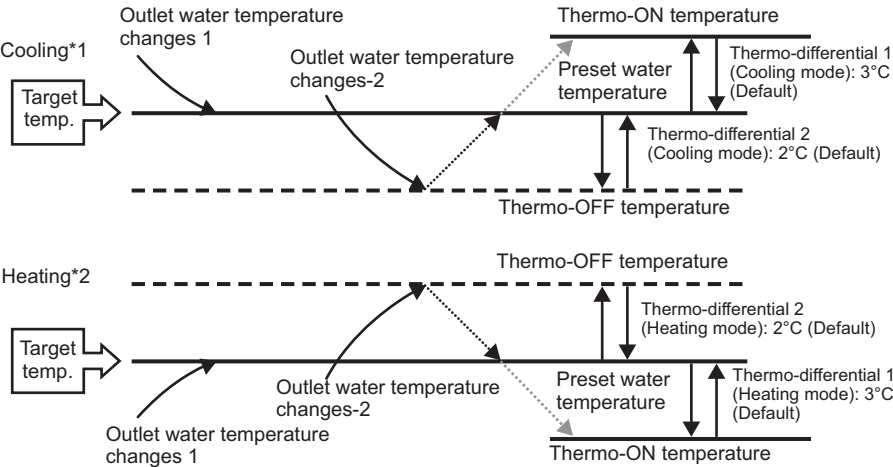
*6: Thermo - ON/OFF temperature conditions (water temperature control)

*7: Applicable only when SW6-10 is set to ON. (Brine setting)



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

5. Wiring Design



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.

*1 Control the evaporation side water temperature.
*2 Control the condensation side water temperature.

5. Wiring Design

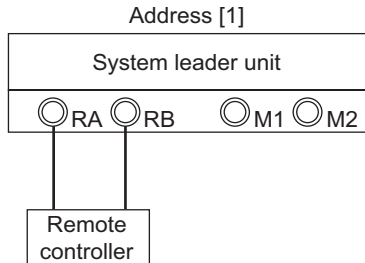
3. Setting procedures

(1) System setting

ERCV-M900YA

1. Making the settings for the initial start-up process

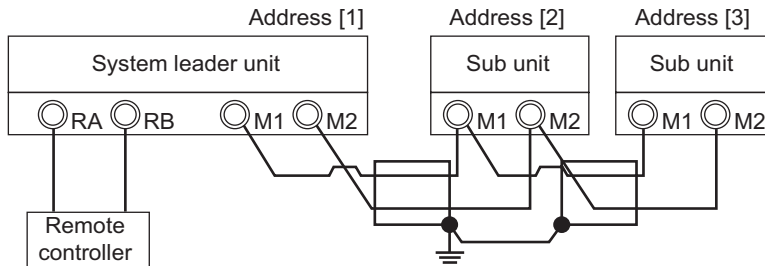
(A) Single unit



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

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



Setting address 1

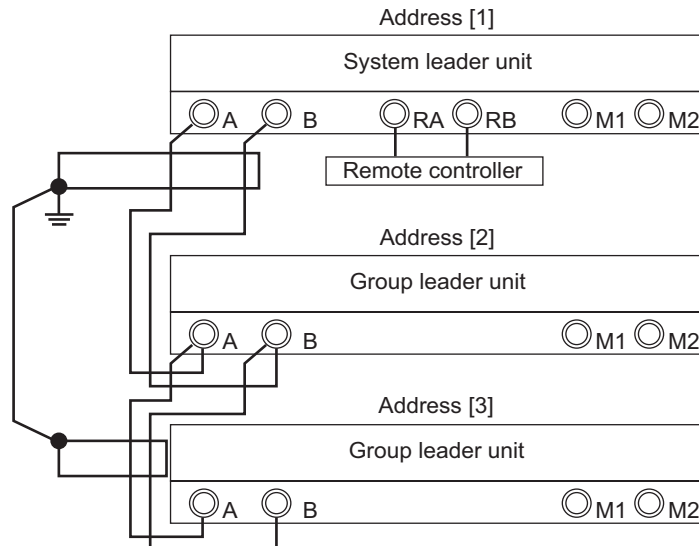
- 1) Turn off the power.
- 2) System leader unit (Address 1 SW5-2, 5-3: ON)
- 3) Turn the power back on.
Address 1 → LED display [EEEE]
- 4) Setting the number of units for the group
SW7: 1 ON
SW4: 1, 2, 3, 4, 8, 10 ON
Press ENTER once.
↓
Address 1 → LED display [1]
↓
Press UP twice.
↓
Address 1 → LED display [3]
↓
Press ENTER once.
SW4: 1, 2, 3, 4, 8, 10 OFF
- 5) SW7: 1, 2, 3, 4 ON and ENTER for 5 seconds.
(Initializes the system)
Address 1 → LED display [9999]→[FFFF]
- 6) SW7: 1, 2, 3, 4 OFF
Start-up process complete
Address 1 → LED display [__||__]

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

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

5. Wiring Design

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



① 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]
- 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
Press ENTER once.
SW4: 5, 8, 10 ON
↓
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.
Press ENTER once.

② Setting address 2

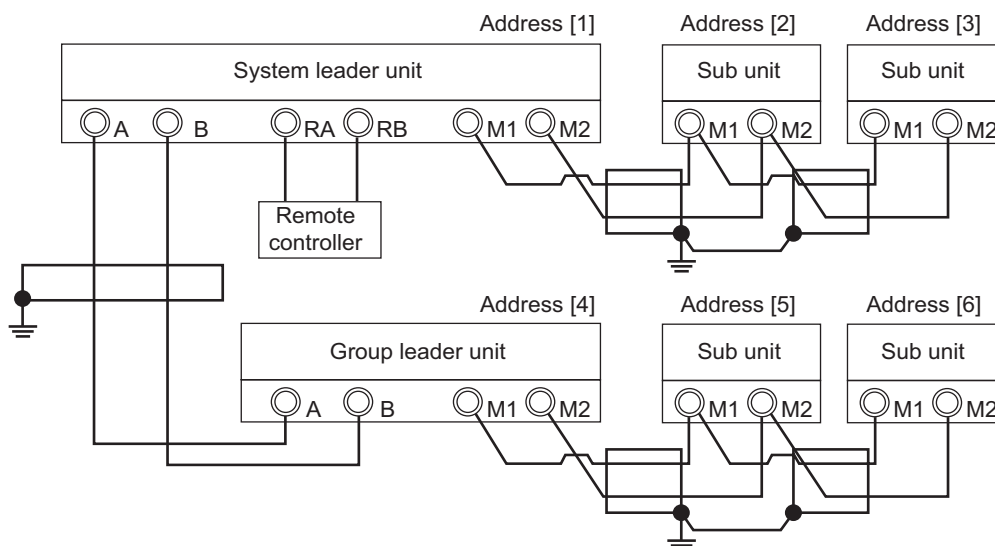
- 1) Turn off the power.
- 2) Group leader unit (SW5-2: ON)
- 3) Turn the power back on.
Address 2 → LED display [EEEE]
- 4) Setting the number of units for each group
*The default setting for the number of units in a group is 1.
- 5) SW7: 1, 2, 3, 4 ON and ENTER for 5 seconds.
(Initializes the system)
Address 2 → LED display [9999]→[FFFF]
- 6) SW7: 1, 2, 3, 4 OFF
Start-up process complete
Address 2 → LED display [__|__]
*Address 3 (Group leader unit) is set in the same way as above.)

③ 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]
- 2) SW7: 1, 2, 3, 4 OFF
Start-up process complete
Address 1 → LED display [__|__]

5. Wiring Design

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



① 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]

- 4) Setting the number of units for each group

SW7: 1 ON
Press ENTER once.
SW4: 1, 2, 3, 4, 8, 10 ON

↓
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
Press ENTER once.
SW4: 5, 8, 10 ON

↓
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.

② 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]

- 4) Setting the number of units for each group

SW7: 1 ON
Press ENTER once.
SW4: 1, 2, 3, 4, 8, 10 ON

↓
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]

- 6) SW7: 1, 2, 3, 4 OFF

Start-up process complete

Address 4 → LED display [____|_|]

③ 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]

- 2) SW7: 1, 2, 3, 4 OFF

Start-up process complete

Address 1 → LED display [____|_|]

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

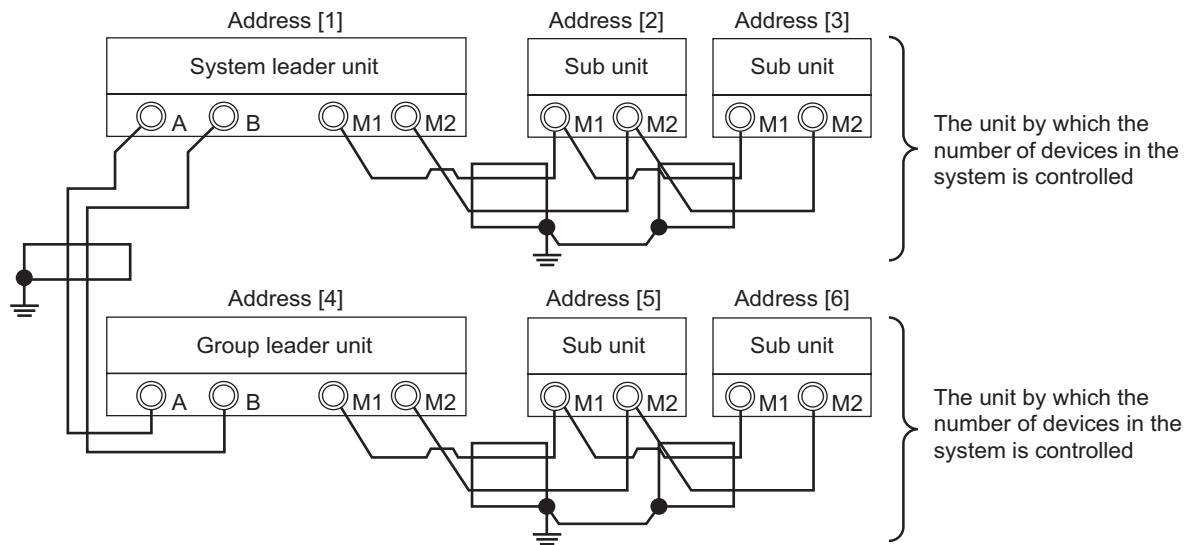
5. Wiring Design

2. Multiple unit control

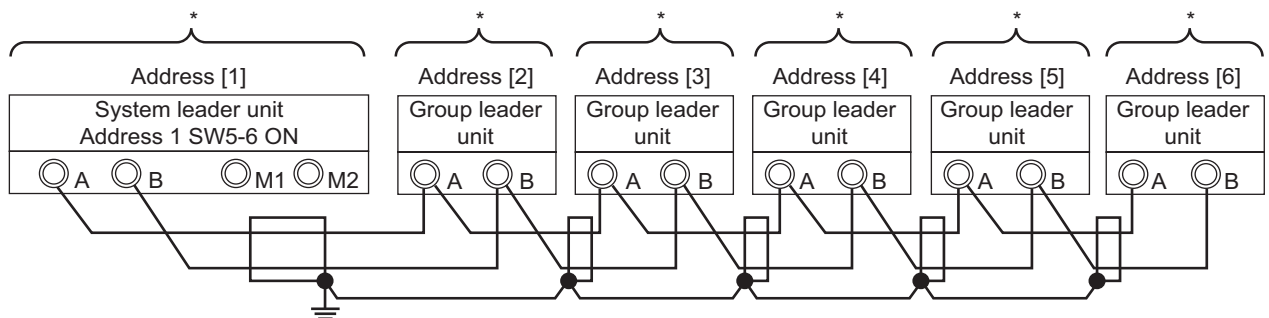
By setting SW5-6 to ON for address 1, optimum control of number of operating units will be performed.

All units will simultaneously operate when SW5-6 is set to OFF.

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



(B) System leader unit and group leader unit

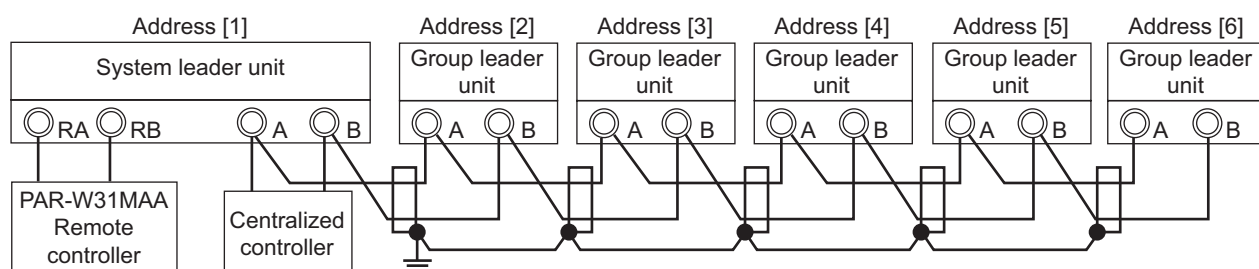


*The unit by which the number of devices in the system is controlled

5. Wiring Design

3. Example of system configuration

Optimum control of number of operating units



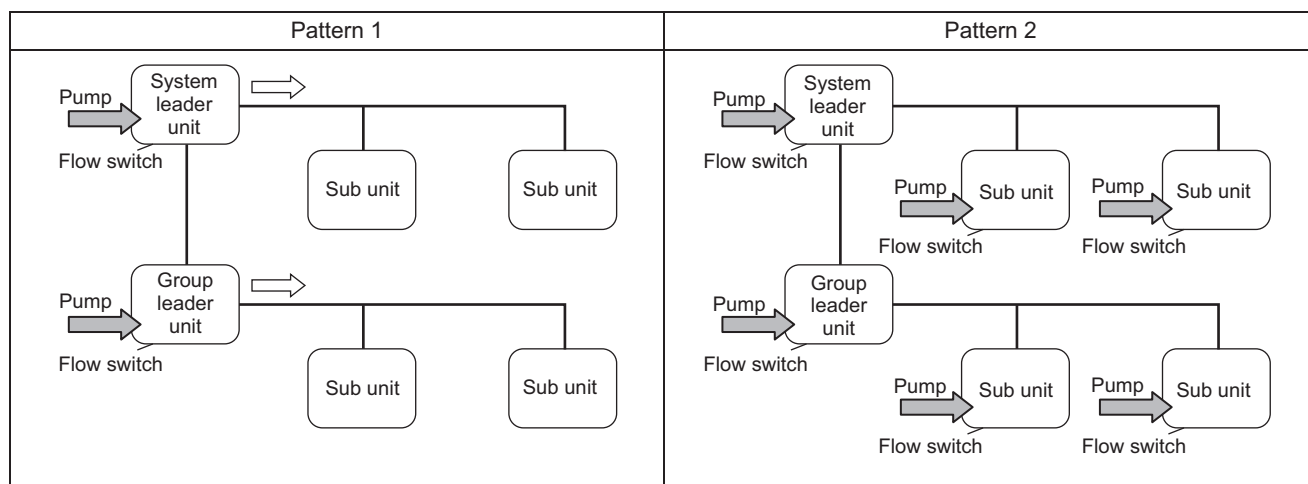
Setting item	SW7-1	DIP SW	SW4	Setting timing	System leader unit	Simultaneous operation Group leader unit	Simultaneous operation Group leader unit	Simultaneous operation Group leader unit	Simultaneous operation Group leader unit	Simultaneous operation Group leader unit
M-NET address	-	-	-	At a reset	1	2	3	4	5	6
M-NET power supply	-	-	-	-	CN40	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	-	ON 1 2 3 4 5 6 7 8 9 10	At a reset	6	1	1	1	1	1
Number of units per group	ON	-	ON 1 2 3 4 5 6 7 8 9 10	At a reset	1	1	1	1	1	1
Multiple unit control	-	5-6	-	At a reset	ON	OFF	OFF	OFF	OFF	OFF

*The shaded cells indicate the settings that requires changes from the default settings.

*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.

*When using an AE-C400, EW-C50 as the centralized controller, leave the M-NET power supply connector as it is.

4. Setting the pump system



Setting item	SW7-1	DIPSW	SW4	Factory setting	Note
				MAIN	
Pump setting	ON	-	ON 1 2 3 4 5 6 7 8 9 10	0	0: Pattern 1, 1: Pattern 2
Evaporation side flow switch settings	ON	-	ON 1 2 3 4 5 6 7 8 9 10	0	0: Pattern 1, 1: Pattern 2
Condensation side flow switch settings	ON	-	ON 1 2 3 4 5 6 7 8 9 10	0	0: Pattern 1, 1: Pattern 2

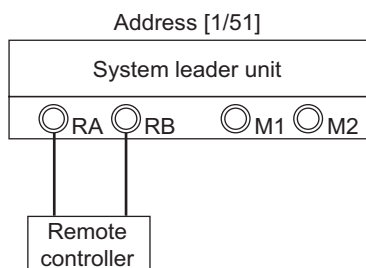
*1: Pump settings must be made on the MAIN circuit on all units.

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

ERCV-M900YA × 2

1. Making the settings for the initial start-up process

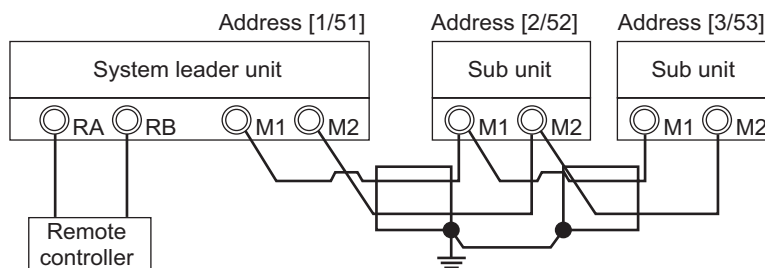
(A) Single unit



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 [____|_|]

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



Setting address 1

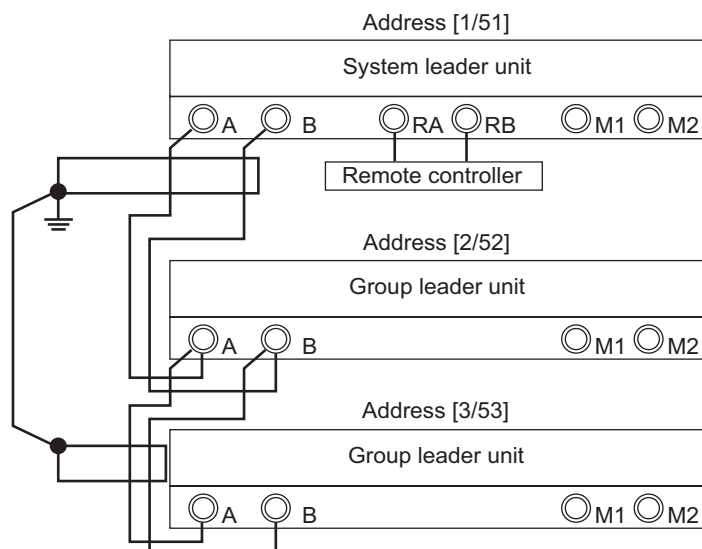
- 1) Turn off the power.
- 2) System leader unit (Address 1 SW5-2, 5-3: ON)
- 3) Turn the power back on.
 Address 1 → LED display [EEEE]
 Address 51 → LED display [EEEE]
- 4) Setting the number of units for the group
 SW7: 1 ON
 SW4: 1, 2, 3, 4, 8, 10 ON
 Press ENTER once.
 ↓
 Address 1 → LED display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

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

5. Wiring Design

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



① 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
 Press ENTER once.
 SW4: 5, 8, 10 ON
 ↓
 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.

Press ENTER once.

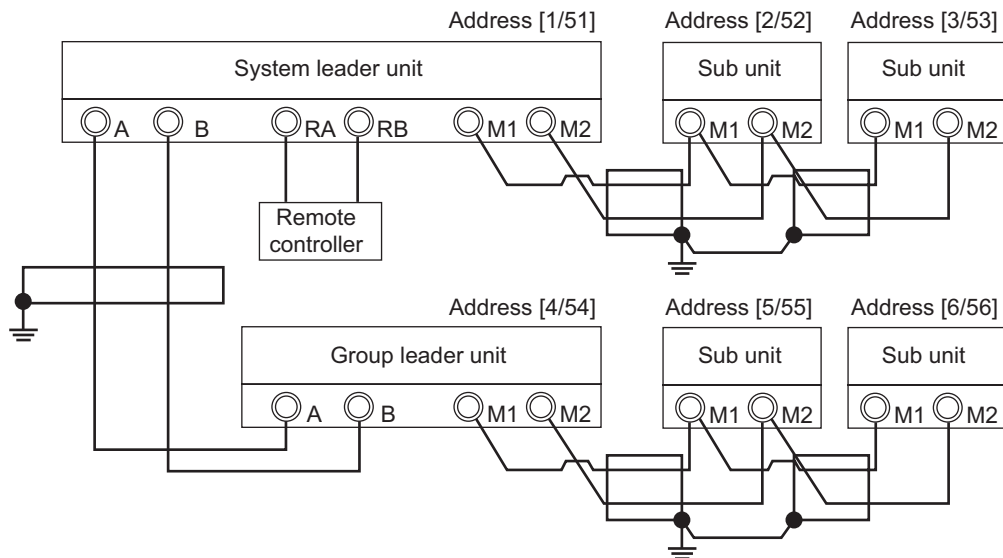
② Setting address 2

- 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.)

③ 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 [____|_|]

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



① 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
Press ENTER once.
SW4: 1, 2, 3, 4, 8, 10 ON

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
Press ENTER once.
SW4: 5, 8, 10 ON

↓

↓

↓

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.

② 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
Press ENTER once.
SW4: 1, 2, 3, 4, 8, 10 ON

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 [____|_|]

③ 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 [____|_|]

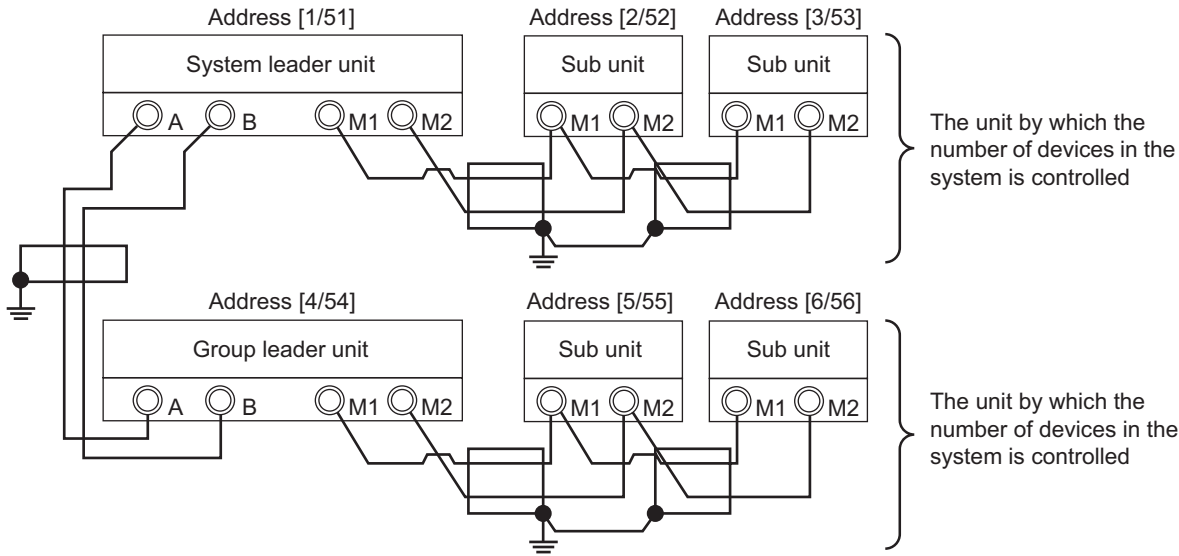
*No settings are required for any address other than for addresses 1 and 4.

ERCV-M900YA, ERCV-M900YA*2

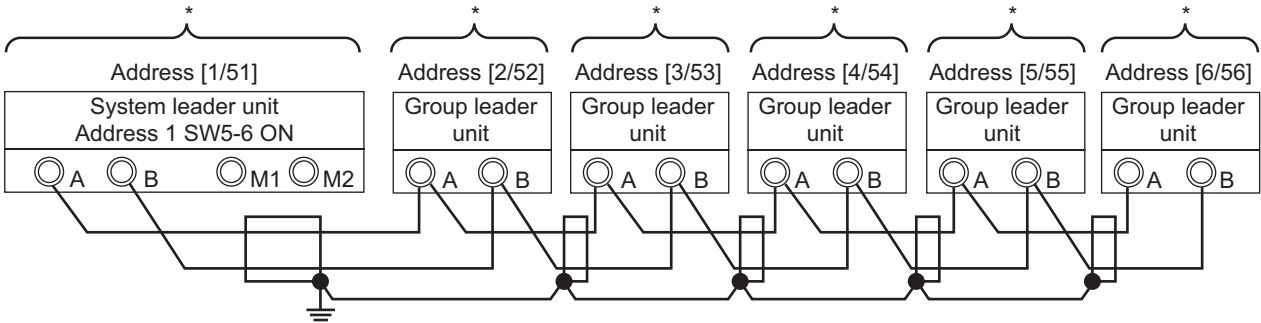
2. Multiple unit control

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.

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



(B) System leader unit and group leader unit

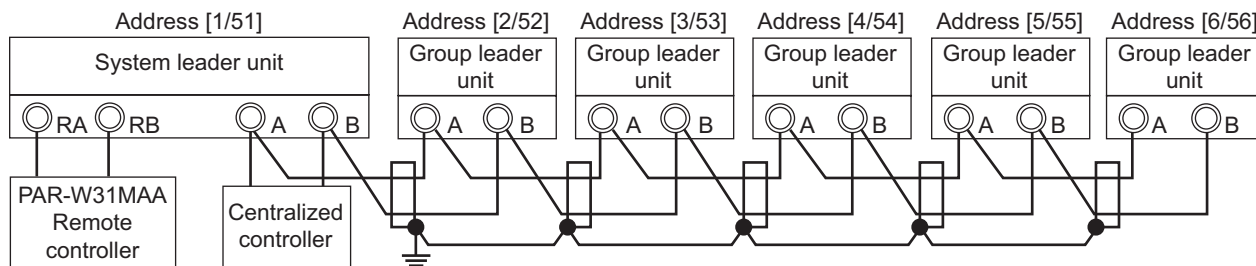


*The unit by which the number of devices in the system is controlled

5. Wiring Design

3. Example of system configuration

Optimum control of number of operating units



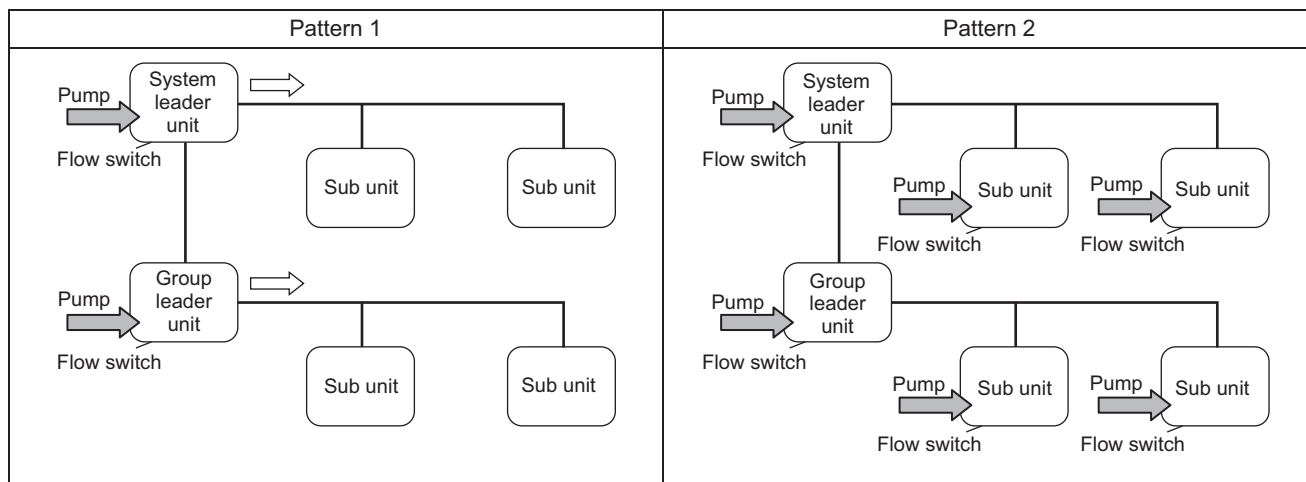
Setting item	SW7-1	DIP SW	SW4	Setting timing	System leader unit		Simultaneous operation Group leader unit		Simultaneous operation Group leader unit		Simultaneous operation Group leader unit		Simultaneous operation Group leader unit		Simultaneous operation Group leader unit	
					1	51	2	52	3	53	4	54	5	55	6	56
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	-	ON 1 2 3 4 5 6 7 8 9 10	At a reset	6	-	1	-	1	-	1	-	1	-	1	-
Number of units per group	ON	-	ON 1 2 3 4 5 6 7 8 9 10	At a reset	1	-	1	-	1	-	1	-	1	-	1	-
Multiple unit control	-	5-6	-	At a reset	ON	-	OFF	-	OFF	-	OFF	-	OFF	-	OFF	-

*The shaded cells indicate the settings that requires changes from the default settings.

*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.

*When using an AE-C400, EW-C50 as the centralized controller, leave the M-NET power supply connector as it is.

4. Setting the pump system



Setting item	SW7-1	DIPSW	SW4	Factory setting		Note
				MAIN	SUB	
Pump setting	ON	-	ON 1 2 3 4 5 6 7 8 9 10	0	-	0: Pattern 1, 1: Pattern 2
Evaporation side flow switch settings	ON	-	ON 1 2 3 4 5 6 7 8 9 10	0	-	0: Pattern 1, 1: Pattern 2
Condensation side flow switch settings	ON	-	ON 1 2 3 4 5 6 7 8 9 10	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.

5. Wiring Design

(2) Water-temperature setting

ERCV-M900YA

Different water temperature settings can be set for different modes.

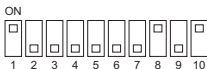
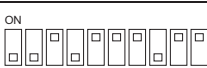
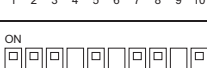
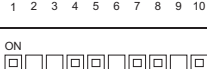
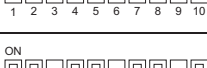
Set the dip switches on the circuit board as follows to make the settings for the items described in this section.

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	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	°C	0.1°C	4 (-10) *6	30	Possible
2	SW7-1 ON		Setting temp. 2 (Cooling mode) *4	7	°C	0.1°C	4 (-10) *6	30	Possible
3	SW7-1 ON		Setting temp. 1 (Heating mode) *3	45	°C	0.1°C	20	60 *5	Possible
4	SW7-1 ON		Setting temp. 2 (Heating mode) *4	45	°C	0.1°C	20	60 *5	Possible
5	SW7-2 ON		Setting water temp. A at Cooling ECO mode	11.5	°C	0.1°C	4 (-10) *6	30	Not possible
6	SW7-2 ON		Setting outdoor temp. A at Cooling ECO mode	20	°C	0.1°C	-20	55	Not possible
7	SW7-2 ON		Setting water temp. B at Cooling ECO mode	7	°C	0.1°C	4 (-10) *6	30	Not possible
8	SW7-2 ON		Setting outdoor temp. B at Cooling ECO mode	35	°C	0.1°C	-20	55	Not possible
9	SW7-2 ON		Setting water temp. C at Cooling ECO mode	10	°C	0.1°C	4 (-10) *6	30	Not possible
10	SW7-2 ON		Setting outdoor temp. C at Cooling ECO mode	25	°C	0.1°C	-20	55	Not possible
11	SW7-1 ON		Setting water temp. D at Heating ECO mode	52	°C	0.1°C	20	60 *5	Not possible
12	SW7-1 ON		Setting outdoor temp. D at Heating ECO mode	-7	°C	0.1°C	-30	50	Not possible
13	SW7-1 ON		Setting water temp. E at Heating ECO mode	30	°C	0.1°C	20	60 *5	Not possible
14	SW7-1 ON		Setting outdoor temp. E at Heating ECO mode	12	°C	0.1°C	-30	50	Not possible
15	SW7-1 ON		Setting water temp. F at Heating ECO mode	42	°C	0.1°C	20	60 *5	Not possible
16	SW7-1 ON		Setting outdoor temp. F at Heating ECO mode	2	°C	0.1°C	-30	50	Not possible

5. Wiring Design

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

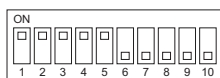
*2 Temperature setting increments: 0.5°C

*3 No-voltage contact KN51-KN61: OFF

*4 No-voltage contact KN51-KN61: ON

*5 Maximum 60°C. When the target water temperature exceeds 55°C and the Efficiency priority mode (No-voltage contact K91-93: ON) is enabled, the maximum temperature for this setting will be limited to 55°C.

*6 Applicable only when SW6-10 is set to ON. (Brine setting)



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

- Check the operation mode suitable for the application.

Setting item	SW5-1
Cooling mode* ¹	OFF
Heating mode* ²	ON

*1 Control the evaporation side water temperature.

*2 Control the condensation side water temperature.

- Select the outdoor temperature input source selection.

Setting item	SW6-3	SW6-4
No outdoor temperature* ¹	OFF	OFF
Outdoor temp. analog input 4-20mA input	ON	OFF
It terminal* ²	OFF	ON
Outdoor temp. input TH11* ³	ON	ON

*1 Cooling ECO/Heating ECO mode cannot be used.

*2 Connection to a BMS requires an installation of Procon A1M/A1M+ (MODBUS[®] interface), which is available from MITSUBISHI ELECTRIC UK. Use a BMS with insulation.

*3 Use the following recommended products or similar products for the outdoor temperature thermistor.

Recommended product t-mac 500-51791

Relationship between resistance value Rt (kΩ) and temperature t (°C)

$$R_t = 1.07 \exp \left\{ 3978 \left(\frac{1}{273+t} - \frac{1}{358} \right) \right\}$$

- Select the thermistor taking note of the tolerance in the resistance values.
- Use shielded cable for the wiring.

- When the outdoor temperature setting input is 4-20mA

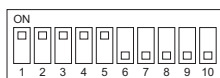
Press the push switch SWP3 to enable the configuration changes.

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

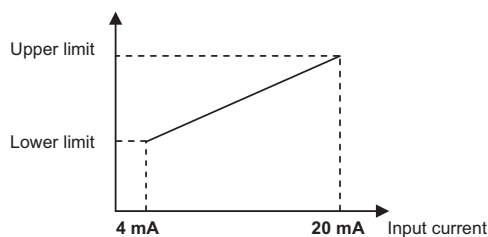
No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Setting Item	Initial value	Unit	Setting			Setting change from an optional remote controller (PAR-W31MAA)
						Increments	Lower limit	Upper limit	
1	ON		Outdoor setting Upper limit	40	°C	0.1	-20	55	Not possible
2	ON		Outdoor setting Lower limit	-10	°C	0.1	-20	55	Not possible



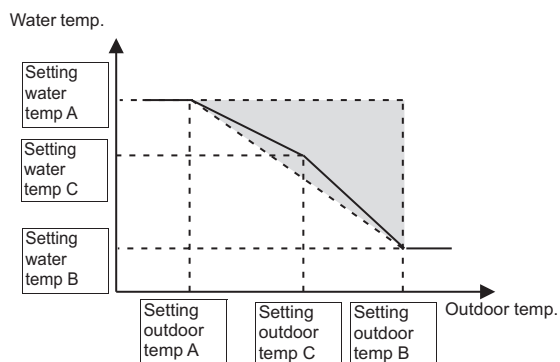
The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

5. Wiring Design

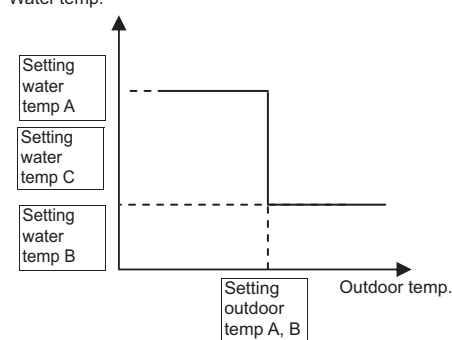
- External analog input signal of 4 mA: Lower limit
- External analog input signal of 20 mA: Upper limit
- External analog input signal of between 4 and 20 mA: the preset temperature will be linearly interpolated.



Cooling ECO

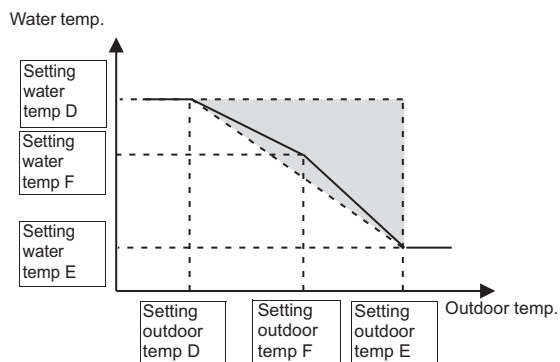


When the outdoor temp A and B are set to the same value, the Cooling ECO line will be as follows.

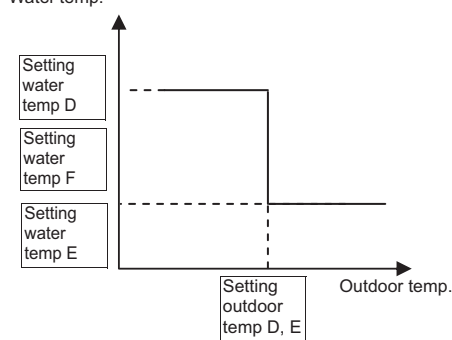


* Always use a value for setting C that is between setting value A and setting value B.

Heating ECO



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



* Always use a value for setting F that is between setting value D and setting value E.

5. Wiring Design

ERCY-M900YA × 2

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	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	°C	0.1°C	4 (-10) *5	30	Possible
2	SW7-1 ON		Setting temp. 2 (Cooling mode) *4	7	°C	0.1°C	4 (-10) *5	30	Possible
3	SW7-1 ON		Setting temp. 1 (Heating mode) *3	45	°C	0.1°C	20	55	Possible
4	SW7-1 ON		Setting temp. 2 (Heating mode) *4	45	°C	0.1°C	20	55	Possible
5	SW7-2 ON		Setting water temp. A at Cooling ECO mode	11.5	°C	0.1°C	4 (-10) *5	30	Not possible
6	SW7-2 ON		Setting outdoor temp. A at Cooling ECO mode	20	°C	0.1°C	-20	55	Not possible
7	SW7-2 ON		Setting water temp. B at Cooling ECO mode	7	°C	0.1°C	4 (-10) *5	30	Not possible
8	SW7-2 ON		Setting outdoor temp. B at Cooling ECO mode	35	°C	0.1°C	-20	55	Not possible
9	SW7-2 ON		Setting water temp. C at Cooling ECO mode	10	°C	0.1°C	4 (-10) *5	30	Not possible
10	SW7-2 ON		Setting outdoor temp. C at Cooling ECO mode	25	°C	0.1°C	-20	55	Not possible
11	SW7-1 ON		Setting water temp. D at Heating ECO mode	52	°C	0.1°C	20	55	Not possible
12	SW7-1 ON		Setting outdoor temp. D at Heating ECO mode	-7	°C	0.1°C	-30	50	Not possible
13	SW7-1 ON		Setting water temp. E at Heating ECO mode	30	°C	0.1°C	20	55	Not possible
14	SW7-1 ON		Setting outdoor temp. E at Heating ECO mode	12	°C	0.1°C	-30	50	Not possible
15	SW7-1 ON		Setting water temp. F at Heating ECO mode	42	°C	0.1°C	20	55	Not possible
16	SW7-1 ON		Setting outdoor temp. F at Heating ECO mode	2	°C	0.1°C	-30	50	Not possible

5. Wiring Design

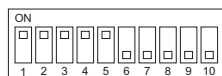
*1 Only the switches designated in the table must be set to ON. (The other switches must be OFF.)

*2 Temperature setting increments: 0.5°C

*3 No-voltage contact KN51-KN61: OFF

*4 No-voltage contact KN51-KN61: ON

*5 Applicable only when SW6-10 is set to ON. (Brine setting)



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

- Check the operation mode suitable for the application.

Setting item	SW5-1
Cooling mode*1	OFF
Heating mode*2	ON

*1 Control the evaporation side water temperature.

*2 Control the condensation side water temperature.

- Select the outdoor temperature input source selection.

Setting item	SW6-3	SW6-4
No outdoor temperature*1	OFF	OFF
Outdoor temp. analog input 4-20mA input	ON	OFF
It terminal*2	OFF	ON
Outdoor temp. input TH11*3	ON	ON

*1 Cooling ECO/Heating ECO mode cannot be used.

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

*3 Use the following recommended products or similar products for the outdoor temperature thermistor.

Recommended product t-mac 500-51791

Relationship between resistance value Rt (kΩ) and temperature t (°C)

$$R_t = 1.07 \exp \left\{ 3978 \left(\frac{1}{273+t} - \frac{1}{358} \right) \right\}$$

- Select the thermistor taking note of the tolerance in the resistance values.

- Use shielded cable for the wiring.

- When the outdoor temperature setting input is 4-20mA

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

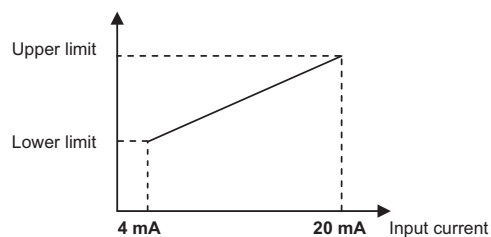
No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Setting Item	Initial value	Unit	Setting			Setting change from an optional remote controller (PAR-W31MAA)
						Increments	Lower limit	Upper limit	
1	ON		Outdoor setting Upper limit	40	°C	0.1	-20	55	Not possible
2	ON		Outdoor setting Lower limit	-10	°C	0.1	-20	55	Not possible



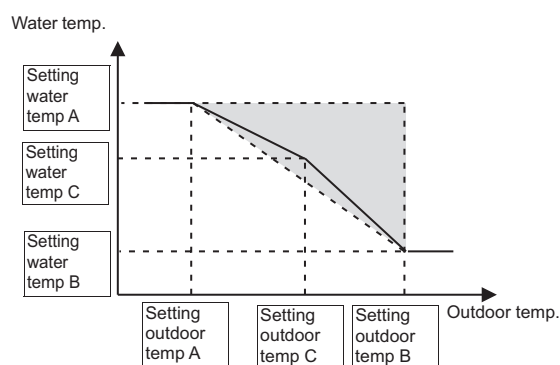
The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

5. Wiring Design

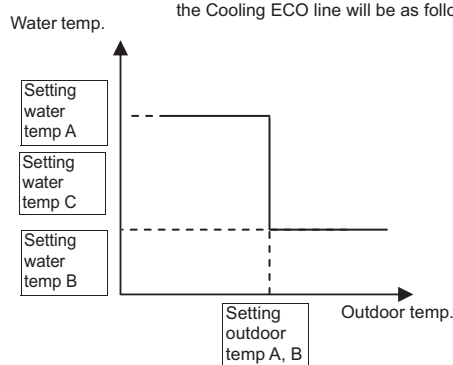
- External analog input signal of 4 mA: Lower limit
- External analog input signal of 20 mA: Upper limit
- External analog input signal of between 4 and 20 mA: the preset temperature will be linearly interpolated.



Cooling ECO

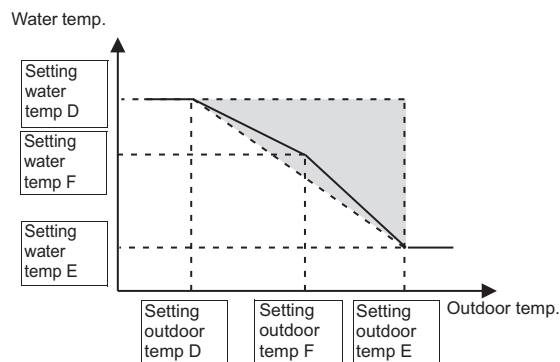


When the outdoor temp A and B are set to the same value, the Cooling ECO line will be as follows.

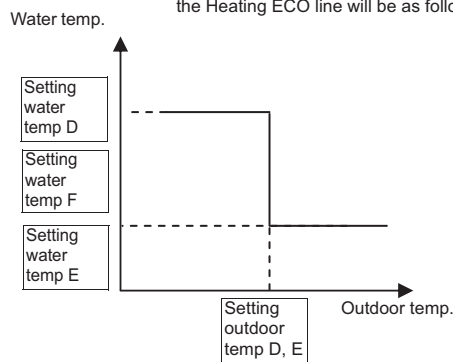


* Always use a value for setting C that is between setting value A and setting value B.

Heating ECO



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



* Always use a value for setting F that is between setting value D and setting value E.

5. Wiring Design

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(3) 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

(4) 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

0-5 V

0-10 V

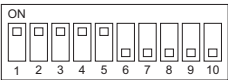
2-10 V

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.

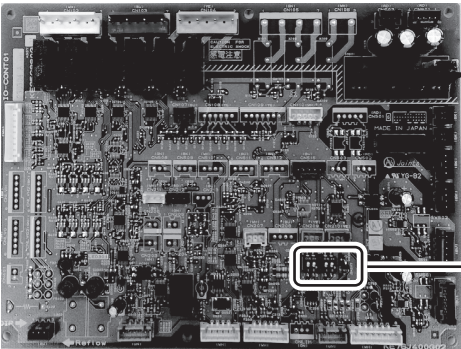
	SW201-1	SW201-2	SW6-1	SW6-2
4-20 mA	ON	ON	OFF	OFF
1-5 V	OFF	ON	ON	OFF
0-10 V	OFF	OFF	OFF	ON
2-10 V	OFF	OFF	ON	ON

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

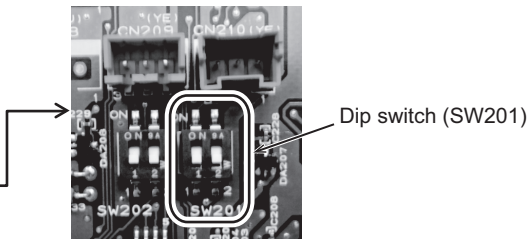


The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

[IO cont board]



[Enlarged view of operation area]



5. Wiring Design

(5) Setting the water temperature using analog signal input

ERCVM900YA

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

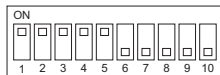
No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Setting Item	Initial value	Unit	Setting			Setting change from an optional remote controller (PAR-W31MAA)
						Increments	Lower limit	Upper limit	
1	ON		Preset temp. A (Cooling)	4	°C	1°C	4 (-10) *3	30	Not possible
2	ON		Preset temp. B (Cooling)	30	°C	1°C	4 (-10) *3	30	Not possible
3	ON		Preset temp. A (Heating)	25	°C	1°C	20	60 *1	Not possible
4	ON		Preset temp. B (Heating)	55	°C	1°C	20	60 *1	Not possible

*1 Maximum 60°C. When the target water temperature exceeds 55°C and the Efficiency priority mode (No-voltage contact K91-93: ON) is enabled, the maximum temperature for this setting will be limited to 55°C.

*2 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.

*3 Applicable only when SW6-10 is set to ON. (Brine setting)

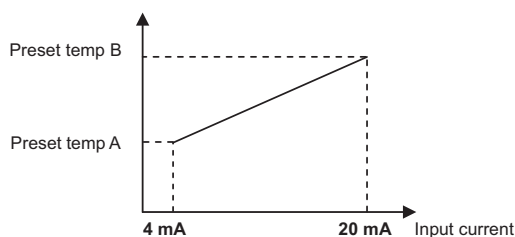
No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Monitorable items	Unit
1	OFF		Current value (4-20 mA)	mA
2	OFF		5V voltage value (1-5 V)	V
3	OFF		10V voltage value (0-10 V or 2-10 V)	V



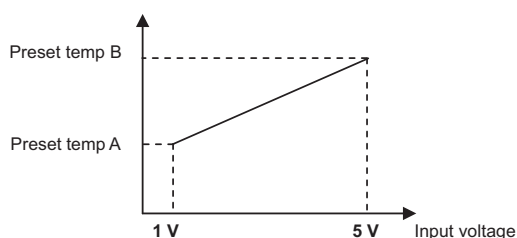
The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

5. Wiring Design

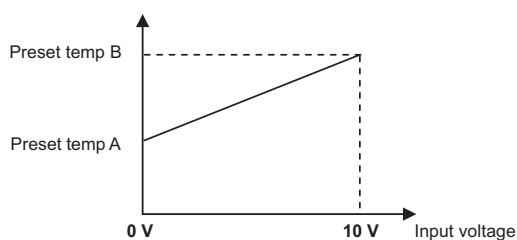
- When the water temperature setting input signal type is 4-20 mA
 - External analog input signal of 4 mA: Preset temp. A
 - External analog input signal of 20 mA: Preset temp. B
 - External analog input signal of between 4 and 20 mA: the preset temperature will be linearly interpolated.



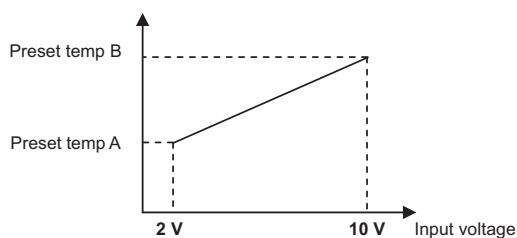
- When the water temperature setting input signal type is 1-5 V
 - External analog input signal of 1 V: Preset temp. A
 - External analog input signal of 5 V: Preset temp. B
 - External analog input signal of between 1 and 5 V: the preset temperature will be linearly interpolated.



- 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.



- 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.



5. Wiring Design

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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.

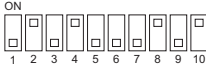
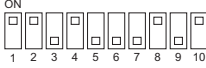
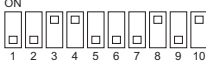
Set the dip switches on the circuit board as follows to make the settings for the items described in this section.

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.

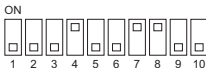
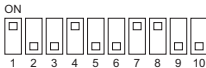
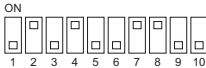
Settings table

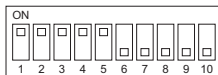
No.	Dip switch setting (SW7-1)	Dip switch setting (SW4)	Setting Item	Initial value	Unit	Setting			Setting change from an optional remote controller (PAR-W31MAA)
						Increments	Lower limit	Upper limit	
1	ON		Preset temp. A (Cooling)	4	°C	1°C	4 (-10) *2	30	Not possible
2	ON		Preset temp. B (Cooling)	30	°C	1°C	4 (-10) *2	30	Not possible
3	ON		Preset temp. A (Heating)	25	°C	1°C	20	55	Not possible
4	ON		Preset temp. B (Heating)	55	°C	1°C	20	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 Applicable only when SW6-10 is set to ON. (Brine setting)

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

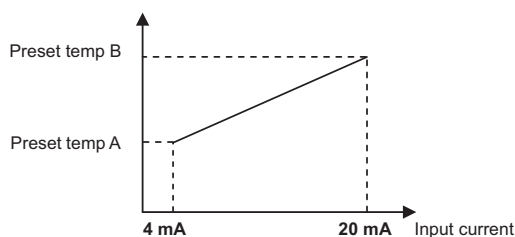


The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

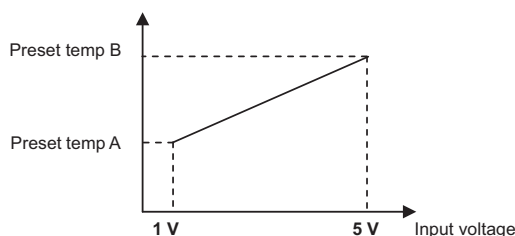
5. Wiring Design

ERCVM900YA, ERCVM900YA×2

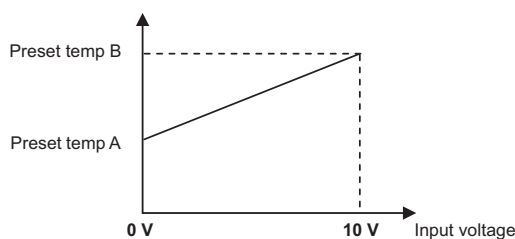
- When the water temperature setting input signal type is 4-20 mA
 - External analog input signal of 4 mA: Preset temp. A
 - External analog input signal of 20 mA: Preset temp. B
 - External analog input signal of between 4 and 20 mA: the preset temperature will be linearly interpolated.



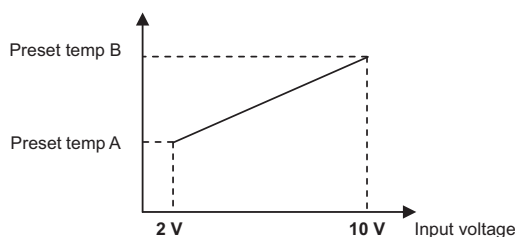
- When the water temperature setting input signal type is 1-5 V
 - External analog input signal of 1 V: Preset temp. A
 - External analog input signal of 5 V: Preset temp. B
 - External analog input signal of between 1 and 5 V: the preset temperature will be linearly interpolated.



- 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.



- 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.



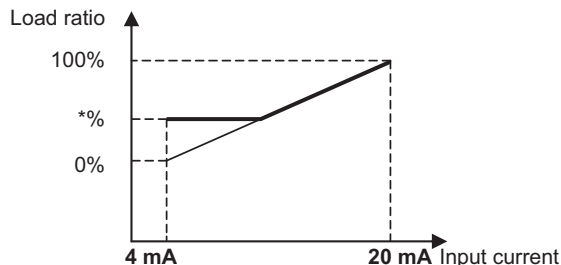
5. Wiring Design

(6) 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.

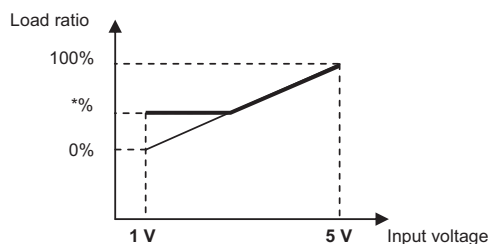
- When the capacity control setting input signal type is 4-20 mA

- 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.



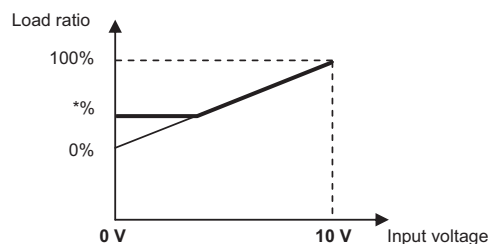
- When the capacity control setting input signal type is 1-5 V

- 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.



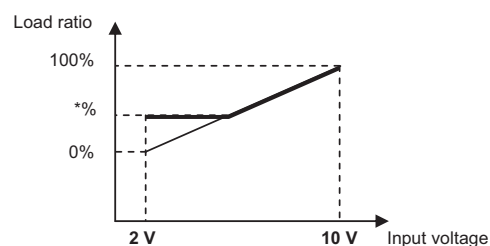
- When the capacity control setting input signal type is 0-10 V

- 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.



- 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.



* %: The compressor runs at the lowest frequency.

* SW5-6 Multiple unit control will be disabled when this setting is enabled

5. Wiring Design

- (7) 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.
- 2 Water-temperature control option (SW5-4) is set to ON, the external water temperature sensor reading (TH12) drops below a set water temperature.

The supplementary heater signal is output from KB1-KB2.

Supplementary heater signal output stop conditions

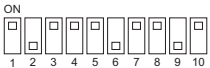
The operation command signal is OFF or at least one of the following two conditions is met.

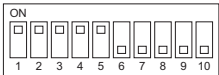
- 1 The inlet water temperature is at or above a set water temperature +2°C.
- 2 External water temperature sensor reading (TH12) is at or above a set water temperature +2°C.

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		Supplementary heater operation water temp.	15	°C	0.1°C	0	55	Not possible

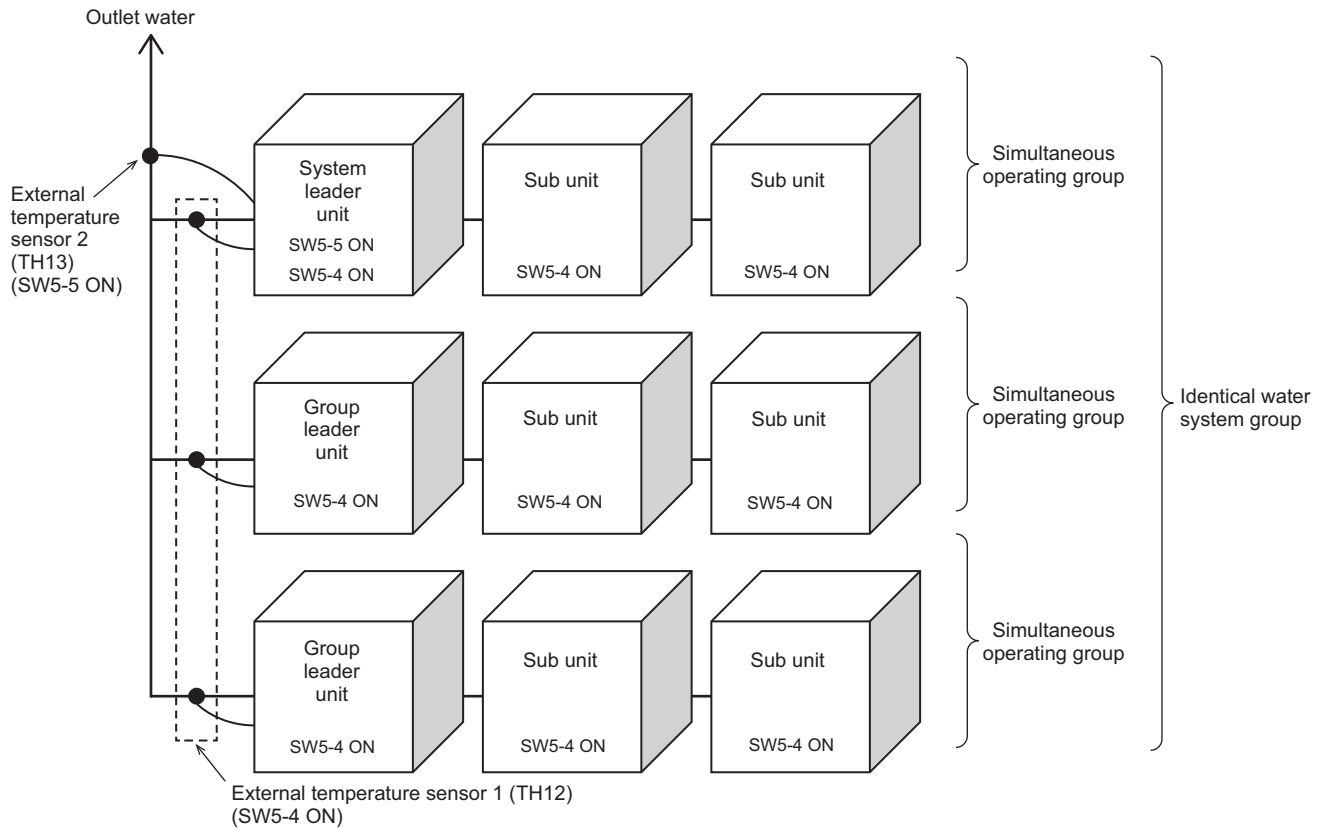


The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

(8) External temperature sensor control

ERCV-M900YA

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



External temperature sensor 1 (Enable only TH12)

When only TH12 is enabled, the Simultaneous operating group is controlled so that the TH12 will reach the target water temperature.

External temperature sensor 2 (Enable only TH13)

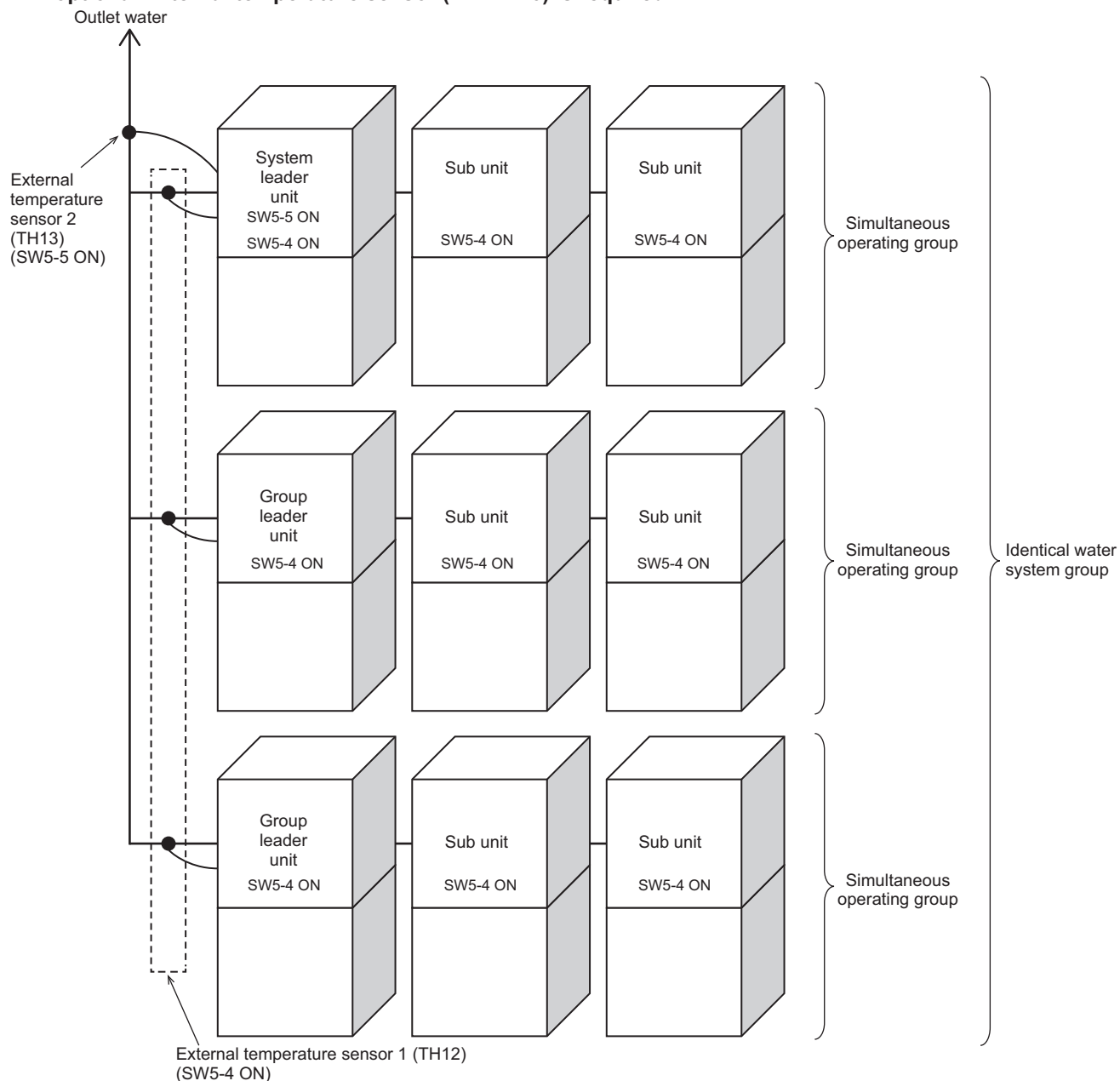
When only TH13 is enabled, the target outlet water temperature of each unit will be corrected to approximate TH13 to the target water temperature.

External temperature sensor 1 and 2 (Enable TH12 and TH13)

When both TH12 and TH13 are enabled, the target water temperature of TH12 will be corrected to approximate TH13 to the target water temperature. Simultaneous operating group will be controlled to meet the corrected TH12.

ERCV-M900YA × 2

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



*Set SW5-4 and 5-5 on the circuit board of the Main unit.

External temperature sensor 1 (Enable only TH12)

When only TH12 is enabled, the Simultaneous operating group is controlled so that the TH12 will reach the target water temperature.

External temperature sensor 2 (Enable only TH13)

When only TH13 is enabled, the target outlet water temperature of each unit will be corrected to approximate TH13 to the target water temperature.

External temperature sensor 1 and 2 (Enable TH12 and TH13)

When both TH12 and TH13 are enabled, the target water temperature of TH12 will be corrected to approximate TH13 to the target water temperature. Simultaneous operating group will be controlled to meet the corrected TH12.

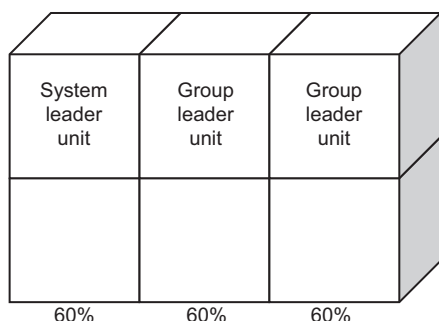
5. Wiring Design

(9) 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.



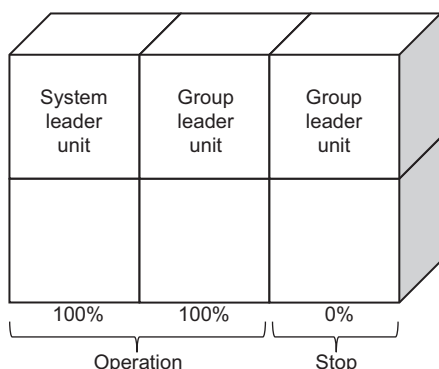
Multiple unit control

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)



*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.)

(10) Operation display output

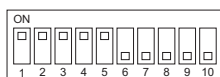
When using the Operation display output (System leader unit), change the setting of the System leader unit shown below from "0 (Individual unit)" to "1 (System leader unit)."

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	OFF		Operation display output	0	—	1	0	1	Not possible

(11) Error display output

When using the Error display output (System leader unit), change the setting of the System leader unit shown below from "0 (Individual unit)" to "1 (System leader unit)."

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	OFF		Error display output	0	—	1	0	1	Not possible



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

(12) Water/Brine setting

ERCV-M900YA (× 2)

Check the operating temperature on the evaporation side before initial operation.
Turn SW6-10 ON when using the brine temperature range.
Note that incorrect settings may cause the evaporation side heat exchanger to freeze.

		SW6-10 ^{*3}	
		OFF (Water setting)	ON (Brine setting)
Evaporation side	Cooling mode (SW5-1: OFF) ^{*3}	Fluid: Water ^{*1} Outlet temp. range: 4~30°C	Fluid: Brine ^{*2} Outlet temp. range: -10~30°C
	Heating mode (SW5-1: ON) ^{*3}	Fluid: Water ^{*1} Inlet temp. range: 9~35°C	Fluid: Brine ^{*2} Inlet temp. range: -7~35°C

^{*1} Either water or brine can be used.
^{*2} To prevent the heat exchanger from freezing, check that the connection of brine is such that the freezing temperature is -18°C or less before operation.
^{*3} When installing ERCV-M900YA × 2, ensure the settings are applied to both the MAIN and SUB circuits.

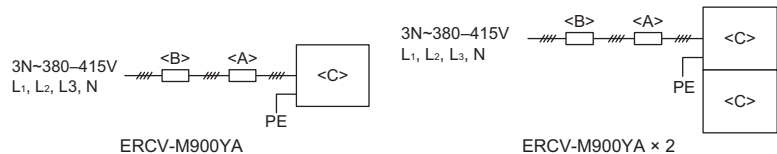
5. Wiring Design

5-2. Electrical Wiring Installation

5-2-1. Main Power Supply Wiring and Switch Capacity

Schematic Drawing of Wiring (Example)

<A>:Switch (with current breaking capability)
:Current leakage breaker
<C>:Unit



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. Permissible System Impedance
	Main cable	Branch	Ground		Capacity	Fuse		
ERCV-M900YA	14	-	14	75 A 100 mA 0.1 sec. or less	75	75	75	0.12 Ω
ERCV-M900YA × 2	38	-	38	150 A 200 mA 0.1 sec. or less	150	150	150	0.06 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 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.

⚠ 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 short-circuit power S_{SC} greater than or equal to $S_{SC} (*1)$.

*1

	S_{SC} (MVA)
ERCV-M900YA	5.18
ERCV-M900YA × 2	10.35

Control cable specifications

Remote controller cable	Size	0.3 mm ² (Max. 250 m total)
	Recommended cable types	2-core sheathed cable
M-NET cable between units	Size	Min. 1.25 mm ² (Max. 200 m total)
	Recommended cable types	Shielded cable CVVS, CPEVS or MVVS
External input wire size		Min. 0.3 mm ²
External output wire size		1.25 mm ²

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

1. Schematic Diagram of a Unit and Terminal Block Arrangement

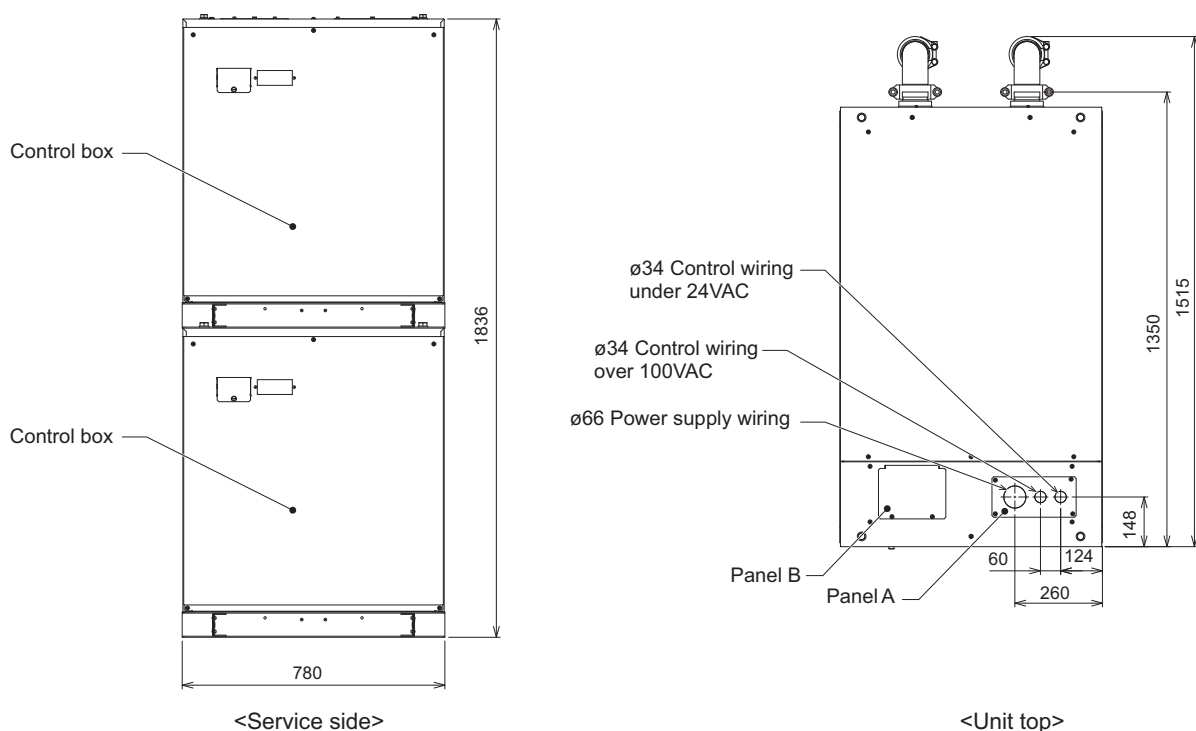
ERCV-M900YA, ERCV-M900YA×2



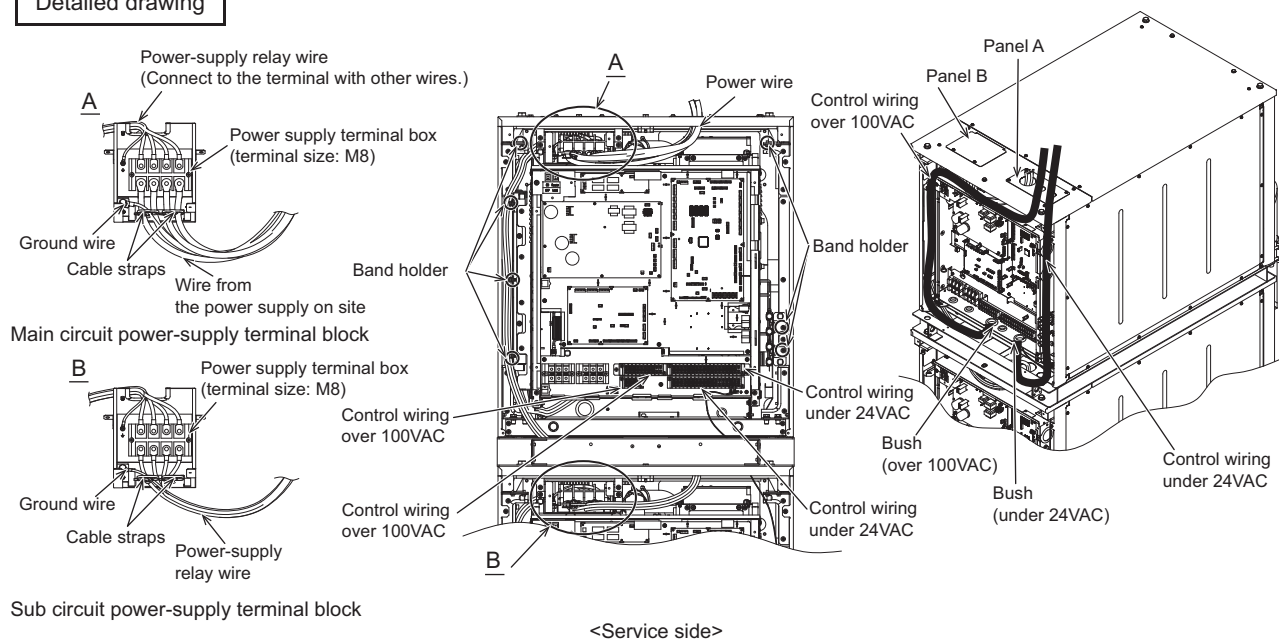
- ERCV-M900YA, ERCV-M900YA×2**

ERCV-M900YA × 2

(Unit: mm)



Detailed drawing



- (1) Remove the control box cover and the terminal box cover.
- (2) Punch out the knockout hole on panel A, and connect the power wire, ground wire, and control wire. The ground wire should be longer than the power wire.
*Smooth out the edges of knockouts that have been punched out.
- (3) Remove panel B, and connect the power wire to the power-supply terminal block with a screw. Hold the wires together by using a cable strap.
- (4) Separately connect the control wires to 24 VAC and 100 VAC terminals on panel A. Pass the control wires through the bushes on the control box, and connect them to the terminal block. Secure the control wires in place using tie bands at the band holders.
- (5) Secure the cable conduit, and then waterproof the area around the pipe with silicon, etc.
- (6) Re-place the control box cover and the terminal block cover.

5. Wiring Design

2. 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.

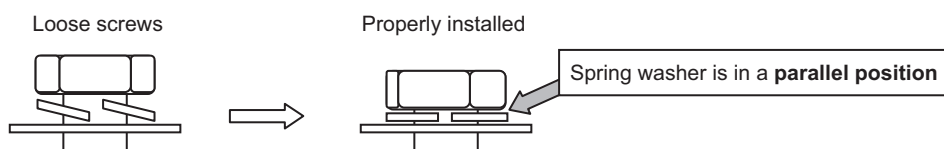
<1> Screw fastening torque

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.

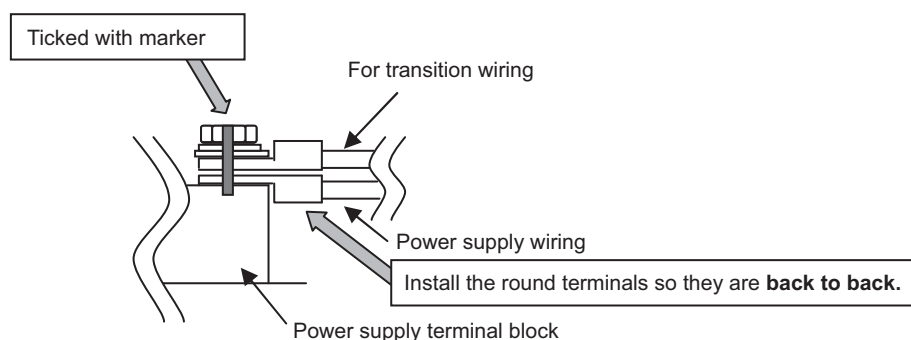


2) Check that the wiring does not move at the screw terminal.

<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.



3. 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.

6. Controller

6-1. PAR-W31MAA specifications

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.	○	○
Brine/Water temperature setting	Temperature can be set within the ranges below. (in increments of 0.5°C or 0.5°F) Heating 20°C ~ 60°C (ERCV-M900YA), 20°C ~ 55°C (ERCV-M900YA × 2) Heating ECO 20°C ~ 60°C (ERCV-M900YA), 20°C ~ 55°C (ERCV-M900YA × 2) Anti-freeze 25°C Cooling 4°C ~ 30°C [SW6-10: OFF (Water setting)] -10°C ~ 30°C [SW6-10: ON (Brine setting)] * The settable range varies depending on the unit to be connected.	○	○
Water temperature display	-20°C ~ 90°C (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	○	○

ERCV-M900YA, ERCV-M900YA×2

⚠ 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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