

WATER-SOURCE UNITS

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1. SPECIFICATIONS

1-1. PQRY-P72~336T(S)LMU-A Specifications

Model			PQRY-P72TLMU-A	PQRY-P96TLMU-A
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	3-phase 3-wire 208 / 230 ±10% 60Hz
Cooling capacity (Nominal) *1 (208/230V)		Btu/h	72,000	96,000
		kW	21.1	28.1
	Power input	kW	3.23	4.65
	Current input	A	9.9-9.0	14.3-12.9
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	59~75° F (15~24° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Heating capacity (Nominal) *2 (208/230V)		Btu/h	80,000	108,000
		kW	23.4	31.7
	Power input	kW	3.63	5.05
	Current input	A	11.1-10.1	15.5-14.0
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	59~81° F (15~27° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
	Model / Quantity		P06~P96/1~18	P06~P96/1~24
Sound pressure level (measured in anechoic room)		dB <A>	46	48
Refrigerant	High pressure	in.(mm)	5/8 (15.88) Brazed	3/4 (19.05) Brazed
piping diameter	Low pressure	in.(mm)	3/4 (19.05) Brazed	7/8 (22.2) Brazed
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension HxWxD	in.		43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
	mm		1,100 x 880 x 550	1,100 x 880 x 550
Net weight		lbs(kg)	380 (172)	380 (172)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter
	Motor output	kW	4.3	6.0
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,522	1,522
		G/min(gpm)	25.4	25.4
		m³ / h	5.76	5.76
		L/min	96	96
		cfm	3.4	3.4
	Pressure drop	psi	3.48	3.48
		kPa	24	24
	Operating volume range	G/h	793 ~ 1,902	793 ~ 1,902
		G/min(gpm)	13.2 ~ 31.7	13.2 ~ 31.7
m³ / h		3.0 ~ 7.2	3.0 ~ 7.2	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Minimum Circuit Ampacity(MCA)		A	13 / 12	19 / 17
Maximum Overcurrent Protection(MOP)		A	20 / 20	30 / 25
Refrigerant	Type x original charge		R410A x (11 lbs + 1 oz) (5.0 kg)	R410A x (11 lbs + 1 oz) (5.0 kg)
	Control		Indoor LEV and BC controller	Indoor LEV and BC controller
Drawing	External		KJ94T127	KJ94T127
	Wiring		KE94C966	KE94C966
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Details refer to External Drw	Details refer to External Drw
Optional parts			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-R160-J1	
			BC controller: CMB-P104, 105, 106, 108, 1010, 1013, 1016NU-G1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.	

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m ³ /min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P120TLMU-A	PQRY-P144TLMU-A
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	3-phase 3-wire 208 / 230 ±10% 60Hz
Cooling capacity (Nominal) *1 (208/230V)		Btu/h	120,000	144,000
		kW	35.2	42.2
	Power input	kW	7.24	8.78
	Current input	A	22.3 / 20.1	27.0 / 24.4
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	59~75° F (15~24° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Heating capacity (Nominal) *2 (208/230V)		Btu/h	135,000	160,000
		kW	39.6	46.9
	Power input	kW	6.83	8.11
	Current input	A	21.0 / 19.0	25.0 / 22.6
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	59~81° F (15~27° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
	Model / Quantity		P06~P96/1~30	P06~P96/1~36
Sound pressure level (measured in anechoic room)		dB <A>	54	54
Refrigerant piping diameter	High pressure	in.(mm)	3/4 (19.05) Brazed	7/8 (22.2) Brazed
	Low pressure	in.(mm)	7/8 (22.2) Brazed	1-1/8 (28.58) Brazed
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension HxWxD		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
		mm	1,100 x 880 x 550	1,100 x 880 x 550
Net weight		lbs(kg)	380 (172)	380 (172)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
MPa		2	2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter
	Motor output	kW	7.7	9.5
	Lubricant		MEL32	
Circulating water *3	Water flow rate	G/h	1,522	1,902
		G/min(gpm)	25.4	31.7
		m³ / h	5.76	7.2
		L/min	96	120
		cfm	3.4	4.2
	Pressure drop	psi	3.48	6.38
		kPa	24	44
	Operating volume range	G/h	793 ~ 1,902	1,189 ~ 3,054
		G/min(gpm)	13.2 ~ 31.7	19.8 ~ 50.9
	m³ / h	3.0 ~ 7.2	4.5 ~ 11.6	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	29 / 26	35 / 32
Maximum Overcurrent Protection(MOP)		A	50 / 45	60 / 50
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	R410A x 11 lbs + 1 oz (5.0 kg)
	Control		Indoor LEV and BC controller	Indoor LEV and BC controller
Drawing	External		KJ94T127	KJ94T127
	Wiring		KE94C966	KE94C966
Standard attachment	Document		Installation Manual	
	Accessory		Details refer to External Drw	
Optional parts			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-R160-J1	Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-R160-J1
			BC controller: CMB-P104, 105, 106, 108, 1010, 1013, 1016NU-G1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
		Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1		
Remarks		Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.		

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B. / 66degF W.B. (27degC D.B. / 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P168TLMU-A	PQRY-P192TLMU-A
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	3-phase 3-wire 208 / 230 ±10% 60Hz
Cooling capacity (Nominal) *1 (208/230V)		Btu/h	168,000	192,000
		kW	49.2	56.3
	Power input	kW	12.05	15.05
	Current input	A	37.1 / 33.6	46.4 / 41.9
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	59~75° F (15~24° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Heating capacity (Nominal) *2 (208/230V)		Btu/h	188,000	215,000
		kW	55.1	63
	Power input	kW	9.86	11.9
	Current input	A	30.4 / 27.5	36.7 / 33.1
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	59~81° F (15~27° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
	Model / Quantity		P06~P96/1~42	P06~P96/1~48
Sound pressure level (measured in anechoic room)		dB <A>	56	58
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed	7/8 (22.2) Brazed
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	1-1/8 (28.58) Brazed
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension HxWxD		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
		mm	1,450 x 880 x 550	1,450 x 880 x 550
Net weight		lbs(kg)	479 (217)	479 (217)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter
	Motor output	kW	11.0	12.4
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,902	1,902
		G/min(gpm)	31.7	31.7
		m³ / h	7.2	7.2
		L/min	120	120
		cfm	4.2	4.2
	Pressure drop	psi	6.38	6.38
		kPa	44	44
	Operating volume range	G/h	1,189 ~ 3,054	1,189 ~ 3,054
		G/min(gpm)	19.8 ~ 50.9	19.8 ~ 50.9
m³ / h		4.5 ~ 11.6	4.5 ~ 11.6	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	44 / 39	54 / 49
Maximum Overcurrent Protection(MOP)		A	70 / 70	90 / 80
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	R410A x 13 lbs + 4 oz (6.0 kg)
	Control		Indoor LEV and BC controller	Indoor LEV and BC controller
Drawing	External		KJ94T128	KJ94T128
	Wiring		KE94C968	KE94C968
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Details refer to External Drw	Details refer to External Drw
Optional parts		Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1		
		Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1		
		Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1		
Remarks		Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.		

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P216TLMU-A	PQRY-P240TLMU-A
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	3-phase 3-wire 208 / 230 ±10% 60Hz
Cooling capacity (Nominal) *1 (208/230V)	Btu/h		216,000	240,000
	kW		63.3	70.3
	Power input	kW	19.23	21.14
	Current input	A	59.3 / 53.6	65.1 / 58.9
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	59~75° F (15~24° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Heating capacity (Nominal) *2 (208/230V)	Btu/h		243,000	270,000
	kW		71.2	79.1
	Power input	kW	13.04	15.12
	Current input	A	40.2 / 36.3	46.6 / 42.1
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	59~81° F (15~27° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	P06~P96/2~50 (Connectable branch pipe number is max. 48.)
Sound pressure level (measured in anechoic room)		dB <A>	58	58
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)	7/8 (22.2) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	1-3/8 (34.93) Brazed
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension HxWxD	in.		57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
	mm		1,450 x 880 x 550	1,450 x 880 x 550
Net weight		lbs(kg)	556 (252)	556 (252)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	2.64	2.64
		l	10	10
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter
	Motor output	kW	14.5	16.1
	Case heater	kW	0.045 (240 V)	0.045 (240 V)
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	3,044	3,044
		G/min(gpm)	50.7	50.7
		m³ / h	11.52	11.52
		L/min	192	192
		cfm	6.8	6.8
	Pressure drop	psi	6.53	6.53
		kPa	45	45
	Operating volume range	G/h	1,585 ~ 3,804	1,585 ~ 3,804
		G/min(gpm)	26.4 ~ 63.4	26.4 ~ 63.4
		m³ / h	6.0 ~ 14.4	6.0 ~ 14.4
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	69 / 63	79 / 71
Maximum Overcurrent Protection(MOP)		A	110 / 110	125 / 125
Refrigerant	Type x original charge		R410A x 25 lbs + 13 oz (11.7 kg)	R410A x 25 lbs + 13 oz (11.7 kg)
	Control		Indoor LEV and BC controller	Indoor LEV and BC controller
Drawing	External		KJ94T172	KJ94T172
	Wiring		KE94G037	KE94G037
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Details refer to External Drw	Details refer to External Drw
Optional parts			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.	

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P144TSLMU-A	
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	
Cooling capacity (Nominal) *1 (208/230V)		Btu/h	144,000	
		kW	42.2	
	Power input	kW	7.11	
	Current input	A	21.9 / 19.8	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (208/230V)		Btu/h	160,000	
		kW	46.9	
	Power input	kW	7.45	
	Current input	A	22.9 / 20.7	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/1~36	
Sound pressure level (measured in anechoic room)		dB <A>	49	
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed	
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	
Module Set				
Module			PQRY-P72TLMU-A	
External finish			Galvanized steel sheets	
External dimension HxWxD		in.	43-5/16 x 34-11/16 x 21-11/16	
		mm	1,100 x 880 x 550	
Net weight		lbs(kg)	380 (172)	
			380 (172)	
Heat exchanger	Type		Plate	
	Water volume in plate	G	1.32	
		l	5	
	Water pressure Max.	psi	290	
		MPa	2	
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter
	Motor output	kW	4.3	
	Lubricant		MEL32	
Circulating water *3	Water flow rate	G/h	1,522 + 1,522	
		G/min(gpm)	25.4 + 25.4	
		m³ / h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	psi	3.48	
		kPa	24	
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902	
		G/min(gpm)	13.2 + 13.2 ~ 31.7 + 31.7	
		m³ / h	3.0 + 3.0 ~ 7.2 + 7.2	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	13 / 12	
Maximum Overcurrent Protection(MOP)		A	20 / 20	
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	5/8 (15.88) Brazed	
	Low pressure	in.(mm)	3/4 (19.05) Brazed	
Drawing	External		KJ94T151	
	Wiring		KE94C966	KE94C966
Standard attachment	Document		Installation Manual	
	Accessory		Details refer to External Drw	
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2	
			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-R160-J1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks		Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.		

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B. / 66degF W.B. (27degC D.B. / 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P168TSLMU-A	
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	
Cooling capacity (Nominal) *1 (208/230V)		Btu/h	168,000	
		kW	49.2	
	Power input	kW	9.33	
	Current input	A	28.7 / 26.0	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (208/230V)		Btu/h	188,000	
		kW	55.1	
	Power input	kW	9.34	
	Current input	A	28.8 / 26.0	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/1~42	
Sound pressure level (measured in anechoic room)		dB <A>	50	
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed	
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	
Module Set				
Module		PQRY-P96TLMU-A		PQRY-P72TLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD	in.	43-5/16 x 34-11/16 x 21-11/16		43-5/16 x 34-11/16 x 21-11/16
	mm	1,100 x 880 x 550		1,100 x 880 x 550
Net weight		lbs(kg)	380 (172)	380 (172)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method	Inverter		Inverter
	Motor output	kW	6.0	4.3
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,522 + 1,522	
		G/min(gpm)	25.4 + 25.4	
		m³ / h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	psi	3.48	3.48
		kPa	24	24
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902	
		G/min(gpm)	13.2 + 13.2 ~ 31.7 + 31.7	
		m³ / h	3.0 + 3.0 ~ 7.2 + 7.2	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	19 / 17	13 / 12
Maximum Overcurrent Protection(MOP)		A	30 / 25	20 / 20
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	3/4 (19.05) Brazed	
	Low pressure	in.(mm)	7/8 (22.2) Brazed	
Drawing	External		KJ94T151	
	Wiring		KE94C966	
Standard attachment	Document		Installation Manual	
	Accessory			
Optional parts			Details refer to External Drw	
			Heat Source Twinning kit: CMY-Q100CBK2	
			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1 Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks		Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.		

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B. / 66degF W.B. (27degC D.B. / 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P192TSLMU-A	
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	
Cooling capacity (Nominal) *1 (208/230V)		Btu/h	192,000	
		kW	56.3	
	Power input	kW	11.3	
	Current input	A	34.8 / 31.5	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (208/230V)		Btu/h	215,000	
		kW	63	
	Power input	kW	11.02	
	Current input	A	33.9 / 30.7	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/1~48	
Sound pressure level (measured in anechoic room)		dB <A>	51	
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed	
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	
Module Set				
Module		PQRY-P96TLMU-A		PQRY-P96TLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD	in.	43-5/16 x 34-11/16 x 21-11/16		43-5/16 x 34-11/16 x 21-11/16
	mm	1,100 x 880 x 550		1,100 x 880 x 550
Net weight		lbs(kg)	380 (172)	380 (172)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method	Inverter	Inverter	
	Motor output	kW	6.0	6.0
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,522 + 1,522	
		G/min(gpm)	25.4 + 25.4	
		m³ / h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	psi	3.48	3.48
		kPa	24	24
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902	
		G/min(gpm)	13.2 + 13.2 ~ 31.7 + 31.7	
		m³ / h	3.0 + 3.0 ~ 7.2 + 7.2	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	19 / 17	19 / 17
Maximum Overcurrent Protection(MOP)		A	30 / 25	30 / 25
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	R410A x 11 lbs + 1 oz (5.0 kg)
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	3/4 (19.05) Brazed	3/4 (19.05) Brazed
	Low pressure	in.(mm)	-	7/8 (22.2) Brazed
Drawing	External		KJ94T151	
	Wiring		KE94C966	KE94C966
Standard attachment	Document		Installation Manual	
	Accessory		Details refer to External Drw	
Optional parts	Heat Source Twinning kit: CMY-Q100CBK2			
	Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1			
	Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1			
	Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1			
Remarks	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P216TSLMU-A	
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	
Cooling capacity (Nominal) *1 (208/230V)		Btu/h	216,000	
		kW	63.3	
	Power input	kW	14.03	
	Current input	A	43.2 / 39.1	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (208/230V)		Btu/h	243,000	
		kW	71.2	
	Power input	kW	12.88	
	Current input	A	39.7 / 35.9	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	
Sound pressure level (measured in anechoic room)		dB <A>	55	
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)	
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	
Module Set				
Module		PQRY-P120TLMU-A		PQRY-P96TLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD		in.	43-5/16 x 34-11/16 x 21-11/16	
		mm	1,100 x 880 x 550	
Net weight		lbs(kg)	380 (172)	
Heat exchanger	Water volume in plate	G	Plate	
			1.32	
		I	5	
	Water pressure Max.	psi	290	
		MPa	2	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	7.7	
	Lubricant		MEL32	
Circulating water *3	Water flow rate	G/h	1,522 + 1,522	
		G/min(gpm)	25.4 + 25.4	
		m³ / h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	psi	3.48	
		kPa	24	
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902	
G/min(gpm)		13.2 + 13.2 ~ 31.7 + 31.7		
m³ / h		3.0 + 3.0 ~ 7.2 + 7.2		
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	29 / 26	
Maximum Overcurrent Protection(MOP)		A	50 / 45	
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	3/4 (19.05) Brazed	
	Low pressure	in.(mm)	-	
Drawing	External		KJ94T151	
	Wiring		KE94C966	
Standard attachment	Document		Installation Manual	
	Accessory		Details refer to External Drw	
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2	
			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks		Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.		

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P240TSLMU-A	
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	
Cooling capacity (Nominal) *1 (208/230V)		Btu/h	240,000	
		kW	70.3	
	Power input	kW	16.89	
	Current input	A	52.0 / 47.1	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (208/230V)		Btu/h	270,000	
		kW	79.1	
	Power input	kW	14.58	
	Current input	A	44.9 / 40.6	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	
Sound pressure level (measured in anechoic room)		dB <A>	57	
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)	
	Low pressure	in.(mm)	1-3/8 (34.93) Brazed	
Module Set				
Module			PQRY-P120TLMU-A	
External finish			Galvanized steel sheets	
External dimension HxWxD		in.	43-5/16 x 34-11/16 x 21-11/16	
		mm	1,100 x 880 x 550	
Net weight		lbs(kg)	380 (172)	
Heat exchanger	Type		Plate	
	Water volume in plate	G	1.32	
		l	5	
	Water pressure Max.	psi	290	
		MPa	2	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	7.7	
	Lubricant		MEL32	
Circulating water *3	Water flow rate	G/h	1,522 + 1,522	
		G/min(gpm)	25.4 + 25.4	
		m³ / h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	psi	3.48	
		kPa	24	
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902	
		G/min(gpm)	13.2 + 13.2 ~ 31.7 + 31.7	
		m³ / h	3.0 + 3.0 ~ 7.2 + 7.2	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	29 / 26	
Maximum Overcurrent Protection(MOP)		A	50 / 45	
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	3/4 (19.05) Brazed	
	Low pressure	in.(mm)	- 7/8 (22.2) Brazed	
Drawing	External		KJ94T152	
	Wiring		KE94C968	
Standard attachment	Document		Installation Manual	
	Accessory		Details refer to External Drw	
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2	
			joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.	

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P288TSLMU-A		
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz		
Cooling capacity (Nominal) *1 (208/230V)	Btu/h		288,000		
	kW		84.4		
	Power input		kW		20.42
	Current input		A		62.9 / 56.9
Temp. range of cooling	Indoor		W.B.		59~75° F (15~24° C)
	Circulating water *3				50~113° F (10~45° C)
Heating capacity (Nominal) *2 (208/230V)	Btu/h		323,000		
	kW		94.7		
	Power input		kW		17.5
	Current input		A		53.9 / 48.8
Temp. range of heating	Indoor		D.B.		59~81° F (15~27° C)
	Circulating water *3				50~113° F (10~45° C)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity		
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)		
Sound pressure level (measured in anechoic room)		dB <A>	57		
Refrigerant piping diameter	High pressure		in.(mm)		1-1/8 (28.58) Brazed
	Low pressure		in.(mm)		1-3/8 (34.93) Brazed
Module Set					
Module		PQRY-P144TLMU-A		PQRY-P144TLMU-A	
External finish		Galvanized steel sheets			
External dimension HxWxD	in.		57-1/8 x 34-11/16 x 21-11/16		57-1/8 x 34-11/16 x 21-11/16
	mm		1,450 x 880 x 550		1,450 x 880 x 550
Net weight		lbs(kg)	479 (217)		479 (217)
Heat exchanger	Type		Plate		Plate
	Water volume in plate	G	1.32		1.32
		l	5		5
	Water pressure Max.	psi	290		290
MPa		2		2	
Compressor	Type	Inverter scroll hermetic compressor			
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method		Inverter	Inverter	
	Motor output	kW	9.5		
	Lubricant		MEL32		
Circulating water *3	Water flow rate	G/h	1,902 + 1,902		
		G/min(gpm)	31.7 + 31.7		
		m³ / h	7.20 + 7.20		
		L/min	120 + 120		
		cfm	4.2 + 4.2		
	Pressure drop	psi	6.38		6.38
		kPa	44		44
	Operating volume range	G/h	1,189 + 1,189 ~ 3,054 + 3,054		
G/min(gpm)		19.8 + 19.8 ~ 50.9 + 50.9			
m³ / h		4.5 + 4.5 ~ 11.6 + 11.6			
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
	Inverter circuit(comp)		Over-heat protection, Over-current protection		
	Compressor		Over-heat protection		
Minimum Circuit Ampacity(MCA)		A	35 / 32		35 / 32
Maximum Overcurrent Protection(MOP)		A	60 / 50		60 / 50
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)		R410A x 13 lbs + 4 oz (6.0 kg)
	Control		Indoor LEV and BC controller		
Pipe between unit and distributor	High pressure	in.(mm)	7/8 (22.2) Brazed		7/8 (22.2) Brazed
	Low pressure	in.(mm)	-		1-1/8 (28.58) Brazed
Drawing	External		KJ94T152		
	Wiring		KE94C968		KE94C968
Standard attachment	Document		Installation Manual		
	Accessory		Details refer to External Drw		
Optional parts			Heat Source Twinning kit: CMY-Q200CBK		
			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1		
			Main BC controller: CMB-P108, 1010, 1016NU-HA1		
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1		
Remarks		Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B. / 66degF W.B. (27degC D.B. / 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P312TSLMU-A			
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz			
Cooling capacity (Nominal) *1 (208/230V)	Btu/h		312,000			
	kW		91.4			
	Power input		23.41			
	Current input		72.1 / 65.2			
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)			
	Circulating water *3		50~113° F (10~45° C)			
Heating capacity (Nominal) *2 (208/230V)	Btu/h		350,000			
	kW		102.6			
	Power input		19.11			
	Current input		58.9 / 53.3			
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)			
	Circulating water *3		50~113° F (10~45° C)			
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity			
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)			
Sound pressure level (measured in anechoic room)		dB <A>	58			
Refrigerant piping diameter	High pressure	in.(mm)	1-1/8 (28.58) Brazed			
	Low pressure	in.(mm)	1-3/8 (34.93) Brazed			
Module Set						
Module			PQRY-P168TLMU-A		PQRY-P144TLMU-A	
External finish			Galvanized steel sheets			
External dimension HxWxD		in.	43-5/16 x 34-11/16 x 21-11/16		43-5/16 x 34-11/16 x 21-11/16	
		mm	1,100 x 880 x 550		1,100 x 880 x 550	
Net weight		lbs(kg)	479 (217)		479 (217)	
Heat exchanger	Type		Plate		Plate	
	Water volume in plate	G	1.32		1.32	
		l	5		5	
	Water pressure Max.	psi	290		290	
MPa		2		2		
Compressor	Type		Inverter scroll hermetic compressor			
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION			
	Starting method		Inverter		Inverter	
	Motor output	kW	11.0		9.5	
	Lubricant		MEL32		MEL32	
Circulating water *3	Water flow rate	G/h	1,902 + 1,902			
		G/min(gpm)	31.7 + 31.7			
		m³ / h	7.20 + 7.20			
		L/min	120 + 120			
		cfm	4.2 + 4.2			
	Pressure drop	psi	6.38		6.38	
		kPa	44		44	
	Operating volume range	G/h	1,189 + 1,189 ~ 3,054 + 3,054			
		G/min(gpm)	19.8 + 19.8 ~ 50.9 + 50.9			
		m³ / h	4.5 + 4.5 ~ 11.6 + 11.6			
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)			
	Inverter circuit(comp)		Over-heat protection, Over-current protection			
	Compressor		Over-heat protection			
Minimum Circuit Ampacity(MCA)		A	44 / 39		35 / 32	
Maximum Overcurrent Protection(MOP)		A	70 / 70		60 / 50	
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)		R410A x 13 lbs + 4 oz (6.0 kg)	
	Control		Indoor LEV and BC controller			
Pipe between unit and distributor	High pressure	in.(mm)	7/8 (22.2) Brazed		7/8 (22.2) Brazed	
	Low pressure	in.(mm)	-		1-1/8 (28.58) Brazed	
Drawing	External		KJ94T152			
	Wiring		KE94C968		KE94C968	
Standard attachment	Document		Installation Manual			
	Accessory		Details refer to External Drw			
Optional parts			Heat Source Twinning kit: CMY-Q200CBK			
			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1			
			Main BC controller: CMB-P108, 1010, 1016NU-HA1			
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1			
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B. / 66degF W.B. (27degC D.B. / 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m ³ /min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P336TSLMU-A	
Power source			3-phase 3-wire 208 / 230 ±10% 60Hz	
Cooling capacity (Nominal) *1 (208/230V)		Btu/h	336,000	
		kW	98.5	
	Power input	kW	26.84	
	Current input	A	82.7 / 74.8	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (208/230V)		Btu/h	378,000	
		kW	110.8	
	Power input	kW	20.77	
	Current input	A	64.0 / 57.9	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	
Sound pressure level (measured in anechoic room)		dB <A>	59	
Refrigerant piping diameter	High pressure	in.(mm)	1-1/8 (28.58) Brazed	
	Low pressure	in.(mm)	1-5/8 (41.28) Brazed	
Module Set				
Module		PQRY-P168TLMU-A		PQRY-P168TLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD	in.	57-1/8 x 34-11/16 x 21-11/16		57-1/8 x 34-11/16 x 21-11/16
	mm	1,450 x 880 x 550		1,450 x 880 x 550
Net weight		lbs(kg)	479 (217)	
Heat exchanger	Type	Plate		Plate
	Water volume in plate	G	1.32	
		l	5	
	Water pressure Max.	psi	290	
MPa		2		
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method	Inverter	Inverter	
	Motor output	kW	11.0	
	Lubricant	MEL32		
Circulating water *3	Water flow rate	G/h	1,902 + 1,902	
		G/min(gpm)	31.7 + 31.7	
		m³ / h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	psi	6.38	
		kPa	44	
	Operating volume range	G/h	1,189 + 1,189 ~ 3,054 + 3,054	
		G/min(gpm)	19.8 + 19.8 ~ 50.9 + 50.9	
		m³ / h	4.5 + 4.5 ~ 11.6 + 11.6	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	44 / 39	
Maximum Overcurrent Protection(MOP)		A	70 / 70	
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	7/8 (22.2) Brazed	
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	
Drawing	External		KJ94T152	
	Wiring		KE94C968	KE94C968
Standard attachment	Document		Installation Manual	
	Accessory		Details refer to External Drw	
Optional parts	Heat Source Twinning kit: CMY-Q200CBK			
	Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1			
	Main BC controller: CMB-P108, 1010, 1016NU-HA1			
	Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1			
Remarks		Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.		

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B. / 66degF W.B. (27degC D.B. / 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

1-2. PQRY-P72~336Y(S)LMU-A Specifications

Model			PQRY-P72YLMU-A	PQRY-P96YLMU-A
Power source			3-phase 3-wire 460 ±10% 60Hz	3-phase 3-wire 460 ±10% 60Hz
Cooling capacity (Nominal) *1 (460V)		Btu/h	72,000	96,000
		kW	21.1	28.1
	Power input	kW	3.23	4.65
	Current input	A	4.5	6.4
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	59~75° F (15~24° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Heating capacity (Nominal) *2 (460V)		Btu/h	80,000	108,000
		kW	23.4	31.7
	Power input	kW	3.63	5.05
	Current input	A	5	7
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	59~81° F (15~27° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
	Model / Quantity		P06~P96/1~18	P06~P96/1~24
Sound pressure level (measured in anechoic room)		dB <A>	46	48
Refrigerant piping diameter	High pressure	in.(mm)	5/8 (15.88) Brazed	3/4 (19.05) Brazed
	Low pressure	in.(mm)	3/4 (19.05) Brazed	7/8 (22.2) Brazed
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension HxWxD	in.		43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
	mm		1,100 x 880 x 550	1,100 x 880 x 550
Net weight		lbs(kg)	404 (183)	404 (183)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
MPa		2	2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter
	Motor output	kW	4.3	6.0
			MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,522	1,522
		G/min(gpm)	25.4	25.4
		m³ / h	5.76	5.76
		L/min	96	96
		cfm	3.4	3.4
	Pressure drop	psi	3.48	3.48
		kPa	24	24
	Operating volume range	G/h	793 ~ 1,902	793 ~ 1,902
		G/min(gpm)	13.2 ~ 31.7	13.2 ~ 31.7
		m³ / h	3.0 ~ 7.2	3.0 ~ 7.2
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Minimum Circuit Ampacity(MCA)		A	6	9
Maximum Overcurrent Protection(MOP)		A	15	15
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	R410A x 11 lbs + 1 oz (5.0 kg)
	Control		Indoor LEV and BC controller	Indoor LEV and BC controller
Drawing	External		KJ94T129	KJ94T129
	Wiring		KE94C952	KE94C952
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Details refer to External Drw	Details refer to External Drw
Optional parts			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-R160-J1	
			BC controller: CMB-P104, 105, 106, 108, 1010, 1013, 1016NU-G1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.	

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m ³ /min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P120YLMU-A	PQRY-P144YLMU-A
Power source			3-phase 3-wire 460 ±10% 60Hz	3-phase 3-wire 460 ±10% 60Hz
Cooling capacity (Nominal) *1 (460V)		Btu/h	120,000	144,000
		kW	35.2	42.2
	Power input	kW	7.24	8.78
	Current input	A	10	12.2
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	59~75° F (15~24° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Heating capacity (Nominal) *2 (460V)		Btu/h	135,000	160,000
		kW	39.6	46.9
	Power input	kW	6.83	8.11
	Current input	A	9.5	11.3
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	59~81° F (15~27° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
	Model / Quantity		P06~P96/1~30	P06~P96/1~36
Sound pressure level (measured in anechoic room)		dB <A>	54	54
Refrigerant piping diameter	High pressure	in.(mm)	3/4 (19.05) Brazed	7/8 (22.2) Brazed
	Low pressure	in.(mm)	7/8 (22.2) Brazed	1-1/8 (28.58) Brazed
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension HxWxD		in.	43-5/16 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
		mm	1,100 x 880 x 550	1,450 x 880 x 550
Net weight		lbs(kg)	404 (183)	505 (229)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	7.7	9.5
	Lubricant		MEL32	
Circulating water *3	Water flow rate	G/h	1,522	1,902
		G/min(gpm)	25.4	31.7
		m³ / h	5.76	7.2
		L/min	96	120
		cfm	3.4	4.2
	Pressure drop	psi	3.48	6.38
		kPa	24	44
	Operating volume range	G/h	793 ~ 1,902	1,189 ~ 3,054
		G/min(gpm)	13.2 ~ 31.7	19.8 ~ 50.9
		m³ / h	3.0 ~ 7.2	4.5 ~ 11.6
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Minimum Circuit Ampacity(MCA)		A	13	16
Maximum Overcurrent Protection(MOP)		A	20	25
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	R410A x 13 lbs + 4 oz (6.0 kg)
	Control		Indoor LEV and BC controller	Indoor LEV and BC controller
Drawing	External		KJ94T129	KJ94T130
	Wiring		KE94C952	KE94C952
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Details refer to External Drw	Details refer to External Drw
Optional parts			Joint :CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-R160C-J	Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-R160-J1
			BC controller : CMB-P104, 105, 106, 108, 1010, 1013, 1016NU-G	-
			Main BC controller : CMB-P108, 1010, 1013, 1016NU-GA	Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1
			Sub BC controller : CMB-P104, 108NU-GB, CMB-P1016NU-HB	Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.	

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft (7.5m)	25ft (7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P168YLMU-A	PQRY-P192YLMU-A
Power source			3-phase 3-wire 460 ±10% 60Hz	3-phase 3-wire 460 ±10% 60Hz
Cooling capacity (Nominal) *1 (460V)		Btu/h	168,000	192,000
		kW	49.2	56.3
	Power input	kW	12.05	15.05
	Current input	A	16.8	20.9
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	59~75° F (15~24° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Heating capacity (Nominal) *2 (460V)		Btu/h	188,000	215,000
		kW	55.1	63
	Power input	kW	9.86	11.9
	Current input	A	13.7	16.5
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	59~81° F (15~27° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
	Model / Quantity		P06~P96/1~42	P06~P96/1~48
Sound pressure level (measured in anechoic room)		dB <A>	56	58
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed	7/8 (22.2) Brazed
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	1-1/8 (28.58) Brazed
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension HxWxD		in.	57-1/8 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
		mm	1,450 x 880 x 550	1,100 x 880 x 550
Net weight		lbs(kg)	505 (229)	404 (183)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
MPa		2	2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter
	Motor output	kW	11.0	12.4
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,902	1,902
		G/min(gpm)	31.7	31.7
		m³ / h	7.2	7.2
		L/min	120	120
		cfm	4.2	4.2
	Pressure drop	psi	6.38	6.38
		kPa	44	44
	Operating volume range	G/h	1,189 ~ 3,054	1,189 ~ 3,054
		G/min(gpm)	19.8 ~ 50.9	19.8 ~ 50.9
		m³ / h	4.5 ~ 11.6	4.5 ~ 11.6
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	20	25
Maximum Overcurrent Protection(MOP)		A	35	40
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	R410A x 13 lbs + 4 oz (6.0 kg)
	Control		Indoor LEV and BC controller	Indoor LEV and BC controller
Drawing	External		KJ94T130	KJ94T130
	Wiring		KE94C952	KE94C952
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Details refer to External Drw	Details refer to External Drw
Optional parts			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Factory furnished field installed interlocking for the unit operation and water circuit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.	

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P216YLMU-A	PQRY-P240YLMU-A
Power source			3-phase 3-wire 460 ±10% 60Hz	3-phase 3-wire 460 ±10% 60Hz
Cooling capacity (Nominal) *1 (460V)		Btu/h	216,000	240,000
		kW	63.3	70.3
	Power input	kW	19.23	21.14
	Current input	A	26.8	29.4
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	59~75° F (15~24° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Heating capacity (Nominal) *2 (460V)		Btu/h	243,000	270,000
		kW	71.2	79.1
	Power input	kW	13.04	15.12
	Current input	A	18.1	21
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	59~81° F (15~27° C)
	Circulating water *3		50~113° F (10~45° C)	50~113° F (10~45° C)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	P06~P96/2~50 (Connectable branch pipe number is max. 48.)
Sound pressure level (measured in anechoic room)		dB <A>	58	58
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)	7/8 (22.2) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	1-3/8 (34.93) Brazed
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension HxWxD		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
		mm	1,450 x 880 x 550	1,450 x 880 x 550
Net weight		lbs(kg)	571 (259)	571 (259)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	2.64	2.64
		l	10	10
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter
	Motor output	kW	14.5	16.1
	Case heater	kW	0.045 (240 V)	0.045 (240 V)
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	3,044	3,044
		G/min(gpm)	50.7	50.7
		m³ / h	11.52	11.52
		L/min	192	192
		cfm	6.8	6.8
	Pressure drop	psi	6.53	6.53
		kPa	45	45
	Operating volume range	G/h	1,585 ~ 3,804	1,585 ~ 3,804
		G/min(gpm)	26.4 ~ 63.4	26.4 ~ 63.4
		m³ / h	6.0 ~ 14.4	6.0 ~ 14.4
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Minimum Circuit Ampacity(MCA)		A	31	36
Maximum Overcurrent Protection(MOP)		A	50	60
Refrigerant	Type x original charge		R410A x 25 lbs + 13 oz (11.7 kg)	R410A x 25 lbs + 13 oz (11.7 kg)
	Control		Indoor LEV and BC controller	Indoor LEV and BC controller
Drawing	External		KJ94T173	KJ94T173
	Wiring		KE94C952	KE94C952
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Details refer to External Drw	Details refer to External Drw
Optional parts			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. When the high pressure piping length is 65 m or less, use 7/8 (22.2) pipe. When the high pressure piping length exceeds 65 m, use 7/8 (22.2) pipe until 65 m, use 1-1/8 (28.58) pipe for the part that exceeds 65 m. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.	

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P144YSLMU-A	
Power source			3-phase 3-wire 460 ±10% 60Hz	
Cooling capacity (Nominal) *1 (460V)	Btu/h		144,000	
	kW		42.2	
	Power input	kW	7.11	
	Current input	A	9.9	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (460V)	Btu/h		160,000	
	kW		46.9	
	Power input	kW	7.45	
	Current input	A	10.3	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/1~36	
Sound pressure level (measured in anechoic room)		dB <A>	49	
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed	
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	
Module Set				
Module		PQRY-P72YLMU-A		PQRY-P72YLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD	in.	43-5/16 x 34-11/16 x 21-11/16		43-5/16 x 34-11/16 x 21-11/16
	mm	1,100 x 880 x 550		1,100 x 880 x 550
Net weight		lbs(kg)	404 (183)	404 (183)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method	Inverter	Inverter	
	Motor output	kW	4.3	4.3
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,522 + 1,522	
		G/min(gpm)	25.4 + 25.4	
		m³ / h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	psi	3.48	3.48
		kPa	24	24
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902	
		G/min(gpm)	13.2 + 13.2 ~ 31.7 + 31.7	
		m³ / h	3.0 + 3.0 ~ 7.2 + 7.2	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	6	6
Maximum Overcurrent Protection(MOP)		A	15	15
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	R410A x 11 lbs + 1 oz (5.0 kg)
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	5/8 (15.88) Brazed	5/8 (15.88) Brazed
	Low pressure	in.(mm)	-	3/4 (19.05) Brazed
Drawing	External		KJ94T153	
	Wiring		KE94C952	KE94C952
Standard attachment	Document		Installation Manual	
	Accessory		Details refer to External Drw	
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2	
			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-R160-J1	
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P168YSLMU-A	
Power source			3-phase 3-wire 460 ±10% 60Hz	
Cooling capacity (Nominal) *1 (460V)		Btu/h	168,000	
		kW	49.2	
	Power input	kW	9.33	
	Current input	A	13	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (460V)		Btu/h	188,000	
		kW	55.1	
	Power input	kW	9.34	
	Current input	A	13	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/1~42	
Sound pressure level (measured in anechoic room)		dB <A>	50	
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed	
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	
Module Set				
Module		PQRY-P96YLMU-A		PQRY-P72YLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD	in.	43-5/16 x 34-11/16 x 21-11/16		43-5/16 x 34-11/16 x 21-11/16
	mm	1,100 x 880 x 550		1,100 x 880 x 550
Net weight		lbs(kg)	404 (183)	404 (183)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method	Inverter	Inverter	
	Motor output	kW	6.0	4.3
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,522 + 1,522	
		G/min(gpm)	25.4 + 25.4	
		m³ / h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	psi	3.48	3.48
		kPa	24	24
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902	
G/min(gpm)		13.2 + 13.2 ~ 31.7 + 31.7		
m³ / h		3.0 + 3.0 ~ 7.2 + 7.2		
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	9	6
Maximum Overcurrent Protection(MOP)		A	15	15
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	R410A x 11 lbs + 1 oz (5.0 kg)
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	3/4 (19.05) Brazed	3/4 (19.05) Brazed
	Low pressure	in.(mm)	-	7/8 (22.2) Brazed
Drawing	External		KJ94T153	
	Wiring		KE94C952	KE94C952
Standard	Document		Installation Manual	
Attachment	Accessory		Details refer to External Drw	
Optional parts	Heat Source Twinning kit: CMY-Q100CBK2			
	Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1			
	Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1			
	Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1			
Remarks	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P192YSLMU-A		
Power source			3-phase 3-wire 460 ±10% 60Hz		
Cooling capacity (Nominal) *1 (460V)		Btu/h	192,000		
		kW	56.3		
		Power input	kW		11.3
		Current input	A		15.7
Temp. range of cooling		Indoor	W.B.		59~75° F (15~24° C)
		Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (460V)		Btu/h	215,000		
		kW	63		
		Power input	kW		11.02
		Current input	A		15.3
Temp. range of heating		Indoor	D.B.		59~81° F (15~27° C)
		Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity	50~150% of heat source unit capacity			
	Model / Quantity	P06~P96/1~48			
Sound pressure level (measured in anechoic room)		dB <A>	51		
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed		
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed		
Module Set					
Module		PQRY-P96YLMU-A		PQRY-P96YLMU-A	
External finish		Galvanized steel sheets			
External dimension HxWxD		in.	43-5/16 x 34-11/16 x 21-11/16		
		mm	1,100 x 880 x 550		
Net weight		lbs(kg)	404 (183)		
Heat exchanger	Type	Plate		Plate	
	Water volume in plate	G	1.32		
		l	5		
	Water pressure Max.	psi	290		
MPa		2			
Compressor	Type	Inverter scroll hermetic compressor			
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION			
	Starting method	Inverter		Inverter	
	Motor output	kW	6.0		
	Lubricant	MEL32			
Circulating water *3	Water flow rate	G/h	1,522 + 1,522		
		G/min(gpm)	25.4 + 25.4		
		m³ / h	5.76 + 5.76		
		L/min	96 + 96		
		cfm	3.4 + 3.4		
	Pressure drop	psi	3.48		
		kPa	24		
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902		
		G/min(gpm)	13.2 + 13.2 ~ 31.7 + 31.7		
m³ / h		3.0 + 3.0 ~ 7.2 + 7.2			
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
	Inverter circuit(comp)		Over-heat protection, Over-current protection		
	Compressor		Over-heat protection		
Minimum Circuit Ampacity(MCA)		A	9		
Maximum Overcurrent Protection(MOP)		A	15		
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)		
	Control		Indoor LEV and BC controller		
Pipe between unit and distributor	High pressure	in.(mm)	3/4 (19.05) Brazed		
	Low pressure	in.(mm)	-		
Drawing	External		KJ94T153		
	Wiring		KE94C952		
Standard attachment	Document		Installation Manual		
	Accessory		Details refer to External Drw		
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2		
			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1		
			Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1		
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1		
Remarks		Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B. / 66degF W.B. (27degC D.B. / 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P216YSLMU-A	
Power source			3-phase 3-wire 460 ±10% 60Hz	
Cooling capacity (Nominal) *1 (460V)		Btu/h	216,000	
		kW	63.3	
	Power input	kW	14.03	
	Current input	A	19.5	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (460V)		Btu/h	243,000	
		kW	71.2	
	Power input	kW	12.88	
	Current input	A	17.9	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	
Sound pressure level (measured in anechoic room)		dB <A>	55	
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)	
	Low pressure	in.(mm)	1-1/8 (28.58) Brazed	
Module Set				
Module		PQRY-P120YLMU-A		PQRY-P96YLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD	in.	43-5/16 x 34-11/16 x 21-11/16		43-5/16 x 34-11/16 x 21-11/16
	mm	1,100 x 880 x 550		1,100 x 880 x 550
Net weight		lbs(kg)	404 (183)	404 (183)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
	MPa	2	2	
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method	Inverter	Inverter	
	Motor output	kW	7.7	6.0
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,522 + 1,522	
		G/min(gpm)	25.4 + 25.4	
		m³ / h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	psi	3.48	3.48
		kPa	24	24
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902	
		G/min(gpm)	13.2 + 13.2 ~ 31.7 + 31.7	
m³ / h		3.0 + 3.0 ~ 7.2 + 7.2		
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	13	9
Maximum Overcurrent Protection(MOP)		A	20	15
Refrigerant	Type x original charge	R410A x 11 lbs + 1 oz (5.0 kg)		R410A x 11 lbs + 1 oz (5.0 kg)
	Control	Indoor LEV and BC controller		
Pipe between unit and distributor	High pressure	in.(mm)	3/4 (19.05) Brazed	3/4 (19.05) Brazed
	Low pressure	in.(mm)	-	7/8 (22.2) Brazed
Drawing	External	KJ94T153		
	Wiring	KE94C952		KE94C952
Standard attachment	Document	Installation Manual		
	Accessory	Details refer to External Drw		
Optional parts	Heat Source Twinning kit: CMY-Q100CBK2			
	Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1			
	Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1			
	Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1			
Remarks	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. When the high pressure piping length is 65 m or less, use 7/8 (22.2) pipe. When the high pressure piping length exceeds 65 m, use 7/8 (22.2) pipe until 65 m, use 1-1/8 (28.58) pipe for the part that exceeds 65m. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			
Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter	
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412	
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31	
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536	
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.	
* Due to continuing improvement, above specifications may be subject to change without notice.				

1. SPECIFICATIONS

Model			PQRY-P240YSLMU-A	
Power source			3-phase 3-wire 460 ±10% 60Hz	
Cooling capacity (Nominal) *1 (460V)		Btu/h	240,000	
		kW	70.3	
	Power input	kW	16.89	
	Current input	A	23.5	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (460V)		Btu/h	270,000	
		kW	79.1	
	Power input	kW	14.58	
	Current input	A	20.3	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	
Sound pressure level (measured in anechoic room)		dB <A>	57	
Refrigerant piping diameter	High pressure	in.(mm)	7/8 (22.2) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)	
	Low pressure	in.(mm)	1-3/8 (34.93) Brazed	
Module Set				
Module		PQRY-P120YLMU-A		PQRY-P120YLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD	in.	43-5/16 x 34-11/16 x 21-11/16		43-5/16 x 34-11/16 x 21-11/16
	mm	1,100 x 880 x 550		1,100 x 880 x 550
Net weight		lbs(kg)	404 (183)	404 (183)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5.0	5.0
	Water pressure Max.	psi	290	290
MPa		2.0	2.0	
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method	Inverter	Inverter	
	Motor output	kW	7.7	7.7
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,522 + 1,522	
		G/min(gpm)	25.4 + 25.4	
		m³ / h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	psi	3.48	3.48
		kPa	24	24
	Operating volume range	G/h	793 + 793 ~ 1,902 + 1,902	
		G/min(gpm)	13.2 + 13.2 ~ 31.7 + 31.7	
		m³ / h	3.0 + 3.0 ~ 7.2 + 7.2	
Protection devices	High pressure protection	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
	Inverter circuit(comp)	Over-heat protection, Over-current protection		
	Compressor	Over-heat protection		
Minimum Circuit Ampacity(MCA)		A	13	13
Maximum Overcurrent Protection(MOP)		A	20	20
Refrigerant	Type x original charge	R410A x 11 lbs + 1 oz (5.0 kg)		R410A x 11 lbs + 1 oz (5.0 kg)
	Control	Indoor LEV and BC controller		
Pipe between unit and distributor	High pressure	in.(mm)	3/4 (19.05) Brazed	3/4 (19.05) Brazed
	Low pressure	in.(mm)	-	7/8 (22.2) Brazed
Drawing	External	KJ94T153		
	Wiring	KE94C952		KE94C952
Standard attachment	Document	Installation Manual		
	Accessory	Details refer to External Drw		
Optional parts	Heat Source Twinning kit: CMY-Q100CBK2			
	Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1			
	Main BC controller: CMB-P108, 1010, 1013, 1016NU-GA1, 108, 1010, 1016NU-HA1			
	Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1			
Remarks	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit.The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. When the high pressure piping length is 65 m or less, use 7/8 (22.2) pipe. When the high pressure piping length exceeds 65 m, use 7/8 (22.2) pipe until 65 m, use 1-1/8 (28.58) pipe for the part that exceeds 65m. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			
Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)		*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)		68degF D.B. (20degC D.B.)	BTU/h =kW x 3,412
Water Temp.:	86degF (30degC)		68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)		25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)		0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.				

1. SPECIFICATIONS

Model			PQRY-P288YSLMU-A	
Power source			3-phase 3-wire 460 ±10% 60Hz	
Cooling capacity (Nominal) *1 (460V)		Btu/h	288,000	
		kW	84.4	
	Power input	kW	20.42	
	Current input	A	28.4	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (460V)		Btu/h	323,000	
		kW	94.7	
	Power input	kW	17.5	
	Current input	A	24.4	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	
Sound pressure level (measured in anechoic room)		dB <A>	57	
Refrigerant piping diameter	High pressure	in.(mm)	1-1/8 (28.58) Brazed	
	Low pressure	in.(mm)	1-3/8 (34.93) Brazed	
Module Set				
Module			PQRY-P144YLMU-A	PQRY-P144YLMU-A
External finish			Galvanized steel sheets	
External dimension HxWxD		in.	57-1/8 x 34-11/16 x 21-11/16	
		mm	1,450 x 880 x 550	
Net weight		lbs(kg)	505 (229)	
Heat exchanger	Type		Plate	
	Water volume in plate	G	1.32	
		l	5	
	Water pressure Max.	psi	290	
		MPa	2	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacturer		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter
	Motor output	kW	9.5	
	Lubricant		MEL32	
Circulating water *3	Water flow rate	G/h	1,902 ± 1,902	
		G/min(gpm)	31.7 ± 31.7	
		m³ / h	7.20 ± 7.20	
		L/min	120 ± 120	
		cfm	4.2 ± 4.2	
	Pressure drop	psi	6.38	
		kPa	44	
	Operating volume range	G/h	1,189 ± 1,189 ~ 3,054 ± 3,054	
G/min(gpm)		19.8 ± 19.8 ~ 50.9 ± 50.9		
m³ / h		4.5 ± 4.5 ~ 11.6 ± 11.6		
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	16	
Maximum Overcurrent Protection(MOP)		A	25	
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	7/8 (22.2) Brazed	
	Low pressure	in.(mm)	-	
Drawing	External		KJ94T154	
	Wiring		KE94C952	KE94C952
Standard	Document		Installation Manual	
Attachment	Accessory		Details refer to External Drw	
Optional parts	Heat Source Twinning kit: CMY-Q200CBK			
	Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1			
	Main BC controller: CMB-P108, 1010, 1016NU-HA1			
	Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1			
Remarks	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P312YSLMU-A	
Power source			3-phase 3-wire 460 ±10% 60Hz	
Cooling capacity (Nominal) *1 (460V)		Btu/h	312,000	
		kW	91.4	
	Power input	kW	23.41	
	Current input	A	32.6	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (460V)		Btu/h	350,000	
		kW	102.6	
	Power input	kW	19.11	
	Current input	A	26.6	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	
Sound pressure level (measured in anechoic room)		dB <A>	58	
Refrigerant piping diameter	High pressure	in.(mm)	1-1/8 (28.58) Brazed	
	Low pressure	in.(mm)	1-3/8 (34.93) Brazed	
Module Set				
Module		PQRY-P168YLMU-A		PQRY-P144YLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD	in.	57-1/8 x 34-11/16 x 21-11/16		57-1/8 x 34-11/16 x 21-11/16
	mm	1,450 x 880 x 550		1,450 x 880 x 550
Net weight		lbs(kg)	505 (229)	505 (229)
Heat exchanger	Type		Plate	Plate
	Water volume in plate	G	1.32	1.32
		l	5	5
	Water pressure Max.	psi	290	290
		MPa	2	2
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method	Inverter	Inverter	
	Motor output	kW	11.0	9.5
	Lubricant		MEL32	MEL32
Circulating water *3	Water flow rate	G/h	1,902 + 1,902	
		G/min(gpm)	31.7 + 31.7	
		m³ / h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	psi	6.38	6.38
		kPa	44	44
	Operating volume range	G/h	1,189 + 1,189 ~ 3,054 + 3,054	
		G/min(gpm)	19.8 + 19.8 ~ 50.9 + 50.9	
m³ / h		4.5 + 4.5 ~ 11.6 + 11.6		
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	20	16
Maximum Overcurrent Protection(MOP)		A	35	25
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	R410A x 13 lbs + 4 oz (6.0 kg)
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	7/8 (22.2) Brazed	7/8 (22.2) Brazed
	Low pressure	in.(mm)	-	1-1/8 (28.58) Brazed
Drawing	External		KJ94T154	
	Wiring		KE94C952	KE94C952
Standard attachment	Document		Installation Manual	
	Accessory		Details refer to External Drw	
Optional parts			Heat Source Twinning kit: CMY-Q200CBK	
			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1	
			Main BC controller: CMB-P108, 1010, 1016NU-HA1	
			Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1	
Remarks	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B. / 66degF W.B. (27degC D.B. / 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

Model			PQRY-P336YSLMU-A	
Power source			3-phase 3-wire 460 ±10% 60Hz	
Cooling capacity (Nominal) *1 (460V)		Btu/h	336,000	
		kW	98.5	
	Power input	kW	26.84	
	Current input	A	37.4	
Temp. range of cooling	Indoor	W.B.	59~75° F (15~24° C)	
	Circulating water *3		50~113° F (10~45° C)	
Heating capacity (Nominal) *2 (460V)		Btu/h	378,000	
		kW	110.8	
	Power input	kW	20.77	
	Current input	A	28.9	
Temp. range of heating	Indoor	D.B.	59~81° F (15~27° C)	
	Circulating water *3		50~113° F (10~45° C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	
	Model / Quantity		P06~P96/2~50 (Connectable branch pipe number is max. 48.)	
Sound pressure level (measured in anechoic room)		dB <A>	59	
Refrigerant piping diameter	High pressure	in.(mm)	1-1/8 (28.58) Brazed	
	Low pressure	in.(mm)	1-5/8 (41.28) Brazed	
Module Set				
Module		PQRY-P168YLMU-A		PQRY-P168YLMU-A
External finish		Galvanized steel sheets		
External dimension HxWxD		in.	57-1/8 x 34-11/16 x 21-11/16	
		mm	1,450 x 880 x 550	
Net weight		lbs(kg)	505 (229)	
Heat exchanger	Type		Plate	
	Water volume in plate	G	1.32	
		l	5	
	Water pressure Max.	psi	290	
		MPa	2	
Compressor	Type	Inverter scroll hermetic compressor		
	Manufacturer	AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method	Inverter		Inverter
	Motor output	kW	11.0	
	Lubricant	MEL32		MEL32
Circulating water *3	Water flow rate	G/h	1,902 ± 1,902	
		G/min(gpm)	31.7 ± 31.7	
		m³ / h	7.20 ± 7.20	
		L/min	120 ± 120	
		cfm	4.2 ± 4.2	
	Pressure drop	psi	6.38	
		kPa	44	
	Operating volume range	G/h	1,189 ± 1,189 ~ 3,054 ± 3,054	
G/min(gpm)		19.8 ± 19.8 ~ 50.9 ± 50.9		
m³ / h		4.5 ± 4.5 ~ 11.6 ± 11.6		
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit(comp)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Minimum Circuit Ampacity(MCA)		A	20	
Maximum Overcurrent Protection(MOP)		A	35	
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	
	Control		Indoor LEV and BC controller	
Pipe between unit and distributor	High pressure	in.(mm)	7/8 (22.2) Brazed	
	Low pressure	in.(mm)	-	
Drawing	External		KJ94T154	
	Wiring		KE94C952	
Standard	Document		Installation Manual	
Attachment	Accessory		Details refer to External Drw	
Optional parts	Heat Source Twinning kit: CMY-Q200CBK			
	Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1			
	Main BC controller: CMB-P108, 1010, 1016NU-HA1			
	Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1			
Remarks	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. The ambient temperature of the Heat Source Unit needs to be kept below 104°F DB(40° C DB). The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Mount a strainer (more than 50 meshes) at the water inlet piping of the unit. The Heat Source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. A field provided flow switch is required for minimum flow protection on each module, field installed and wired to TB8 (terminal 3-4). *3 If using Circulating water temperatures that are between 23 and 50° F, Dip switch 3-9 must be turned on and glycol must be used in the water loop to prevent freezing down to 5° F.			

Note:	*1 Nominal cooling conditions (subject to JIS B8615-1)	*2 Nominal heating conditions (subject to JIS B8615-1)	Unit converter
Indoor:	81degF D.B./ 66degF W.B. (27degC D.B./ 19degC W.B.)	68degF D.B. (20degC D.B.)	BTU/h =kW x 3.412
Water Temp.:	86degF (30degC)	68degF (20degC)	cfm =m³/min x 35.31
Pipe length:	24-9/16ft.(7.5m)	25ft.(7.6m)	lb =kg / 0.4536
Level difference:	0ft.(0m)	0ft.(0m)	* Above specification data is subject to rounding variation.
* Due to continuing improvement, above specifications may be subject to change without notice.			

1. SPECIFICATIONS

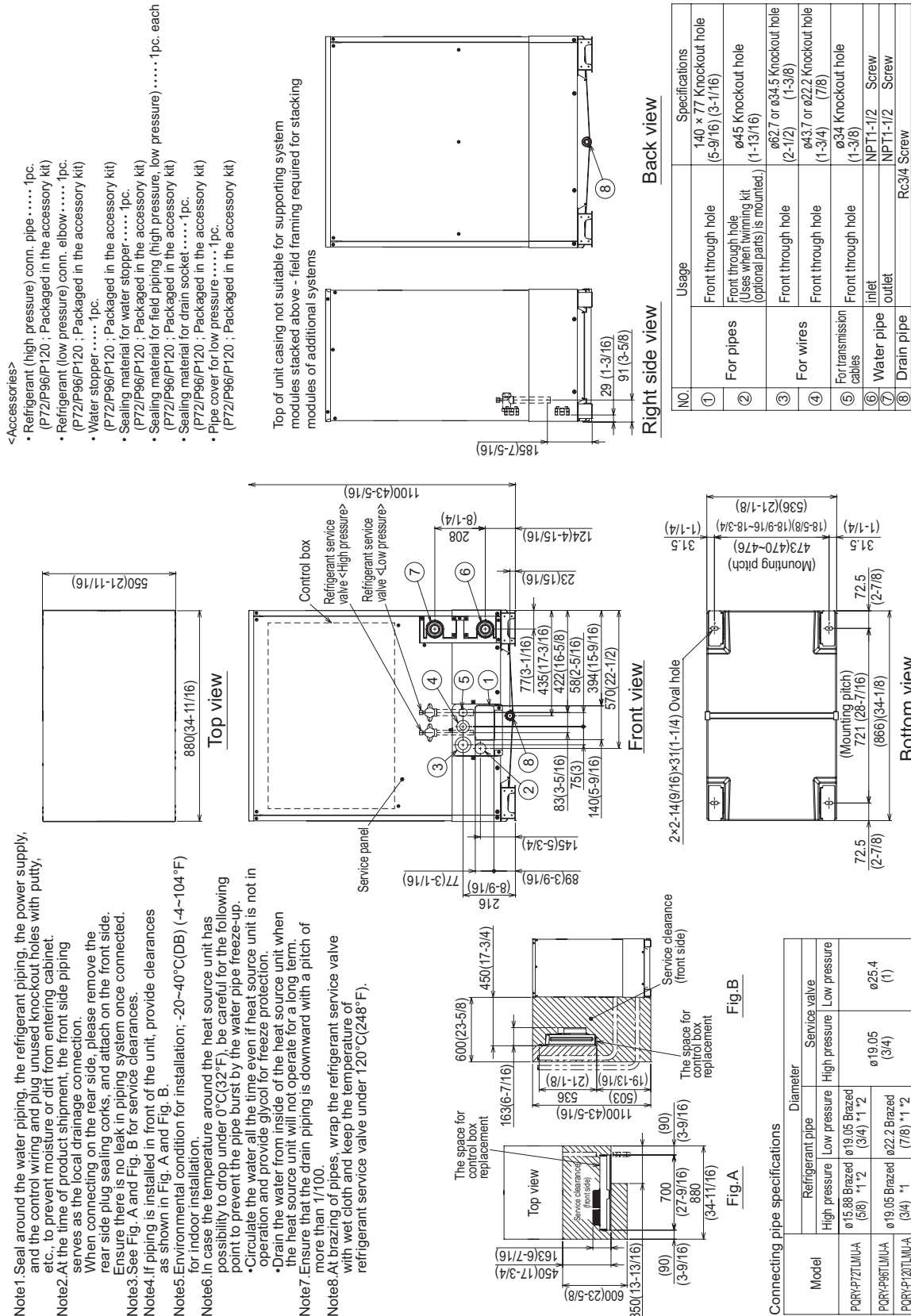
1-3. Efficiency Ratings

Model	IDU Type	EER (95° F) *1	IEER *1	HI COP (68° F) *1	SCHE *1
PQRY-P72TLMU-A	Ducted / Non-Ducted	16.7 / 20.1	24.2 / 28.1	5.51 / 6.05	23.6 / 24.4
PQRY-P96TLMU-A	Ducted / Non-Ducted	15.2 / 18.7	25.0 / 30.4	5.77 / 5.93	19.7 / 23.5
PQRY-P120TLMU-A	Ducted / Non-Ducted	13.4 / 15.6	23.2 / 29.0	5.51 / 5.60	19.7 / 19.7
PQRY-P144TLMU-A	Ducted / Non-Ducted	12.1 / 15.4	19.5 / 23.1	4.90 / 5.50	20.1 / 20.1
PQRY-P144TSLMU-A	Ducted / Non-Ducted	15.1 / 18.6	22.5 / 26.1	5.29 / 5.94	21.7 / 20.2
PQRY-P168TLMU-A	Ducted / Non-Ducted	11.9 / 13.5	18.0 / 21.8	4.73 / 5.39	19.7 / 19.7
PQRY-P168TSLMU-A	Ducted / Non-Ducted	14.8 / 17.1	23.6 / 25.8	5.57 / 5.67	21.0 / 22.6
PQRY-P192TLMU-A	Ducted / Non-Ducted	11.5 / 12.4	18.4 / 21.7	4.60 / 5.15	20.3 / 20.3
PQRY-P192TSLMU-A	Ducted / Non-Ducted	14.4 / 16.2	24.4 / 26.4	5.77 / 5.53	19.7 / 21.8
PQRY-P216TLMU-A	Ducted / Non-Ducted	11.2 / 10.9	19.0 / 21.2	4.75 / 5.23	19.7 / 19.7
PQRY-P216TSLMU-A	Ducted / Non-Ducted	13.5 / 14.9	23.5 / 25.9	5.64 / 5.40	19.7 / 20.1
PQRY-P240TLMU-A	Ducted / Non-Ducted	10.8 / 11.0	18.8 / 21.2	4.52 / 5.05	19.7 / 19.7
PQRY-P240TSLMU-A	Ducted / Non-Ducted	12.5 / 13.8	22.4 / 25.7	5.46 / 5.32	19.3 / 20.0
PQRY-P288TSLMU-A	Ducted / Non-Ducted	11.4 / 13.7	18.5 / 20.6	4.90 / 5.25	20.1 / 19.0
PQRY-P312TSLMU-A	Ducted / Non-Ducted	11.2 / 13.0	17.6 / 20.4	4.78 / 5.24	19.7 / 19.0
PQRY-P336TSLMU-A	Ducted / Non-Ducted	11.1 / 12.3	16.8 / 20.1	4.66 / 5.23	19.7 / 19.0
PQRY-P72YLMU-A	Ducted / Non-Ducted	16.7 / 20.1	24.2 / 28.1	5.51 / 6.05	23.6 / 24.4
PQRY-P96YLMU-A	Ducted / Non-Ducted	15.2 / 18.7	25.0 / 30.4	5.77 / 5.93	19.7 / 23.5
PQRY-P120YLMU-A	Ducted / Non-Ducted	13.4 / 15.6	23.2 / 29.0	5.51 / 5.60	19.7 / 19.7
PQRY-P144YLMU-A	Ducted / Non-Ducted	12.1 / 15.4	19.5 / 23.1	4.90 / 5.50	20.1 / 20.1
PQRY-P144YSLMU-A	Ducted / Non-Ducted	15.1 / 18.6	22.5 / 26.1	5.29 / 5.94	21.7 / 20.2
PQRY-P168YLMU-A	Ducted / Non-Ducted	11.9 / 13.5	18.0 / 21.8	4.73 / 5.39	19.7 / 19.7
PQRY-P168YSLMU-A	Ducted / Non-Ducted	14.8 / 17.1	23.6 / 25.8	5.57 / 5.67	21.0 / 22.6
PQRY-P192YLMU-A	Ducted / Non-Ducted	11.5 / 12.4	18.4 / 21.7	4.60 / 5.15	20.3 / 20.3
PQRY-P192YSLMU-A	Ducted / Non-Ducted	14.4 / 16.2	24.4 / 26.4	5.77 / 5.53	19.7 / 21.8
PQRY-P216YLMU-A	Ducted / Non-Ducted	11.2 / 10.9	19.0 / 21.2	4.75 / 5.23	19.7 / 19.7
PQRY-P216YSLMU-A	Ducted / Non-Ducted	13.5 / 14.9	23.5 / 25.9	5.64 / 5.40	19.7 / 20.1
PQRY-P240YLMU-A	Ducted / Non-Ducted	10.8 / 11.0	18.8 / 21.2	4.52 / 5.05	19.7 / 19.7
PQRY-P240YSLMU-A	Ducted / Non-Ducted	12.5 / 13.8	22.4 / 25.7	5.46 / 5.32	19.3 / 20.0
PQRY-P288YSLMU-A	Ducted / Non-Ducted	11.4 / 13.7	18.5 / 20.6	4.90 / 5.25	20.1 / 19.0
PQRY-P312YSLMU-A	Ducted / Non-Ducted	11.2 / 13.0	17.6 / 20.4	4.78 / 5.24	19.7 / 19.0
PQRY-P336YSLMU-A	Ducted / Non-Ducted	11.1 / 12.3	16.8 / 20.1	4.66 / 5.23	19.7 / 19.0
Note:	*1. Efficiency values based on AHRI 1230 test method.				

2. EXTERNAL DIMENSIONS

PQRY-P72, 96, 120TLMU-A

Unit : mm(in)



2. EXTERNAL DIMENSIONS

PQRY-P144, 168, 192TLMU-A

Unit : mm(in)

Note1. Seal around the water piping, the refrigerant piping, the power supply, and the control wiring and plug unused knockout holes with putty, etc., to prevent moisture or dirt from entering cabinet.

Note2. At the time of product shipment, the front side piping serves as the local drainage connection.

When connecting on the rear side, please remove the rear side plug sealing corks, and attach on the front side.

Note3. Ensure there is no leak in piping system once connected. See Fig. A and Fig. B for service clearances.

Note4. If piping is installed in front of the unit, provide clearances as shown in Fig. A and Fig. B.

Note5. Environmental condition for installation: -20~40°C(DB) (-4~104°F) for indoor installation.

Note6. In case the temperature around the heat source unit has possibility to drop under 0°C(32°F), be careful for the following point to prevent the pipe burst by the water pipe freeze-up.

- Circulate the water all the time even if heat source unit is not in operation and provide glycol for freeze protection.

- Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.

Note7. Ensure that the drain piping is downward with a pitch of more than 1/100.

Note8. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).

<Accessories>

- Refrigerant (high pressure) conn. pipe1pc.
(P144/P168/P192 : Packaged in the accessory kit)
- Refrigerant (low pressure) conn. pipe1pc.
(P144/P168/P192 : Packaged in the accessory kit)
- Water stopper1pc.
(P144/P168/P192 : Packaged in the accessory kit)
- Sealing material for water stopper1pc.
(P144/P168/P192 : Packaged in the accessory kit)
- Sealing material for field piping (high pressure, low pressure)1pc. each
(P144/P168/P192 : Packaged in the accessory kit)
- Sealing material for drain socket1pc.
(P144/P168/P192 : Packaged in the accessory kit)
- Pipe cover for low pressure1pc.
(P144/P168/P192 : Packaged in the accessory kit)
- Sealing material for base leg (two types)4pc. each
(P144/P168/P192 : Packaged in the accessory kit)
- Sealing material for panel1pc.
(P144/P168/P192 : Packaged in the accessory kit)

Top of unit casing not suitable for supporting system modules stacked above - field framing required for stacking modules of additional systems

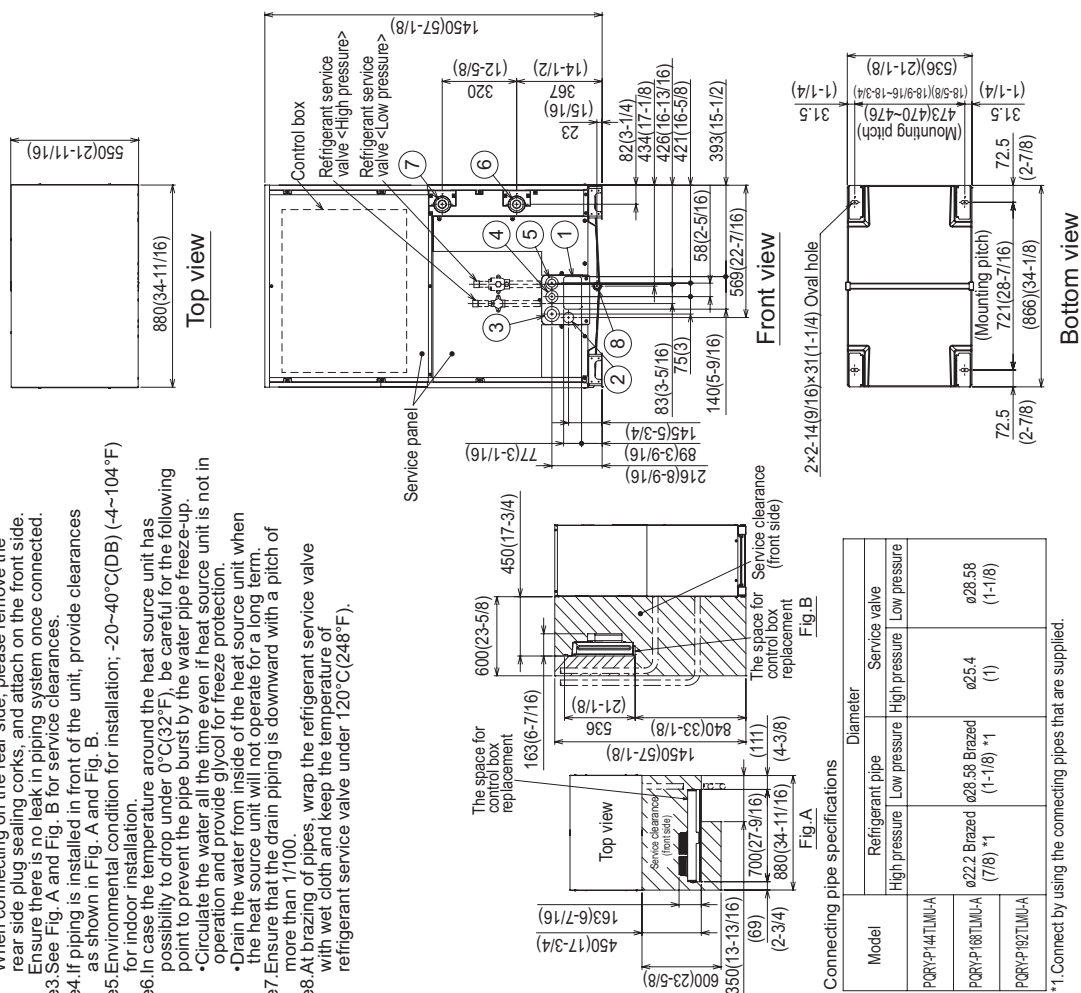


Fig. A

Fig. B

Fig. C

Fig. D

Fig. E

Fig. F

Fig. G

Fig. H

Fig. I

Fig. J

Fig. K

Fig. L

Fig. M

Fig. N

Fig. O

Fig. P

Fig. Q

Fig. R

Fig. S

Fig. T

Fig. U

Fig. V

Fig. W

Fig. X

Fig. Y

Fig. Z

Fig. AA

Fig. AB

Fig. AC

Fig. AD

Fig. AE

Fig. AF

Fig. AG

Fig. AH

Fig. AI

Fig. AJ

Fig. AK

Fig. AL

Fig. AM

Fig. AN

Fig. AO

Fig. AP

Fig. AQ

Fig. AR

Fig. AS

Fig. AT

Fig. AU

Fig. AV

Fig. AW

Fig. AX

Fig. AY

Fig. AZ

Fig. BA

Fig. BB

Fig. BC

Fig. BD

Fig. BE

Fig. BF

Fig. BG

Fig. BH

Fig. BI

Fig. BJ

Fig. BK

Fig. BL

Fig. BM

Fig. BN

Fig. BO

Fig. BP

Fig. BQ

Fig. BR

Fig. BS

Fig. BT

Fig. BU

Fig. BV

Fig. BW

Fig. BX

Fig. BY

Fig. BZ

Fig. CA

Fig. CB

Fig. CC

Fig. CD

Fig. CE

Fig. CF

Fig. CG

Fig. CH

Fig. CI

Fig. CJ

Fig. CK

Fig. CL

Fig. CM

Fig. CN

Fig. CO

Fig. CP

Fig. CQ

Fig. CR

Fig. CS

Fig. CT

Fig. CU

Fig. CV

Fig. CW

Fig. CX

Fig. CY

Fig. CZ

Fig. DA

Fig. DB

Fig. DC

Fig. DD

Fig. DE

Fig. DF

Fig. DG

Fig. DH

Fig. DI

Fig. DJ

Fig. DK

Fig. DL

Fig. DM

Fig. DN

Fig. DO

Fig. DP

Fig. DQ

Fig. DR

Fig. DS

Fig. DT

Fig. DU

Fig. DV

Fig. DW

Fig. DX

Fig. DY

Fig. DZ

Fig. EA

Fig. EB

Fig. EC

Fig. ED

Fig. EE

Fig. EF

Fig. EG

Fig. EH

Fig. EI

Fig. EJ

Fig. EK

Fig. EL

Fig. EM

Fig. EN

Fig. EO

Fig. EP

Fig. EQ

Fig. ER

Fig. ES

Fig. ET

Fig. EU

Fig. EV

Fig. EW

Fig. EX

Fig. EY

Fig. EZ

Fig. FA

Fig. FB

Fig. FC

Fig. FD

Fig. FE

Fig. FF

Fig. FG

Fig. FH

Fig. FI

Fig. FJ

Fig. FK

Fig. FL

Fig. FM

Fig. FN

Fig. FO

Fig. FP

Fig. FQ

Fig. FR

Fig. FS

Fig. FT

Fig. FU

Fig. FV

Fig. FW

Fig. FX

Fig. FY

Fig. FZ

Fig. GA

Fig. GB

Fig. GC

Fig. GD

Fig. GE

Fig. GF

Fig. GG

Fig. GH

Fig. GI

Fig. GJ

Fig. GK

Fig. GL

Fig. GM

Fig. GN

Fig. GO

Fig. GP

Fig. GQ

Fig. GR

Fig. GS

Fig. GT

Fig. GU

Fig. GV

Fig. GW

Fig. GX

Fig. GY

Fig. GZ

Fig. HA

Fig. HB

Fig. HC

Fig. HD

Fig. HE

Fig. HF

Fig. HG

Fig. HH

Fig. HI

Fig. HJ

Fig. HK

Fig. HL

Fig. HM

Fig. HN

Fig. HO

Fig. HP

Fig. HQ

Fig. HR

Fig. HS

Fig. HT

Fig. HU

Fig. HV

Fig. HW

Fig. HX

Fig. HY

Fig. HZ

Fig. IA

Fig. IB

Fig. IC

Fig. ID

Fig. IE

Fig. IF

Fig. IG

Fig. IH

Fig. II

Fig. IJ

Fig. IK

Fig. IL

Fig. IM

Fig. IN

Fig. IO

Fig. IP

Fig. IQ

Fig. IR

Fig. IS

Fig. IT

Fig. IU

Fig. IV

Fig. IW

Fig. IX

Fig. IY

Fig. IZ

Fig. JA

Fig. JB

Fig. JC

Fig. JD

Fig. JE

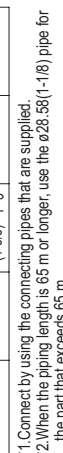
Fig. JF

Fig. JG

Fig. JH

Unit : mm(in)

Note 8. At brazing of pipes, wrap the refrigerant service with wet cloth and keep the temperature of refrigerant service valve under 120°C (248°F).



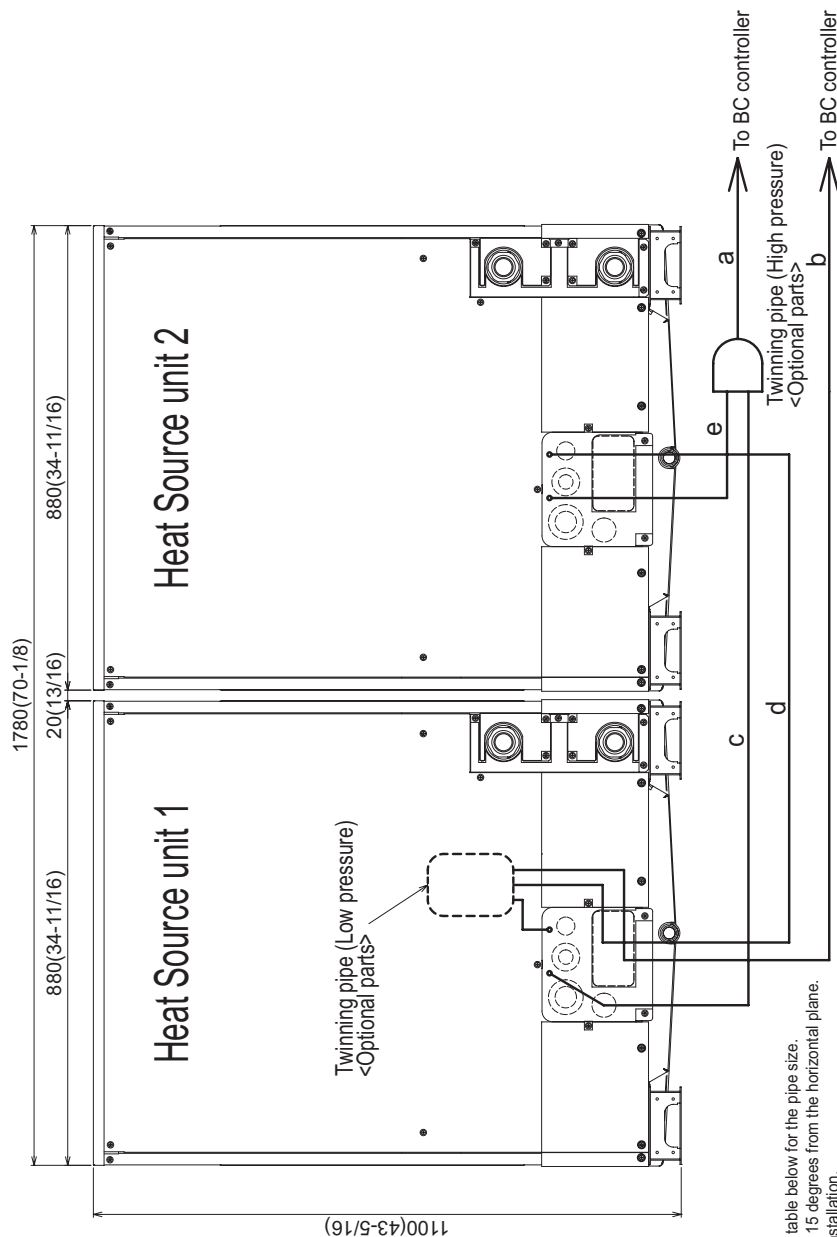
3. Use the pipe joint(field supply) and connect to the refrigerant service valve piping.

- | NO. | Usage | Specifications |
|-----|--|---|
| ① | Front through hole | 140 × 77 Knockout hole
(5-9/16) (3-1/16) |
| ② | For pipes
Front through hole
(Uses when winning kit
(optional parts) is mounted.) | ø45 Knockout hole
(1-13/16) |
| ③ | Front through hole | ø62.7 or ø34.5 Knockout hole
(2-1/2) (1-3/8) |
| ④ | For wires
Front through hole | ø43.7 or ø22.2 Knockout hole
(1-3/4) (7/8) |
| ⑤ | For transmission
cables
Front through hole | ø34 Knockout hole
(1-3/8) |
| ⑥ | Water pipe
inlet | NPT1-1/2 Screw |
| ⑦ | Drain pipe
outlet | NPT1-1/2 Screw |
| ⑧ | | Rc3/4 Screw |

2. EXTERNAL DIMENSIONS

PQRY-P144, 168, 192, 216, 240TSLMU-A

Unit : mm(in)



- Note 1. Connect the pipes as shown in the figure above. Refer to the table below for the pipe size.
 2. Twinning pipe (High pressure) should not be tilted more than 15 degrees from the horizontal plane.
 3. See the Installation Manual for the details of Twinning pipe installation.
 4. Only use the Twinning pipe by Mitsubishi (optional parts).

Twinning pipe connection size

Package unit name	PQRY-P144TSLMU-A	PQRY-P168TSLMU-A	PQRY-P192TSLMU-A	PQRY-P216TSLMU-A	PQRY-P240TSLMU-A
Component unit name	Heat Source unit 1	PQRY-P72TSLMU-A	PQRY-P96TSLMU-A	PQRY-P120TSLMU-A	PQRY-P120TSLMU-A
Twinning pipe Kit(optional parts)	Heat Source unit 2	PQRY-P72TSLMU-A	PQRY-P96TSLMU-A	PQRY-P120TSLMU-A	PQRY-P120TSLMU-A
BC controller-Twinning pipe	High pressure	a	ø22.2(7/8)	ø22.2(7/8)	ø22.2(7/8)
	Low pressure	b	ø28.58(1-1/8)	ø34.93(1-3/8)	ø34.93(1-3/8)

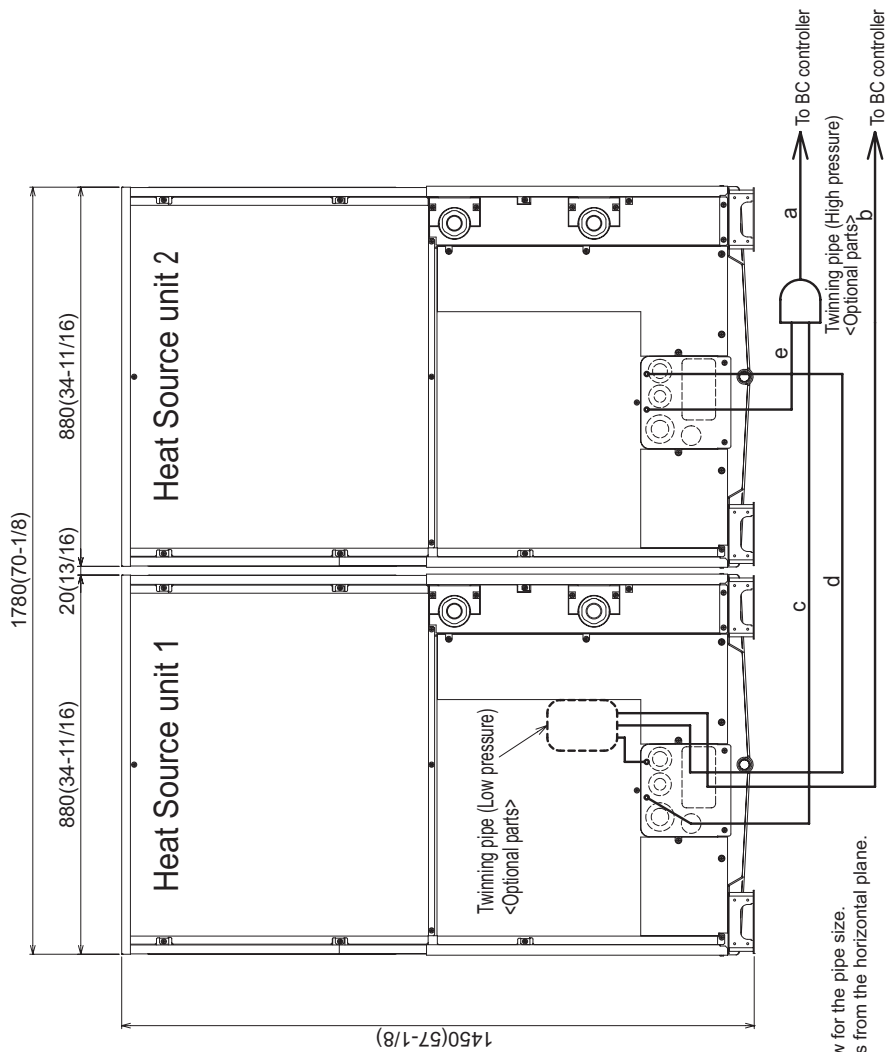
Unit model	High pressure core	Low pressure core
P72	ø15.88(5/8) *2	ø19.05(3/4) *2
P96	ø19.05(3/4)	ø22.2(7/8)
P120		ø22.2(7/8)

*1. When the piping length is 65 m or longer, use the ø28.58(1-1/8) pipe for the part that exceeds 65 m.
 *2. When the package unit name "PQRY-P168TSLMU-A", use the ø19.05(3/4) pipe for high pressure and the ø22.2(7/8) pipe for low pressure.

2. EXTERNAL DIMENSIONS

PQRY-P288, 312, 336TSLMU-A

Unit : mm(in)



- Note 1. Connect the pipes as shown in the figure above. Refer to the table below for the pipe size.
2. Twinning pipe (High pressure) should not be tilted more than 15 degrees from the horizontal plane.
3. See the Installation Manual for the details of Twinning pipe installation.
4. Only use the Twinning pipe by Mitsubishi (optional parts).

Twinning pipe connection size

Package unit name	PQRY-P288TSLMU-A	PQRY-P312TSLMU-A	PQRY-P336TSLMU-A
Component unit name	Heat Source unit 1 PQRY-P144TLMU-A	Heat Source unit 1 PQRY-P168TLMU-A	Heat Source unit 1 PQRY-P168TLMU-A
Twinning pipe Kit(optional parts)	Heat Source unit 2 PQRY-P144TLMU-A	Heat Source unit 2 PQRY-P168TLMU-A	Heat Source unit 2 PQRY-P168TLMU-A
BC controller~ Twinning pipe	High pressure Low pressure	High pressure Low pressure	High pressure Low pressure
	a b	c d	e f
	ø34.93(1-3/8)	ø28.58(1-1/8)	ø41.28(1-5/8)

Unit model	High pressure core	Low pressure d
P144	ø22.2(7/8)	ø28.58(1-1/8)
P168		

2. EXTERNAL DIMENSIONS

PQRY-P72, 96, 120YLMU-A

Unit : mm(in)

Note1. Seal around the water piping, the refrigerant piping, the power supply, and the control wiring and plug unused knockout holes with putty, etc., to prevent moisture or dirt from entering cabinet.

Note2. At the time of product shipment, the front side piping serves as the local drainage connection.

When connecting on the rear side, please remove the rear side plug sealing corks, and attach on the front side.

Note3. Ensure there is no leak in piping system once connected. See Fig. A and Fig. B for service clearances.

Note4. If piping is installed in front of the unit, provide clearances as shown in Fig. A and Fig. B.

Note5. Environmental condition for installation: -20~40°C(DB) (-4~104°F) for indoor installation.

Note6. In case the temperature around the heat source unit has possibility to drop under 0°C(32°F), be careful for the following point to prevent the pipe burst by the water pipe freeze-up.

- Circulate the water all the time even if heat source unit is not in operation and provide glycol for freeze protection.

- Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.

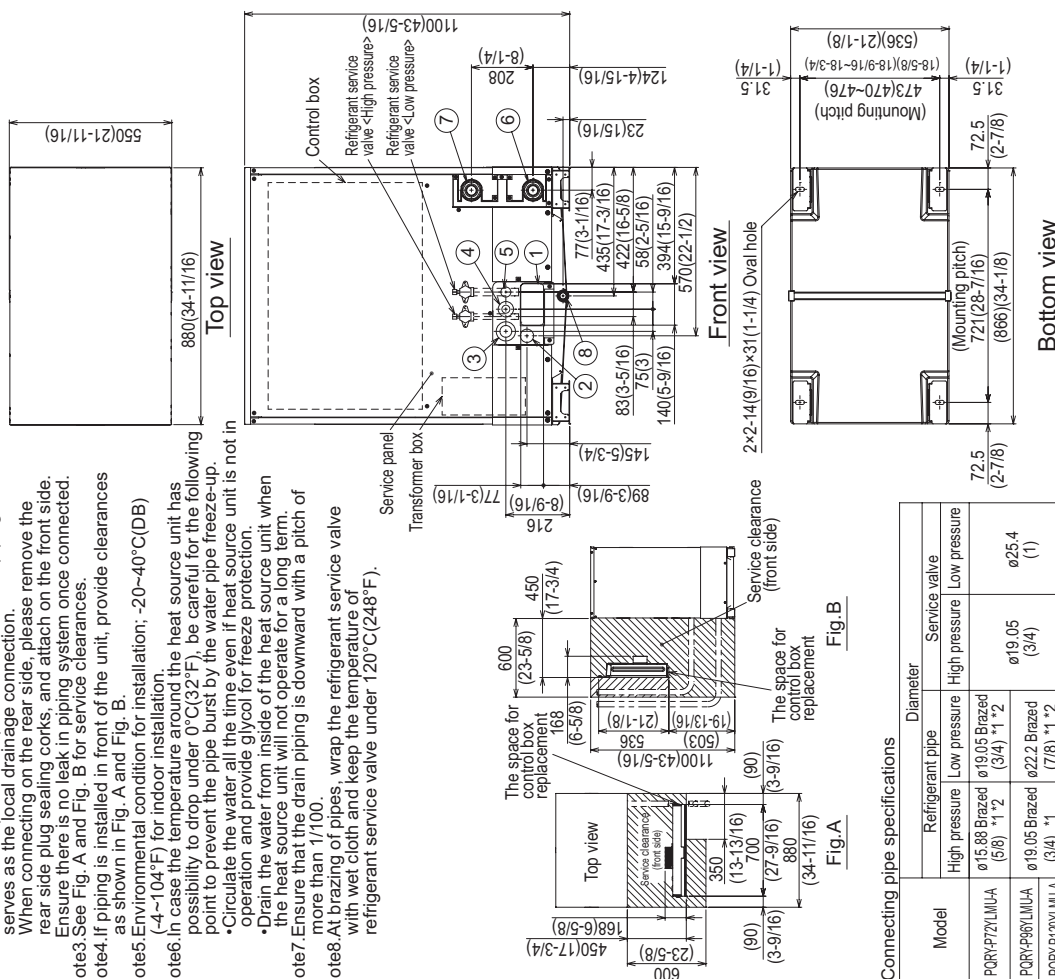
Note7. Ensure that the drain piping is downward with a pitch of more than 1/100.

Note8. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).

<Accessories>

- Refrigerant (high pressure) conn. pipe 1pc.
(P72/P96/P120 : Packaged in the accessory kit)
- Refrigerant (low pressure) conn. elbow 1pc.
(P72/P96/P120 : Packaged in the accessory kit)
- Water stopper 1pc.
(P72/P96/P120 : Packaged in the accessory kit)
- Sealing material for water stopper 1pc.
(P72/P96/P120 : Packaged in the accessory kit)
- Sealing material for field piping (high pressure, low pressure) 1pc. each
(P72/P96/P120 : Packaged in the accessory kit)
- Sealing material for drain socket 1pc.
(P72/P96/P120 : Packaged in the accessory kit)
- Pipe cover for low pressure 1pc.
(P72/P96/P120 : Packaged in the accessory kit)

Top of unit casing not suitable for supporting system modules stacked above - field framing required for stacking modules of additional systems



Back view

Right side view

Front view

Bottom view

NO.	Usage	Specifications
①	Front through hole	140 × 77 Knockout hole (5-9/16) (3-1/16)
②	For pipes	Front through hole (Uses when wiring kit (optional parts) is mounted.)
③	For wires	Front through hole (1-3/8)
④	For transmission cables	Front through hole (1-3/4)
⑤	Water pipe inlet	Front through hole (1-3/8)
⑥	Water pipe outlet	Front through hole (1-3/8)
⑦	Drain pipe	Rc3/4 Screw

Connecting pipe specifications

Model	Refrigerant pipe	Service valve
	High pressure	High pressure
	Low pressure	Low pressure
PQRY-P72YLMU-A	ø15.88 Braze (5/8) *1 *2	ø19.05 Braze (3/4) *1 *2
PQRY-P96YLMU-A	ø19.05 Braze (3/4) *1	ø25.4 Braze (1) *1
PQRY-P120YLMU-A	ø22.2 Braze (7/8) *1 *2	ø25.4 Braze (1) *1

*1. Connect by using the connecting pipes and elbow that are supplied.

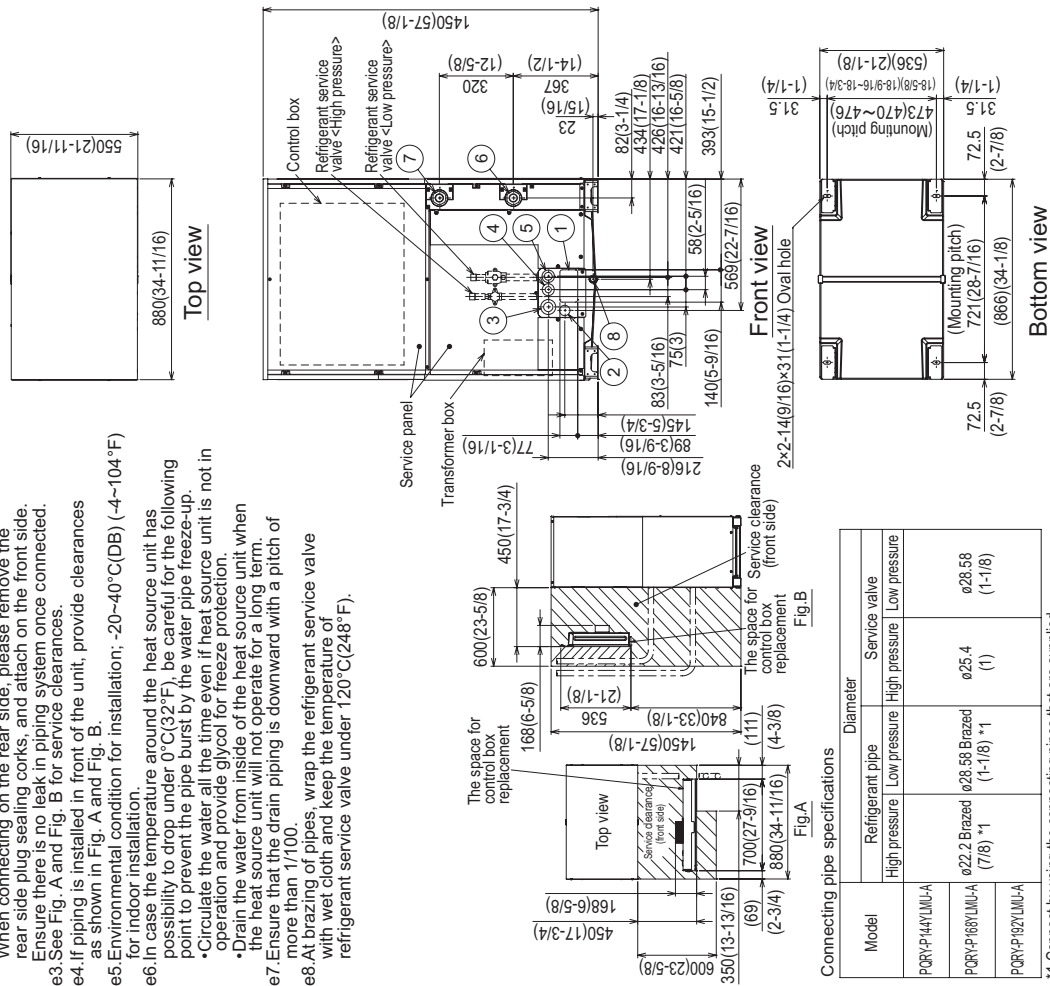
*2. Use the pipe joint (field supply) and connect to the refrigerant service valve piping.

2. EXTERNAL DIMENSIONS

PQRY-P144, 168, 192YLMU-A

Unit : mm(in)

- Note1. Seal around the water piping, the refrigerant piping, the power supply, and the control wiring and plug unused knockout holes with putty, etc., to prevent moisture or dirt from entering cabinet.
- Note2. At the time of product shipment, the front side piping serves as the local drainage connection.
When connecting on the rear side, please remove the rear side plug sealing corks, and attach on the front side. Ensure there is no leak in piping system once connected.
- Note3. See Fig. A and Fig. B for service clearances.
- Note4. If piping is installed in front of the unit, provide clearances as shown in Fig. A and Fig. B.
- Note5. Environmental condition for installation; -20~40°C(DB) (-4~104°F) for indoor installation.
- Note6. In case the temperature around the heat source unit has possibility to drop under 0°C(32°F), be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
• Circulate the water all the time even if heat source unit is not in operation and provide glycol for freeze protection.
• Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.
- Note7. Ensure that the drain piping is downward with a pitch of more than 1/100.
- Note8. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).



- <Accessories>
- Refrigerant (high pressure) conn. pipe.....1pc.
(P144/P168/P192 : Packaged in the accessory kit)
 - Refrigerant (low pressure) conn. pipe.....1pc.
(P144/P168/P192 : Packaged in the accessory kit)
 - Water stopper.....1pc.
(P144/P168/P192 : Packaged in the accessory kit)
 - Sealing material for water stopper.....1pc.
(P144/P168/P192 : Packaged in the accessory kit)
 - Sealing material for field piping (high pressure, low pressure).....1pc. each
(P144/P168/P192 : Packaged in the accessory kit)
 - Sealing material for drain socket.....1pc.
(P144/P168/P192 : Packaged in the accessory kit)
 - Pipe cover for low pressure.....1pc.
(P144/P168/P192 : Packaged in the accessory kit)
 - Sealing material for base leg (two types).....4pcs. each
(P144/P168/P192 : Packaged in the accessory kit)
 - Sealing material for panel.....1pc.
(P144/P168/P192 : Packaged in the accessory kit)

Top of unit casing not suitable for supporting system modules stacked above - field framing required for stacking modules of additional systems

NO.	Usage	Specifications
①	For pipes	Front through hole (Uses when twinning kit (optional parts) is mounted.)
②		140 x 77 Knockout hole (5-9/16) (3-1/16)
③	For wires	Front through hole (2-1/2) (1-3/8)
④		ø45 Knockout hole (1-13/16)
⑤	For transmission cables	Front through hole (1-3/4) (7/8)
⑥	Water pipe inlet	ø27.7 or ø34.5 Knockout hole (2-1/2) (1-3/8)
⑦	Water pipe outlet	ø43.7 or ø22.2 Knockout hole (1-3/4) (7/8)
⑧	Drain pipe	ø34 Knockout hole (1-3/8)
		NPT1-1/2 Screw
		NPT1-1/2 Screw
		Rc3/4 Screw

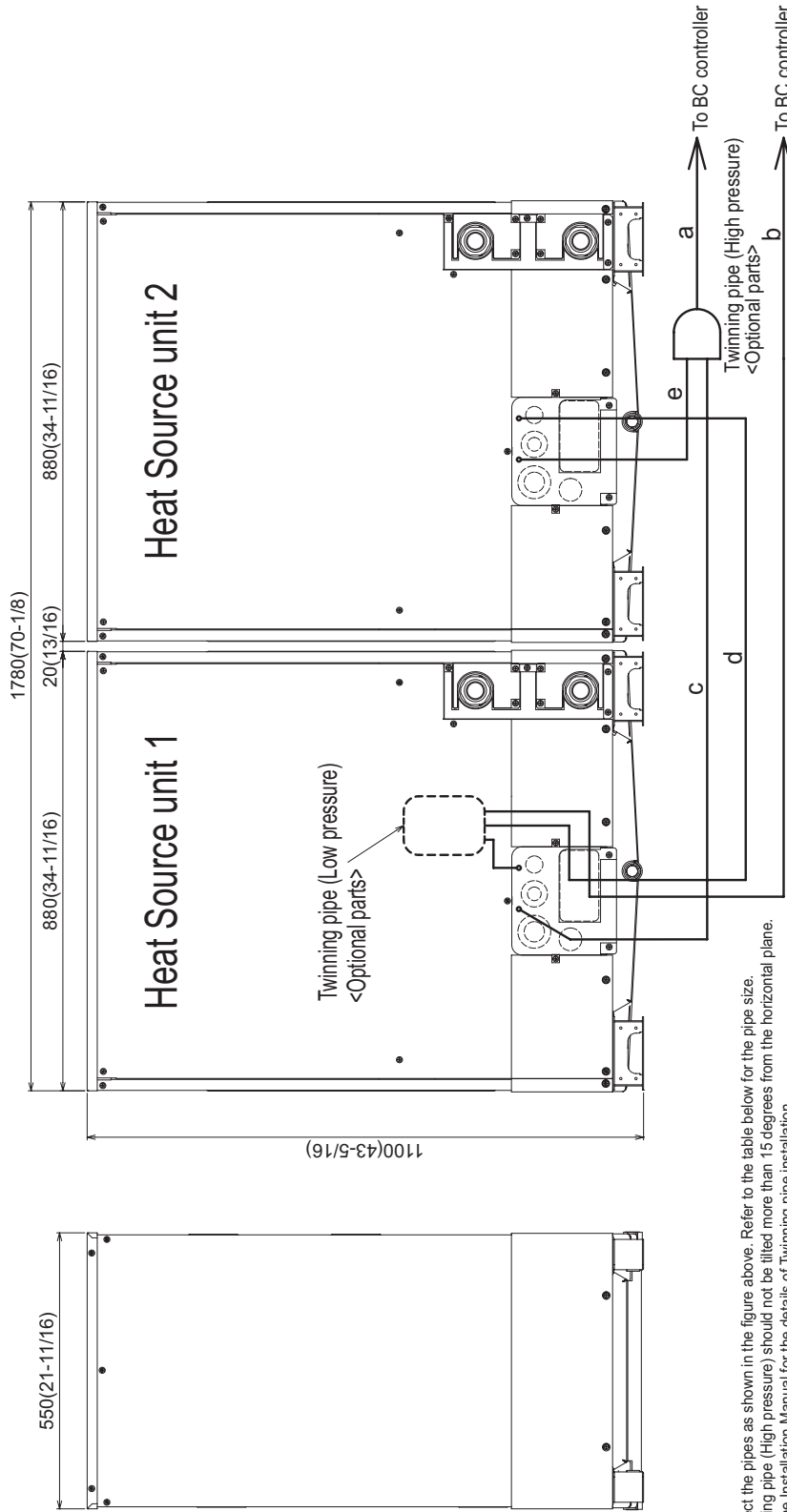
Model	Connecting pipe specifications			Diameter
	Refrigerant pipe	Service valve	Service valve	
PQRY-P144YLMU-A	High pressure	Low pressure	High pressure	Low pressure
PQRY-P168YLMU-A	ø22.2 Braze (7/8) *1	ø28.58 Braze (1-1/8) *1	ø25.4 (1)	ø28.58 (1-1/8)
PQRY-P192YLMU-A				

*1. Connect by using the connecting pipes that are supplied.

2. EXTERNAL DIMENSIONS

PQRY-P144, 168, 192, 216, 240YSLMU-A

Unit : mm(in)



Twinning pipe connection size

Package unit name	PQRY-P144YSLMU-A	PQRY-P168YSLMU-A	PQRY-P192YSLMU-A	PQRY-P216YSLMU-A	PQRY-P240YSLMU-A
Component unit name	Heat Source unit 1	PQRY-P72YLMU-A	PQRY-P96YLMU-A	PQRY-P120YLMU-A	PQRY-P120YLMU-A
Component unit name	Heat Source unit 2	PQRY-P72YLMU-A	PQRY-P96YLMU-A	PQRY-P120YLMU-A	PQRY-P120YLMU-A
Twinning pipe K (optional parts)	High pressure	a	b	c	d
BC controller~ Twinning pipe	High pressure	a	b	c	d
	Low pressure	b	a	c	d
		ø22.2(7/8)	ø28.58(1-1/8)	ø22.2(7/8)	ø34.93(1-3/8)

Unit model	High pressure core	Low pressure d
P72	ø15.88(5/8) *2	ø19.05(3/4) *2
P96	ø19.05(3/4)	ø22.2(7/8)
P120		

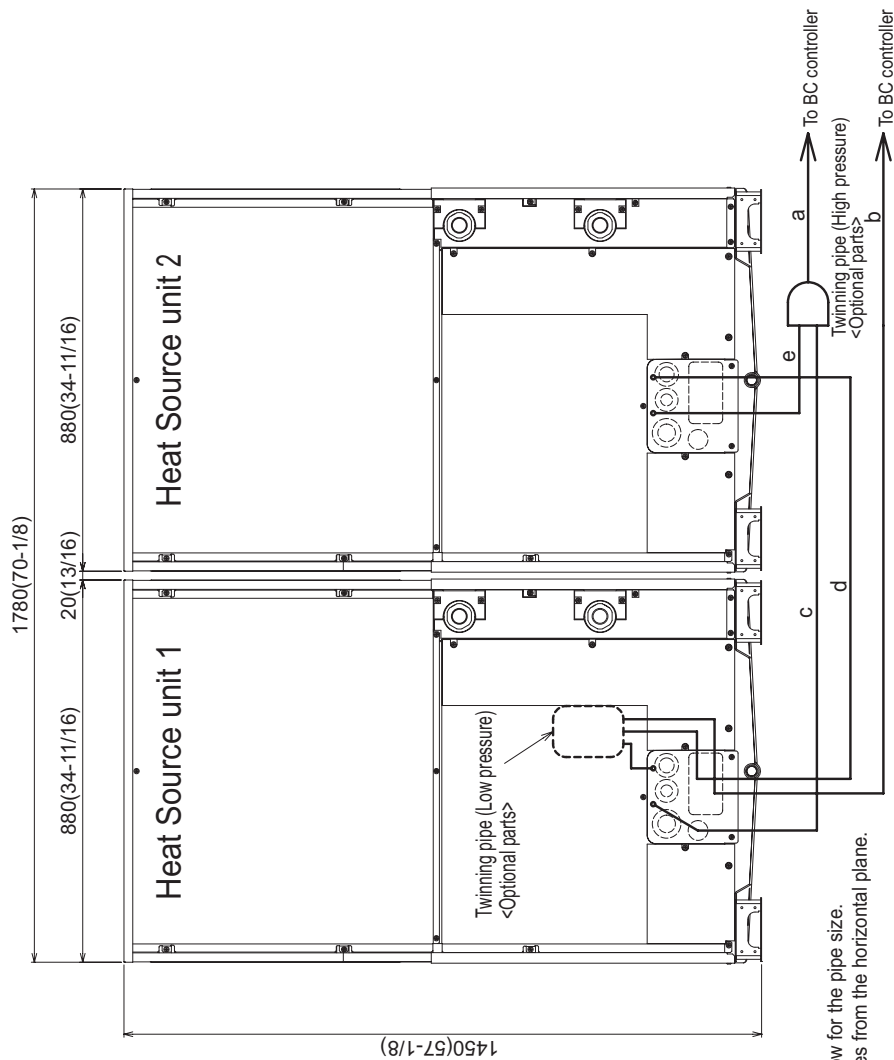
*1: When the piping length is 65 m or longer, use the ø28.58(1-1/8) pipe for the part that exceeds 65 m.

*2: When the package unit name "PQRY-P168YSLMU-A", use the ø19.05(3/4) pipe for high pressure and the ø22.2(7/8) pipe for low pressure.

2. EXTERNAL DIMENSIONS

PQRY-P288, 312, 336YSLMU-A

Unit : mm(in)



- Note 1. Connect the pipes as shown in the figure above. Refer to the table below for the pipe size.
2. Twinning pipe (High pressure) should not be tilted more than 15 degrees from the horizontal plane.
3. See the Installation Manual for the details of Twinning pipe installation.
4. Only use the Twinning pipe by Mitsubishi (optional parts).

Twinning pipe connection size

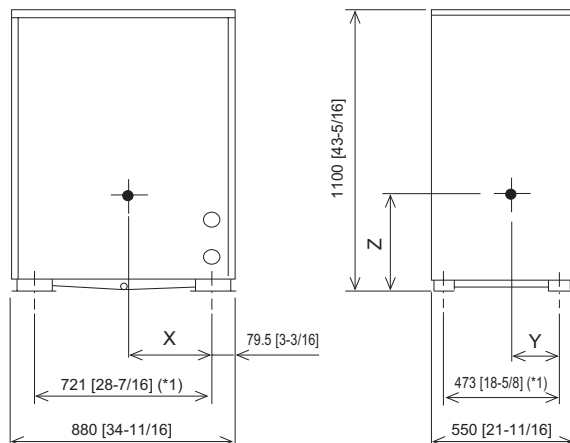
Package unit name		PQRY-P288YSLMU-A PQRY-P312YSLMU-A PQRY-P336YSLMU-A	
Component unit name	Heat Source unit 1	PQRY-P144YLMU-A	PQRY-P168YLMU-A PQRY-P168YLMU-A
	Heat Source unit 2	PQRY-P144YLMU-A	PQRY-P168YLMU-A
Twinning pipe Kit(optional parts)		CMV-Q200CBK	
BC controller-Twinning pipe	High pressure	a	ø28.58(1-1/8)
	Low pressure	b	ø34.93(1-3/8)
		ø41.28(1-5/8)	

Twinning pipe-Heat source unit	Unit model		High pressure	Low pressure
	P144	P168	c or e ø22.2(7/8)	d ø28.58(1-1/8)

3. CENTER OF GRAVITY

PQRY-P72, 96, 120TLMU-A/YLMU-A

Unit: mm [in.]

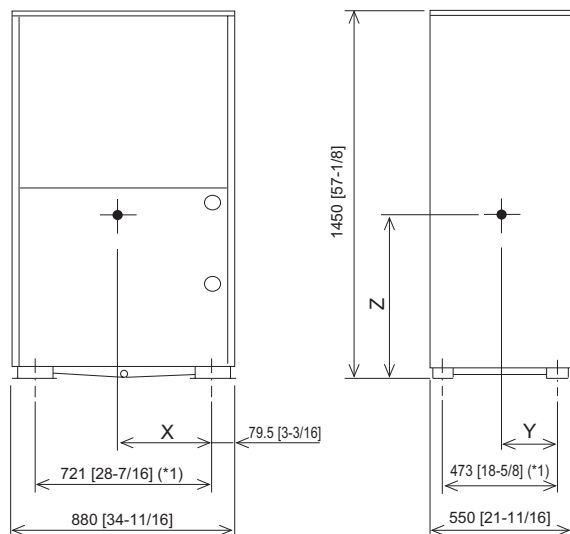


Model	X	Y	Z
PQRY-P72TLMU-A	351 [13-7/8]	235 [9-5/16]	438 [17-1/4]
PQRY-P96TLMU-A	351 [13-7/8]	235 [9-5/16]	438 [17-1/4]
PQRY-P120TLMU-A	351 [13-7/8]	235 [9-5/16]	438 [17-1/4]
PQRY-P72YLMU-A	370 [14-5/8]	224 [8-7/8]	428 [16-7/8]
PQRY-P96YLMU-A	370 [14-5/8]	224 [8-7/8]	428 [16-7/8]
PQRY-P120YLMU-A	370 [14-5/8]	224 [8-7/8]	428 [16-7/8]

*1 Mounting Pitch

PQRY-P144, 168, 192, 216, 240TLMU-A/YLMU-A

Unit: mm [in.]

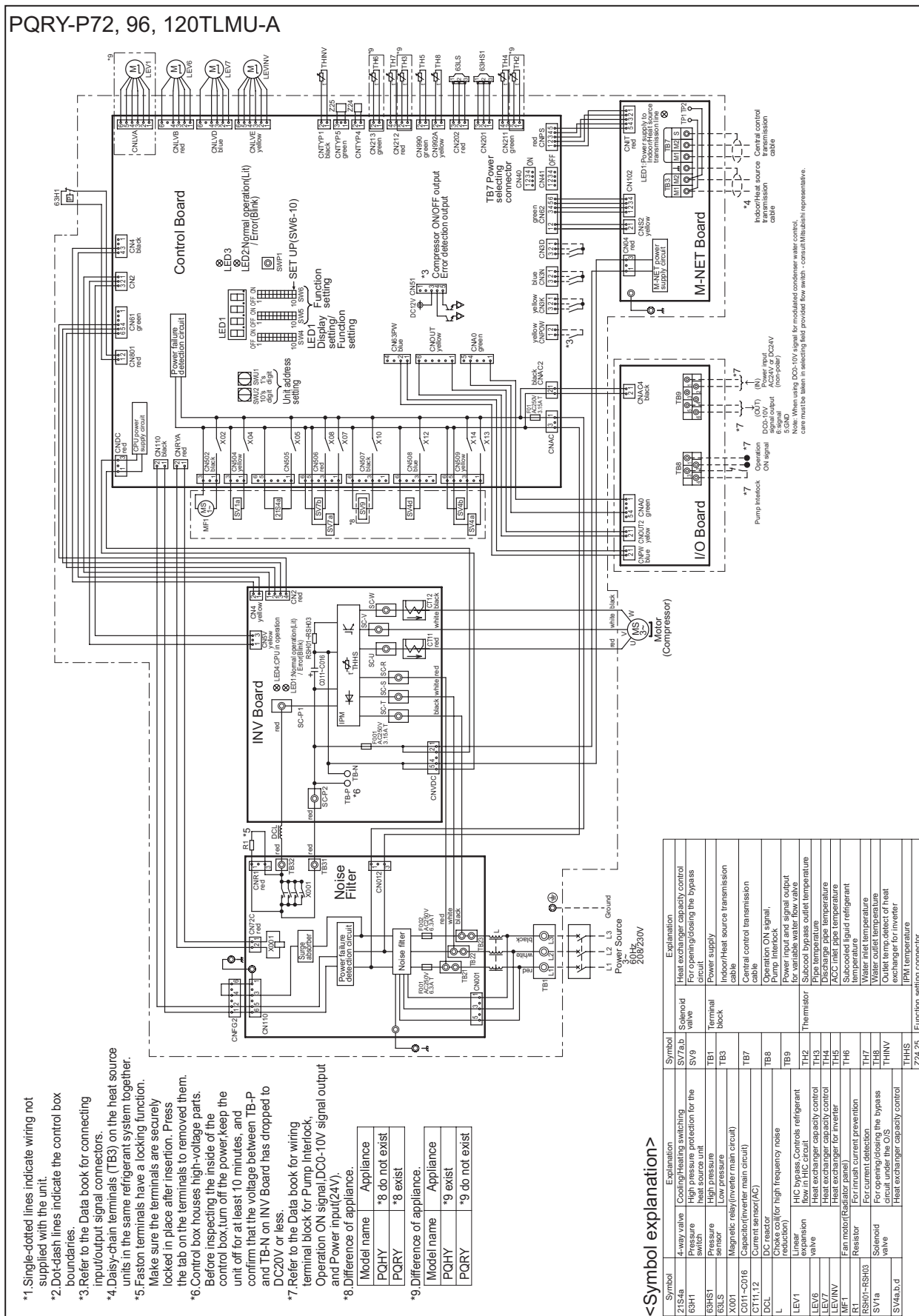


Model	X	Y	Z
PQRY-P144TLMU-A	382 [15-1/16]	233 [9-3/16]	622 [24-1/2]
PQRY-P168TLMU-A	382 [15-1/16]	233 [9-3/16]	622 [24-1/2]
PQRY-P192TLMU-A	382 [15-1/16]	233 [9-3/16]	622 [24-1/2]
PQRY-P216TLMU-A	371 [14-5/8]	232 [9-3/16]	685 [27]
PQRY-P240TLMU-A	371 [14-5/8]	232 [9-3/16]	685 [27]
PQRY-P144YLMU-A	399 [15-3/4]	228 [9]	611 [24-1/16]
PQRY-P168YLMU-A	399 [15-3/4]	228 [9]	611 [24-1/16]
PQRY-P192YLMU-A	399 [15-3/4]	228 [9]	611 [24-1/16]
PQRY-P216YLMU-A	380 [15]	221 [8-3/4]	632 [24-15/16]
PQRY-P240YLMU-A	380 [15]	221 [8-3/4]	632 [24-15/16]

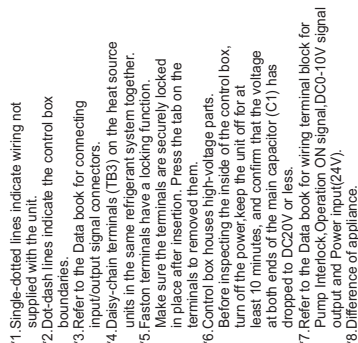
*1 Mounting Pitch

4. ELECTRICAL WIRING DIAGRAMS

PQRY-P72, 96, 120TLMU-A



PQRY-P144, 168, 192TLMU-A



Model name	Appliance
PQHY	*8 do not exist
PQRY	*8 exist

ifference of appliance.

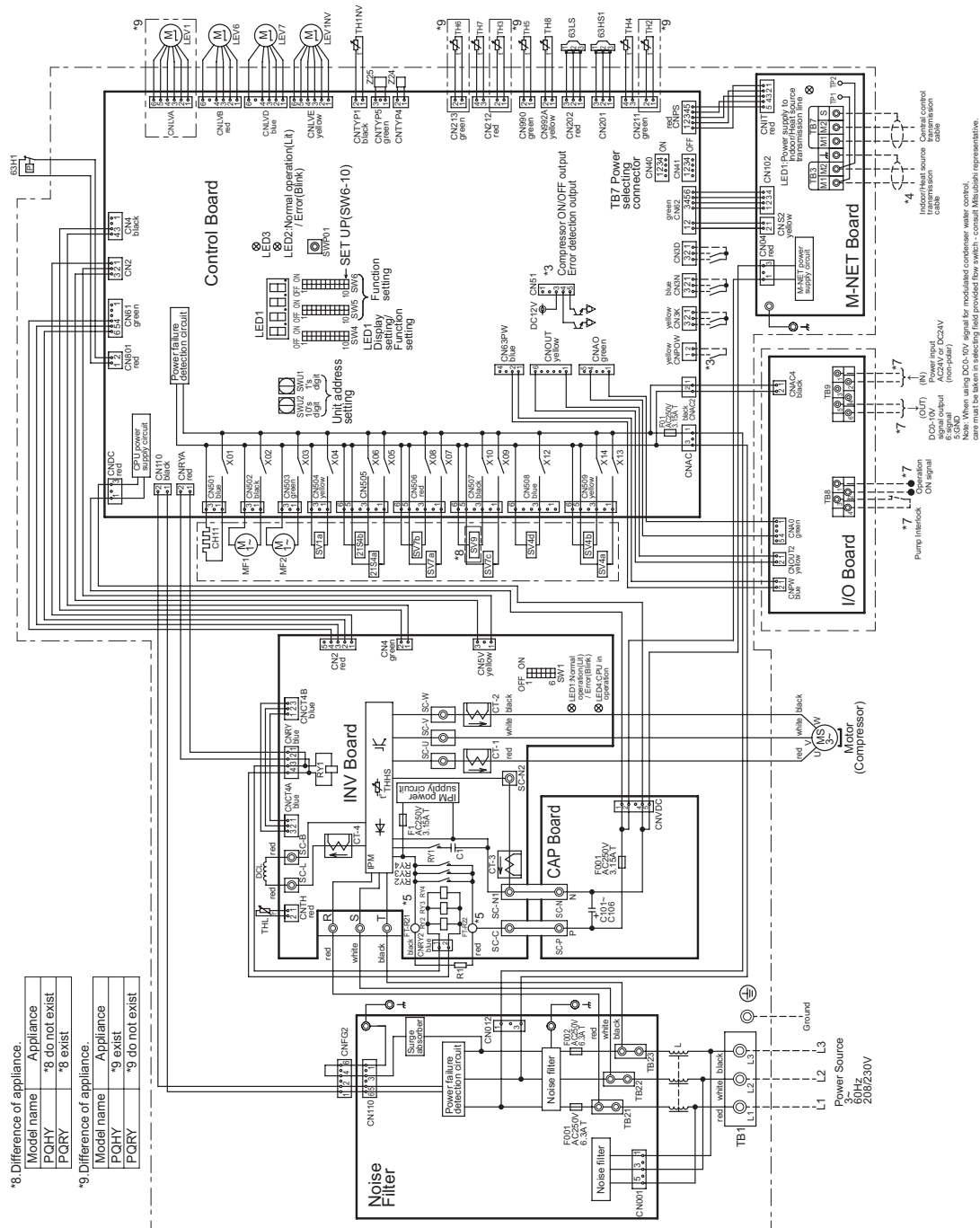
Model name	Appliance
PQHY	*9 exist
PQRY	*9 do not exist

<Symbol explanation>

Symbol	Explanation
4-way valve	Cooling/heating switching
215SA	High pressure protection for control
215SB	Heat exchanger capacity control
363H1	High pressure unit
363HS1	High pressure sensor
363LS	Low pressure
X00P1	Magnetic reed (inverter main circuit)
C1	Capacitor (inverter main circuit)
DCU1 2	Current sensor (dc)
DCL	DC reactor
L	Choke coil (for high frequency noise reduction)
LEV1	H/C bypass Controls refrigerant flow in H/C circuit
LEV6	Heat exchanger capacity control
LEV7	Heat exchanger capacity control
LEV8	Heat exchanger capacity control
FAN motor (R)	For fan motor
R1	Relay
SV1A	For inrush current prevention
Solenoid valve	For opening/closing the bypass circuit under the O/S
SV4a,b	Heat exchanger capacity control
SV4c	Heat exchanger capacity control
SV8	For opening/closing the bypass circuit
TB1	Power supply
TB3	Heat source transmission cable
TB7	Central control transmission cable
TB8	Operation ON signal
TB9	Power input and signal output for variable water flow valve
TH2	Subcool bypass outlet temperature
TH6	Pipe temperature
TH7	Air inlet pipe temperature
TH6	ACC inlet pipe temperature
TH7	Subcooled liquid refrigerant temperature
TH8	Refrigerant temperature
TH9	Outlet temperature
THN1	Outlet temp. detect of heat exchanger
THN2	Outlet temperature for inverter
THS	IPM temperature

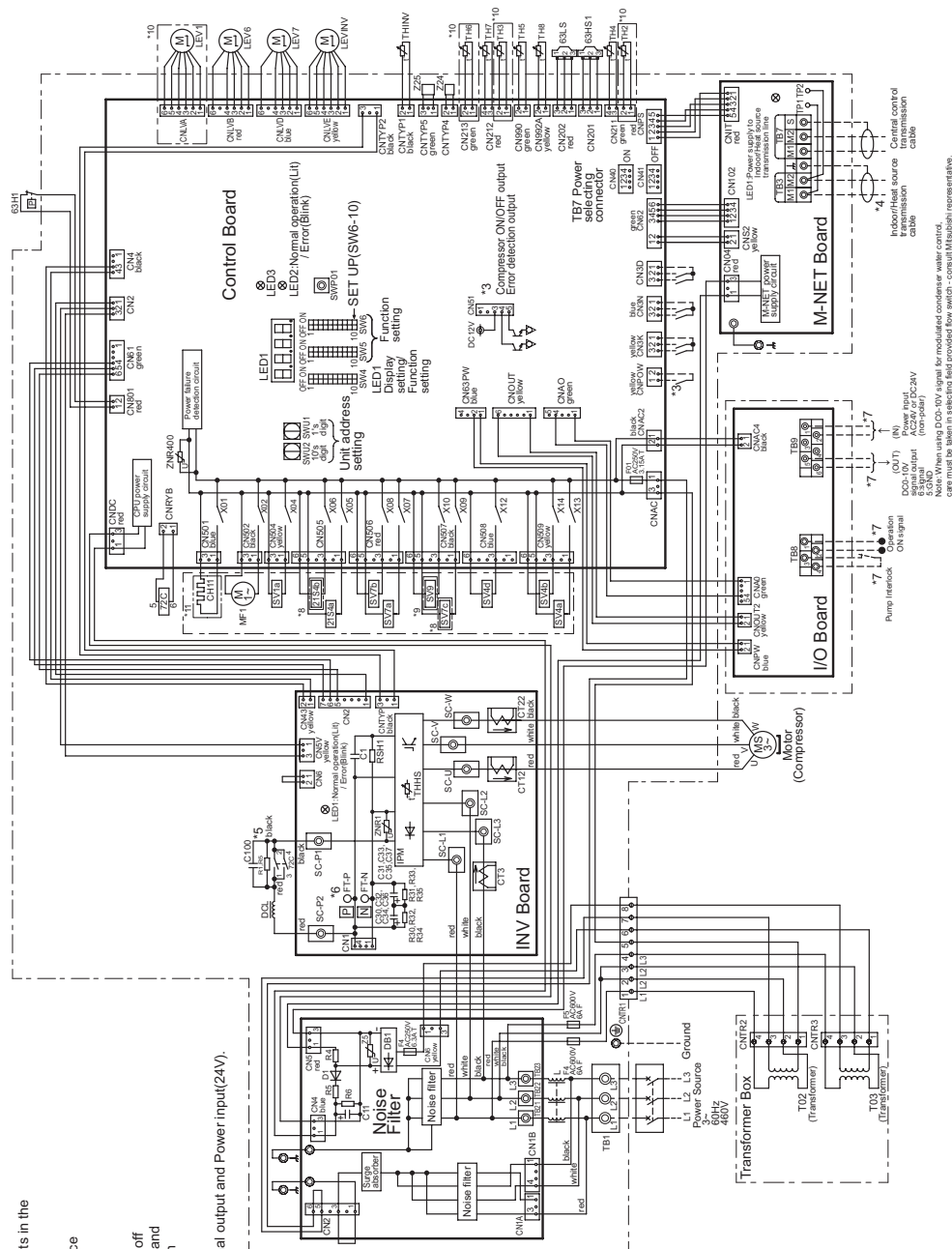
4. ELECTRICAL WIRING DIAGRAMS

PQRY-P216, 240TLMU-A



4. ELECTRICAL WIRING DIAGRAMS

PQRY-P72, 96, 120, 144, 168, 192, 216, 240YLMU-A



- *1 Single-dotted lines indicate wiring not supplied with the unit.
- *2 Dotted lines indicate the control box boundaries.
- *3 Refer to the Data Book for connecting input/output signal connectors.
- *4 Daisy-chain terminals (TB3) on the heat source units in the same refrigerant system together.
- *5 Faston terminals have a locking function. Make sure the terminals are securely locked in place after insertion. Press the tab on the terminals to removed them.
- *6 Control box houses high-voltage parts. Before inspecting the inside of the control box, turn off the power, keep the unit off for at least 10 minutes, and confirm that the voltage between FT-P and FT-N on INV Board has dropped to DC20V or less.
- *7 Refer to the Data Book for wiring terminal block for Pump Interlock Operation ON signal output and Power input (24V).
- *8 Difference of appliance.
- *9 Difference of appliance.
- *10 Difference of appliance.
- *11 Difference of appliance.

Model name	Appliance
P72/96/120	*8 do not exist
P144/168/192/216/240	*8 exist
Model name	Appliance
PQHY	*9 do not exist
PQRY	*9 exist
Model name	Appliance
PQHY	*10 exist
PQRY	*10 do not exist

<Symbol explanation>

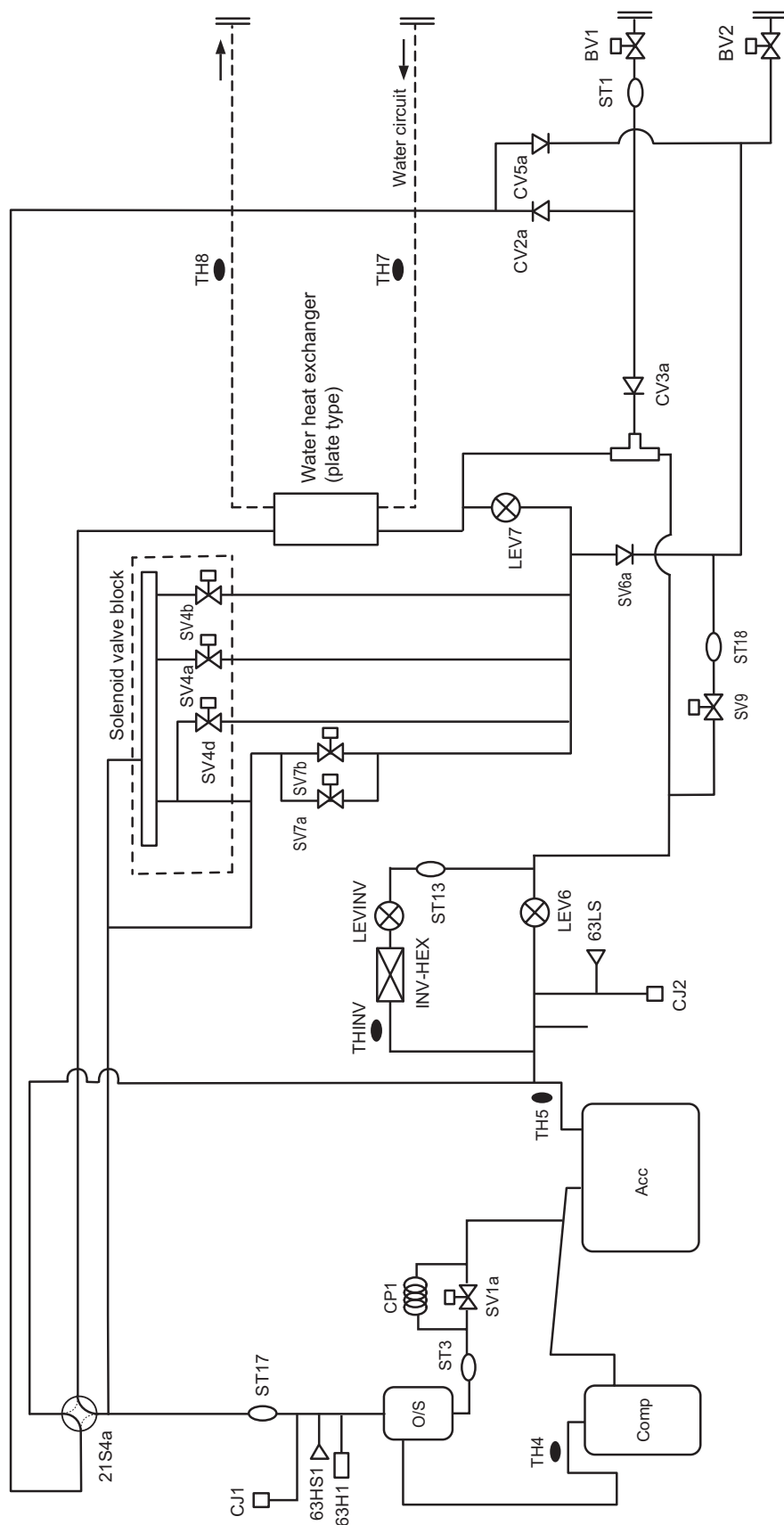
Symbol	Explanation
2/1S4a	4-way valve
2/1S4b	Cooling/Heating switching
60H1	Pressure switch
63H1	Heat exchanger protection for the heat source unit
63H2	Pressure switch
63H3	High pressure sensor
63H4	Low pressure sensor
72C	Magnetic relay (inverter main circuit)
72C-C37	Capacitor (inverter main circuit)
72C-C37	Capacitor (inverter main circuit)
C112.2.3	Current sensor (AC)
DCL	DC reactor
L	Choke coil (for high frequency noise reduction)
LEV1	HIG bypass Controls refrigerant flow in HIC circuit
LEV6	Heat exchanger capacity control valve
LEV7	Heat exchanger capacity control valve
LEV8	Heat exchanger capacity control valve
LEV9	Heat exchanger capacity control valve
LEV10	Heat exchanger capacity control valve
LEV11	Heat exchanger capacity control valve
LEV12	Heat exchanger capacity control valve
LEV13	Heat exchanger capacity control valve
LEV14	Heat exchanger capacity control valve
LEV15	Heat exchanger capacity control valve
LEV16	Heat exchanger capacity control valve
LEV17	Heat exchanger capacity control valve
LEV18	Heat exchanger capacity control valve
LEV19	Heat exchanger capacity control valve
LEV20	Heat exchanger capacity control valve
LEV21	Heat exchanger capacity control valve
LEV22	Heat exchanger capacity control valve
LEV23	Heat exchanger capacity control valve
LEV24	Heat exchanger capacity control valve
LEV25	Heat exchanger capacity control valve
LEV26	Heat exchanger capacity control valve
LEV27	Heat exchanger capacity control valve
LEV28	Heat exchanger capacity control valve
LEV29	Heat exchanger capacity control valve
LEV30	Heat exchanger capacity control valve
LEV31	Heat exchanger capacity control valve
LEV32	Heat exchanger capacity control valve
LEV33	Heat exchanger capacity control valve
LEV34	Heat exchanger capacity control valve
LEV35	Heat exchanger capacity control valve
LEV36	Heat exchanger capacity control valve
LEV37	Heat exchanger capacity control valve
LEV38	Heat exchanger capacity control valve
LEV39	Heat exchanger capacity control valve
LEV40	Heat exchanger capacity control valve
LEV41	Heat exchanger capacity control valve
LEV42	Heat exchanger capacity control valve
LEV43	Heat exchanger capacity control valve
LEV44	Heat exchanger capacity control valve
LEV45	Heat exchanger capacity control valve
LEV46	Heat exchanger capacity control valve
LEV47	Heat exchanger capacity control valve
LEV48	Heat exchanger capacity control valve
LEV49	Heat exchanger capacity control valve
LEV50	Heat exchanger capacity control valve
LEV51	Heat exchanger capacity control valve
LEV52	Heat exchanger capacity control valve
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LEV61	Heat exchanger capacity control valve
LEV62	Heat exchanger capacity control valve
LEV63	Heat exchanger capacity control valve
LEV64	Heat exchanger capacity control valve
LEV65	Heat exchanger capacity control valve
LEV66	Heat exchanger capacity control valve
LEV67	Heat exchanger capacity control valve
LEV68	Heat exchanger capacity control valve
LEV69	Heat exchanger capacity control valve
LEV70	Heat exchanger capacity control valve
LEV71	Heat exchanger capacity control valve
LEV72	Heat exchanger capacity control valve
LEV73	Heat exchanger capacity control valve
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LEV75	Heat exchanger capacity control valve
LEV76	Heat exchanger capacity control valve
LEV77	Heat exchanger capacity control valve
LEV78	Heat exchanger capacity control valve
LEV79	Heat exchanger capacity control valve
LEV80	Heat exchanger capacity control valve
LEV81	Heat exchanger capacity control valve
LEV82	Heat exchanger capacity control valve
LEV83	Heat exchanger capacity control valve
LEV84	Heat exchanger capacity control valve
LEV85	Heat exchanger capacity control valve
LEV86	Heat exchanger capacity control valve
LEV87	Heat exchanger capacity control valve
LEV88	Heat exchanger capacity control valve
LEV89	Heat exchanger capacity control valve
LEV90	Heat exchanger capacity control valve
LEV91	Heat exchanger capacity control valve
LEV92	Heat exchanger capacity control valve
LEV93	Heat exchanger capacity control valve
LEV94	Heat exchanger capacity control valve
LEV95	Heat exchanger capacity control valve
LEV96	Heat exchanger capacity control valve
LEV97	Heat exchanger capacity control valve
LEV98	Heat exchanger capacity control valve
LEV99	Heat exchanger capacity control valve
LEV100	Heat exchanger capacity control valve

*11 Difference of appliance.

Model name	Appliance
P72/96/120/144/168/192	*11 do not exist
P216/240	*11 exist

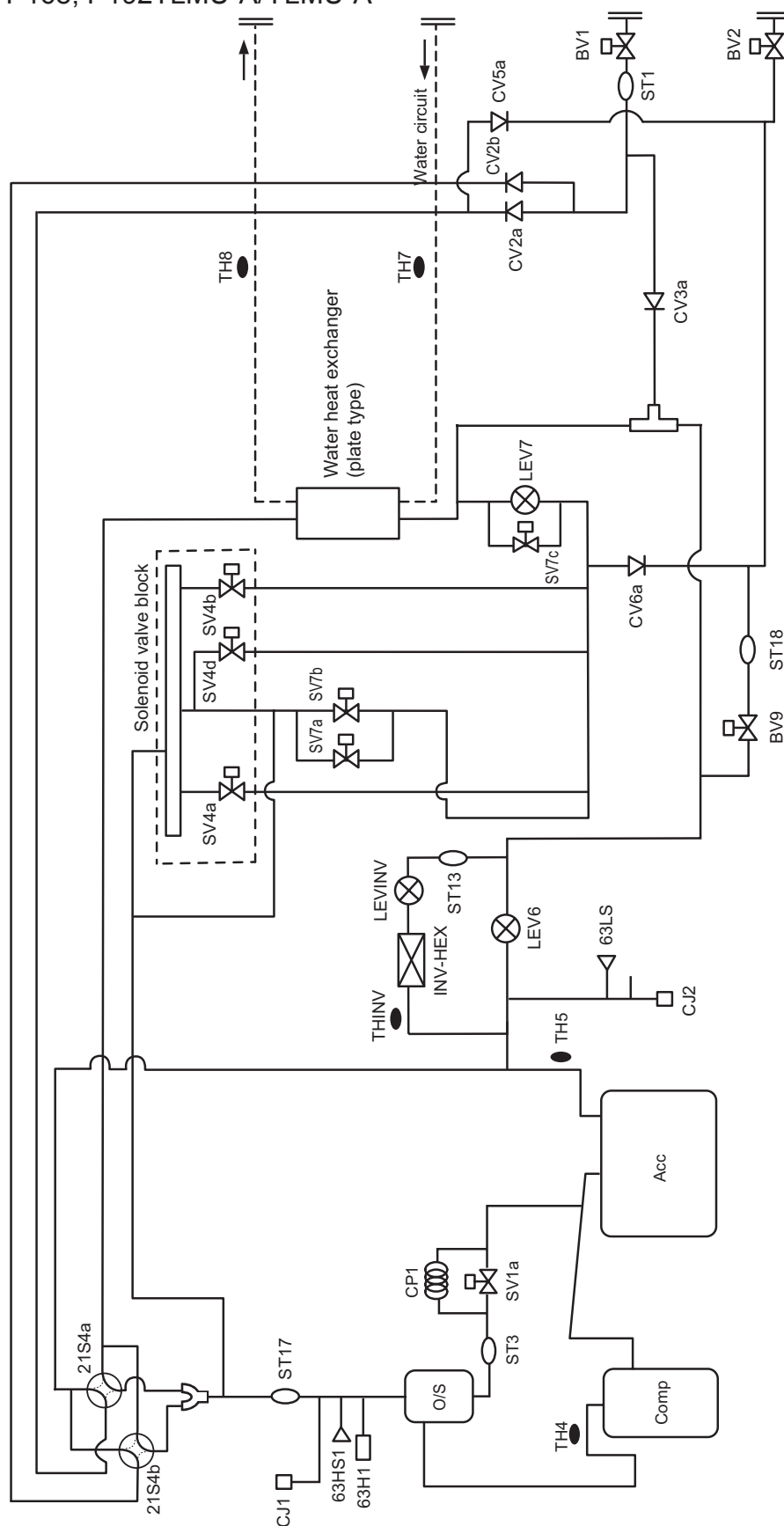
5. REFRIGERANT CIRCUIT DIAGRAMS

PQRY-P72, P96, P120TLMU/YLMU



5. REFRIGERANT CIRCUIT DIAGRAMS

PQRY-P144, P168, P192TLMU-A/YLMU-A

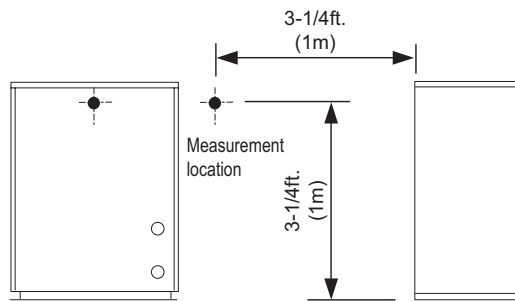


PQRY-P216, P240TLMU-A/YLMU-A

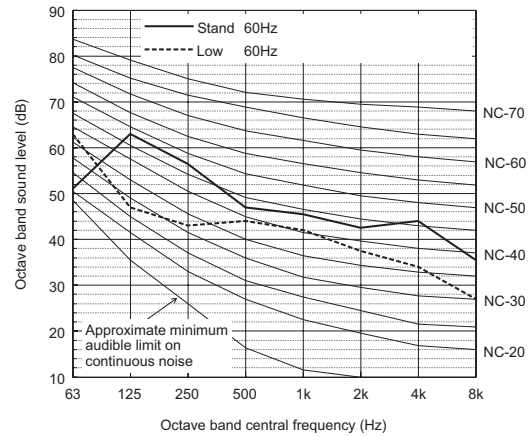


6. SOUND PRESSURE LEVELS

Measurement condition PQRY-P72, 96, 120TLMU-A/YLMU-A



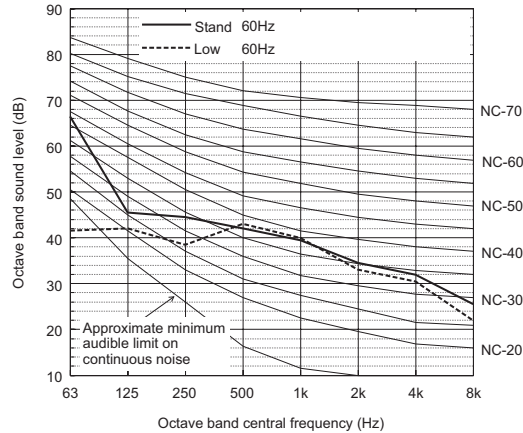
Sound level of PQRY-P120TLMU-A/YLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	51.0	63.0	56.5	47.0	45.5	42.5	44.0	35.5	54.0
Low noise mode	60Hz	63.0	47.0	43.0	44.0	42.0	37.5	34.0	27.0	47.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

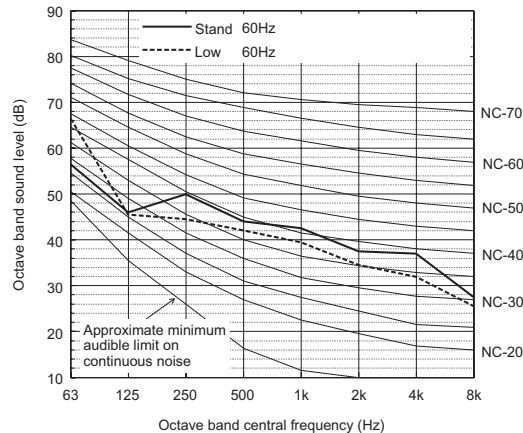
Sound level of PQRY-P72TLMU-A/YLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	66.5	45.5	44.5	42.0	39.5	34.5	32.0	25.5	46.0
Low noise mode	60Hz	41.5	42.0	38.5	43.0	40.0	33.0	30.5	22.0	44.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PQRY-P96TLMU-A/YLMU-A



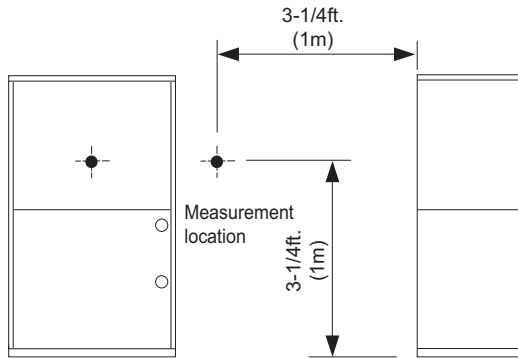
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	56.5	46.0	50.0	44.0	42.5	37.5	37.0	27.5	48.0
Low noise mode	60Hz	66.5	45.5	44.5	42.0	39.5	34.5	32.0	25.5	46.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

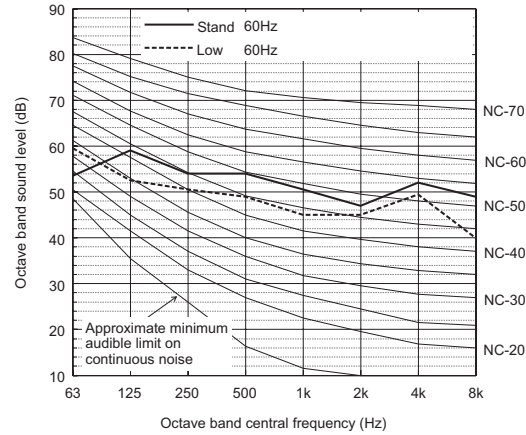
- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
- For BC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

6. SOUND PRESSURE LEVELS

Measurement condition PQRY-P144, 168, 192, 216, 240TLMU-A/YLMU-A



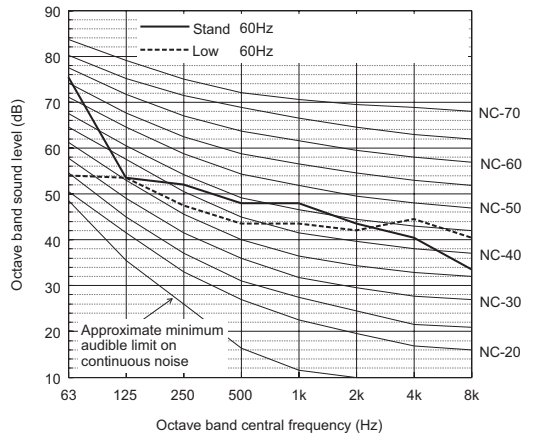
Sound level of PQRY-P192TLMU-A/YLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	53.5	59.0	54.0	54.0	50.5	47.0	52.0	49.0	58.0
Low noise mode	60Hz	59.5	52.5	50.5	49.0	45.0	45.0	49.5	40.0	54.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

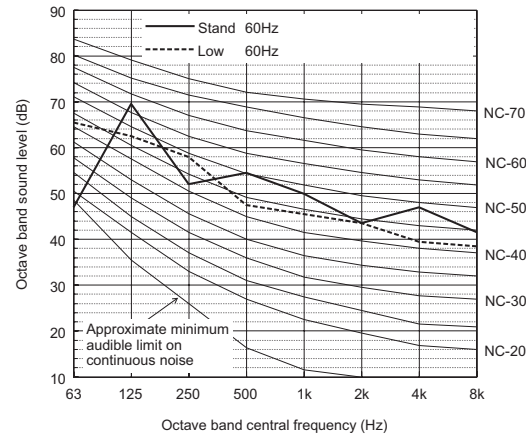
Sound level of PQRY-P144TLMU-A/YLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	75.5	53.5	52.0	48.0	48.0	43.5	40.5	33.5	54.0
Low noise mode	60Hz	54.0	53.5	47.5	43.5	43.5	42.0	44.5	40.5	50.5

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

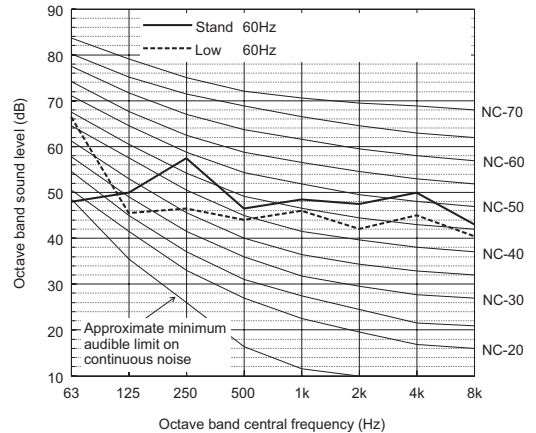
Sound level of PQRY-P216TLMU-A/YLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	47.0	69.5	52.0	54.5	50.0	43.5	47.0	41.5	58.0
Low noise mode	60Hz	65.5	62.5	58.0	47.5	45.5	43.5	39.5	38.5	54.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

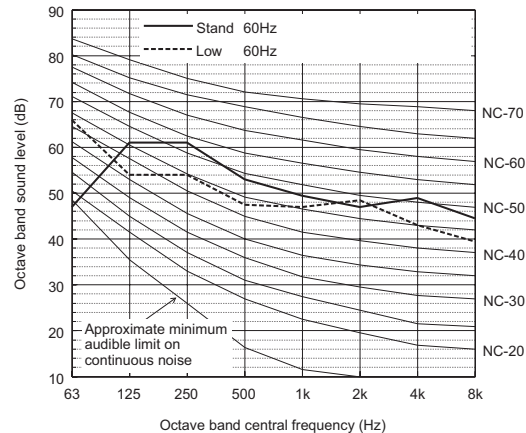
Sound level of PQRY-P168TLMU-A/YLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	48.0	50.0	57.5	46.5	48.5	47.5	50.0	43.0	56.0
Low noise mode	60Hz	66.5	45.5	46.5	44.0	46.0	42.0	45.0	40.5	51.5

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PQRY-P240TLMU-A/YLMU-A



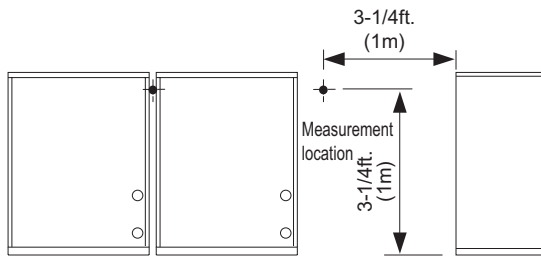
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	47.0	61.0	61.0	53.0	49.5	47.0	49.0	44.5	58.0
Low noise mode	60Hz	66.0	54.0	54.0	47.5	47.0	48.5	43.0	39.5	54.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

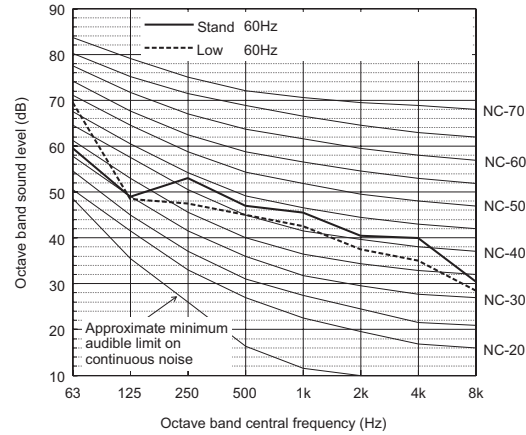
- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
- For BC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

6. SOUND PRESSURE LEVELS

Measurement condition PQRY-P144, 168, 192, 216, 240TSLMU-A/YSLMU-A



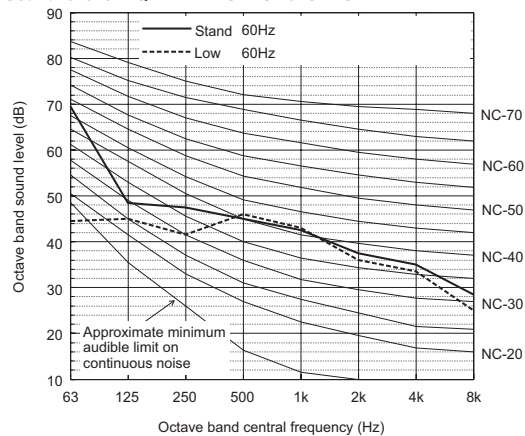
Sound level of PQRY-P192TSLMU-A/YSLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	59.5	49.0	53.0	47.0	45.5	40.5	40.0	30.5	51.0
Low noise mode	60Hz	69.5	48.5	47.5	45.0	42.5	37.5	35.0	28.5	49.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

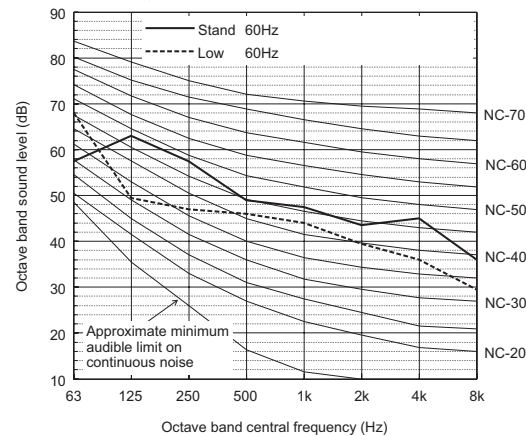
Sound level of PQRY-P144TSLMU-A/YSLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	69.5	48.5	47.5	45.0	42.5	37.5	35.0	28.5	49.0
Low noise mode	60Hz	44.5	45.0	41.5	46.0	43.0	36.0	33.5	25.0	47.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

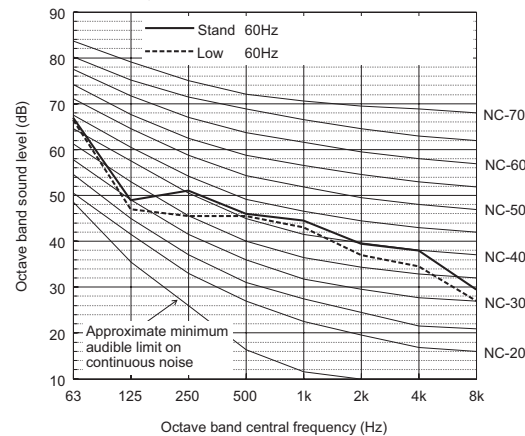
Sound level of PQRY-P216TSLMU-A/YSLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	57.5	63.0	57.5	49.0	47.5	43.5	45.0	36.0	55.0
Low noise mode	60Hz	68.0	49.5	47.0	46.0	44.0	39.5	36.0	29.5	49.5

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

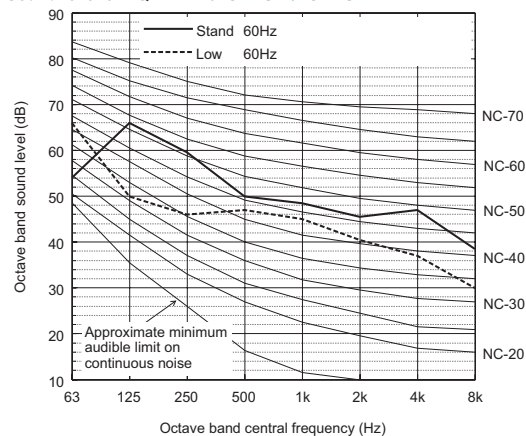
Sound level of PQRY-P168TSLMU-A/YSLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	67.0	49.0	51.0	46.0	44.5	39.5	38.0	29.5	50.0
Low noise mode	60Hz	66.5	47.0	45.5	45.5	43.0	37.0	34.5	27.0	48.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PQRY-P240TSLMU-A/YSLMU-A



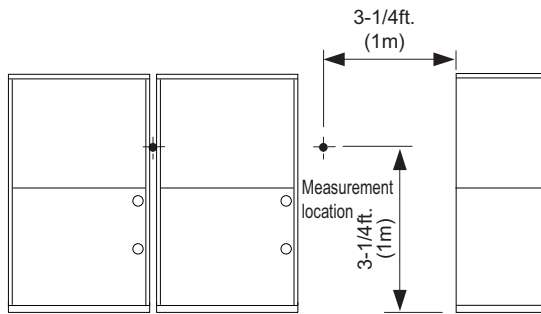
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	54.0	66.0	59.5	50.0	48.5	45.5	47.0	38.5	57.0
Low noise mode	60Hz	66.0	50.0	46.0	47.0	45.0	40.5	37.0	30.0	50.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

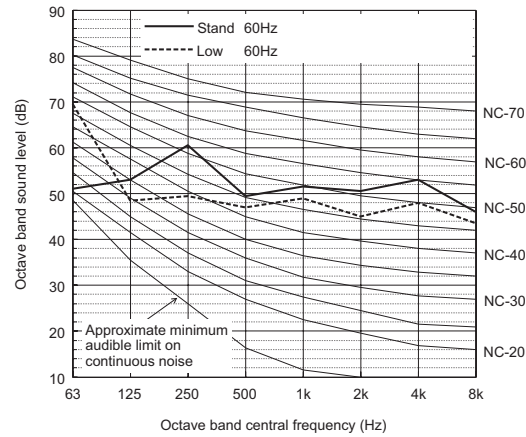
- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
- For BC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

6. SOUND PRESSURE LEVELS

Measurement condition PQRY-P288, 312, 336TSLMU-A/YSLMU-A



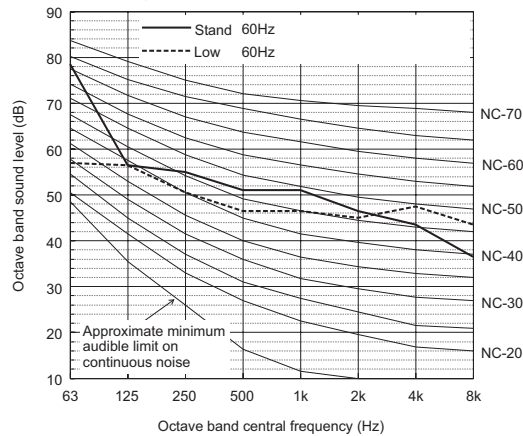
Sound level of PQRY-P336TSLMU-A/YSLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	51.0	53.0	60.5	49.5	51.5	50.5	53.0	46.0	59.0
Low noise mode	60Hz	69.5	48.5	49.5	47.0	49.0	45.0	48.0	43.5	54.5

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

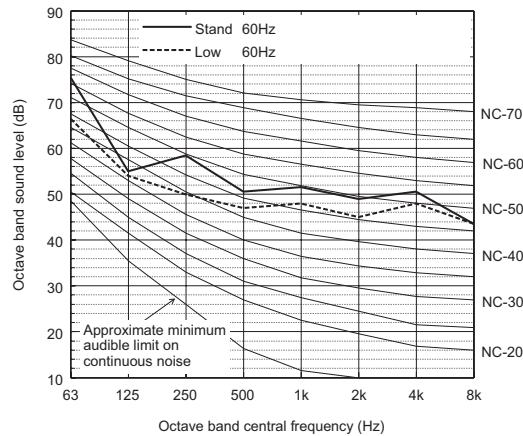
Sound level of PQRY-P288TSLMU-A/YSLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	78.5	56.5	55.0	51.0	51.0	46.5	43.5	36.5	57.0
Low noise mode	60Hz	57.0	56.5	50.5	46.5	45.0	47.5	43.5	53.5	

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PQRY-P312TSLMU-A/YSLMU-A



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	75.5	55.0	58.5	50.5	51.5	49.0	50.5	43.5	58.0
Low noise mode	60Hz	66.5	54.0	50.0	47.0	48.0	45.0	48.0	43.5	54.0

When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

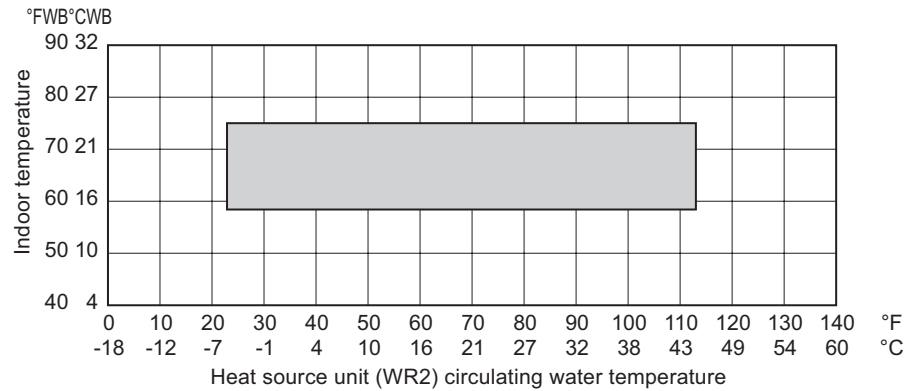
- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
- For BC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

7. OPERATION TEMPERATURE RANGE

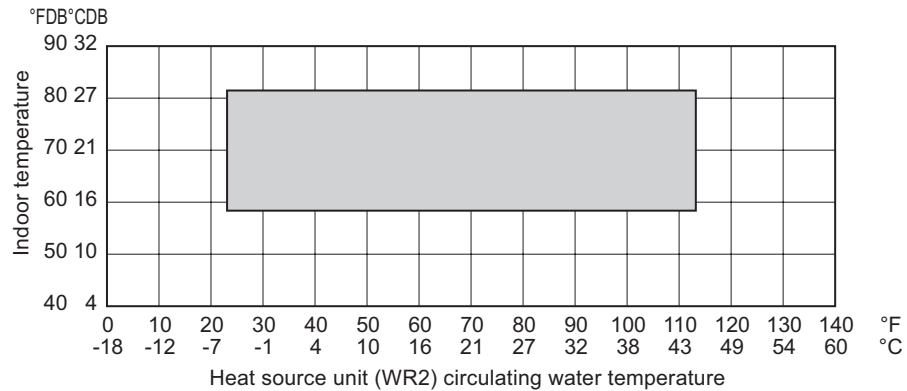
7-1. Connection with standard CITY MULTI indoor units

PQRY-P-T(S)LMU-A/Y(S)LMU-A

Cooling



Heating



Combination of cooling/heating operation (Cooling main or Heating main)

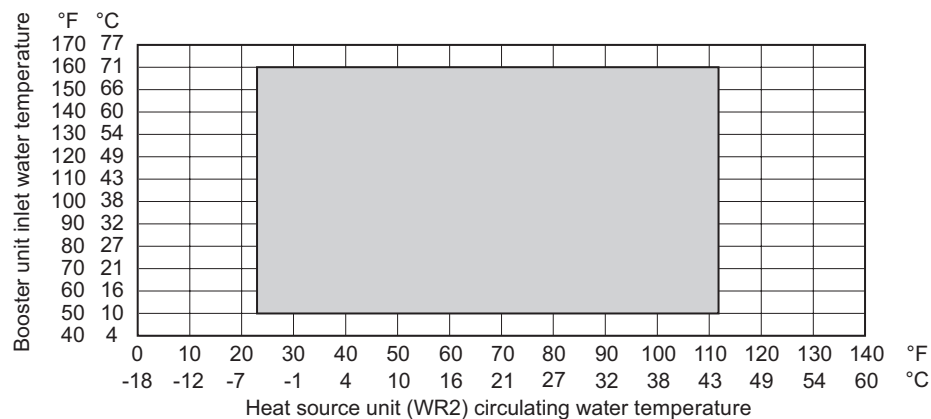
Water temperature	Indoor temperature	
	Cooling	Heating
10 to 45°C (50 to 113°F)	15 to 24°CWB (59 to 75°FWB)	15 to 27°CDB (59 to 81°FDB)

7. OPERATION TEMPERATURE RANGE

7-2. Connection with PWFY-P36NMU-E-BU (Booster unit)

PQRY-P-T(S)LMU-A/Y(S)LMU-A

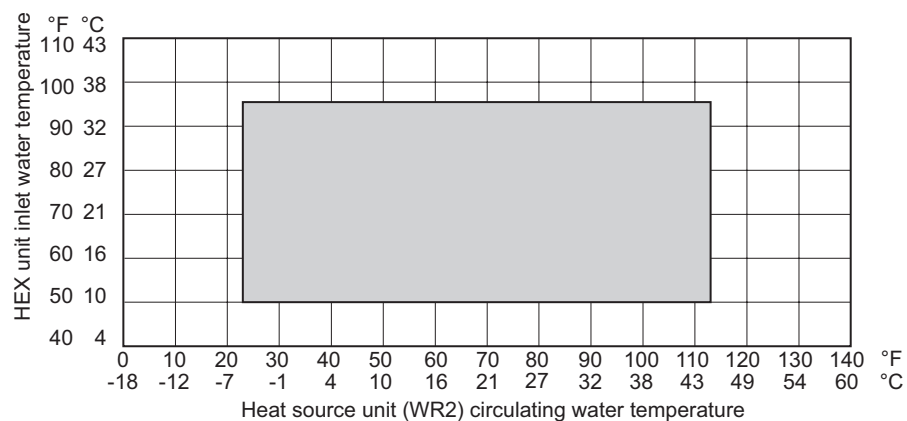
Cooling



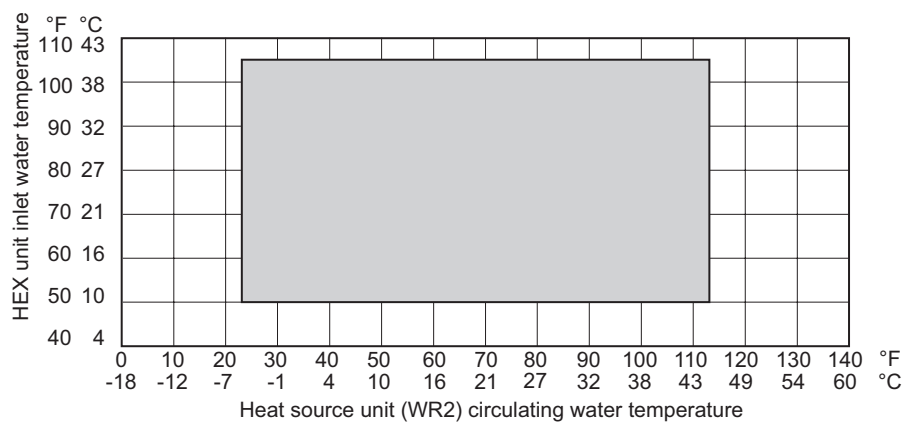
7-3. Connection with PWFY-P36/72NMU-E2-AU (HEX unit)

PQRY-P-T(S)LMU-A/Y(S)LMU-A

Cooling



Heating

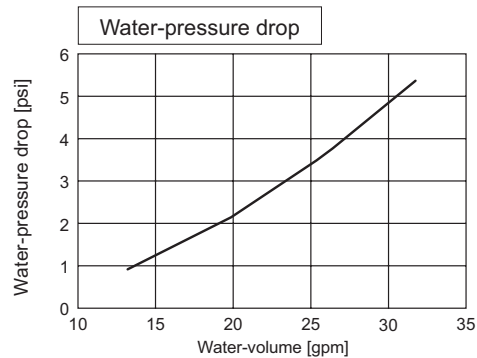
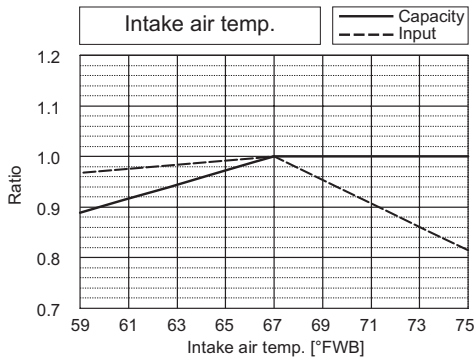
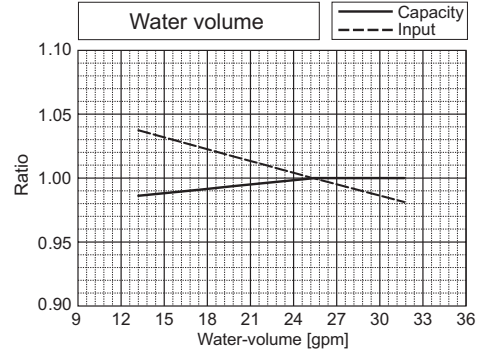
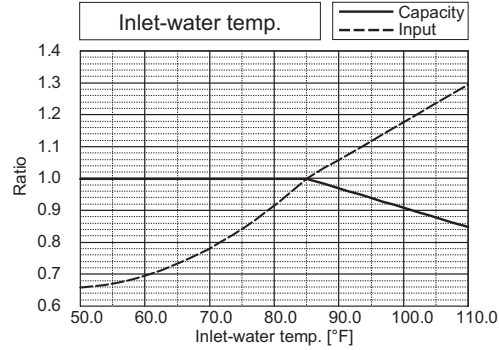


8. CAPACITY TABLES

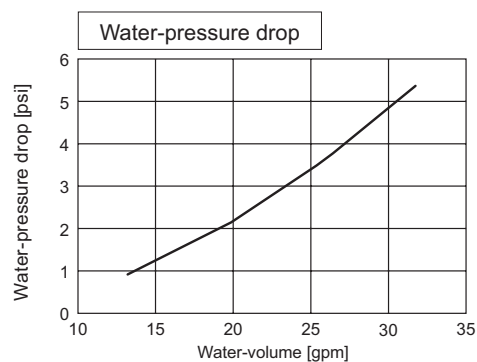
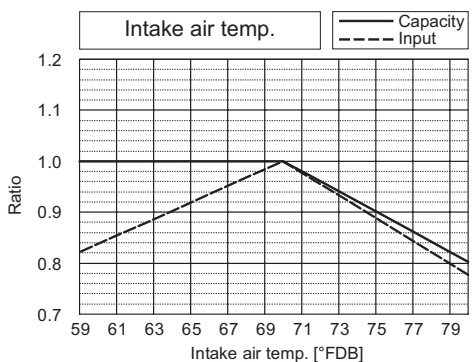
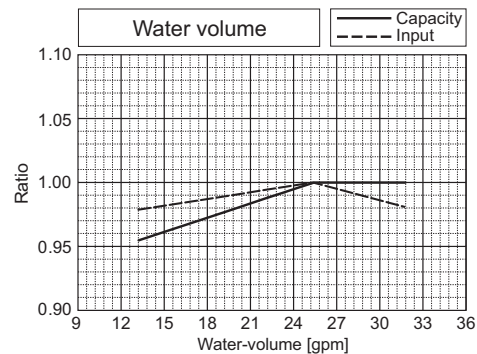
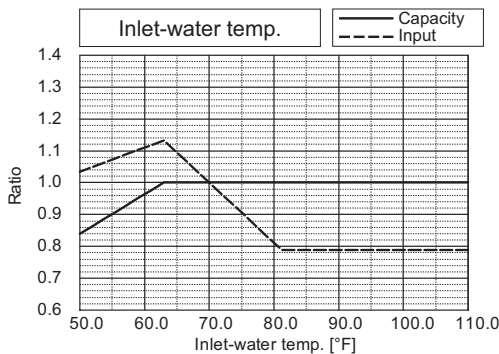
8-1. Correction by Temperature in Fahrenheit

CITY MULTI could have varied capacity at different design temperatures. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperatures.

PQRY-			P72TLMU/YLMU		
Nominal Cooling Capacity	kW	21.1	Rated Cooling Capacity	kW	20.2
	BTU/h	72,000		BTU/h	69,000
Input	kW	3.23	Input	kW	(Non-Ducted) 2.96 (Ducted) 3.12

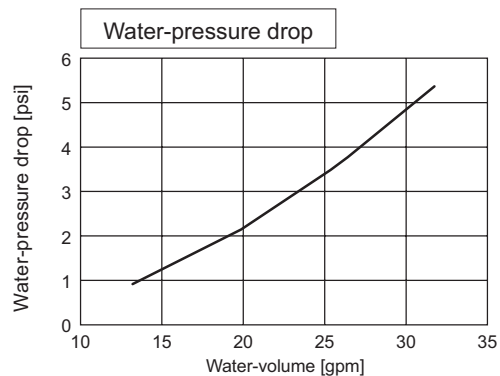
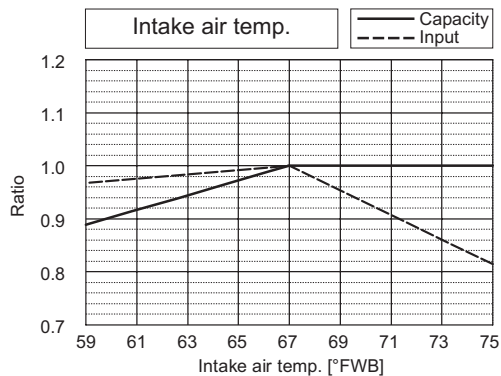
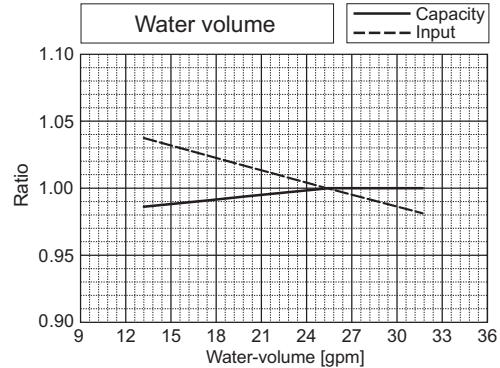
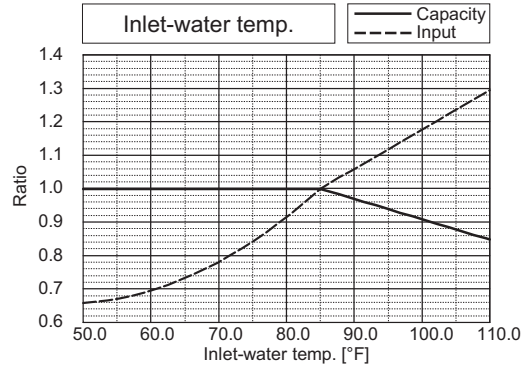


PQRY-			P72TLMU/YLMU		
Nominal Heating Capacity	kW	23.4	Rated Heating Capacity	kW	22.3
	BTU/h	80,000		BTU/h	76,000
Input	kW	3.63	Input	kW	(Non-Ducted) 3.34 (Ducted) 3.36

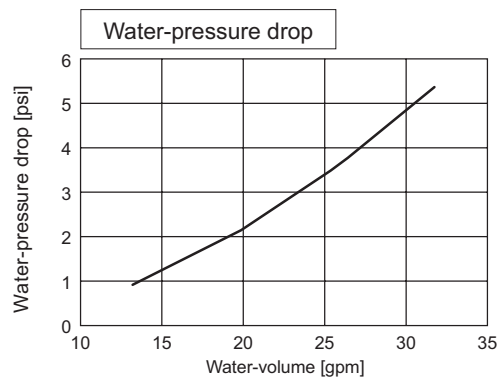
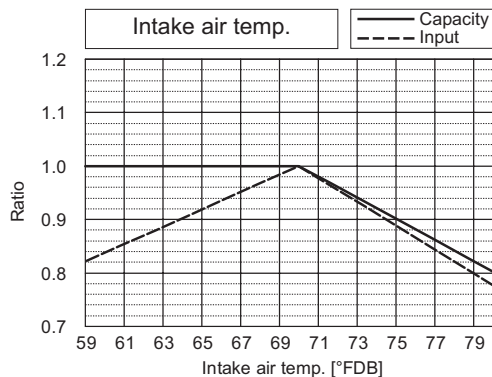
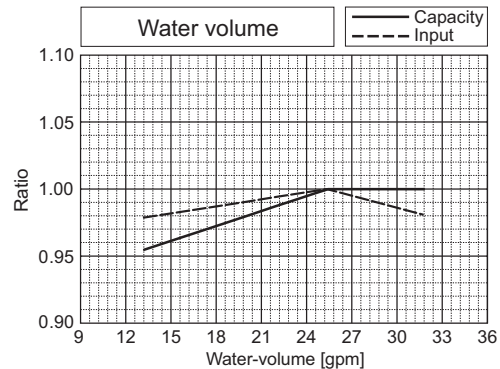
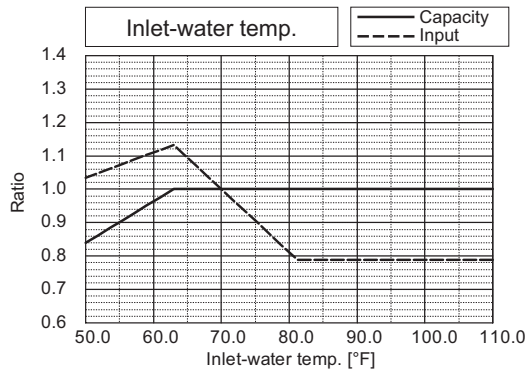


8. CAPACITY TABLES

PQRY-			P96TLMU/YLMU		
Nominal Cooling Capacity	kW	28.1	Rated Cooling Capacity	kW	27.0
	BTU/h	96,000		BTU/h	92,000
Input	kW	4.65	Input	kW	(Non-Ducted) 4.26 (Ducted) 5.19

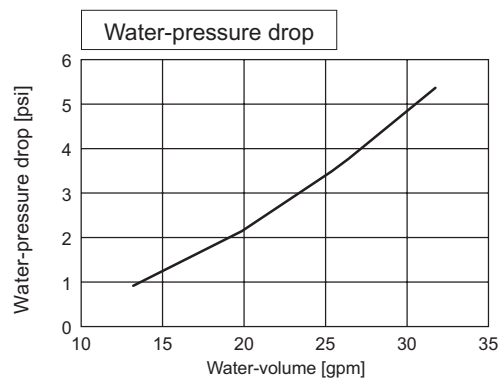
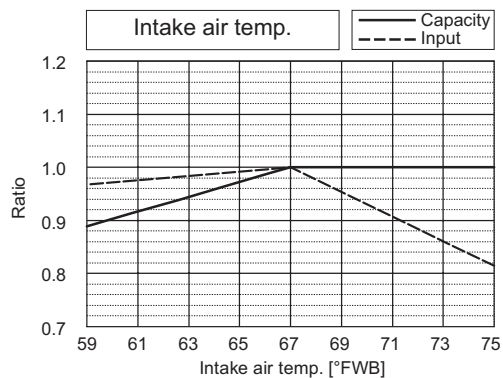
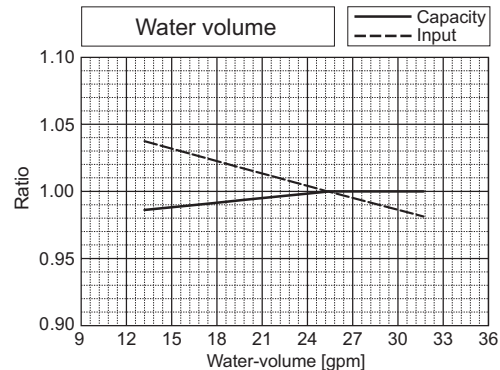
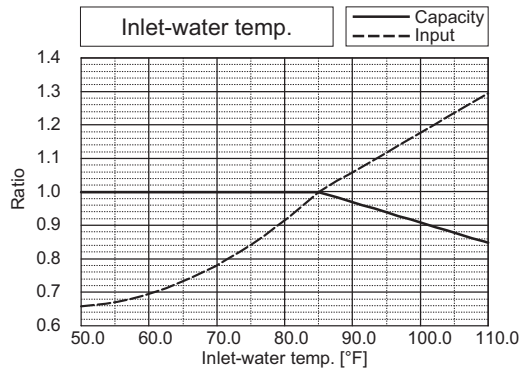


PQRY-			P96TLMU/YLMU		
Nominal Heating Capacity	kW	31.7	Rated Heating Capacity	kW	30.2
	BTU/h	108,000		BTU/h	103,000
Input	kW	5.05	Input	kW	(Non-Ducted) 4.65 (Ducted) 4.48

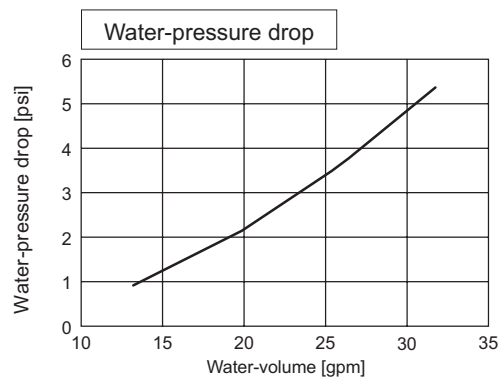
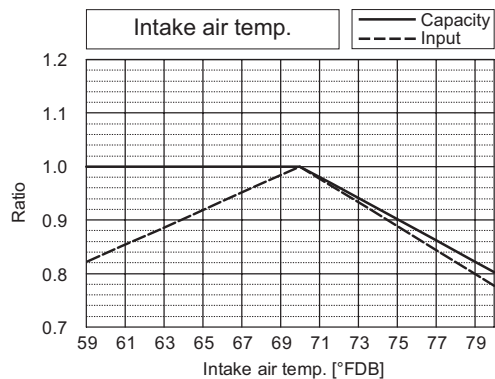
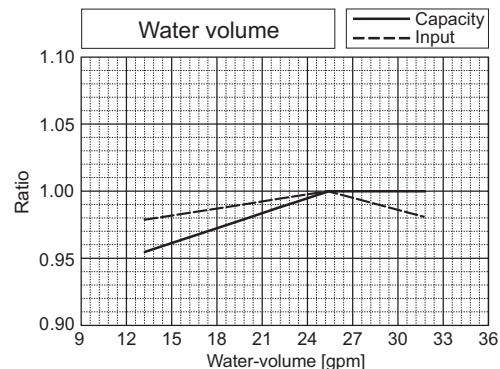
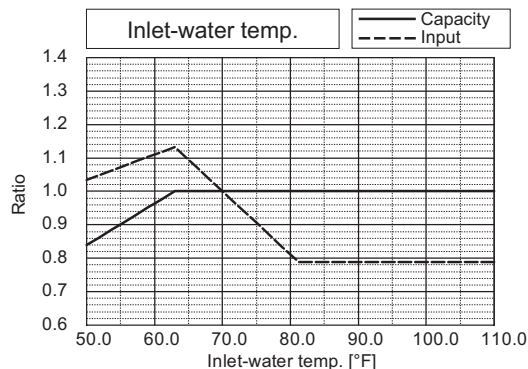


8. CAPACITY TABLES

PQRY-			P120TLMU/YLMU		
Nominal Cooling Capacity	kW	35.2	Rated Cooling Capacity	kW	33.4
	BTU/h	120,000		BTU/h	114,000
Input	kW	7.24	Input	kW	(Non-Ducted) 6.66 (Ducted) 7.35

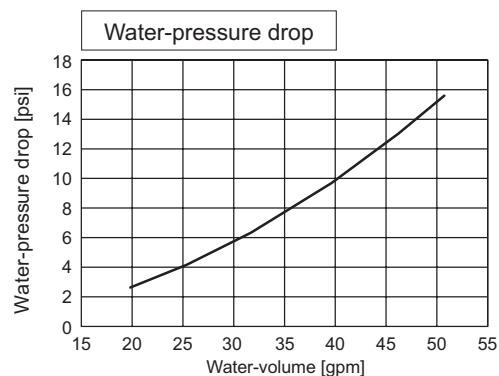
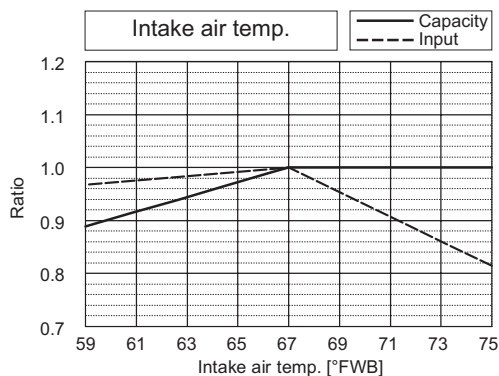
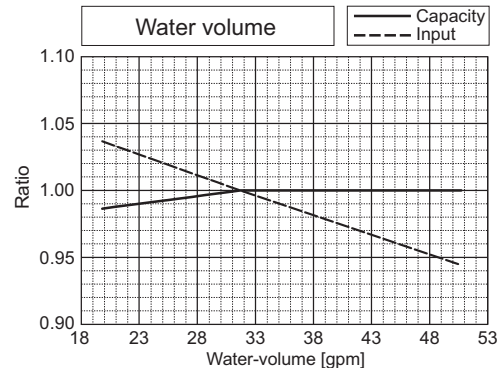
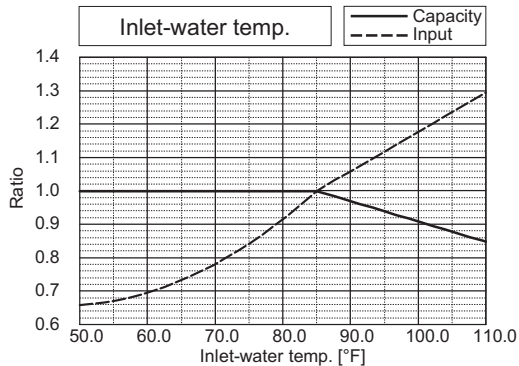


PQRY-			P120TLMU/YLMU		
Nominal Heating Capacity	kW	39.6	Rated Heating Capacity	kW	37.8
	BTU/h	135,000		BTU/h	129,000
Input	kW	6.83	Input	kW	(Non-Ducted) 6.29 (Ducted) 5.92

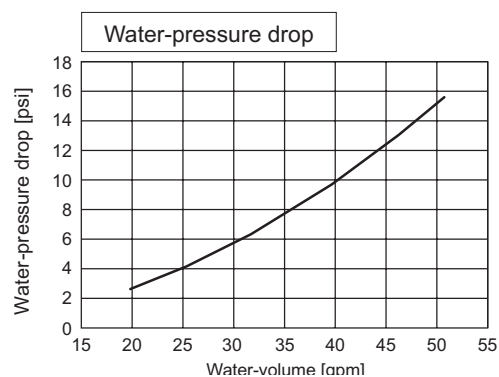
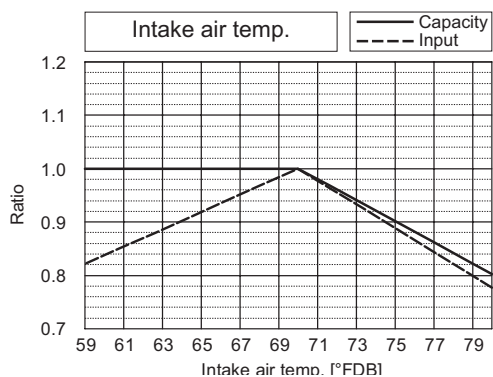
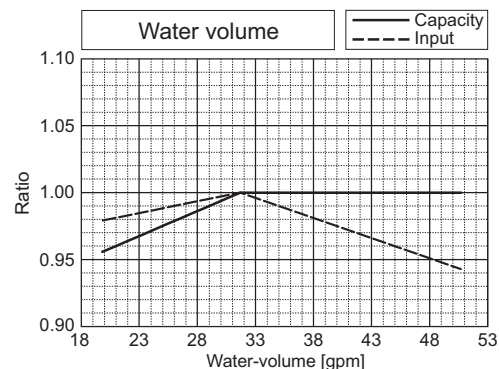
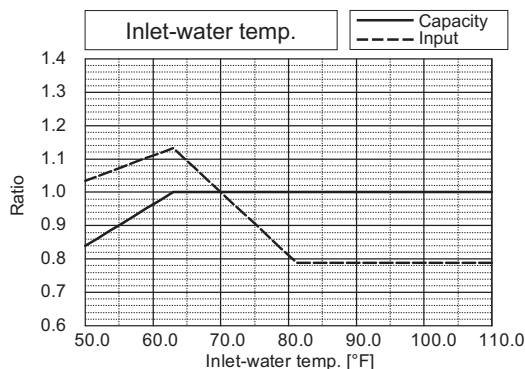


8. CAPACITY TABLES

PQRY-			P144TLMU/YLMU		
Nominal Cooling Capacity	kW	42.2	Rated Cooling Capacity	kW	40.2
	BTU/h	144,000		BTU/h	137,000
Input	kW	8.78	Input	kW	(Non-Ducted) 8.07 (Ducted) 9.98

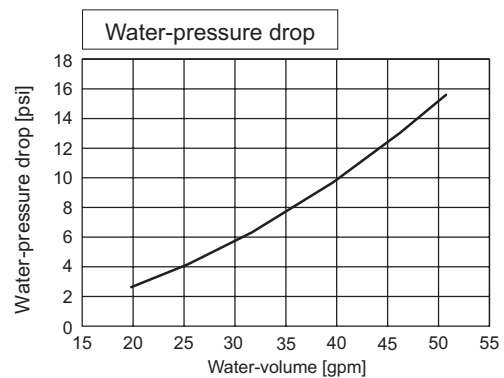
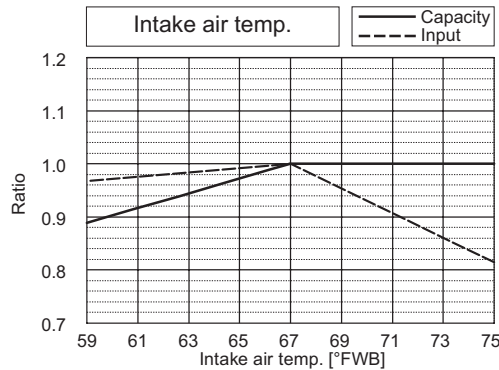
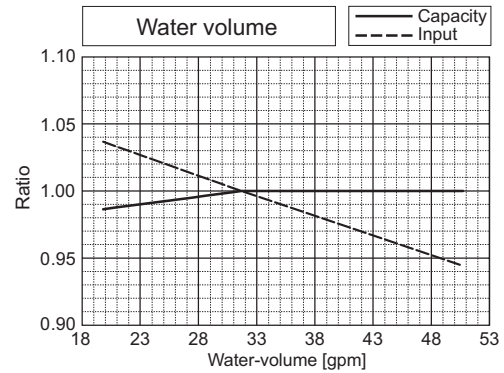
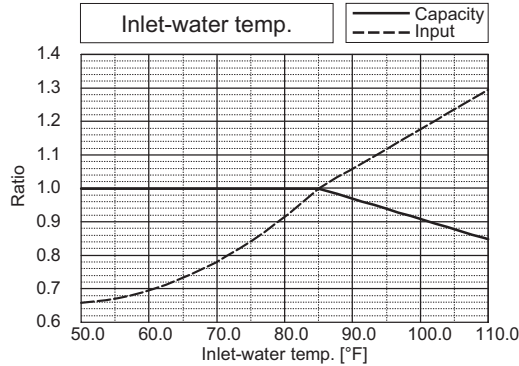


PQRY-			P144TLMU/YLMU		
Nominal Heating Capacity	kW	46.9	Rated Heating Capacity	kW	44.5
	BTU/h	160,000		BTU/h	152,000
Input	kW	8.11	Input	kW	(Non-Ducted) 7.47 (Ducted) 7.90

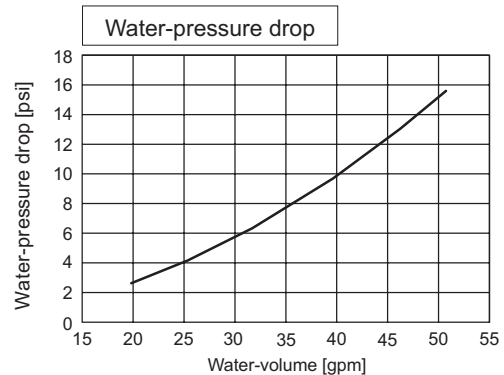
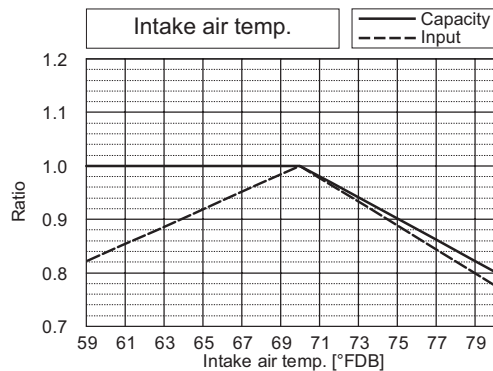
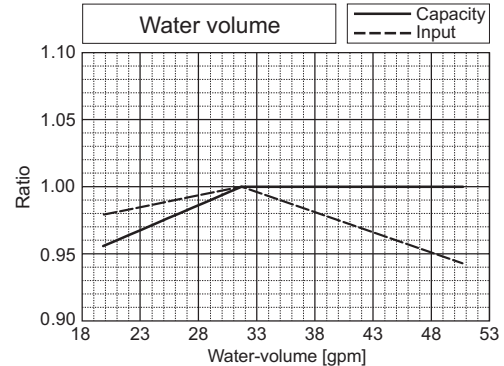
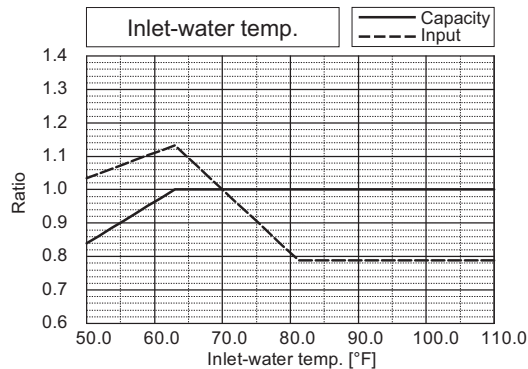


8. CAPACITY TABLES

PQRY-			P168TLMU/YLMU		
Nominal Cooling Capacity	kW	49.2	Rated Cooling Capacity	kW	47.2
	BTU/h	168,000		BTU/h	161,000
Input	kW	12.05	Input	kW	(Non-Ducted) 11.10 (Ducted) 11.88

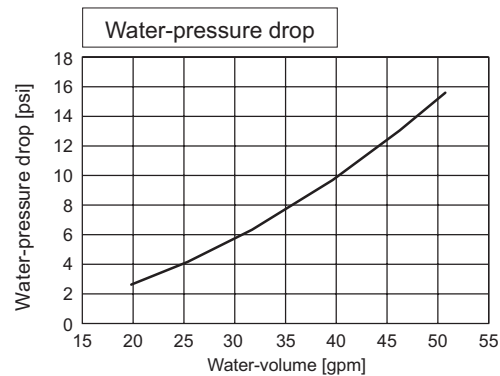
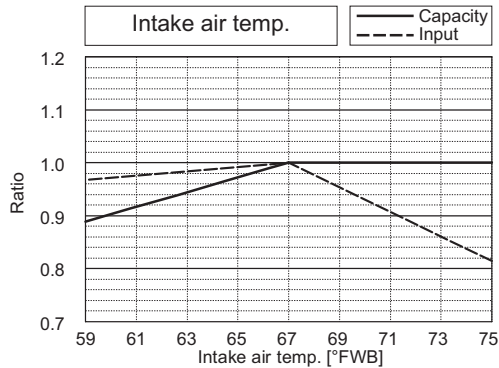
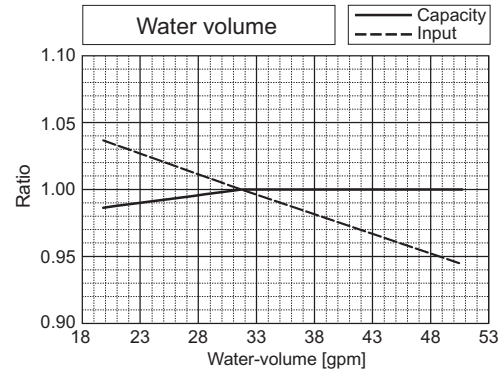
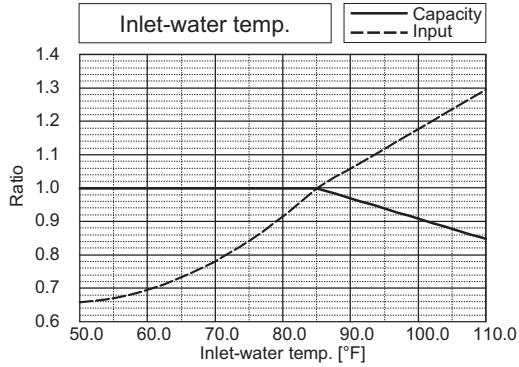


PQRY-			P168TLMU/YLMU		
Nominal Heating Capacity	kW	55.1	Rated Heating Capacity	kW	52.5
	BTU/h	188,000		BTU/h	179,000
Input	kW	9.86	Input	kW	(Non-Ducted) 9.09 (Ducted) 9.72

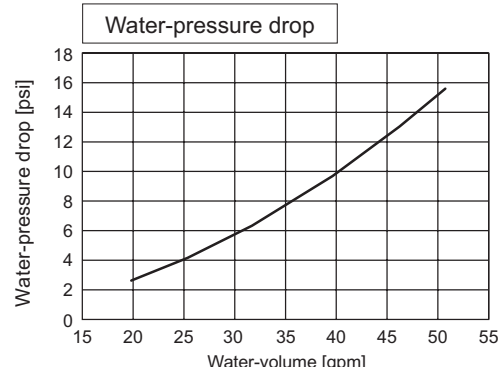
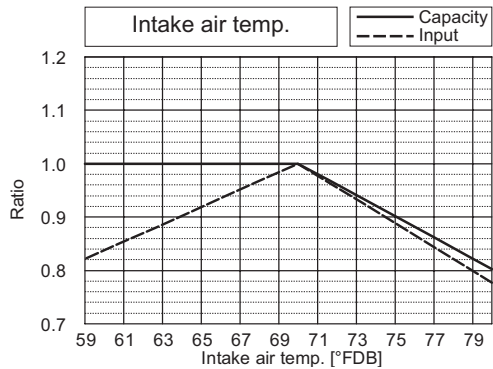
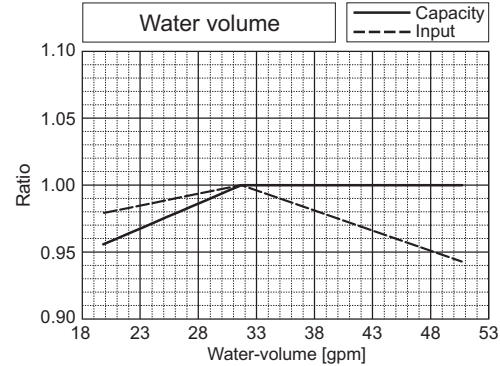
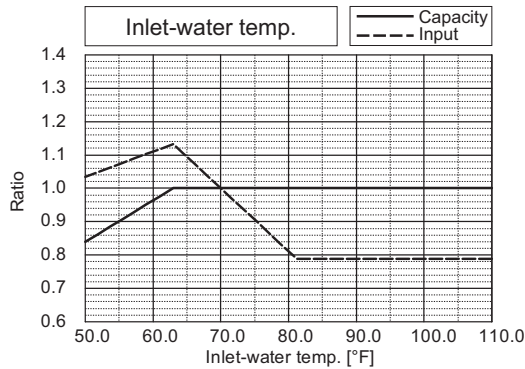


8. CAPACITY TABLES

PQRY-			P192TLMU/YLMU		
Nominal Cooling Capacity	kW	56.3	Rated Cooling Capacity	kW	53.6
	BTU/h	192,000		BTU/h	183,000
Input	kW	15.05	Input	kW	(Non-Ducted) 13.87 (Ducted) 14.19

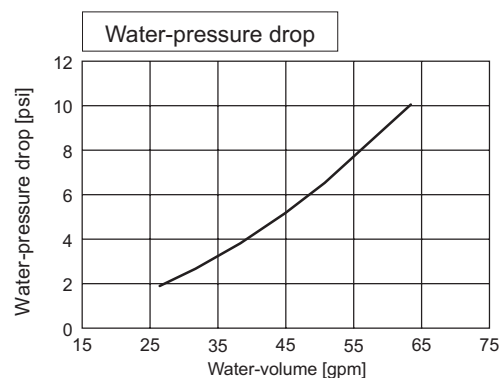
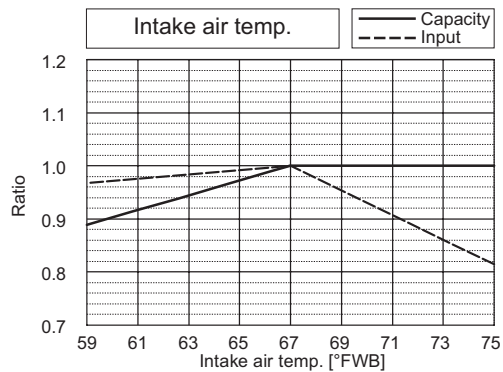
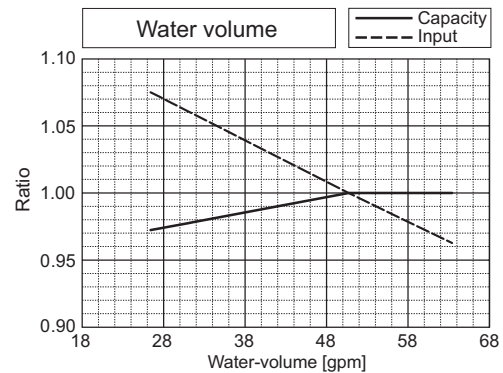
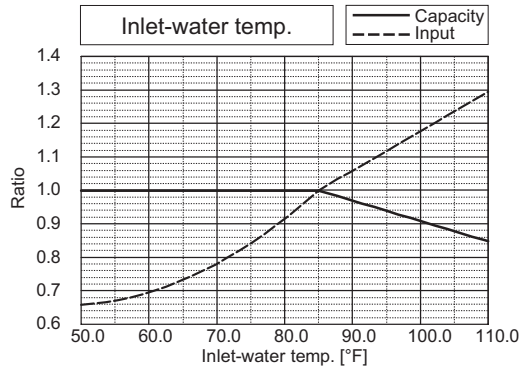


PQRY-			P192TLMU/YLMU		
Nominal Heating Capacity	kW	63.0	Rated Heating Capacity	kW	60.1
	BTU/h	215,000		BTU/h	205,000
Input	kW	11.90	Input	kW	(Non-Ducted) 10.97 (Ducted) 11.56

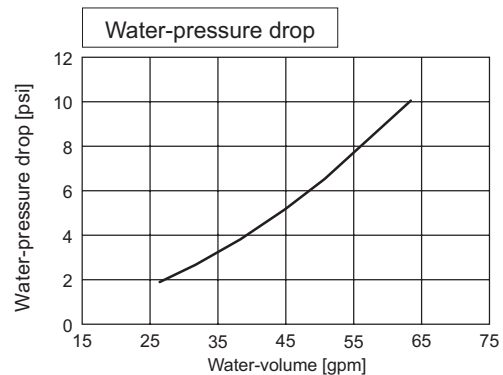
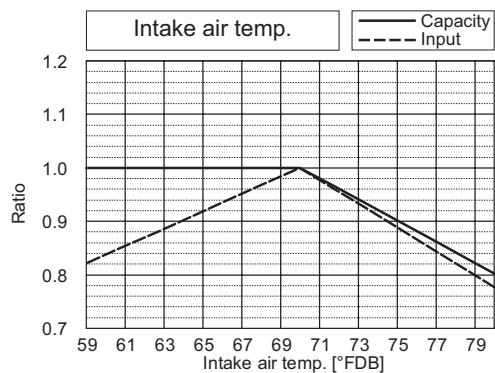
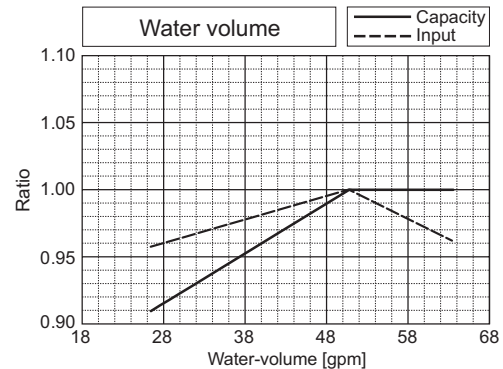
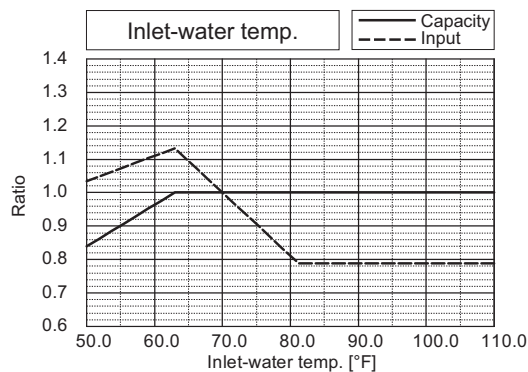


8. CAPACITY TABLES

PQRY-			P216TLMU/YLMU		
Nominal Cooling Capacity	kW	63.3	Rated Cooling Capacity	kW	60.4
	BTU/h	216,000		BTU/h	206,000
Input	kW	19.23	Input	kW	(Non-Ducted) 17.72 (Ducted) 16.10

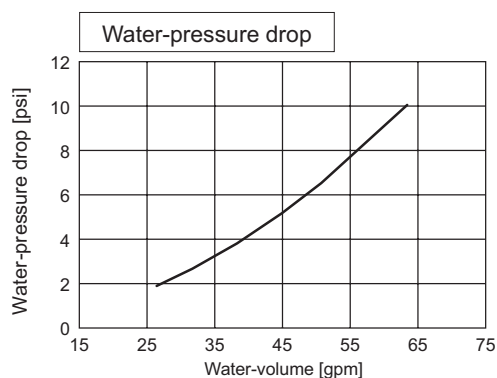
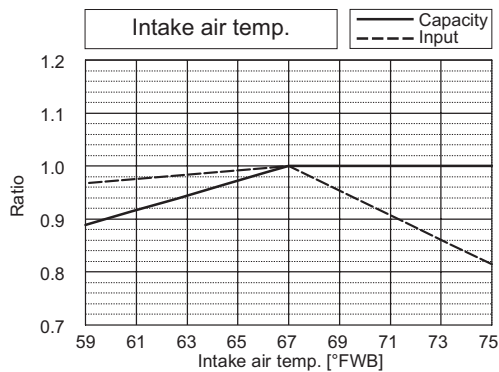
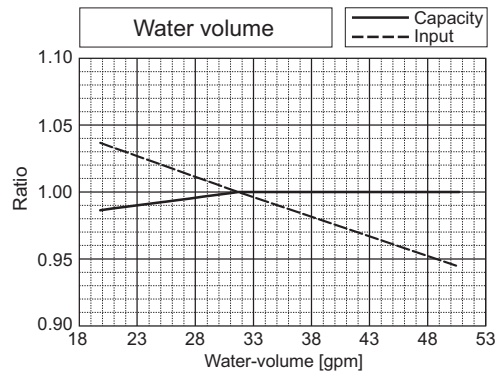
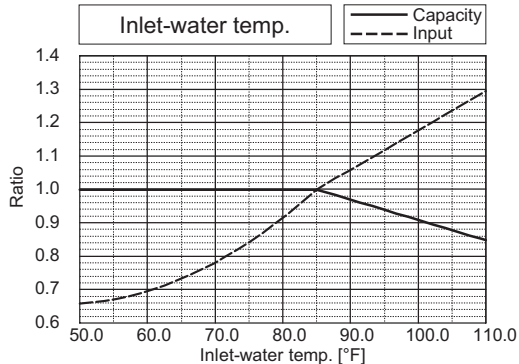


PQRY-			P216TLMU/YLMU		
Nominal Heating Capacity	kW	71.2	Rated Heating Capacity	kW	68.0
	BTU/h	243,000		BTU/h	232,000
Input	kW	13.04	Input	kW	(Non-Ducted) 12.01 (Ducted) 12.34

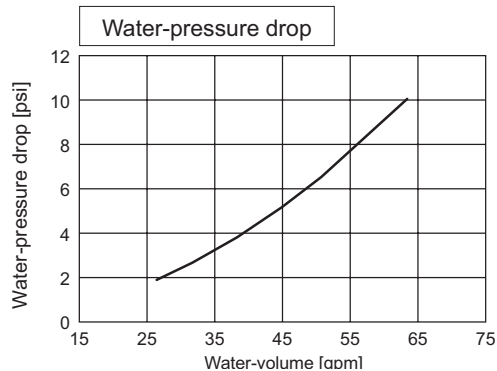
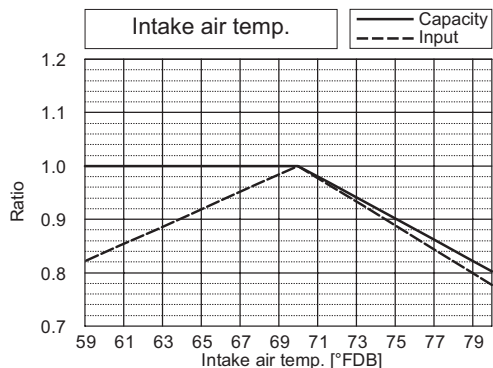
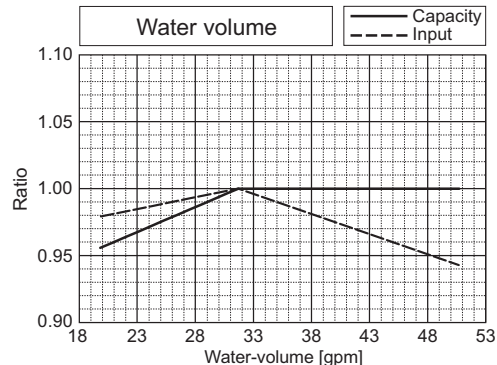
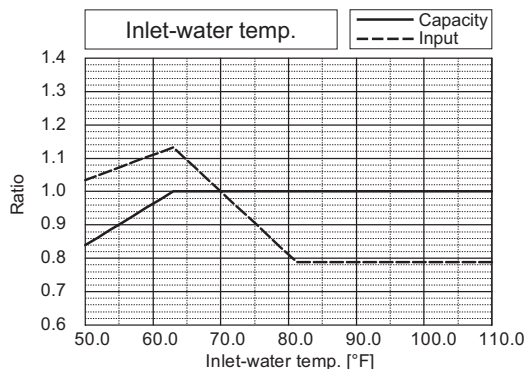


8. CAPACITY TABLES

PQRY-			P240TLMU/YLMU		
Nominal Cooling Capacity	kW	70.3	Rated Cooling Capacity	kW	66.8
	BTU/h	240,000		BTU/h	228,000
Input	kW	21.14	Input	kW	(Non-Ducted) 19.49 (Ducted) 18.74

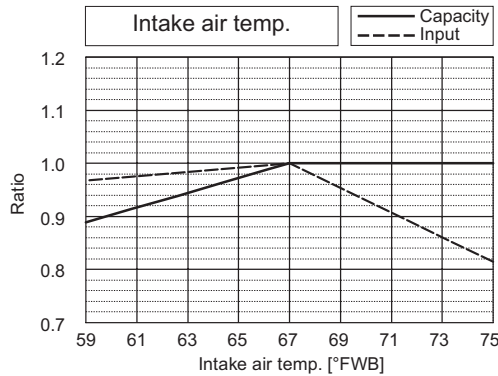
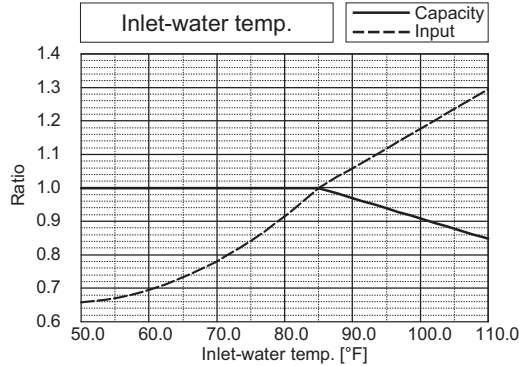


PQRY-			P240TLMU/YLMU		
Nominal Heating Capacity	kW	79.1	Rated Heating Capacity	kW	75.6
	BTU/h	270,000		BTU/h	258,000
Input	kW	15.12	Input	kW	(Non-Ducted) 13.93 (Ducted) 14.62

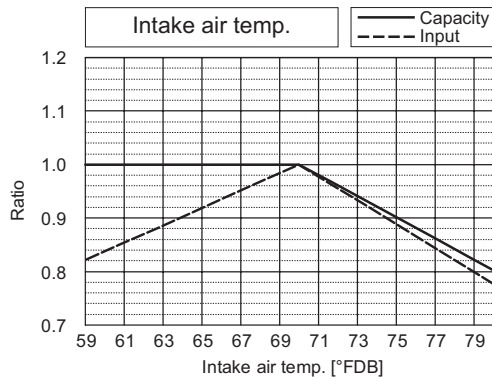
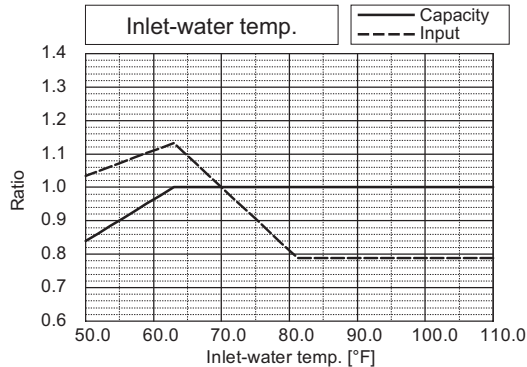


8. CAPACITY TABLES

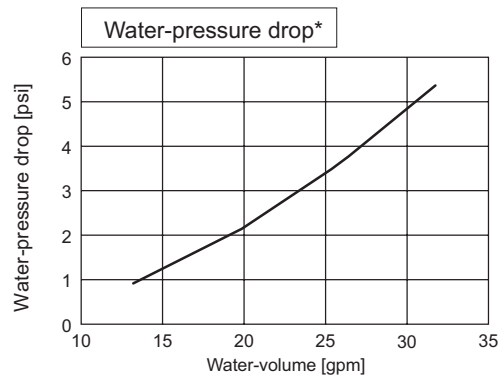
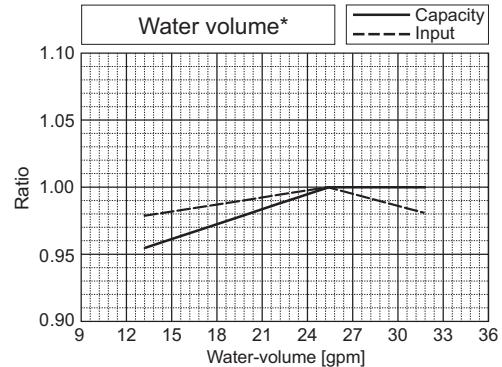
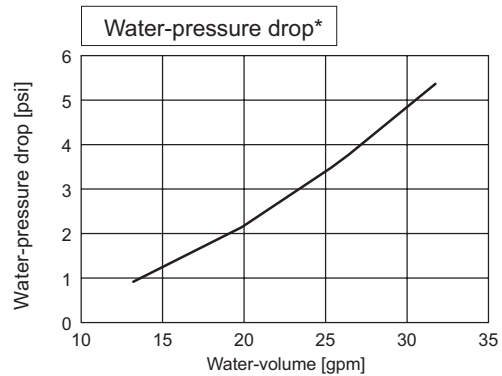
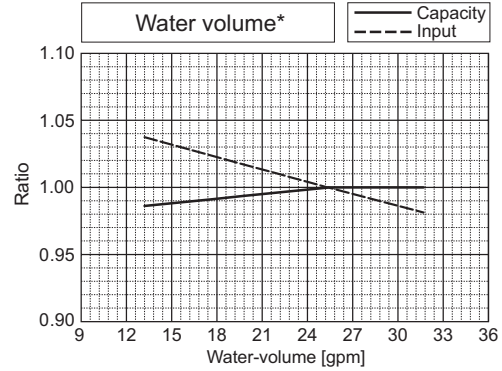
PQRY-			P144TSLMU/YSLMU		
Nominal Cooling Capacity	kW	42.2	Rated Cooling Capacity	kW	40.2
	BTU/h	144,000		BTU/h	137,000
Input	kW	7.11	Input	kW	(Non-Ducted) 6.53 (Ducted) 7.72



PQRY-			P144TSLMU/YSLMU		
Nominal Heating Capacity	kW	46.9	Rated Heating Capacity	kW	44.5
	BTU/h	160,000		BTU/h	152,000
Input	kW	7.45	Input	kW	(Non-Ducted) 6.86 (Ducted) 7.22

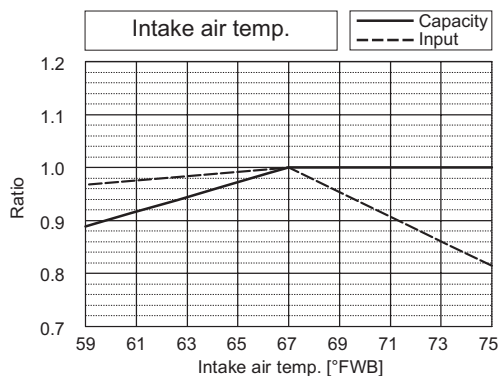
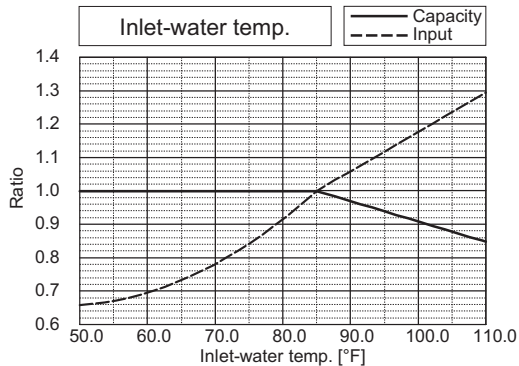


*The drawing indicates characteristic per unit.

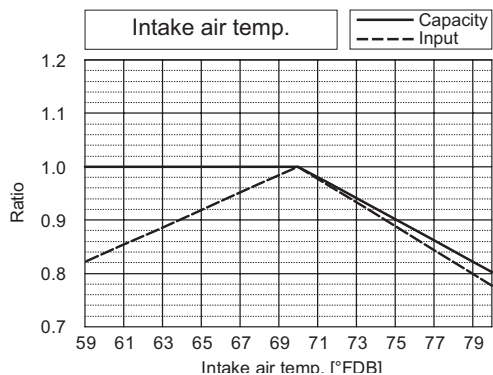
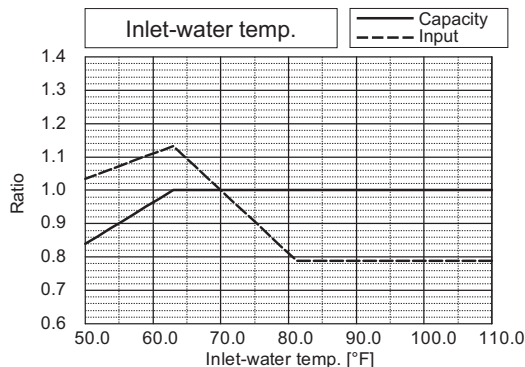


8. CAPACITY TABLES

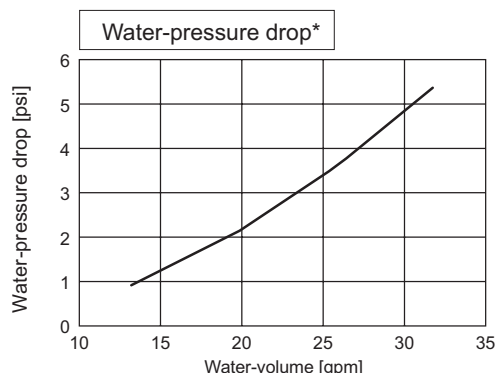
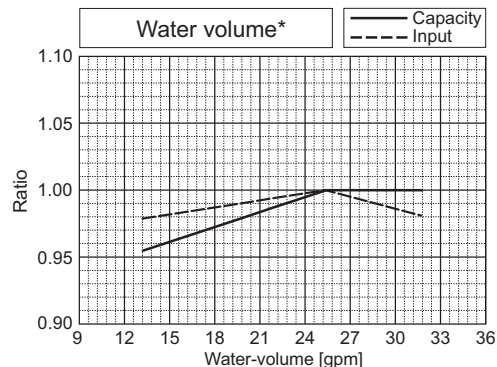
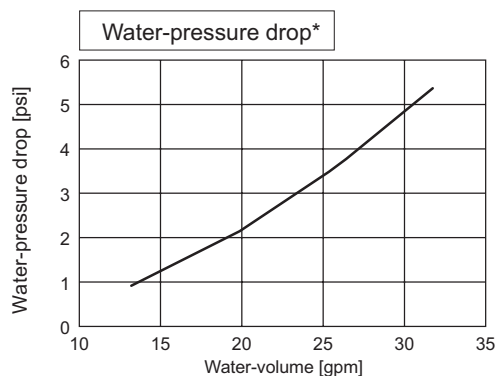
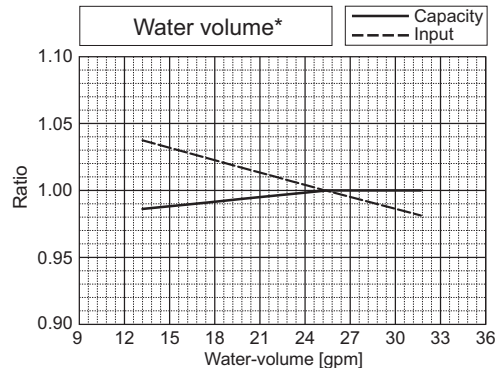
PQRY-			P168TSLMU/YSLMU		
Nominal Cooling Capacity	kW	49.2	Rated Cooling Capacity	kW	47.2
	BTU/h	168,000		BTU/h	161,000
Input	kW	9.33	Input	kW	(Non-Ducted) 8.58 (Ducted) 9.22



PQRY-			P168TSLMU/YSLMU		
Nominal Heating Capacity	kW	55.1	Rated Heating Capacity	kW	52.5
	BTU/h	188,000		BTU/h	179,000
Input	kW	9.34	Input	kW	(Non-Ducted) 8.60 (Ducted) 8.03

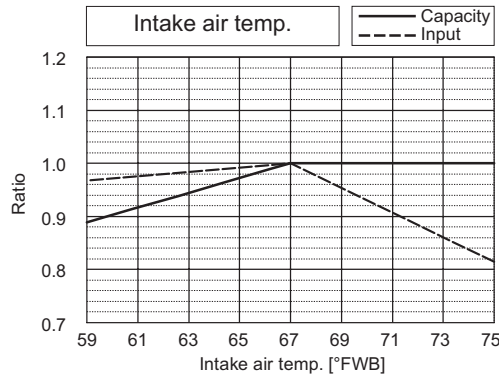
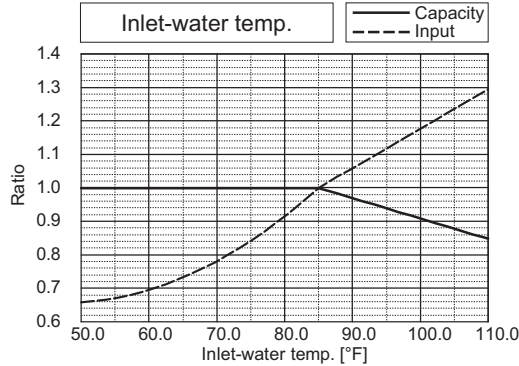


*The drawing indicates characteristic per unit.

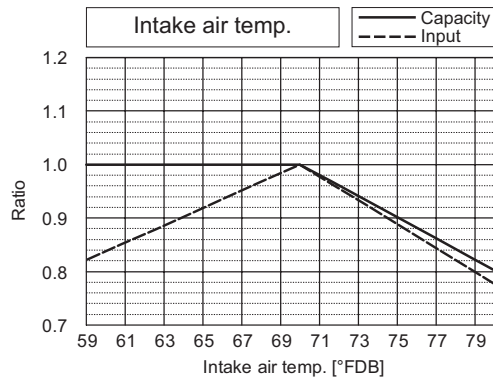
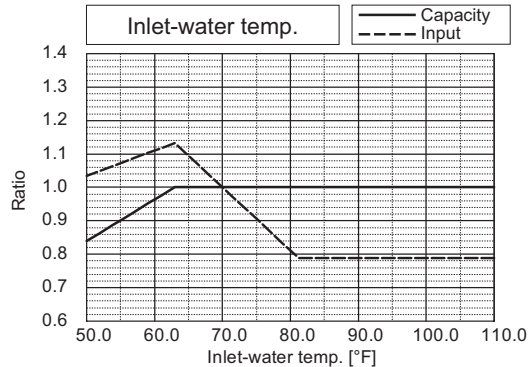


8. CAPACITY TABLES

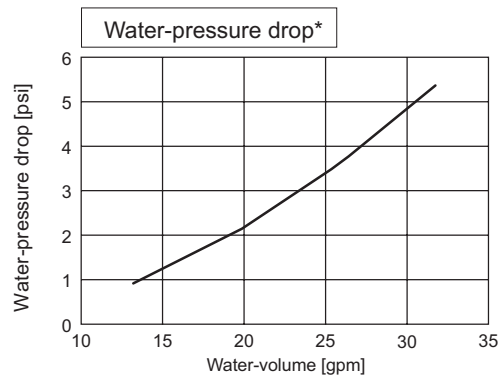
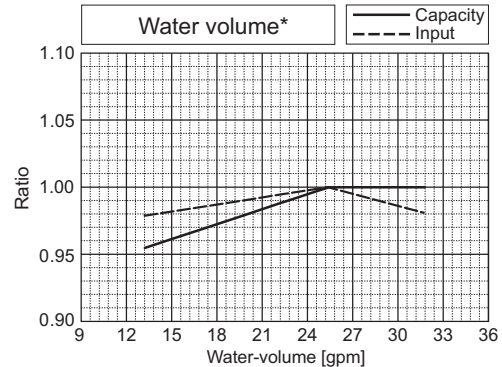
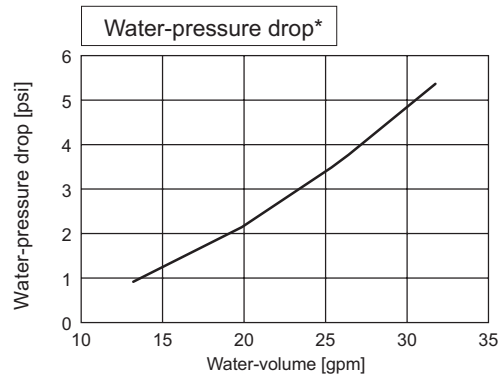
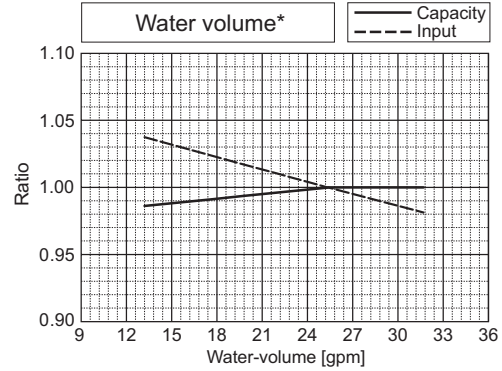
PQRY-			P192TSLMU/YSLMU		
Nominal Cooling Capacity	kW	56.3	Rated Cooling Capacity	kW	53.6
	BTU/h	192,000		BTU/h	183,000
Input	kW	11.30	Input	kW	(Non-Ducted) 10.40 (Ducted) 10.98



PQRY-			P192TSLMU/YSLMU		
Nominal Heating Capacity	kW	63.0	Rated Heating Capacity	kW	60.1
	BTU/h	215,000		BTU/h	205,000
Input	kW	11.02	Input	kW	(Non-Ducted) 10.16 (Ducted) 8.90

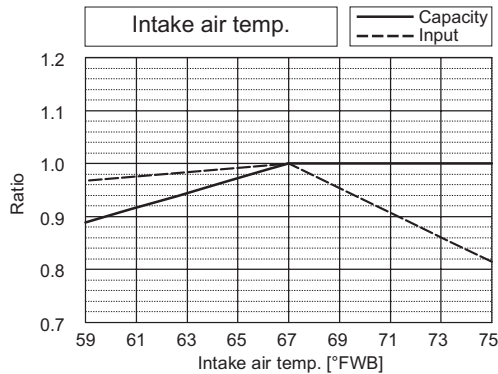
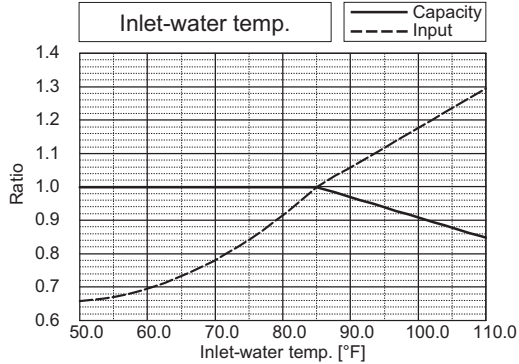


*The drawing indicates characteristic per unit.

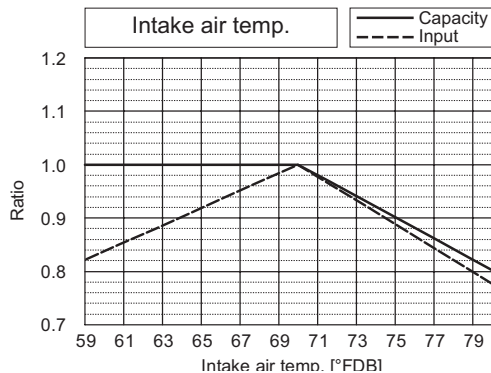
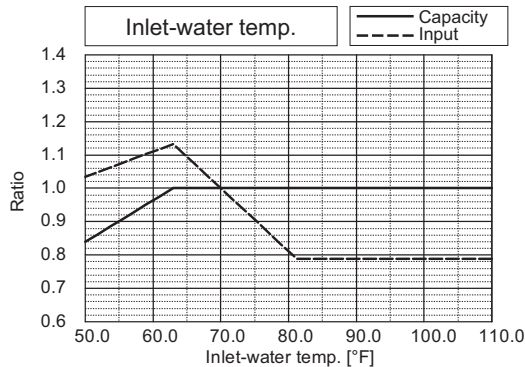


8. CAPACITY TABLES

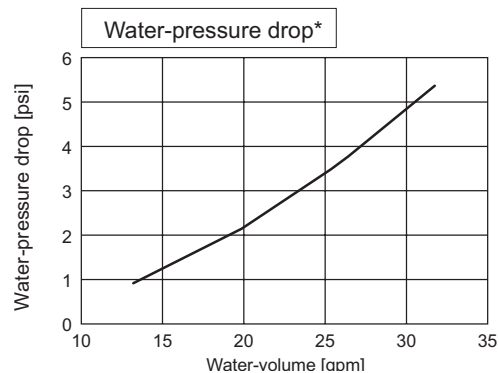
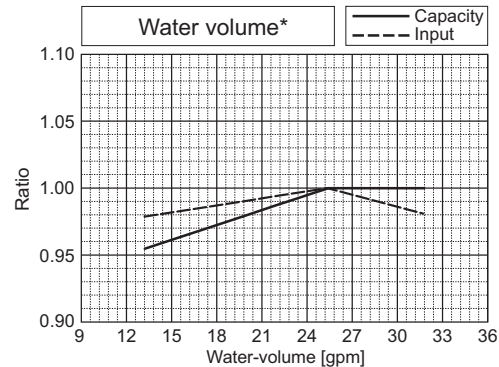
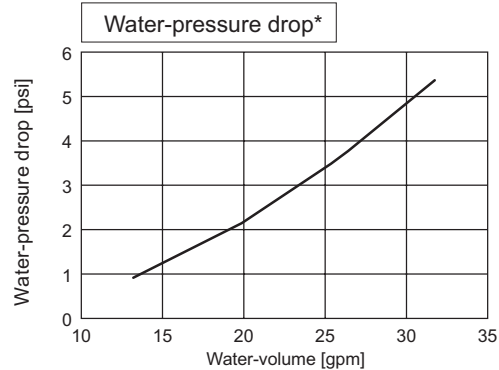
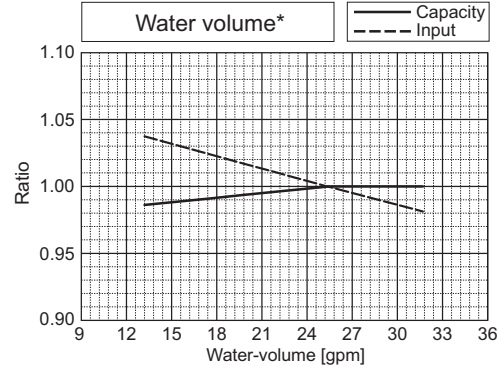
PQRY-			P216TSLMU/YSLMU		
Nominal Cooling Capacity	kW	63.3	Rated Cooling Capacity	kW	60.4
	BTU/h	216,000		BTU/h	206,000
Input	kW	14.03	Input	kW	(Non-Ducted) 12.93 (Ducted) 13.24



PQRY-			P216TSLMU/YSLMU		
Nominal Heating Capacity	kW	71.2	Rated Heating Capacity	kW	68.0
	BTU/h	243,000		BTU/h	232,000
Input	kW	12.88	Input	kW	(Non-Ducted) 11.88 (Ducted) 10.35

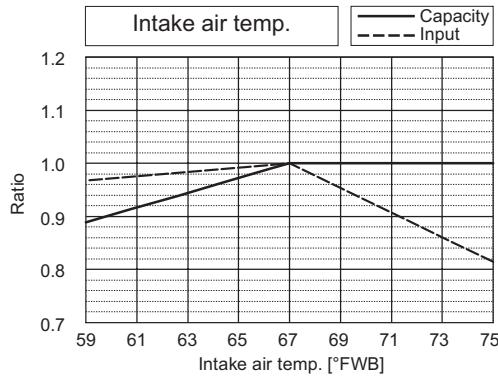
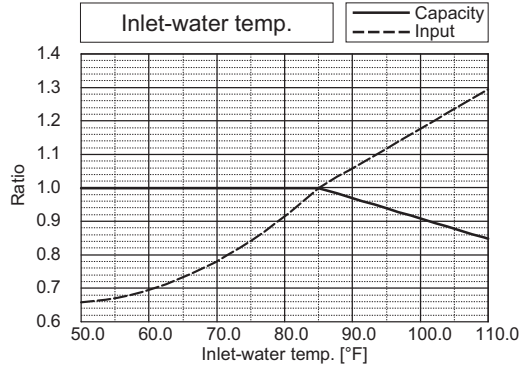


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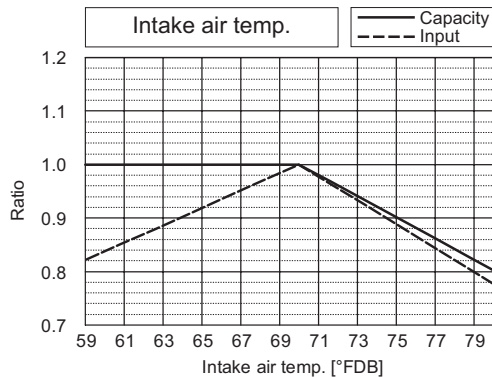
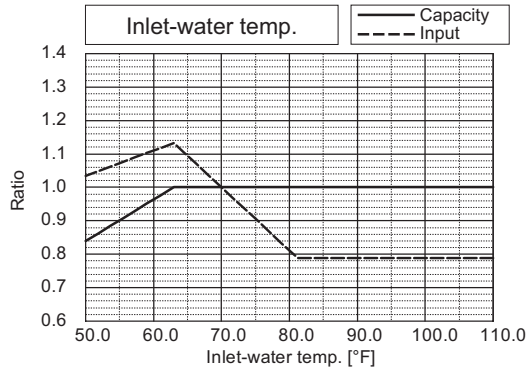


8. CAPACITY TABLES

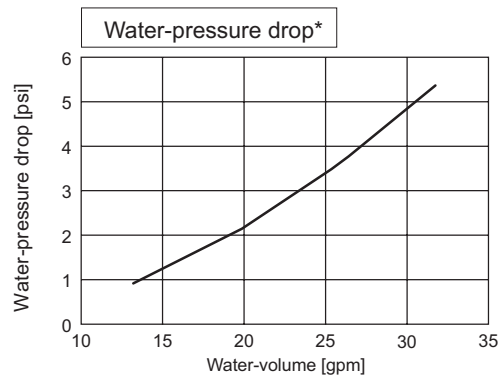
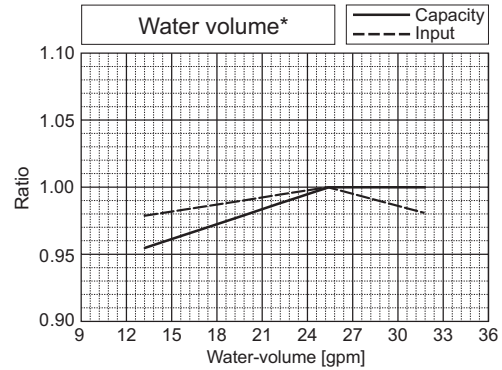
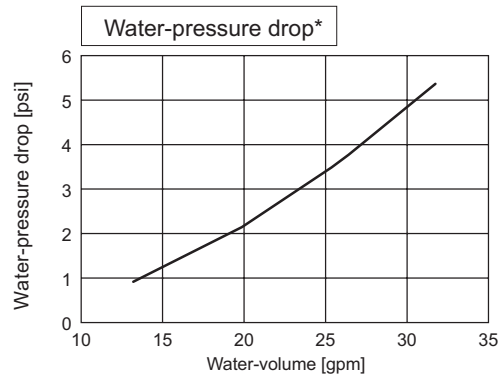
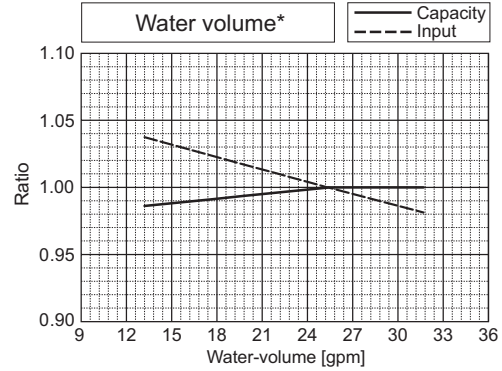
PQRY-			P240TSLMU/YSLMU		
Nominal Cooling Capacity	kW	70.3	Rated Cooling Capacity	kW	66.8
	BTU/h	240,000		BTU/h	228,000
Input	kW	16.89	Input	kW	(Non-Ducted) 15.57 (Ducted) 16.15



PQRY-			P240TSLMU/YSLMU		
Nominal Heating Capacity	kW	79.1	Rated Heating Capacity	kW	75.6
	BTU/h	270,000		BTU/h	258,000
Input	kW	14.58	Input	kW	(Non-Ducted) 13.45 (Ducted) 12.02

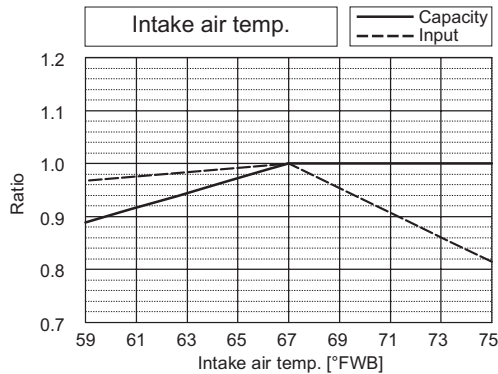
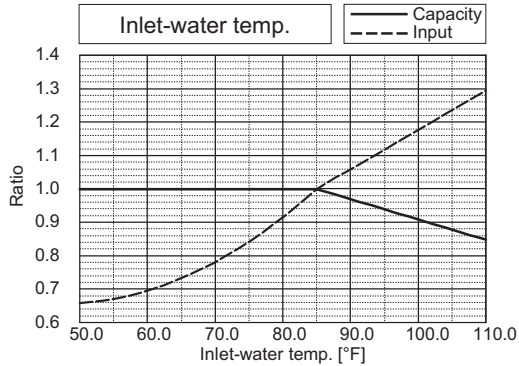


*The drawing indicates characteristic per unit.

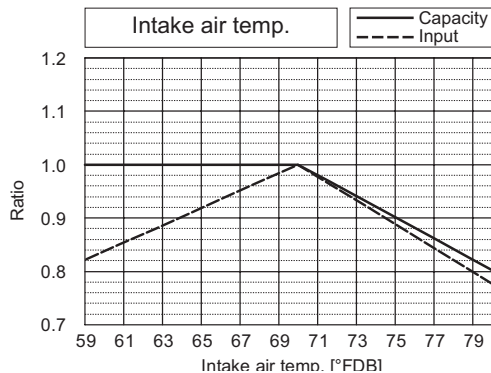
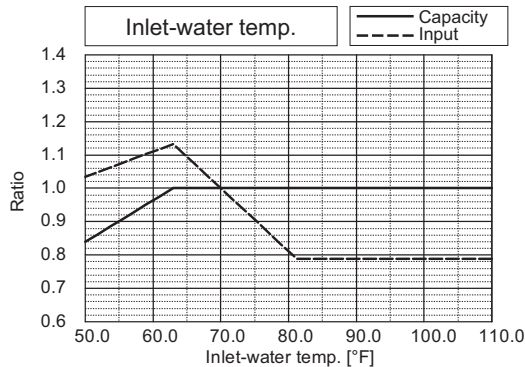


8. CAPACITY TABLES

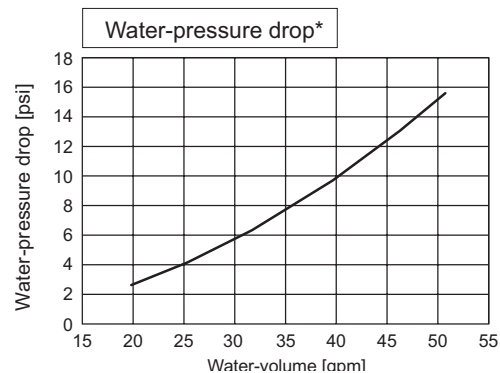
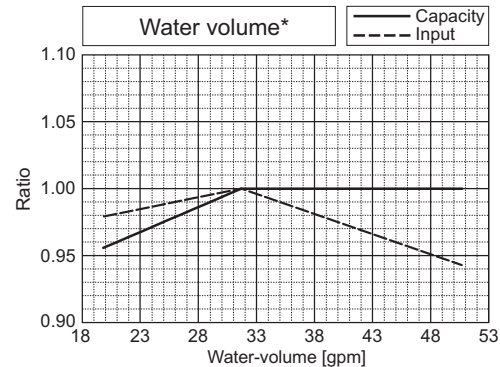
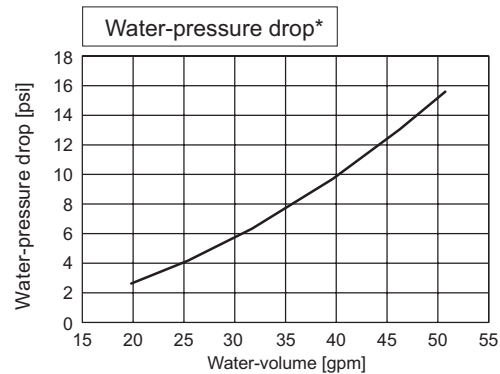
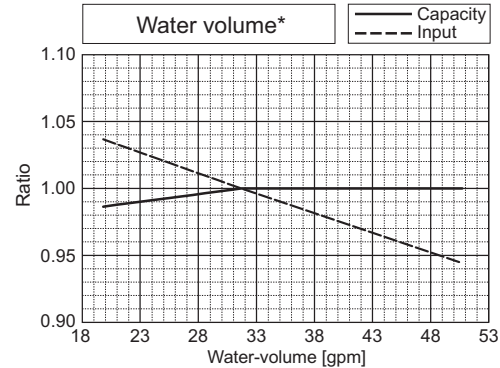
PQRY-			P288TSLMU/YSLMU		
Nominal Cooling Capacity	kW	84.4	Rated Cooling Capacity	kW	80.6
	BTU/h	288,000		BTU/h	275,000
Input	kW	20.42	Input	kW	(Non-Ducted) 18.82 (Ducted) 21.43



PQRY-			P288TSLMU/YSLMU		
Nominal Heating Capacity	kW	94.7	Rated Heating Capacity	kW	90.3
	BTU/h	323,000		BTU/h	308,000
Input	kW	17.50	Input	kW	(Non-Ducted) 16.13 (Ducted) 16.05

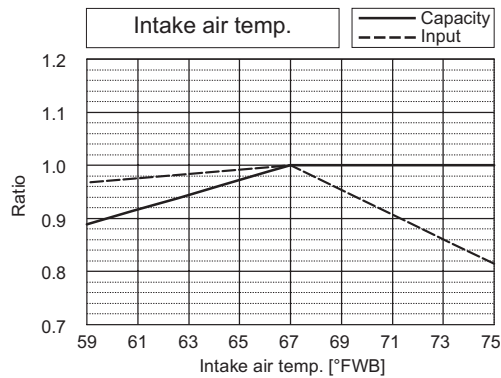
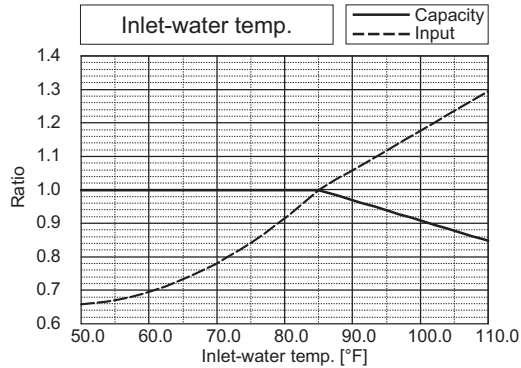


*The drawing indicates characteristic per unit.

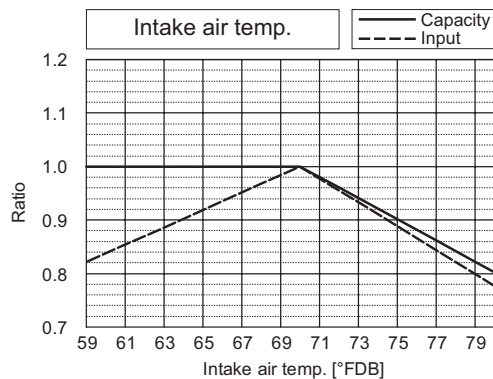
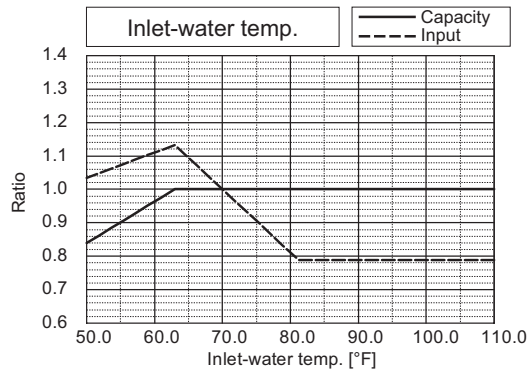


8. CAPACITY TABLES

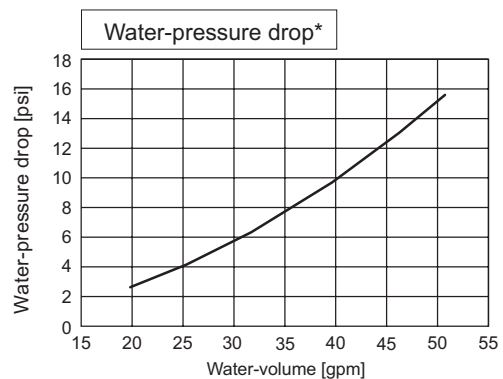
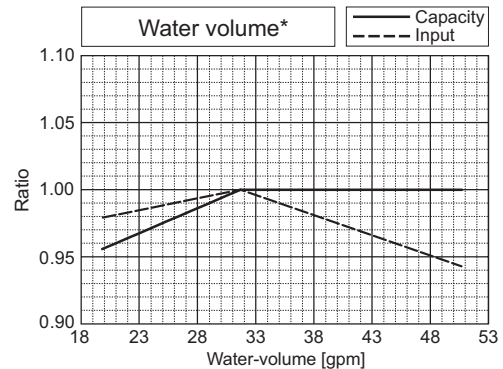
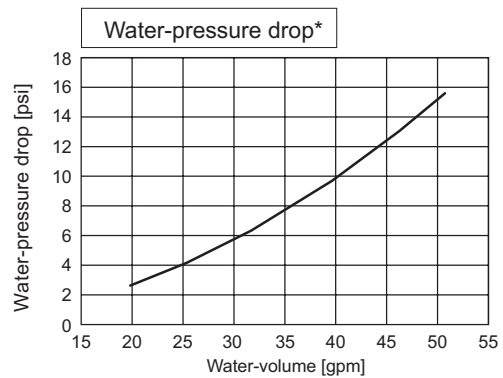
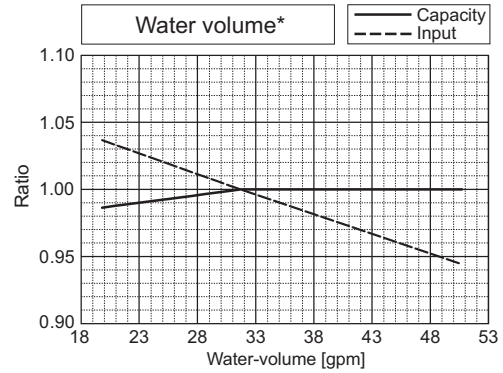
PQRY-			P312TSLMU/YSLMU		
Nominal Cooling Capacity	kW	91.4	Rated Cooling Capacity	kW	87.0
	BTU/h	312,000		BTU/h	297,000
Input	kW	23.41	Input	kW	(Non-Ducted) 21.59 (Ducted) 23.67



PQRY-			P312TSLMU/YSLMU		
Nominal Heating Capacity	kW	102.6	Rated Heating Capacity	kW	97.9
	BTU/h	350,000		BTU/h	334,000
Input	kW	19.11	Input	kW	(Non-Ducted) 17.62 (Ducted) 17.96

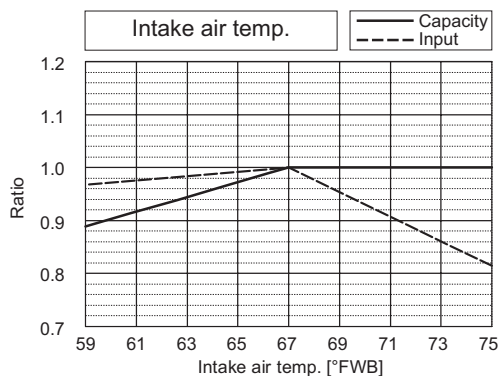
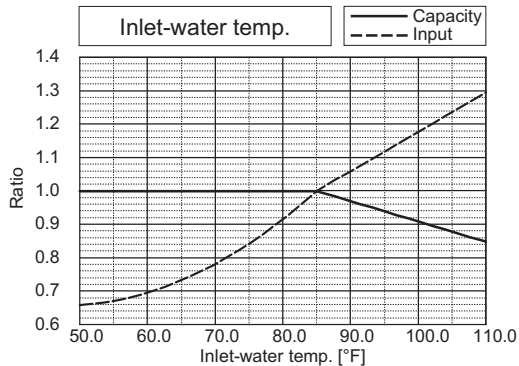


*The drawing indicates characteristic per unit.

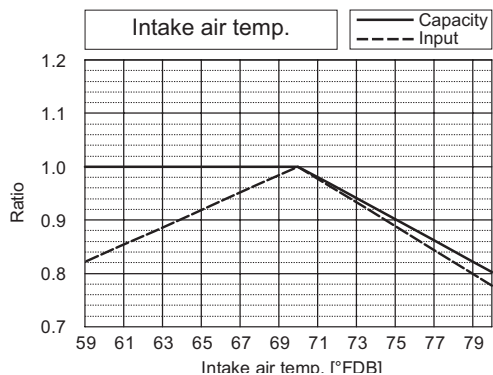
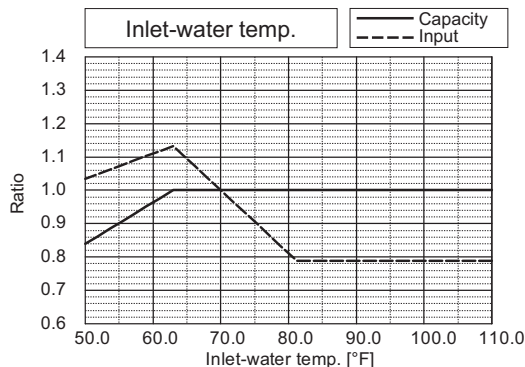


8. CAPACITY TABLES

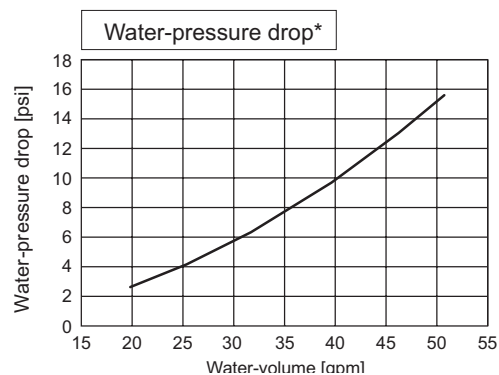
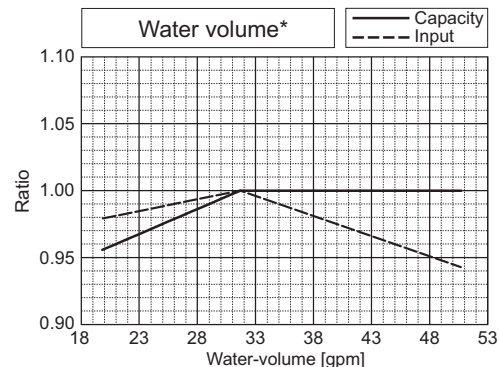
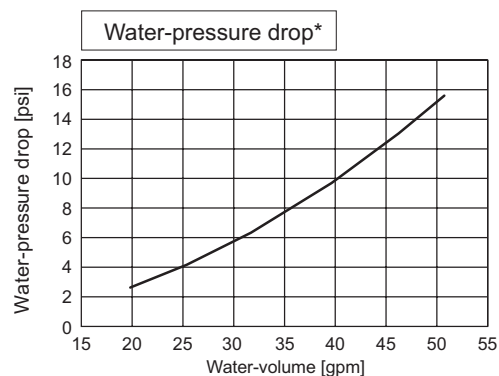
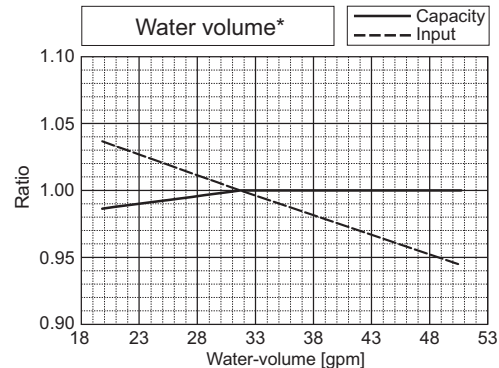
PQRY-			P336TSLMU/YSLMU		
Nominal Cooling Capacity	kW	98.5	Rated Cooling Capacity	kW	93.8
	BTU/h	336,000		BTU/h	320,000
Input	kW	26.84	Input	kW	(Non-Ducted) 24.76 (Ducted) 25.85



PQRY-			P336TSLMU/YSLMU		
Nominal Heating Capacity	kW	110.8	Rated Heating Capacity	kW	105.8
	BTU/h	378,000		BTU/h	361,000
Input	kW	20.77	Input	kW	(Non-Ducted) 19.16 (Ducted) 20.05



*The drawing indicates characteristic per unit.

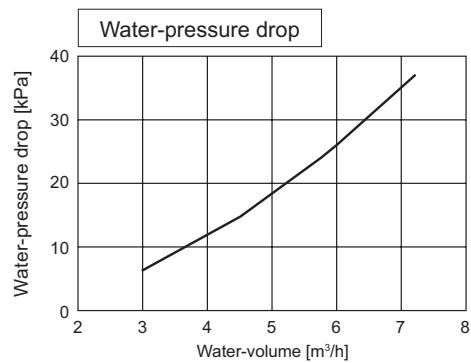
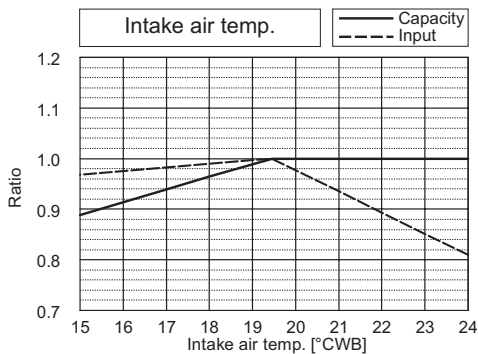
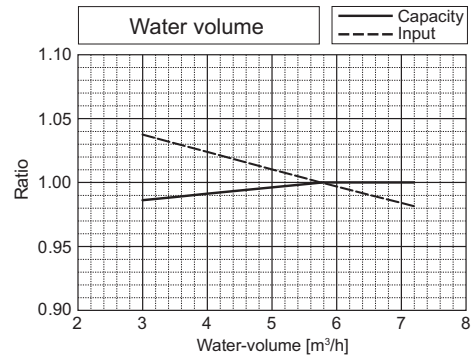
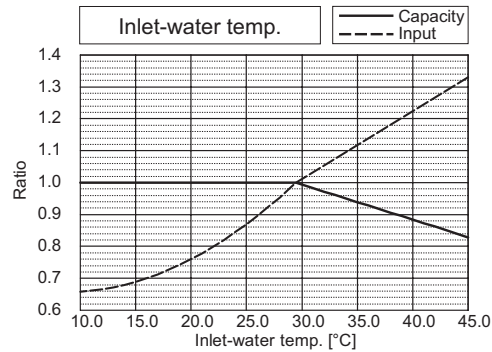


8. CAPACITY TABLES

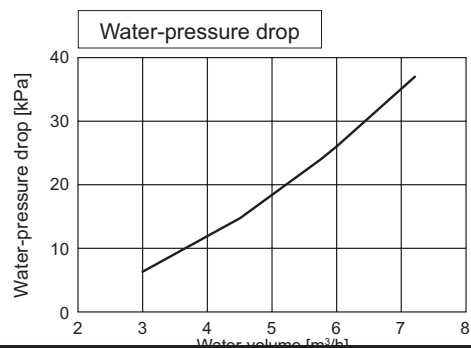
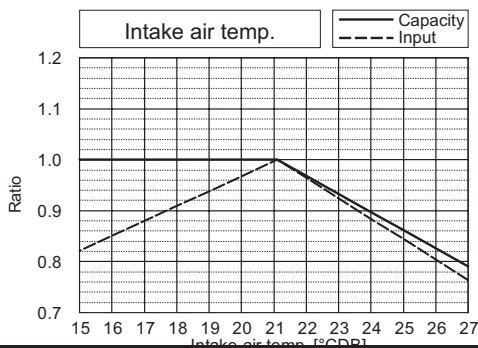
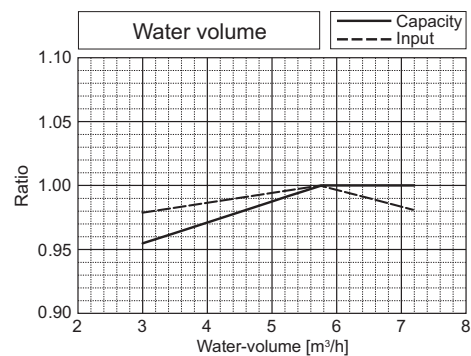
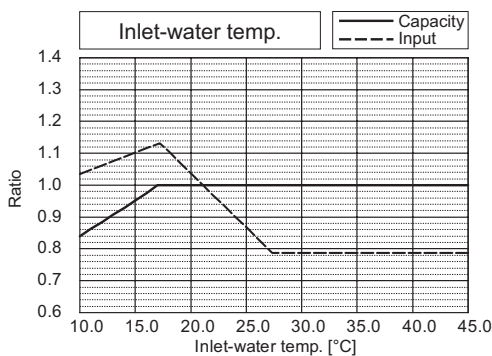
8-2. Correction by Temperature in Celsius

CITY MULTI could have varied capacity at different design temperatures. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperatures.

PQRY-			P72TLMU/YLMU		
Nominal Cooling Capacity	kW	21.1	Rated Cooling Capacity	kW	20.2
	BTU/h	72,000		BTU/h	69,000
Input	kW	3.23	Input	kW	(Non-Ducted) 2.96 (Ducted) 3.12

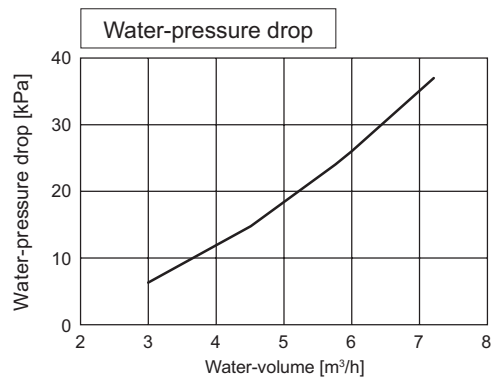
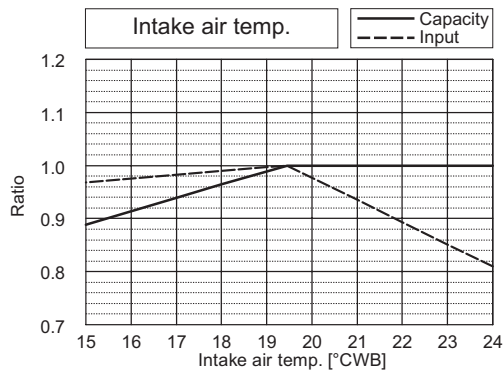
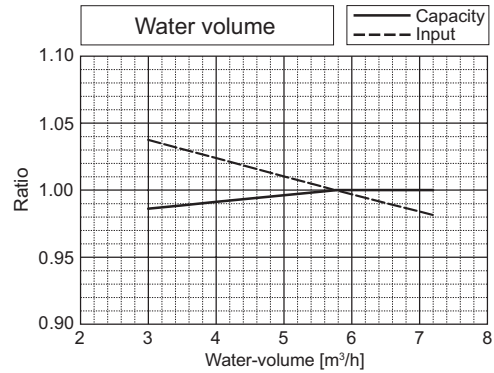
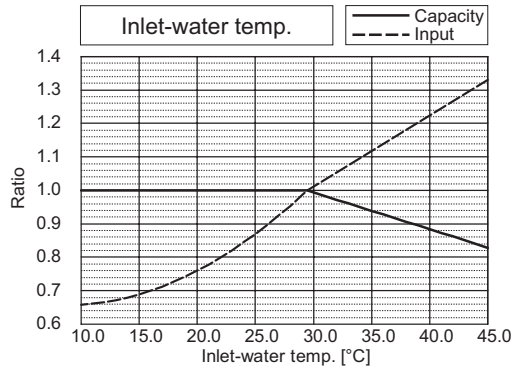


PQRY-			P72TLMU/YLMU		
Nominal Heating Capacity	kW	23.4	Rated Heating Capacity	kW	22.3
	BTU/h	80,000		BTU/h	76,000
Input	kW	3.63	Input	kW	(Non-Ducted) 3.34 (Ducted) 3.36

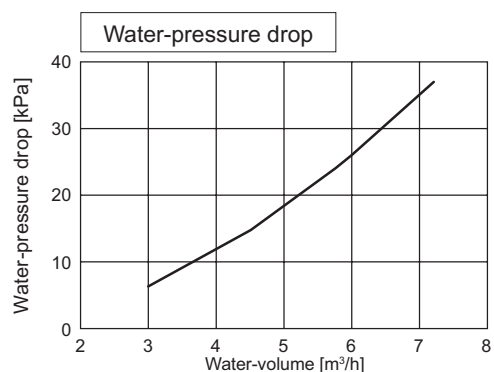
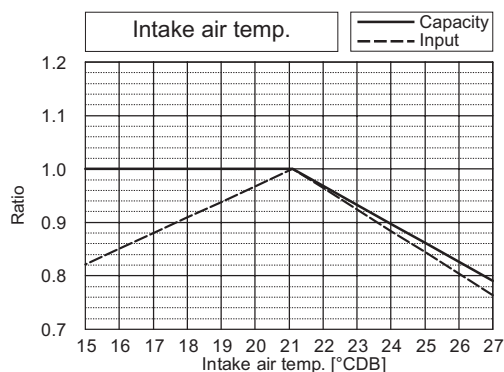
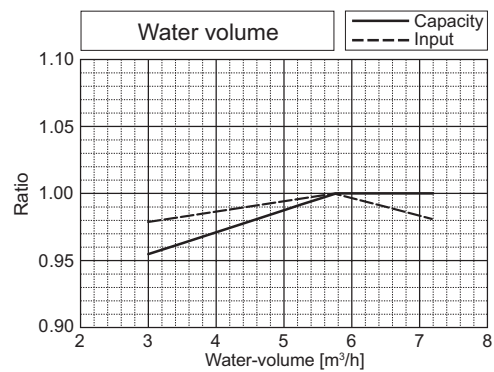
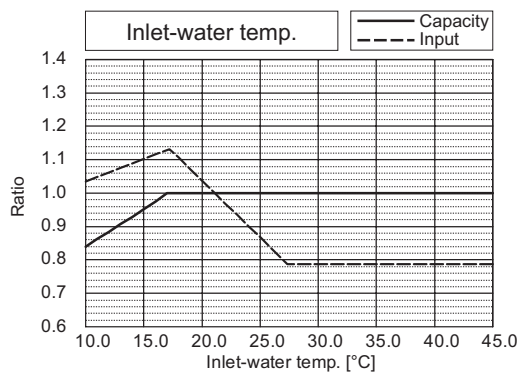


8. CAPACITY TABLES

PQRY-			P96TLMU/YLMU		
Nominal Cooling Capacity	kW	28.1	Rated Cooling Capacity	kW	27.0
	BTU/h	96,000		BTU/h	92,000
Input	kW	4.65	Input	kW	(Non-Ducted) 4.26 (Ducted) 5.19

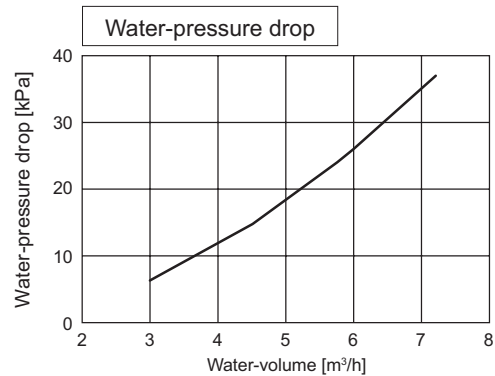
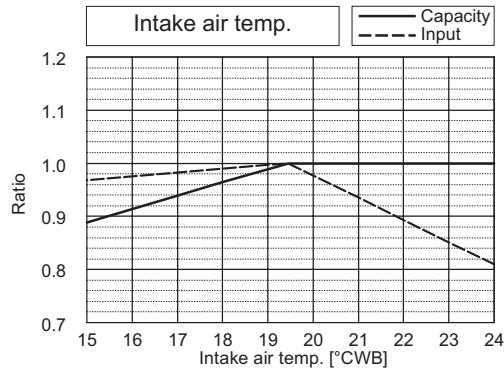
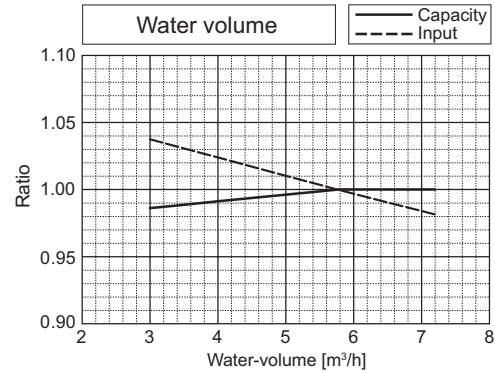
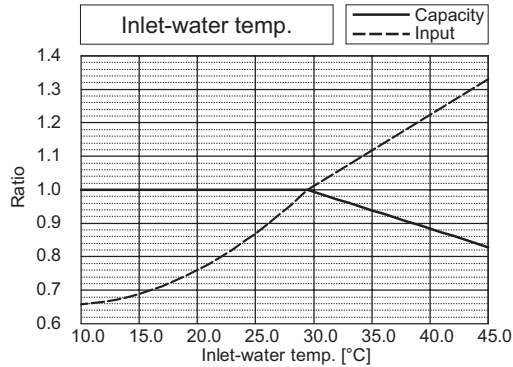


PQRY-			P96TLMU/YLMU		
Nominal Heating Capacity	kW	31.7	Rated Heating Capacity	kW	30.2
	BTU/h	108,000		BTU/h	103,000
Input	kW	5.05	Input	kW	(Non-Ducted) 4.65 (Ducted) 4.48

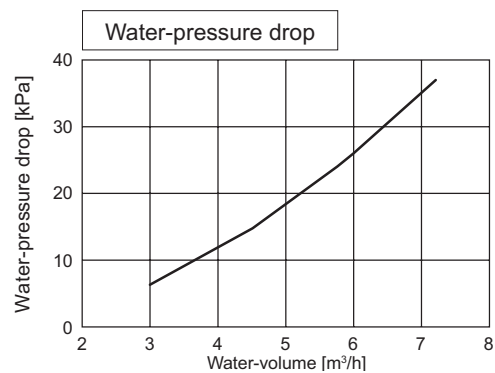
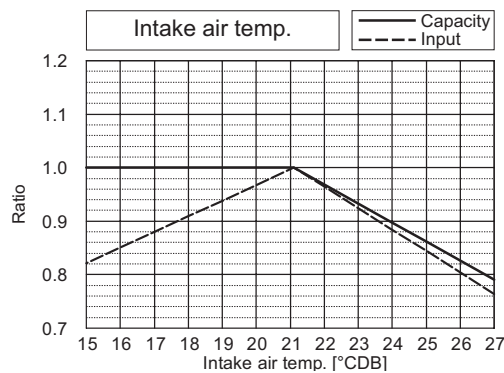
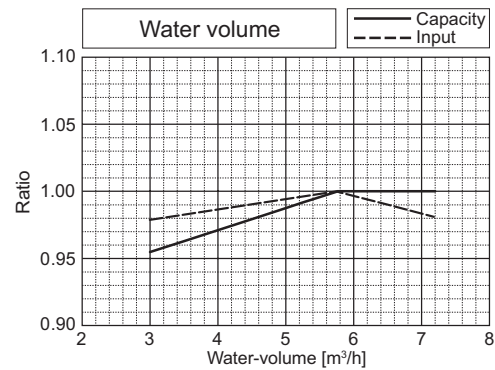
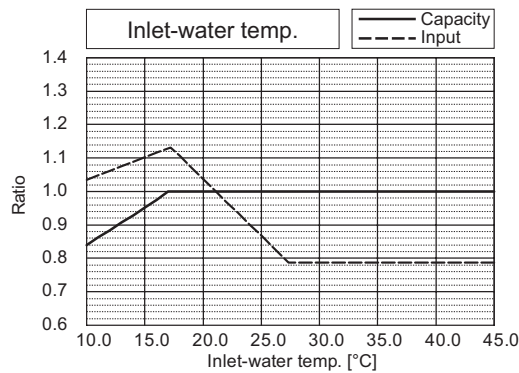


8. CAPACITY TABLES

PQRY-			P120TLMU/YLMU		
Nominal Cooling Capacity	kW	35.2	Rated Cooling Capacity	kW	33.4
	BTU/h	120,000		BTU/h	114,000
Input	kW	7.24	Input	kW	(Non-Ducted) 6.66 (Ducted) 7.35

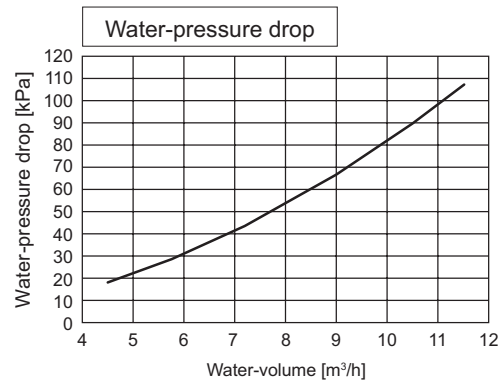
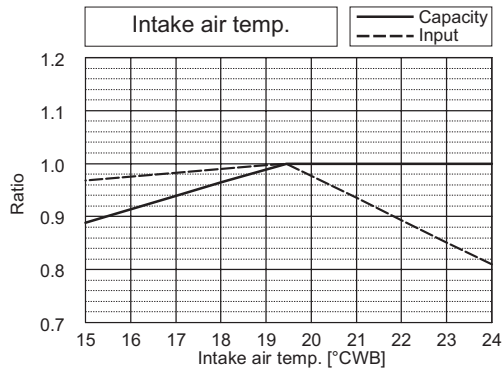
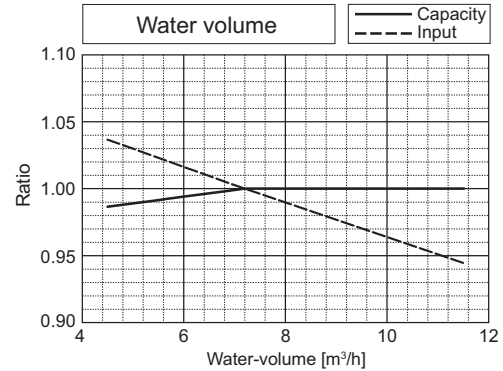
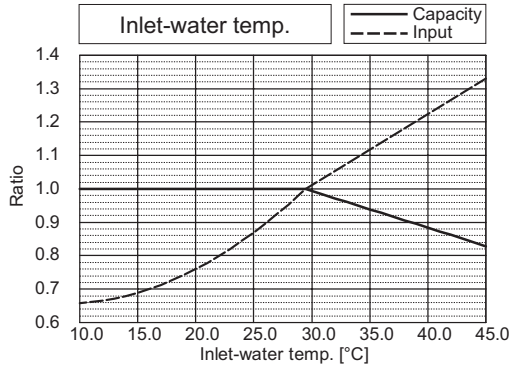


PQRY-			P120TLMU/YLMU		
Nominal Heating Capacity	kW	39.6	Rated Heating Capacity	kW	37.8
	BTU/h	135,000		BTU/h	129,000
Input	kW	6.83	Input	kW	(Non-Ducted) 6.29 (Ducted) 5.92

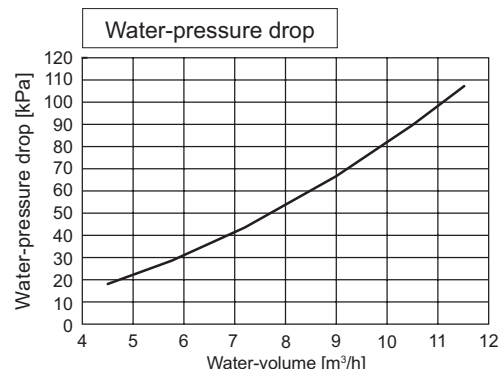
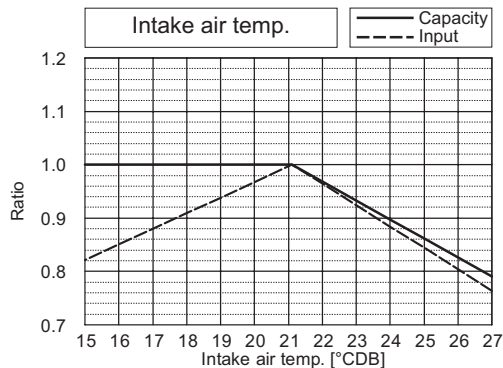
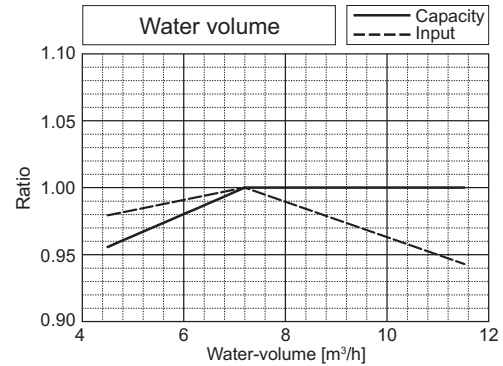
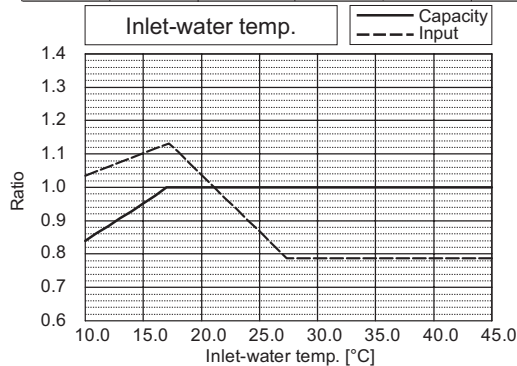


8. CAPACITY TABLES

PQRY-			P144TLMU/YLMU		
Nominal Cooling Capacity	kW	42.2	Rated Cooling Capacity	kW	40.2
	BTU/h	144,000		BTU/h	137,000
Input	kW	8.78	Input	kW	(Non-Ducted) 8.07 (Ducted) 9.98

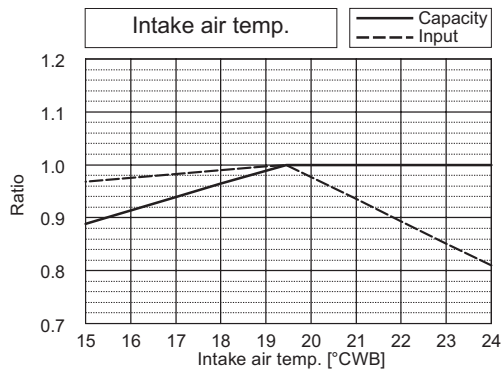
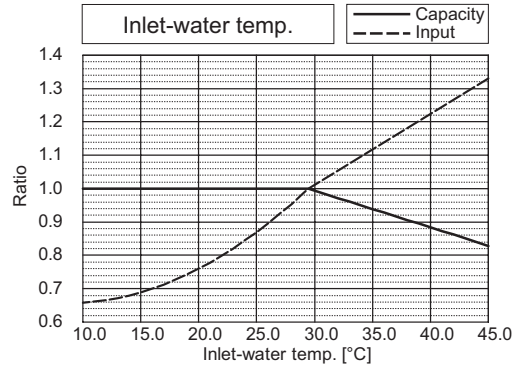


PQRY-			P144TLMU/YLMU		
Nominal Heating Capacity	kW	46.9	Rated Heating Capacity	kW	44.5
	BTU/h	160,000		BTU/h	152,000
Input	kW	8.11	Input	kW	(Non-Ducted) 7.47 (Ducted) 7.90

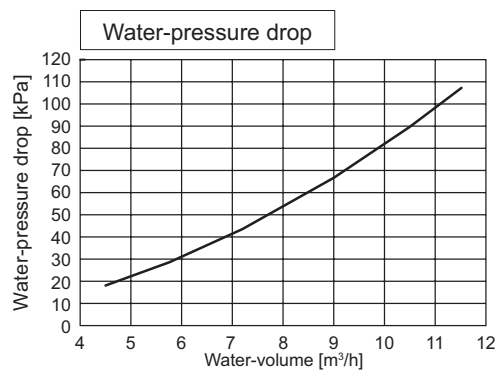
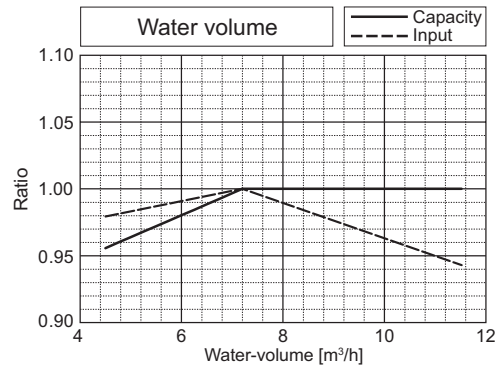
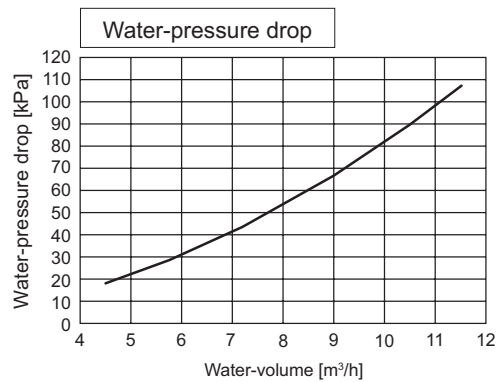
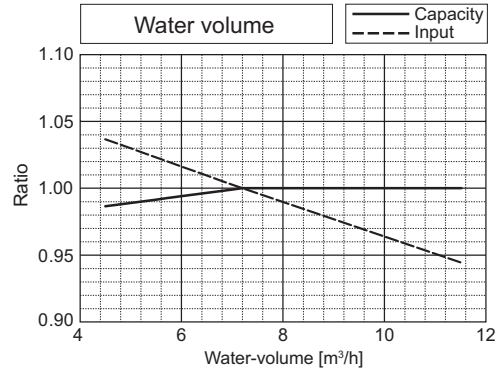
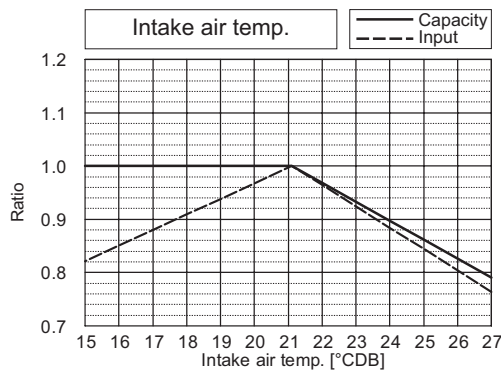
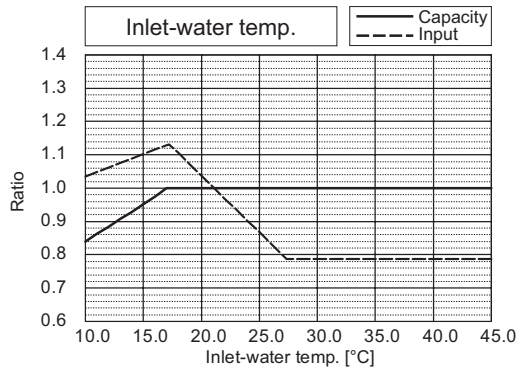


8. CAPACITY TABLES

PQRY-			P168TLMU/YLMU		
Nominal Cooling Capacity	kW	49.2	Rated Cooling Capacity	kW	47.2
	BTU/h	168,000		BTU/h	161,000
Input	kW	12.05	Input	kW	(Non-Ducted) 11.10 (Ducted) 11.88

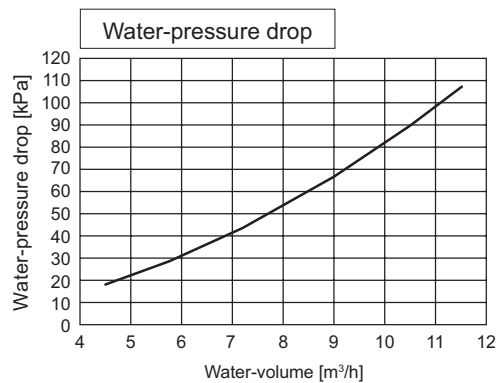
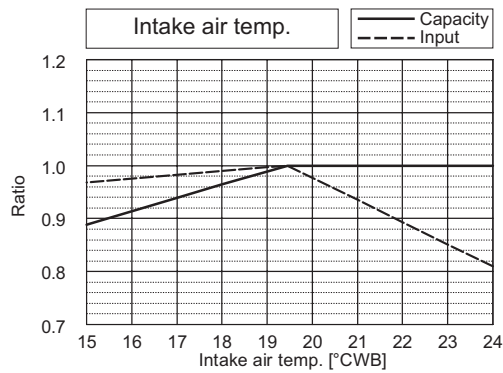
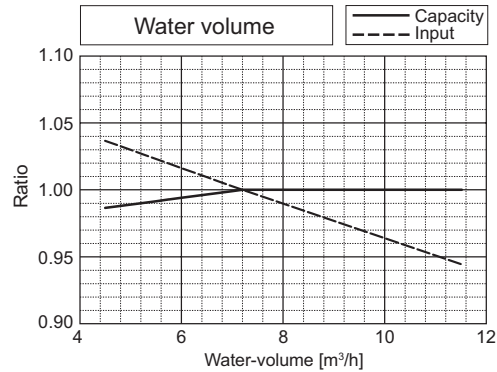
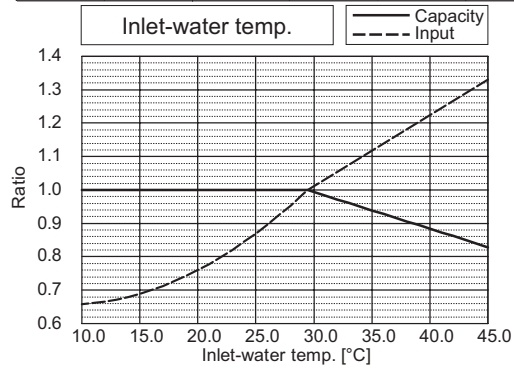


PQRY-			P168TLMU/YLMU		
Nominal Heating Capacity	kW	55.1	Rated Heating Capacity	kW	52.5
	BTU/h	188,000		BTU/h	179,000
Input	kW	9.86	Input	kW	(Non-Ducted) 9.09 (Ducted) 9.72

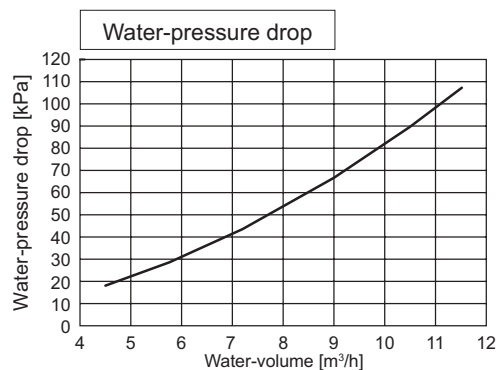
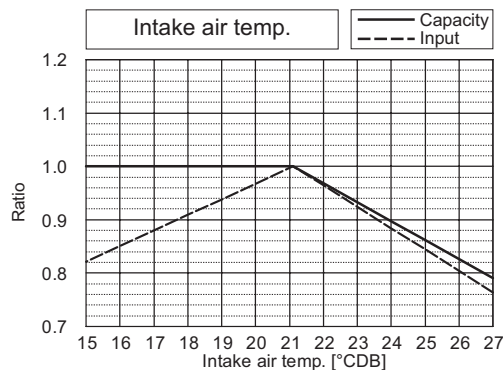
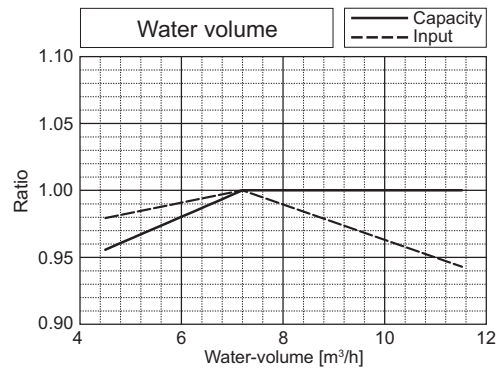
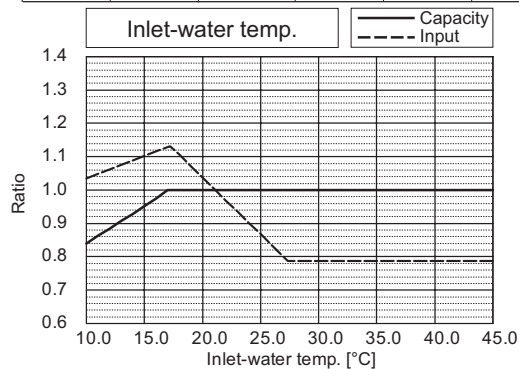


8. CAPACITY TABLES

PQRY-			P192TLMU/YLMU		
Nominal Cooling Capacity	kW	56.3	Rated Cooling Capacity	kW	53.6
	BTU/h	192,000		BTU/h	183,000
Input	kW	15.05	Input	kW	(Non-Ducted) 13.87 (Ducted) 14.19

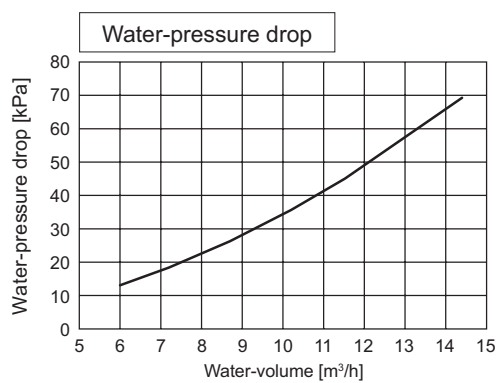
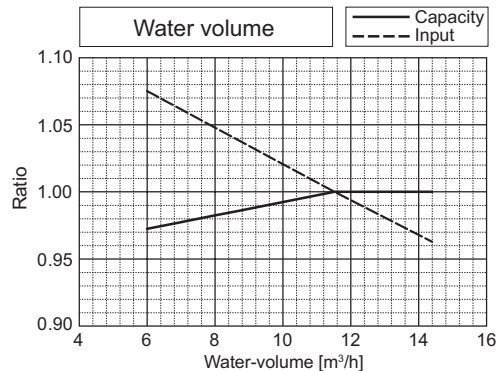
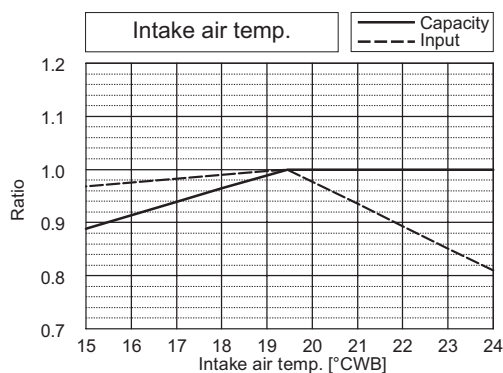
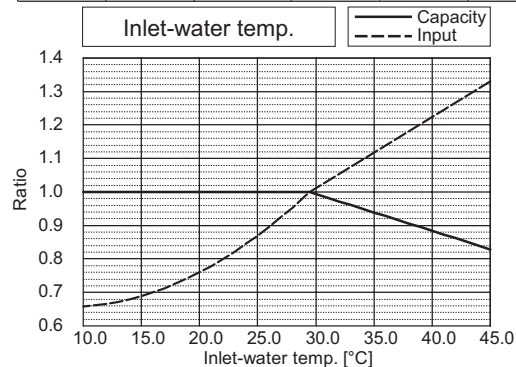


PQRY-			P192TLMU/YLMU		
Nominal Heating Capacity	kW	63.0	Rated Heating Capacity	kW	60.1
	BTU/h	215,000		BTU/h	205,000
Input	kW	11.90	Input	kW	(Non-Ducted) 10.97 (Ducted) 11.56

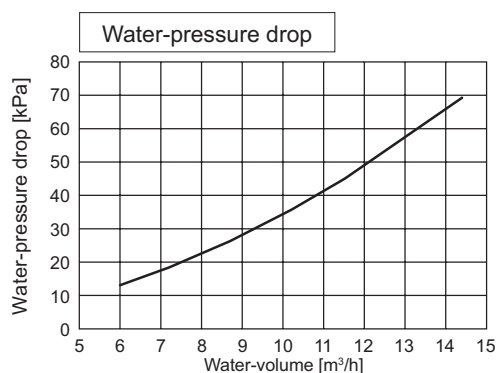
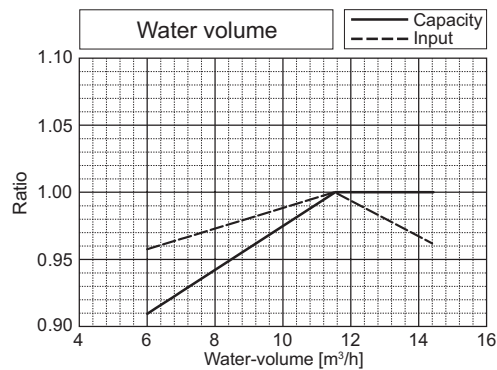
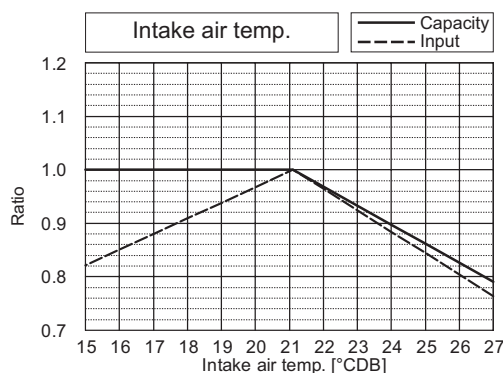
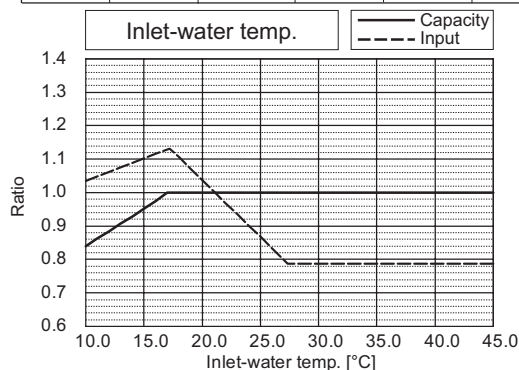


8. CAPACITY TABLES

PQRY-			P216TLMU/YLMU		
Nominal Cooling Capacity	kW	63.3	Rated Cooling Capacity	kW	60.4
	BTU/h	216,000		BTU/h	206,000
Input	kW	19.23	Input	kW	(Non-Ducted) 17.72 (Ducted) 16.10

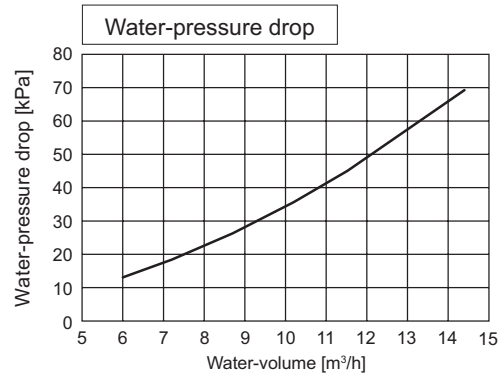
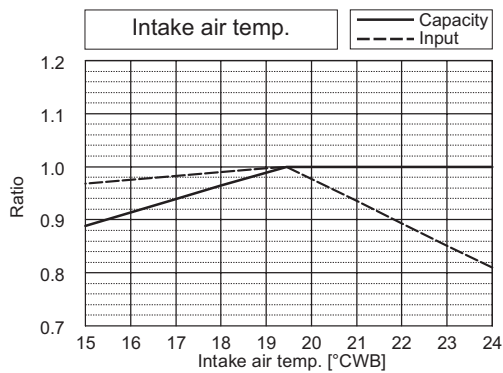
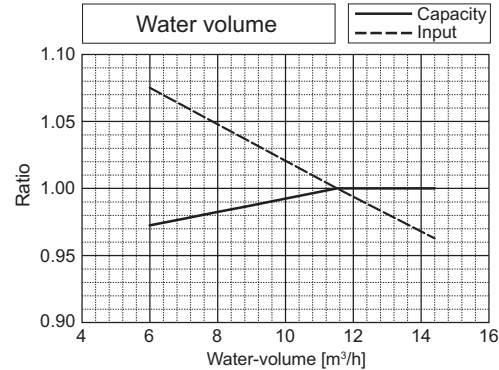
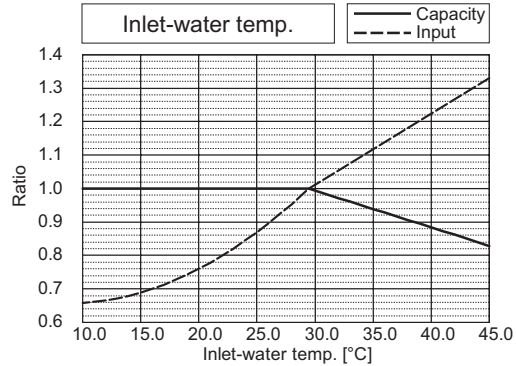


PQRY-			P216TLMU/YLMU		
Nominal Heating Capacity	kW	71.2	Rated Heating Capacity	kW	68.0
	BTU/h	243,000		BTU/h	232,000
Input	kW	13.04	Input	kW	(Non-Ducted) 12.01 (Ducted) 12.34

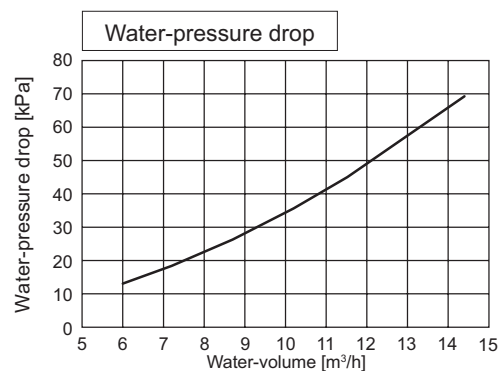
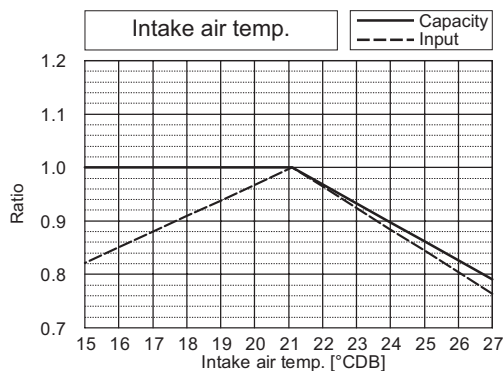
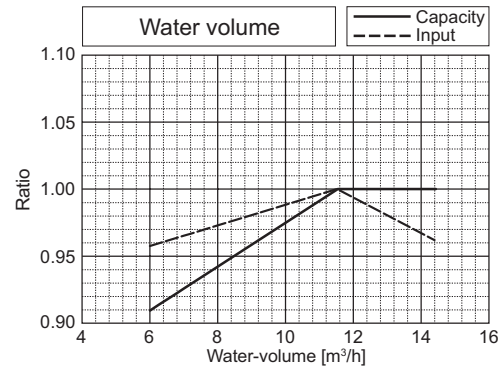
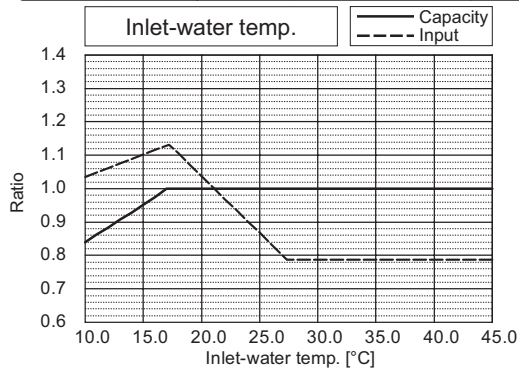


8. CAPACITY TABLES

PQRY-			P240TLMU/YLMU		
Nominal Cooling Capacity	kW	70.3	Rated Cooling Capacity	kW	66.8
	BTU/h	240,000		BTU/h	228,000
Input	kW	21.14	Input	kW	(Non-Ducted) 19.49 (Ducted) 18.74

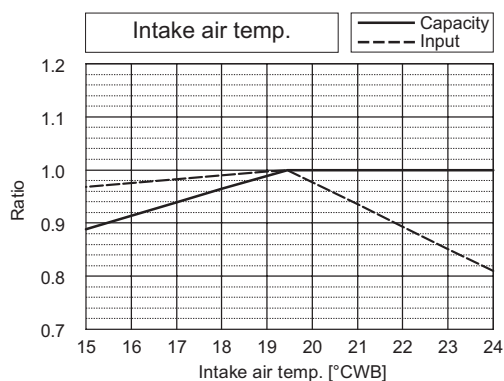
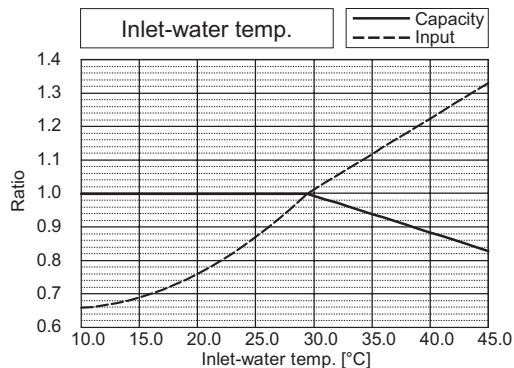


PQRY-			P240TLMU/YLMU		
Nominal Heating Capacity	kW	79.1	Rated Heating Capacity	kW	75.6
	BTU/h	270,000		BTU/h	258,000
Input	kW	15.12	Input	kW	(Non-Ducted) 13.93 (Ducted) 14.62

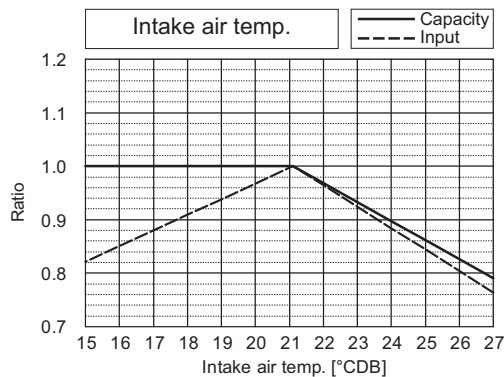
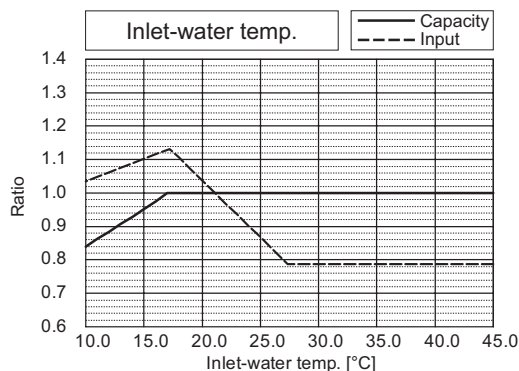


8. CAPACITY TABLES

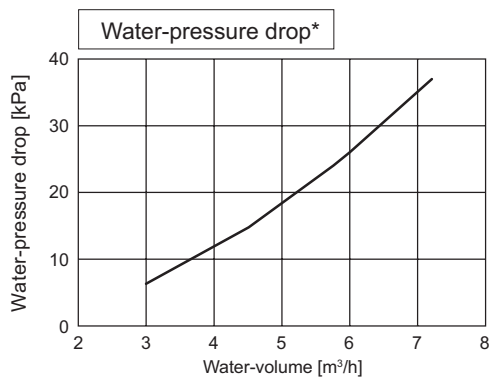
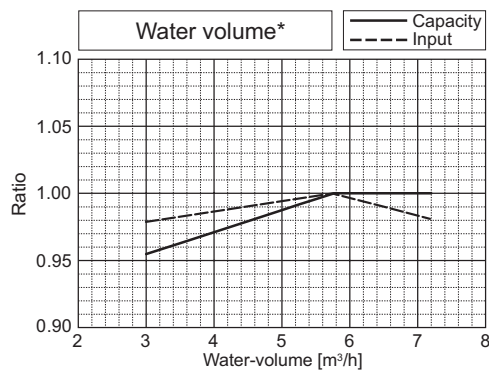
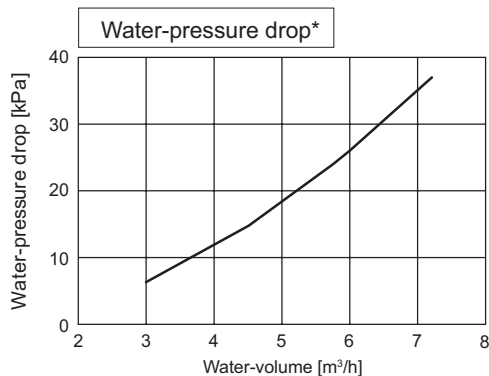
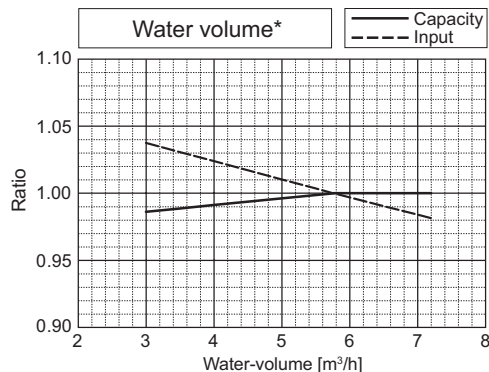
PQRY-			P144TSLMU/YSLMU		
Nominal Cooling Capacity	kW	42.2	Rated Cooling Capacity	kW	40.2
	BTU/h	144,000		BTU/h	137,000
Input	kW	7.11	Input	kW	(Non-Ducted) 6.53 (Ducted) 7.72



PQRY-			P144TSLMU/YSLMU		
Nominal Heating Capacity	kW	46.9	Rated Heating Capacity	kW	44.5
	BTU/h	160,000		BTU/h	152,000
Input	kW	7.45	Input	kW	(Non-Ducted) 6.86 (Ducted) 7.22

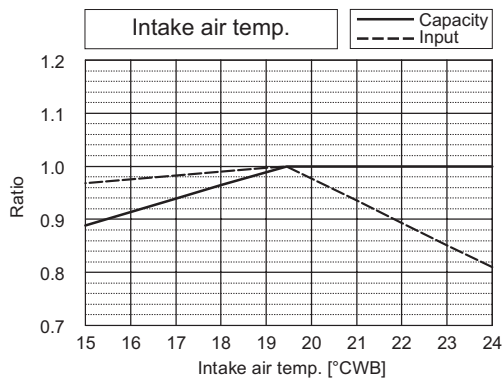
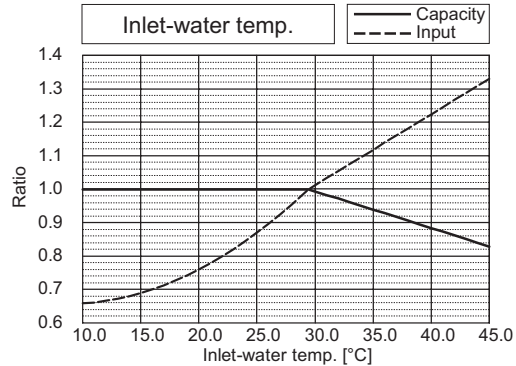


*The drawing indicates characteristic per unit.

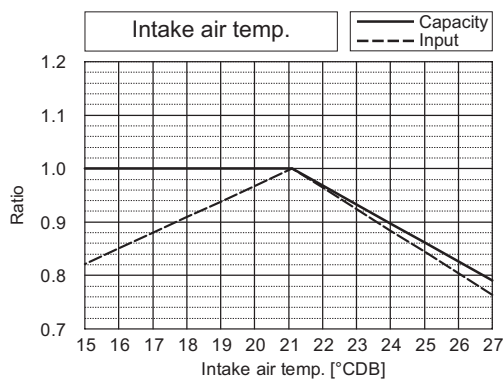
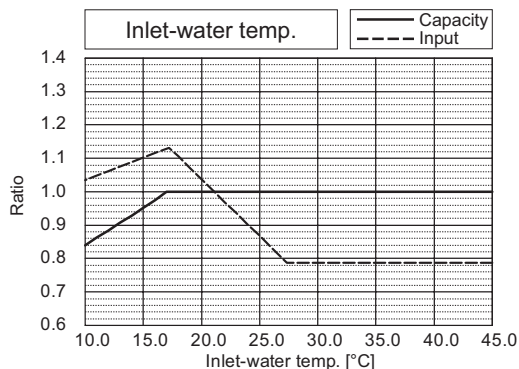


8. CAPACITY TABLES

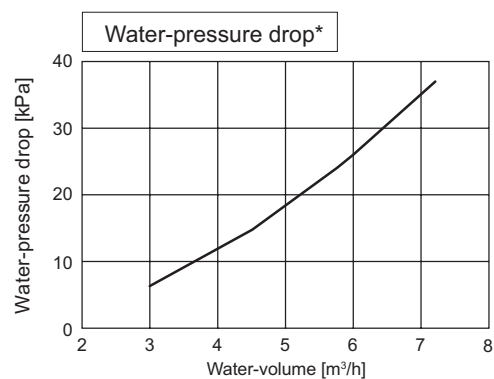
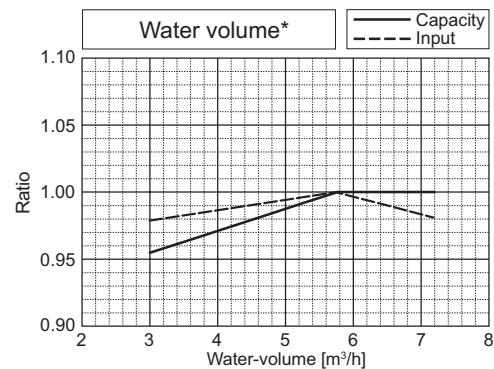
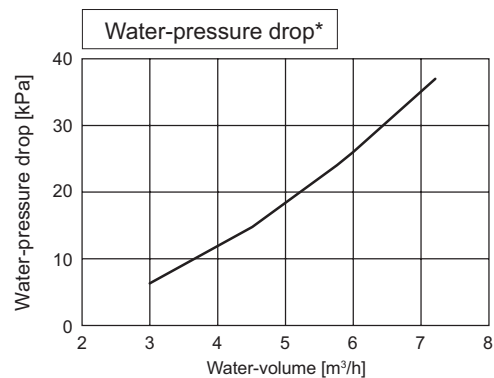
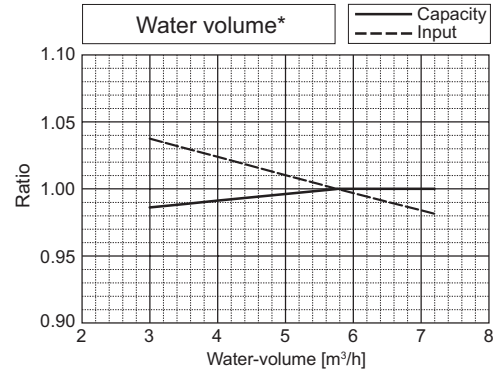
PQRY-			P168TSLMU/YSLMU		
Nominal Cooling Capacity	kW	49.2	Rated Cooling Capacity	kW	47.2
	BTU/h	168,000		BTU/h	161,000
Input	kW	9.33	Input	kW	(Non-Ducted) 8.58 (Ducted) 9.22



PQRY-			P168TSLMU/YSLMU		
Nominal Heating Capacity	kW	55.1	Rated Heating Capacity	kW	52.5
	BTU/h	188,000		BTU/h	179,000
Input	kW	9.34	Input	kW	(Non-Ducted) 8.60 (Ducted) 8.03

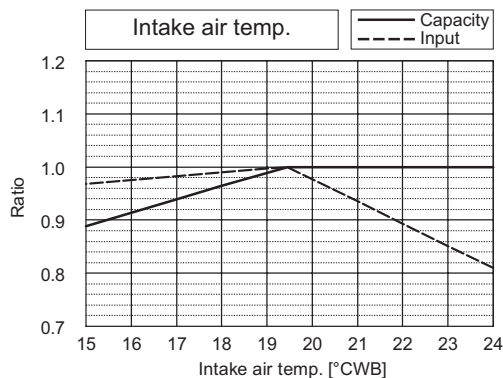
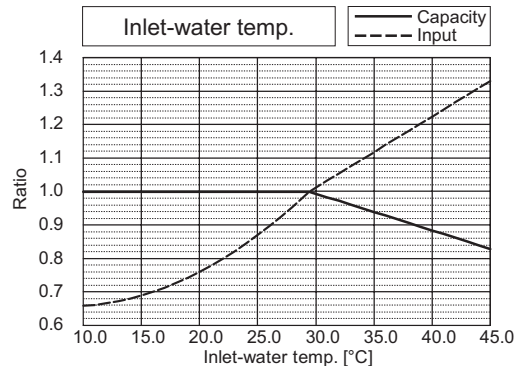


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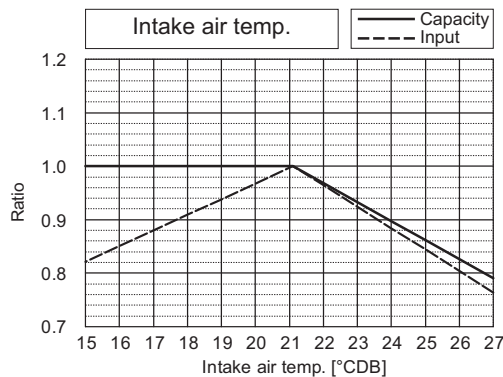
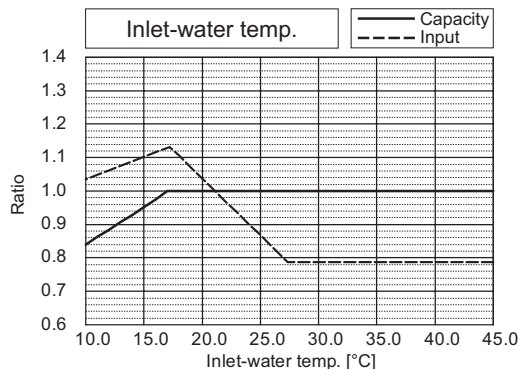


8. CAPACITY TABLES

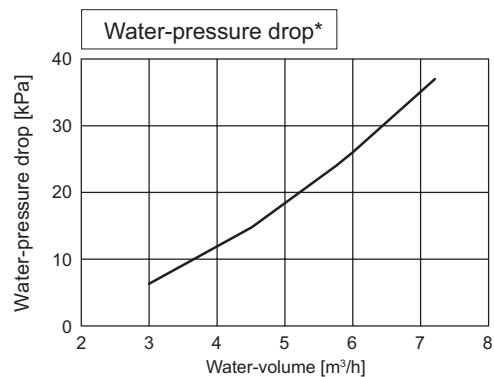
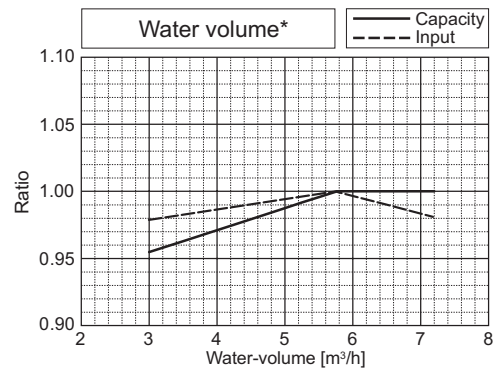
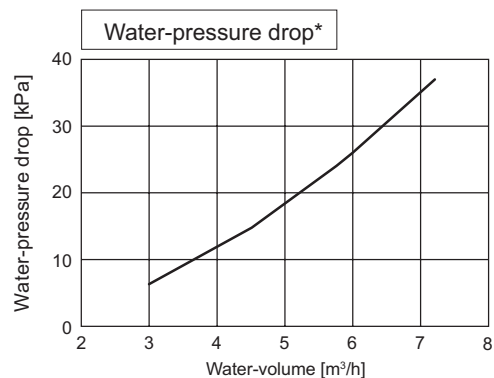
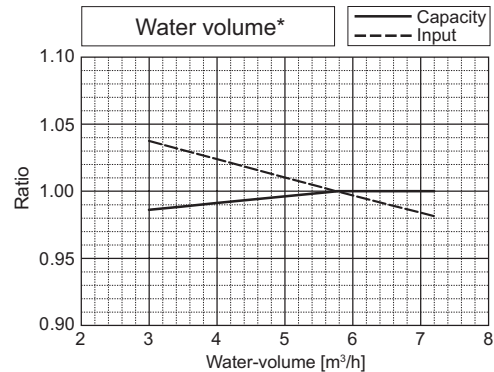
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Nominal Cooling Capacity	kW	56.3	Rated Cooling Capacity	kW	53.6
	BTU/h	192,000		BTU/h	183,000
Input	kW	11.30	Input	kW	(Non-Ducted) 10.40 (Ducted) 10.98



PQRY-			P192TSLMU/YSLMU		
Nominal Heating Capacity	kW	63.0	Rated Heating Capacity	kW	60.1
	BTU/h	215,000		BTU/h	205,000
Input	kW	11.02	Input	kW	(Non-Ducted) 10.16 (Ducted) 8.90

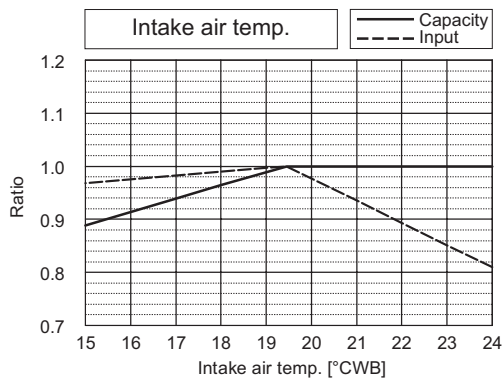
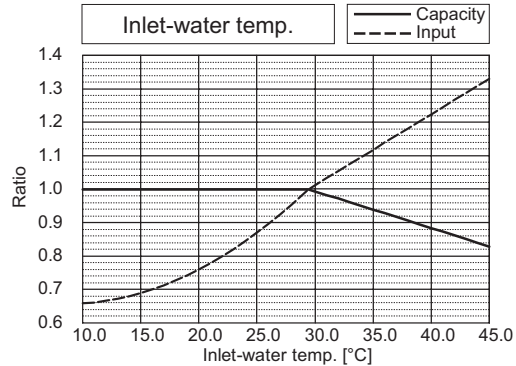


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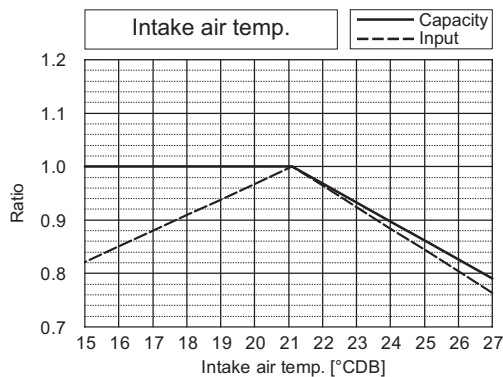
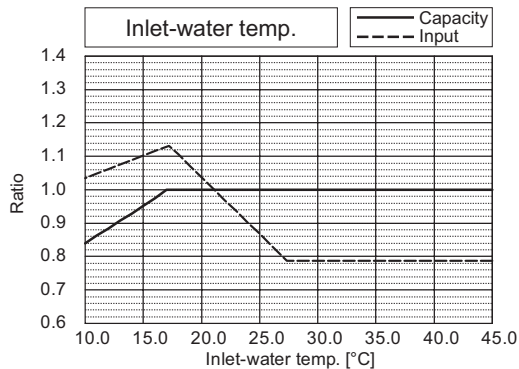


8. CAPACITY TABLES

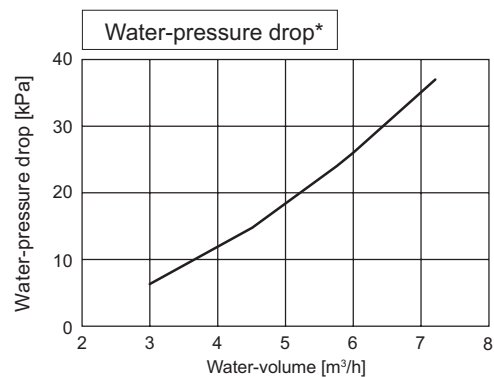
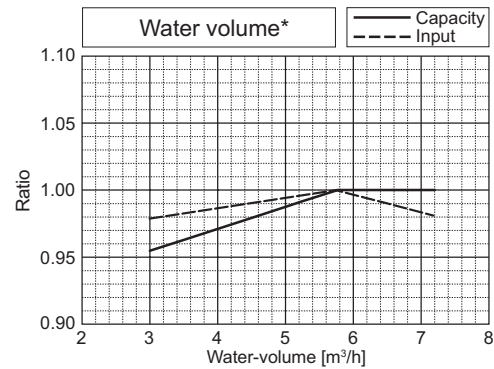
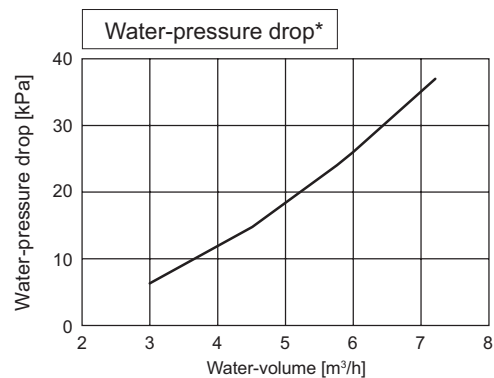
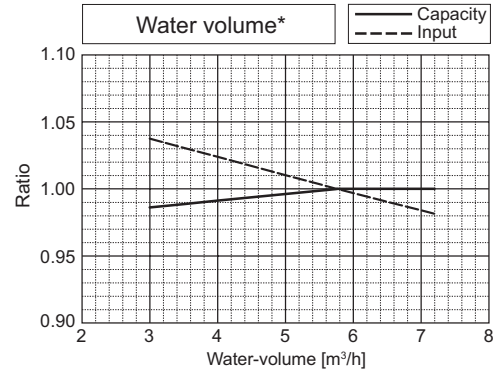
PQRY-			P216TSLMU/YSLMU		
Nominal Cooling Capacity	kW	63.3	Rated Cooling Capacity	kW	60.4
	BTU/h	216,000		BTU/h	206,000
Input	kW	14.03	Input	kW	(Non-Ducted) 12.93 (Ducted) 13.24



PQRY-			P216TSLMU/YSLMU		
Nominal Heating Capacity	kW	71.2	Rated Heating Capacity	kW	68.0
	BTU/h	243,000		BTU/h	232,000
Input	kW	12.88	Input	kW	(Non-Ducted) 11.88 (Ducted) 10.35

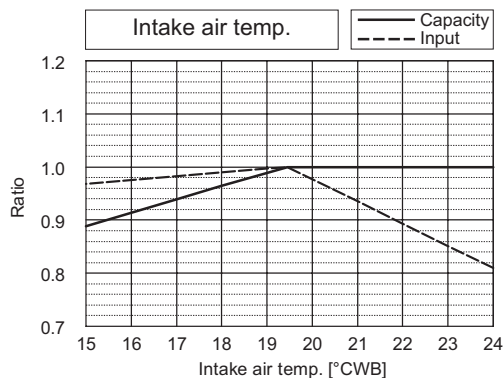
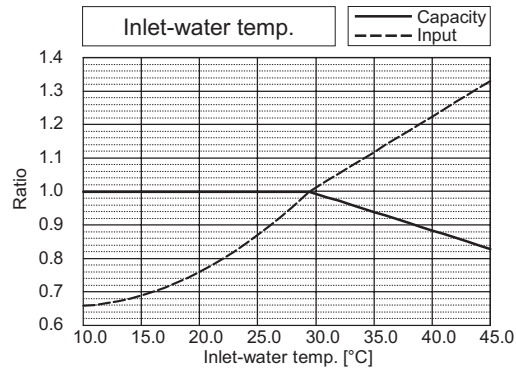


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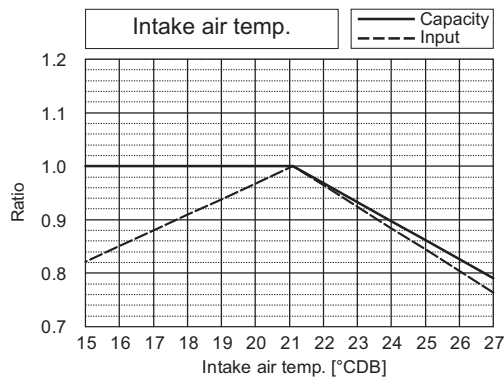
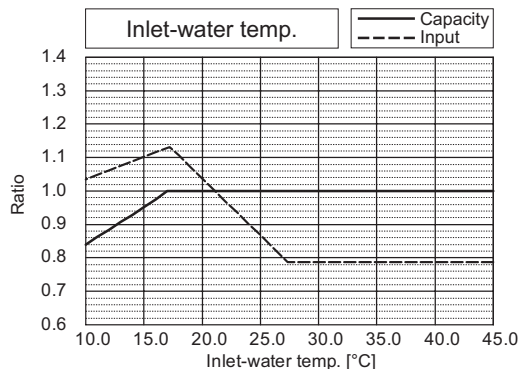


8. CAPACITY TABLES

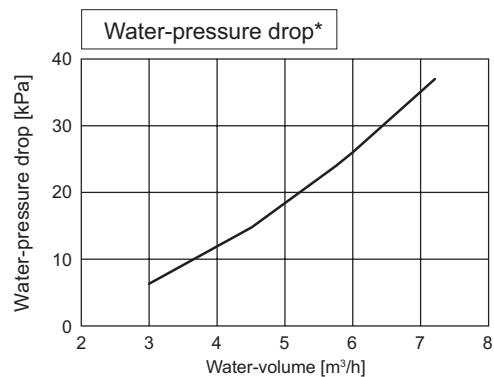
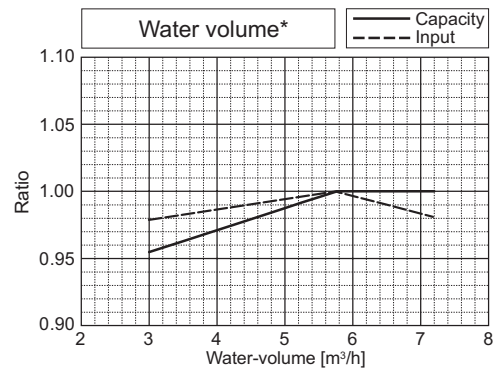
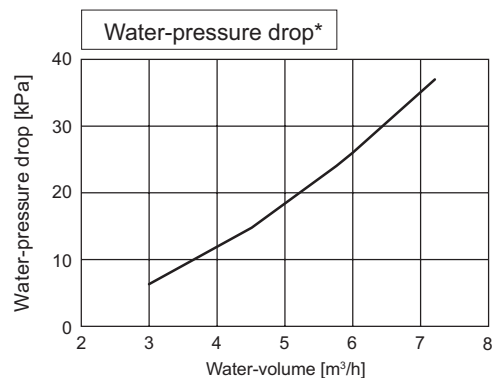
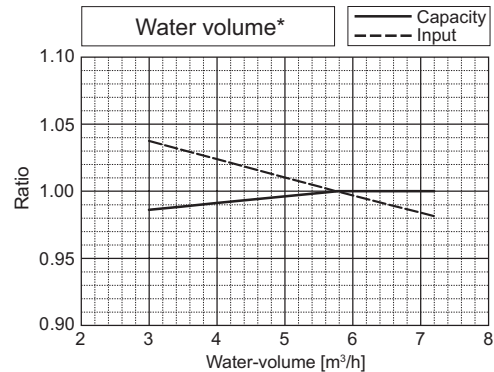
PQRY-			P240TSLMU/YSLMU		
Nominal Cooling Capacity	kW	70.3	Rated Cooling Capacity	kW	66.8
	BTU/h	240,000		BTU/h	228,000
Input	kW	16.89	Input	kW	(Non-Ducted) 15.57 (Ducted) 16.15



PQRY-			P240TSLMU/YSLMU		
Nominal Heating Capacity	kW	79.1	Rated Heating Capacity	kW	75.6
	BTU/h	270,000		BTU/h	258,000
Input	kW	14.58	Input	kW	(Non-Ducted) 13.45 (Ducted) 12.02

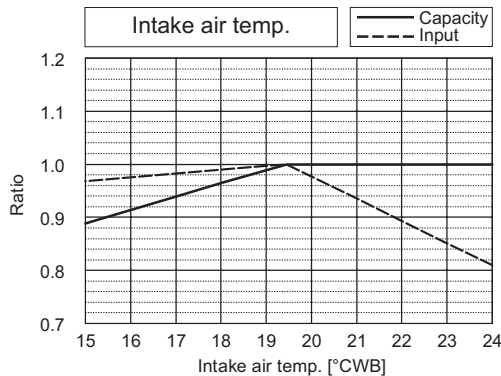
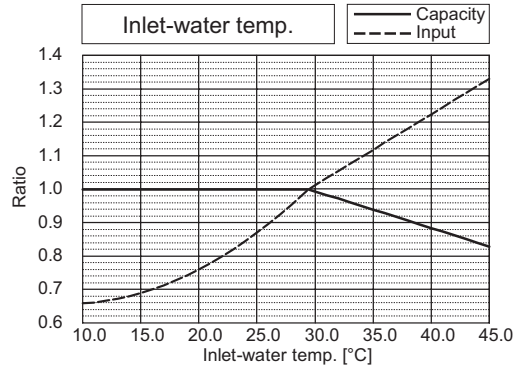


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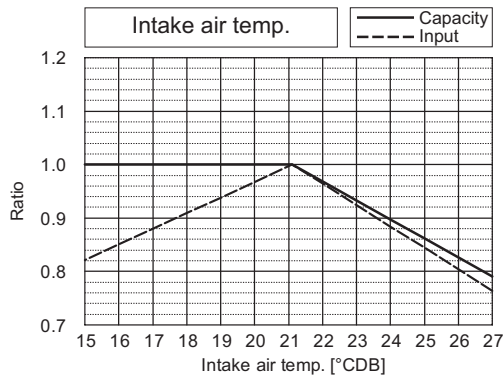
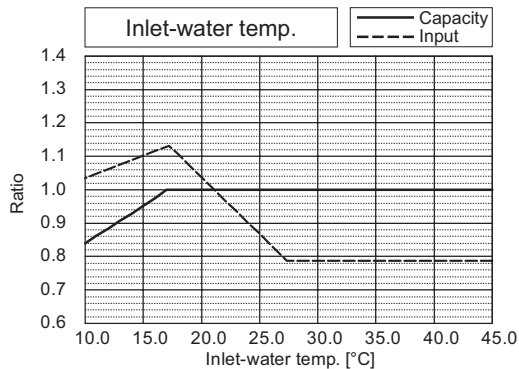


8. CAPACITY TABLES

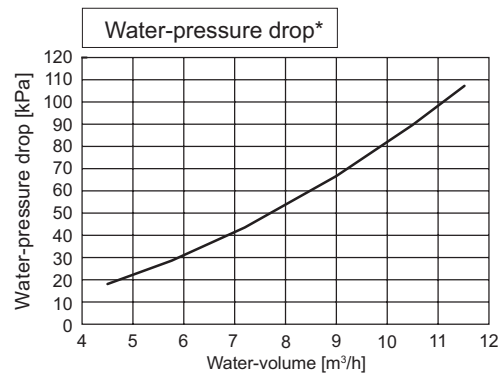
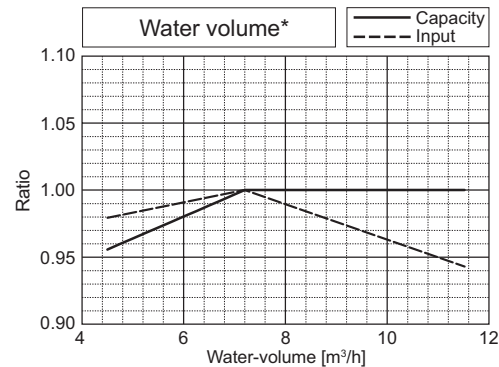
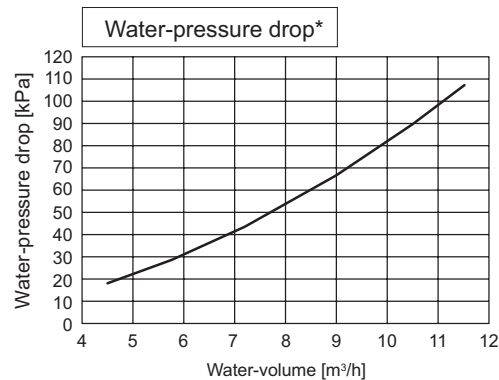
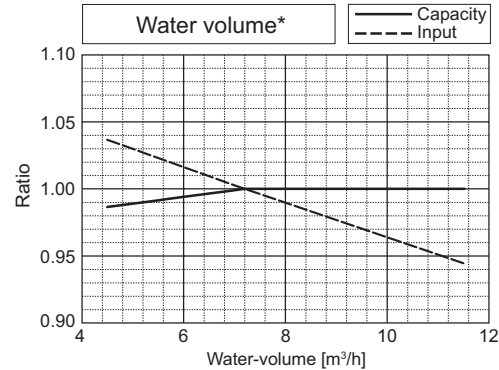
PQRY-		P288TSLMU/YSLMU			
Nominal Cooling Capacity	kW	84.4	Rated Cooling Capacity	kW	80.6
	BTU/h	288,000		BTU/h	275,000
Input	kW	20.42	Input	kW	(Non-Ducted) 18.82 (Ducted) 21.43



PQRY-		P288TSLMU/YSLMU			
Nominal Heating Capacity	kW	94.7	Rated Heating Capacity	kW	90.3
	BTU/h	323,000		BTU/h	308,000
Input	kW	17.50	Input	kW	(Non-Ducted) 16.13 (Ducted) 16.05

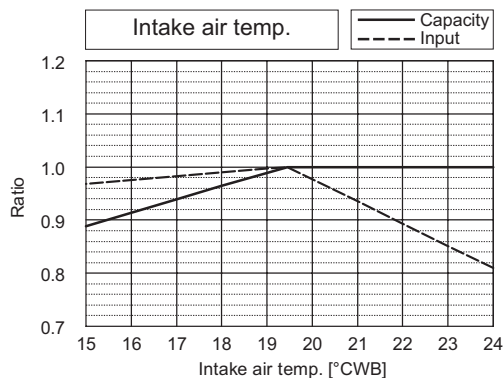
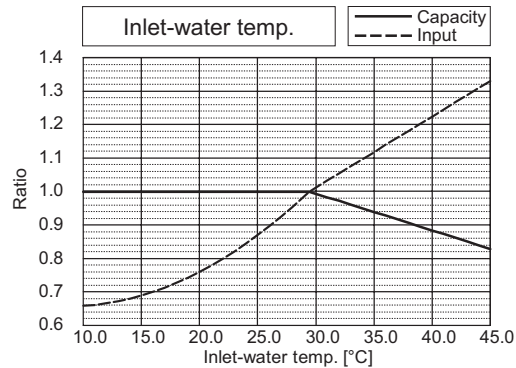


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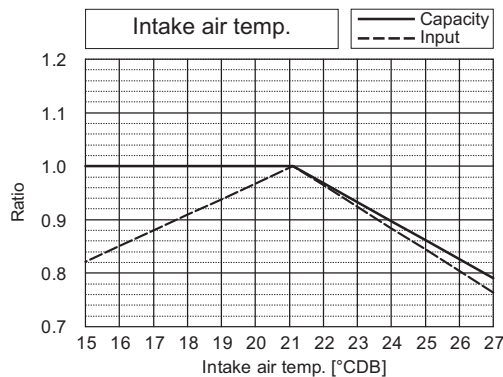
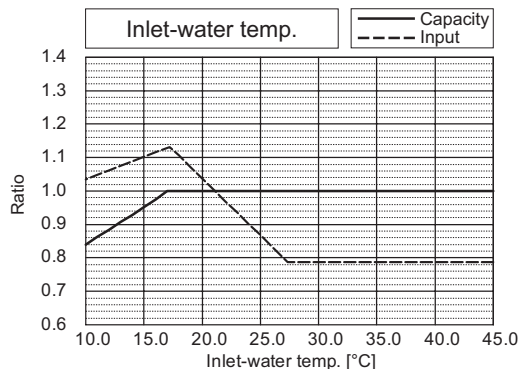


8. CAPACITY TABLES

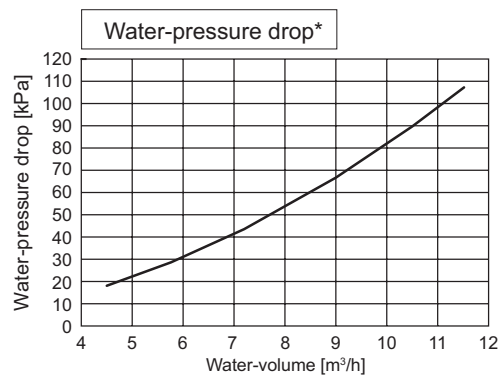
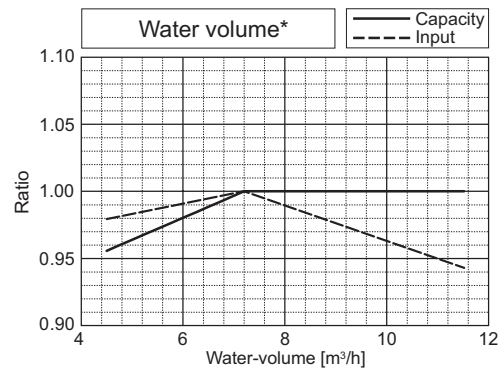
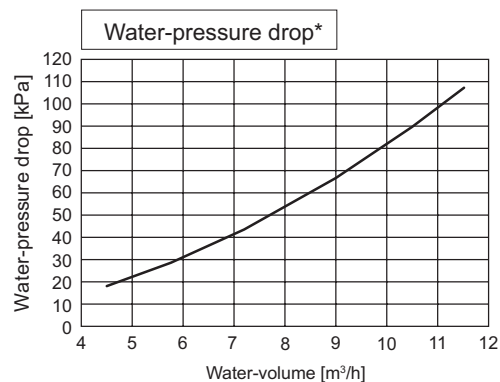
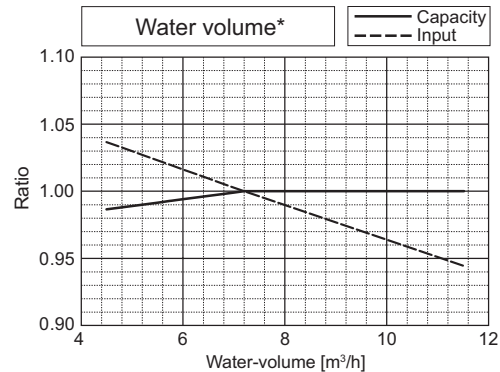
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Nominal Cooling Capacity	kW	91.4	Rated Cooling Capacity	kW	87.0
	BTU/h	312,000		BTU/h	297,000
Input	kW	23.41	Input	kW	(Non-Ducted) 21.59 (Ducted) 23.67



PQRY-			P312TSLMU/YSLMU		
Nominal Heating Capacity	kW	102.6	Rated Heating Capacity	kW	97.9
	BTU/h	350,000		BTU/h	334,000
Input	kW	19.11	Input	kW	(Non-Ducted) 17.62 (Ducted) 17.96



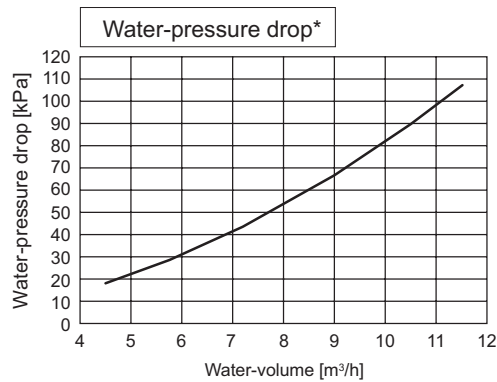
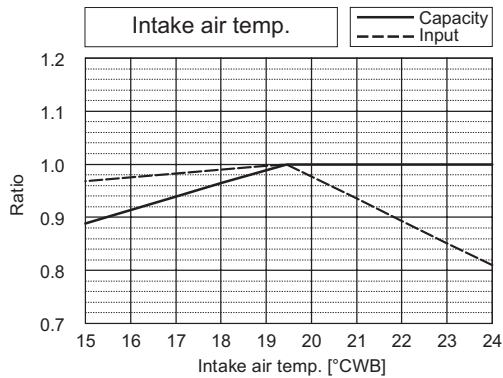
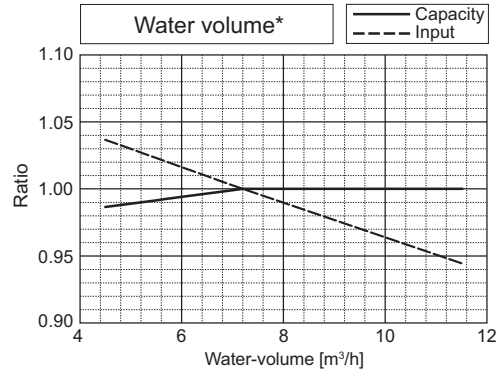
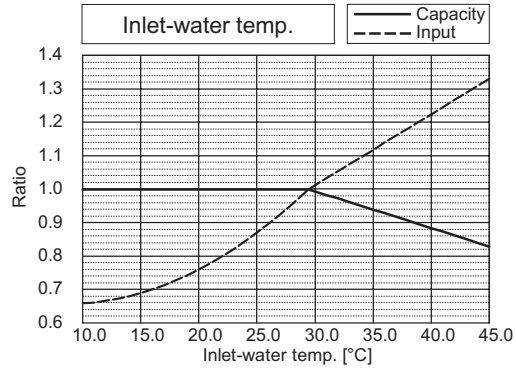
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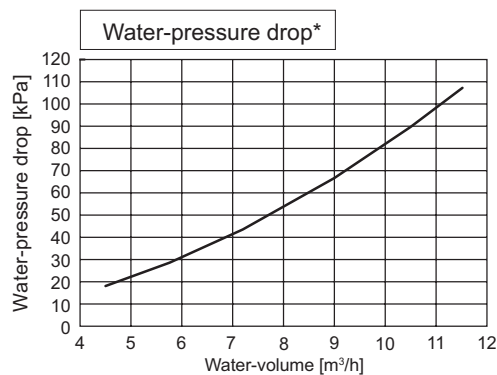
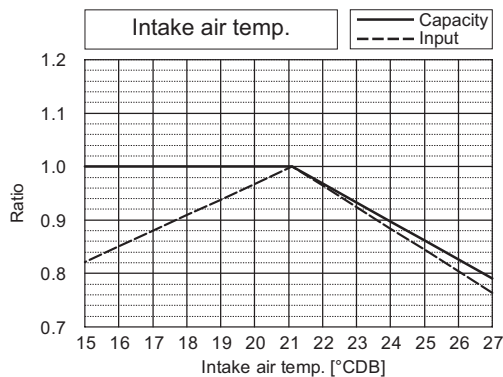
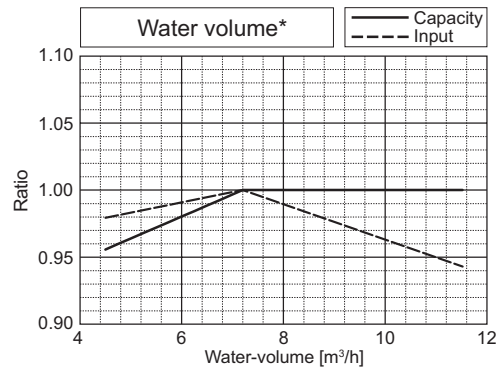
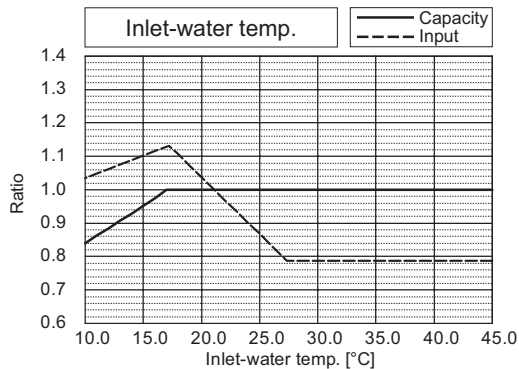
8. CAPACITY TABLES

*The drawing indicates characteristic per unit.

PQRY-		P336TSLMU/YSLMU			
Nominal Cooling Capacity	kW	98.5	Rated Cooling Capacity	kW	93.8
	BTU/h	336,000		BTU/h	320,000
Input	kW	26.84	Input	kW	(Non-Ducted) 24.76 (Ducted) 25.85



PQRY-		P336TSLMU/YSLMU			
Nominal Heating Capacity	kW	110.8	Rated Heating Capacity	kW	105.8
	BTU/h	378,000		BTU/h	361,000
Input	kW	20.77	Input	kW	(Non-Ducted) 19.16 (Ducted) 20.05

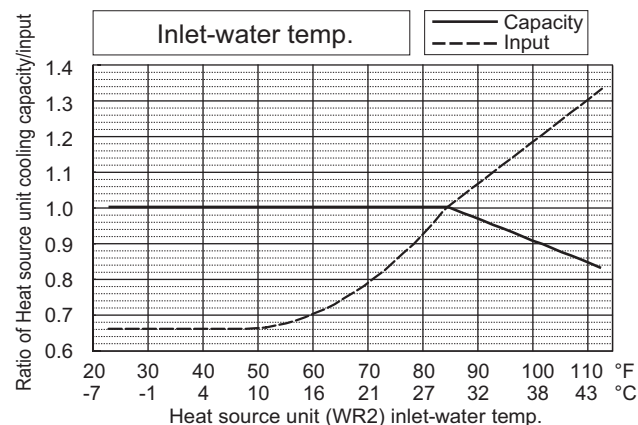


8. CAPACITY TABLES

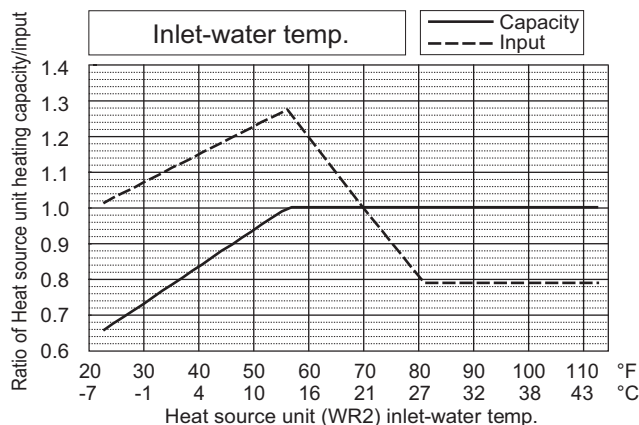
8-3. Water temperature correction factors (Geothermal)

8-3-1. Connection with standard CITY MULTI indoor units

Cooling

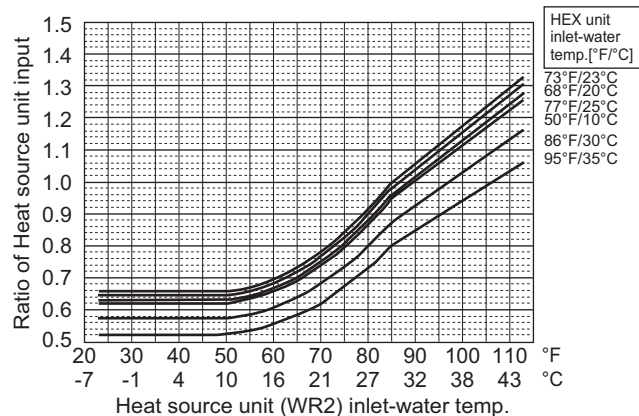
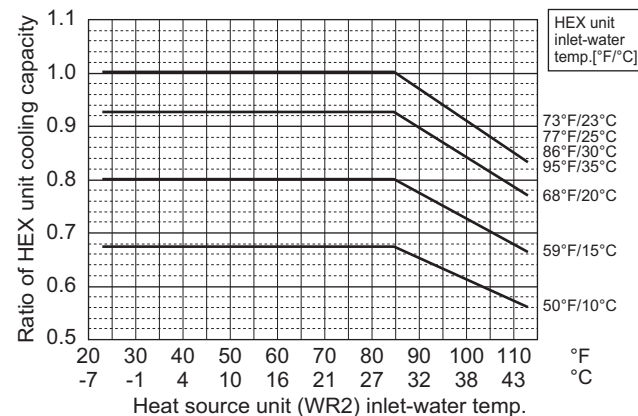


Heating

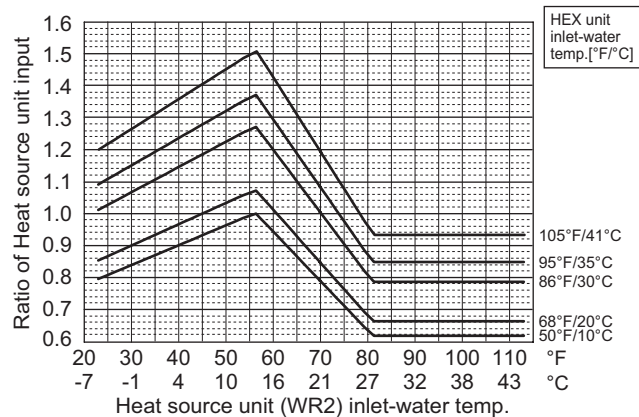
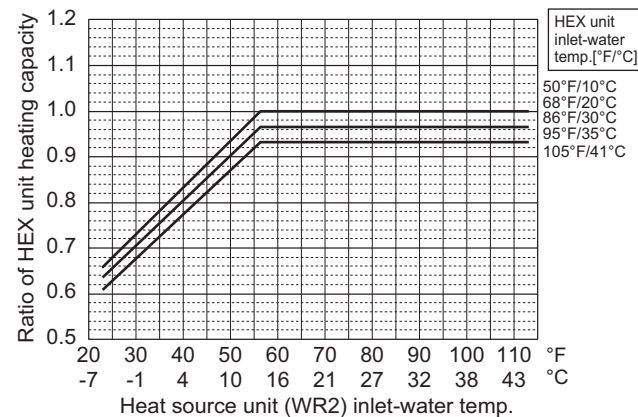


8-3-2. Connection with PWFY-P36/72NMU-E2-AU (HEX unit)

Cooling

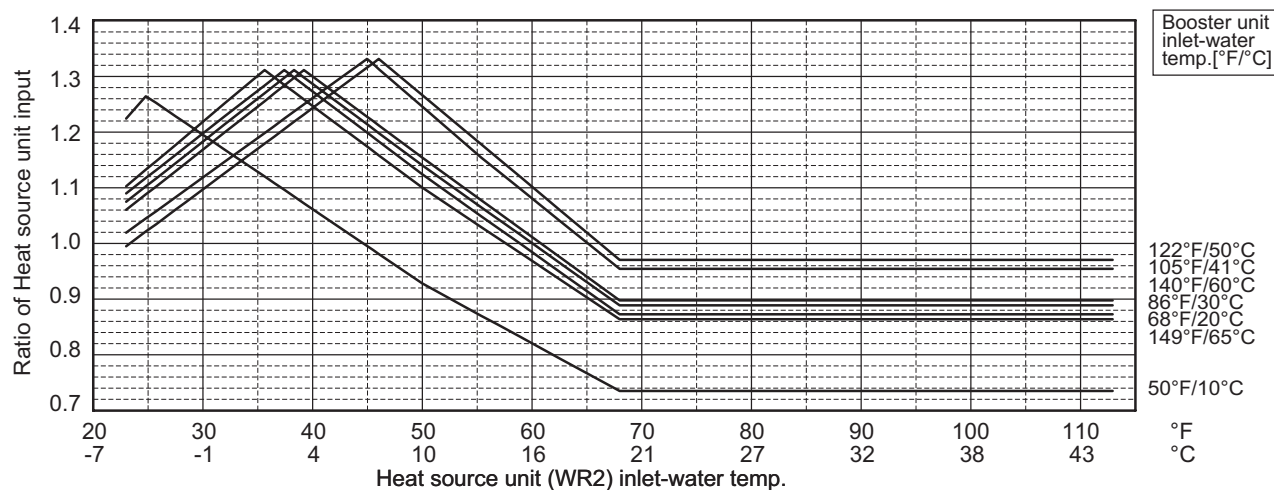
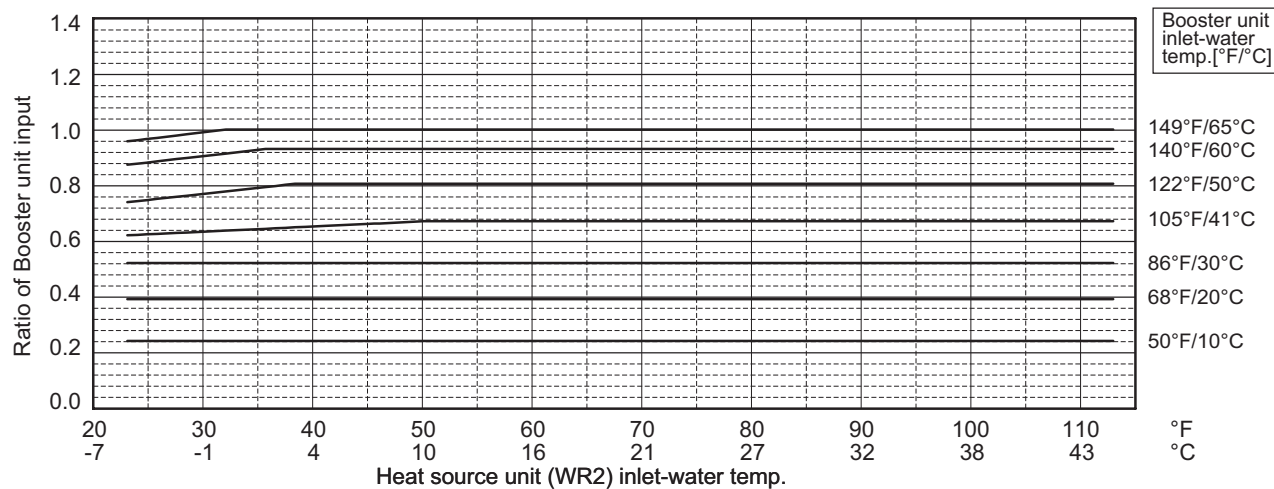
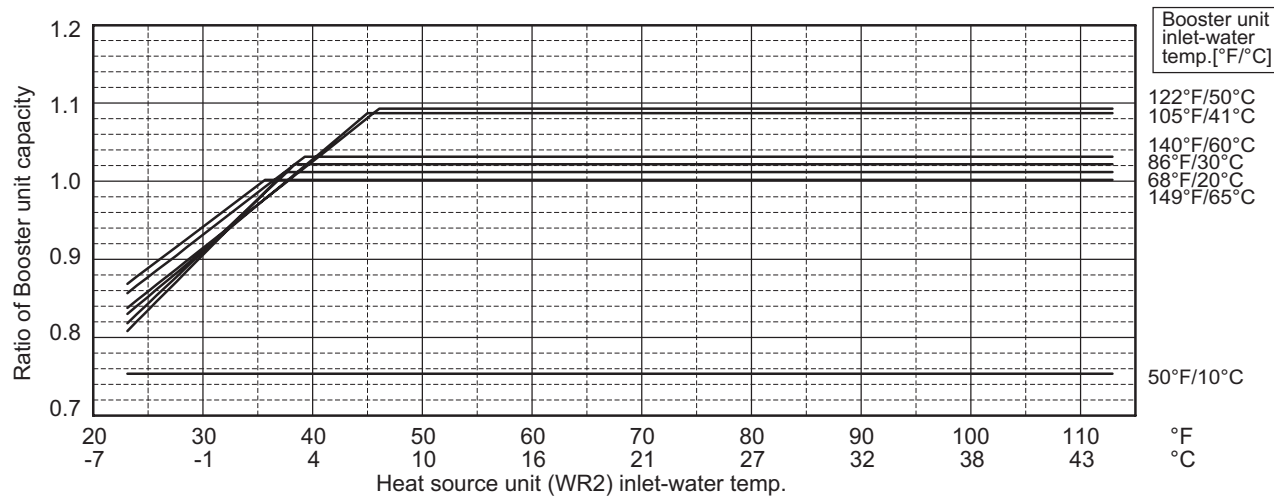


Heating



8. CAPACITY TABLES

8-3-2. Connection with PWFY-P36NMU-E-BU (Booster unit)

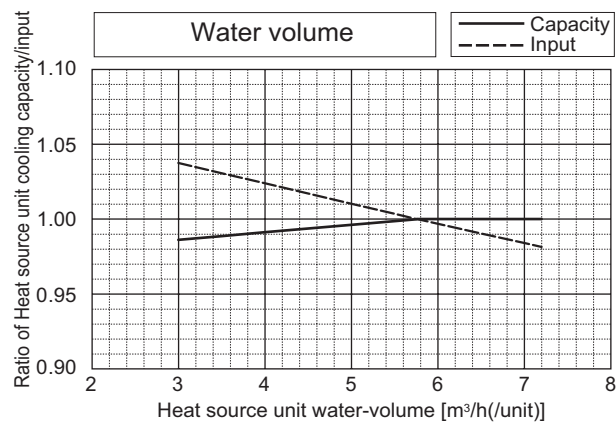


8. CAPACITY TABLES

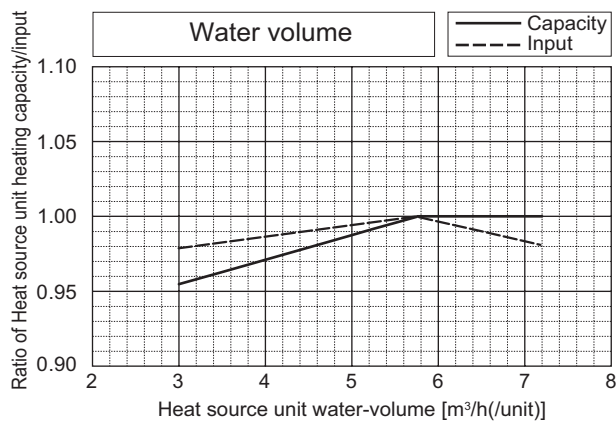
8-4. Water volume correction factors (Geothermal)

PQRY-P72~P120TLMU/YLMU

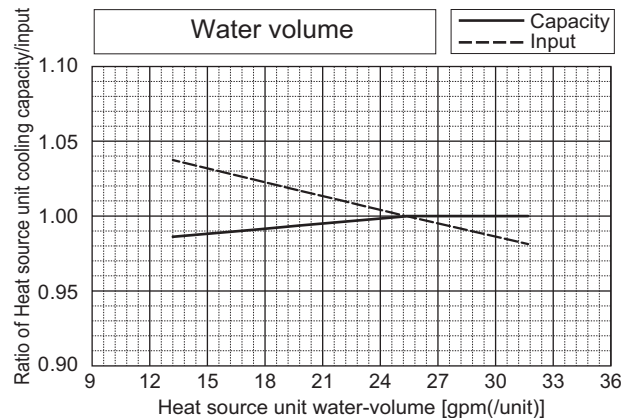
Cooling



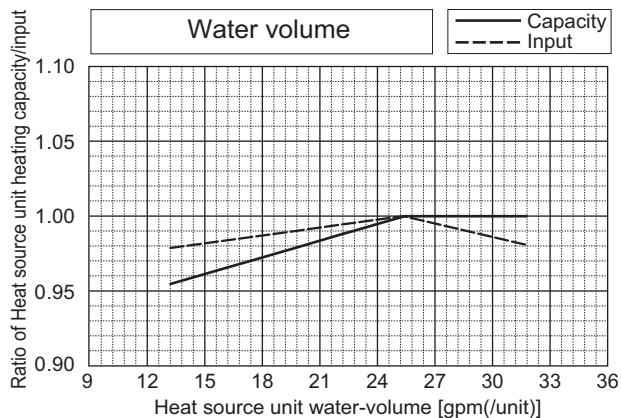
Heating



Cooling



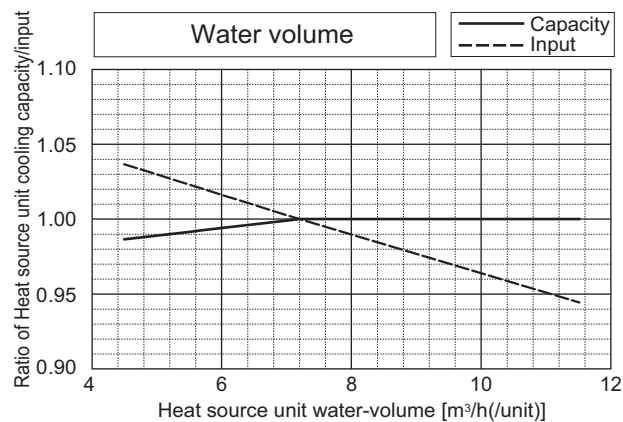
Heating



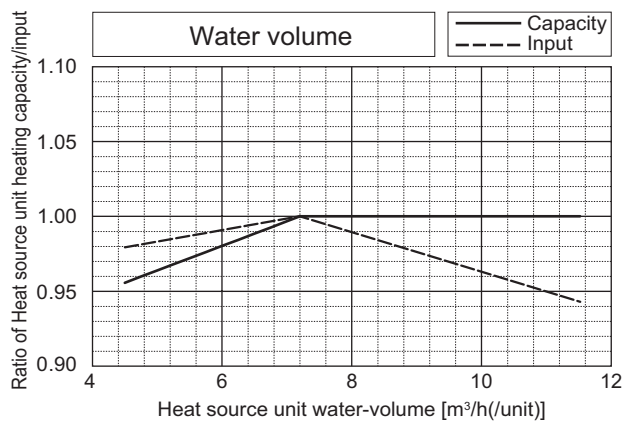
8. CAPACITY TABLES

PQRY-P144~P192TLMU/YLMU

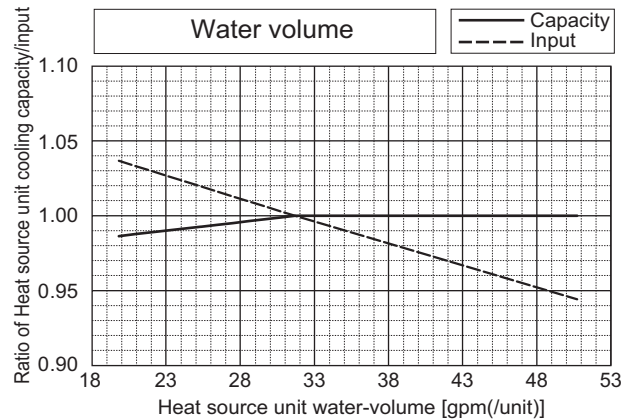
Cooling



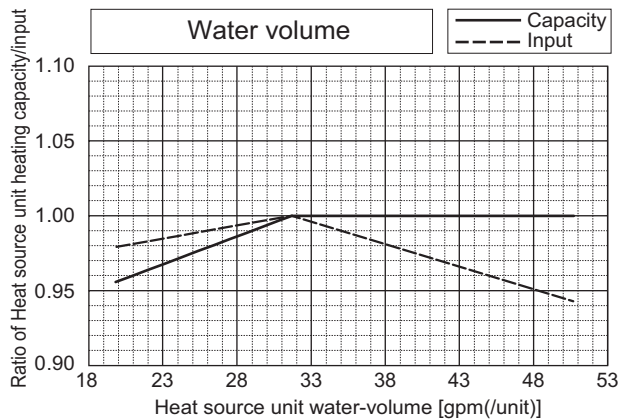
Heating



Cooling



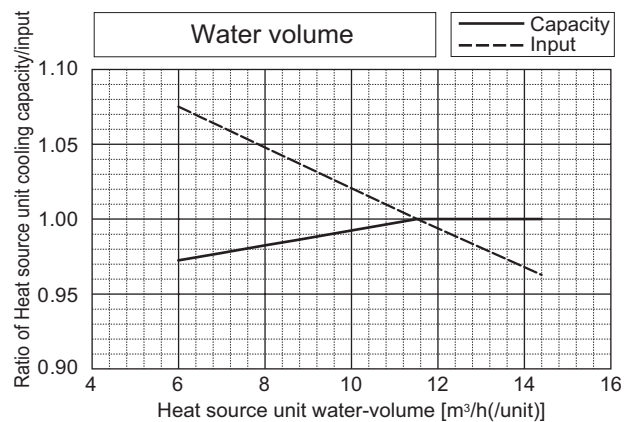
Heating



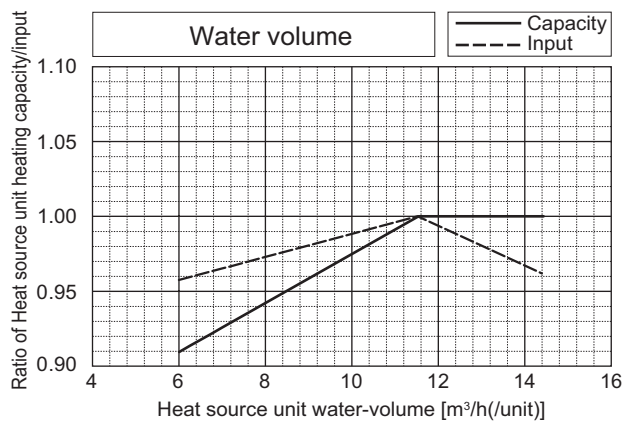
8. CAPACITY TABLES

PQRY-P216~P240TLMU/YLMU

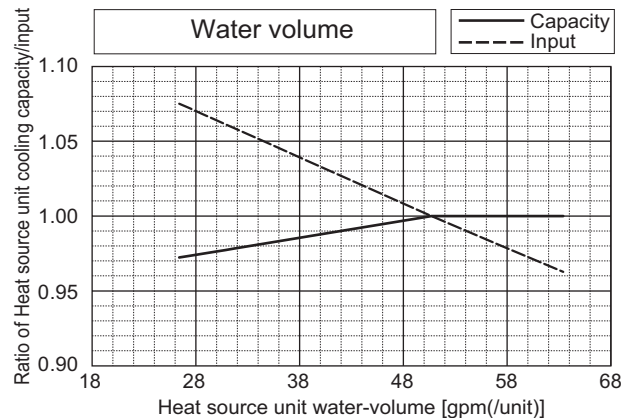
Cooling



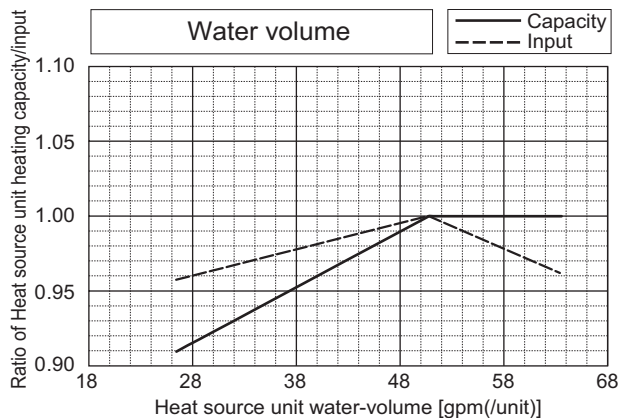
Heating



Cooling



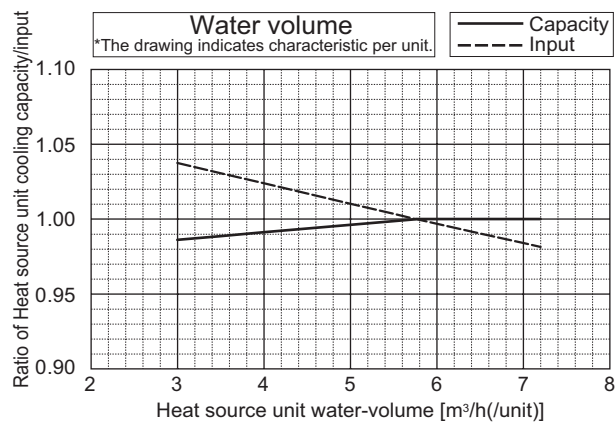
Heating



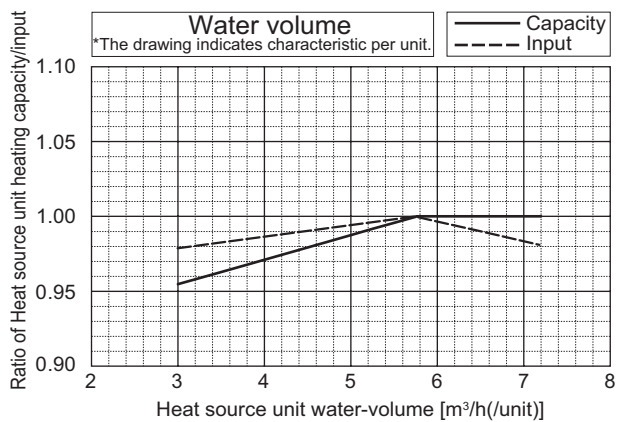
8. CAPACITY TABLES

PQRY-P144~P240TSLMU/YSLMU

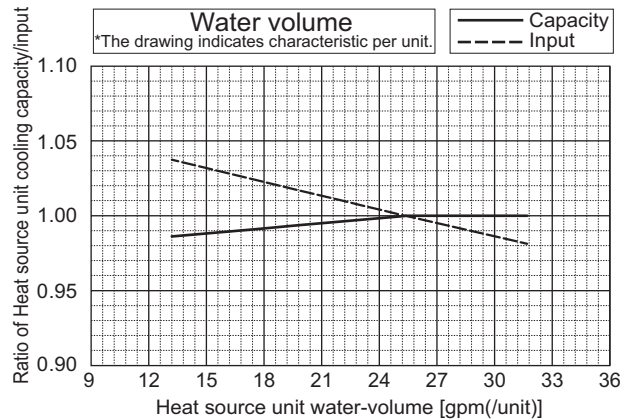
Cooling



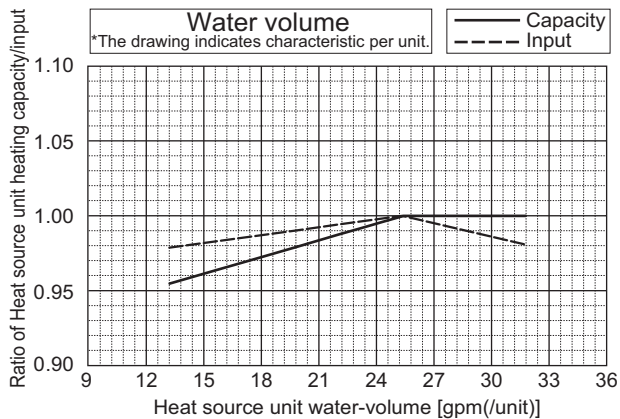
Heating



Cooling



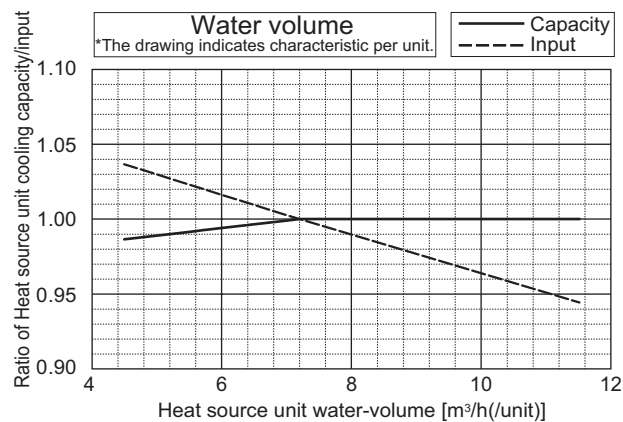
Heating



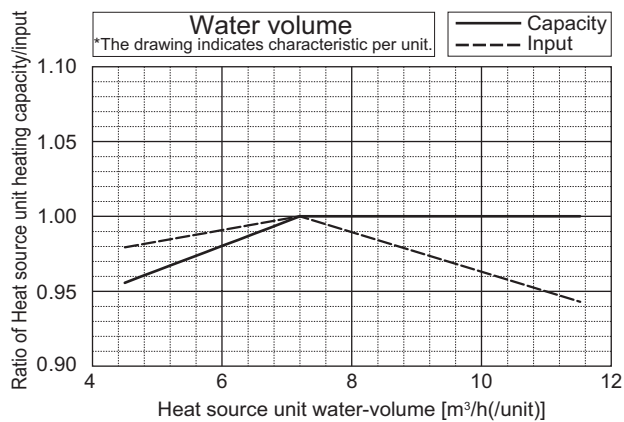
8. CAPACITY TABLES

PQRY-PP288-P336TSLMU/YSLMU

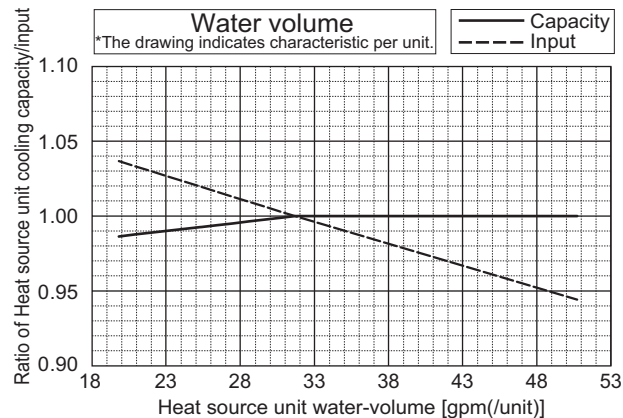
Cooling



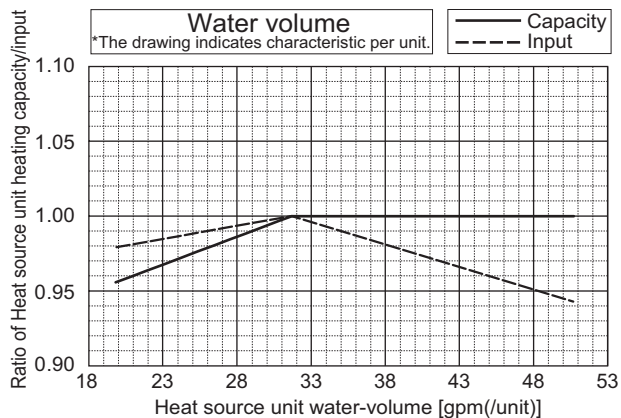
Heating



Cooling



Heating

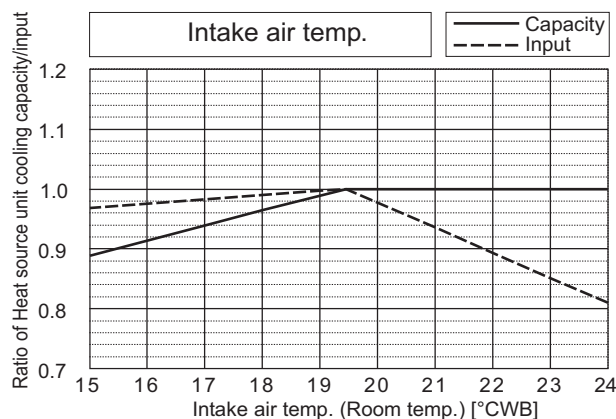


8. CAPACITY TABLES

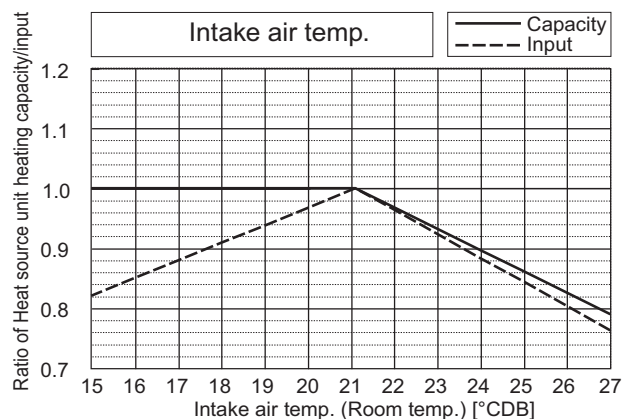
8-5. Indoor temperature correction factors (Geothermal)

8-5-1. Connection with standard CITY MULTI indoor unit

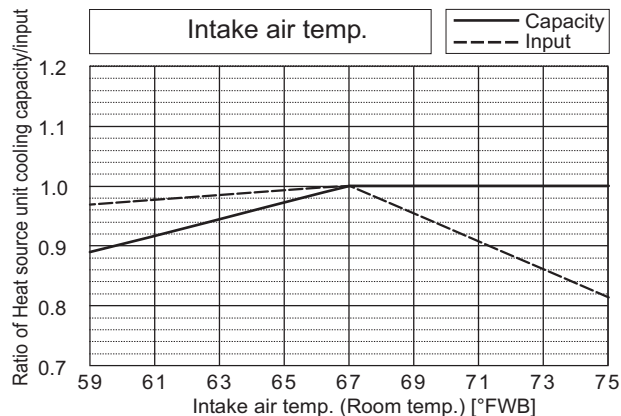
Cooling



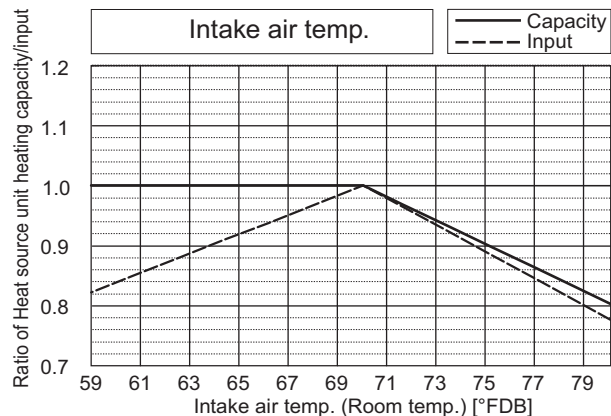
Heating



Cooling



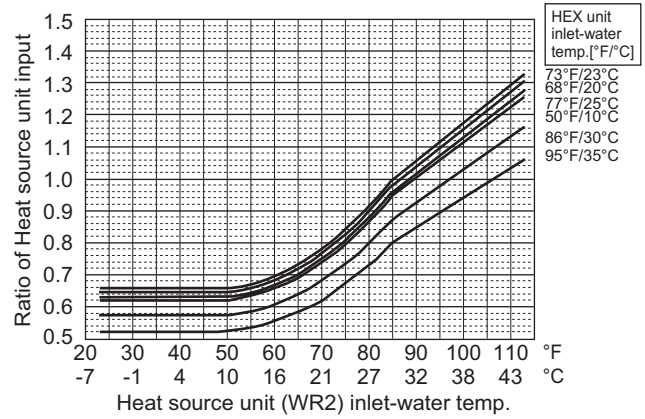
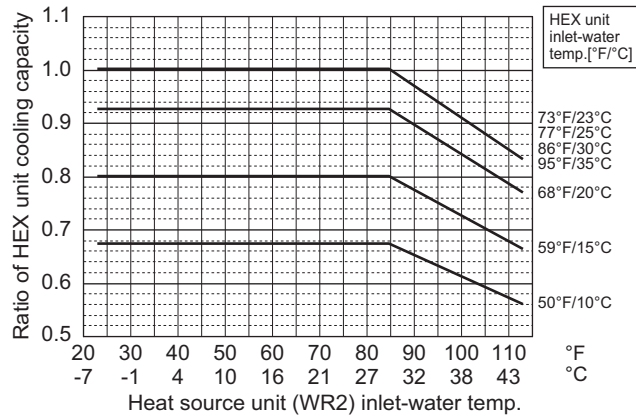
Heating



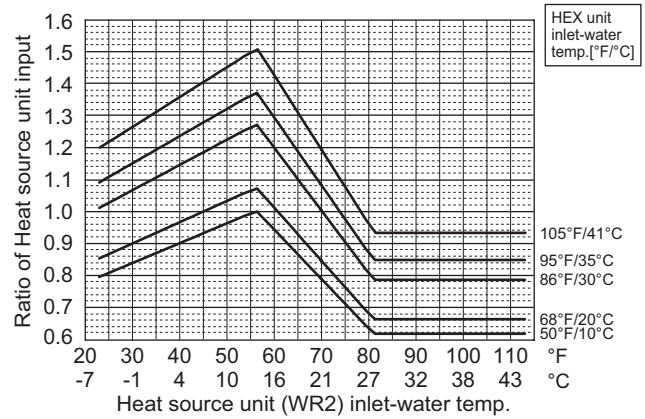
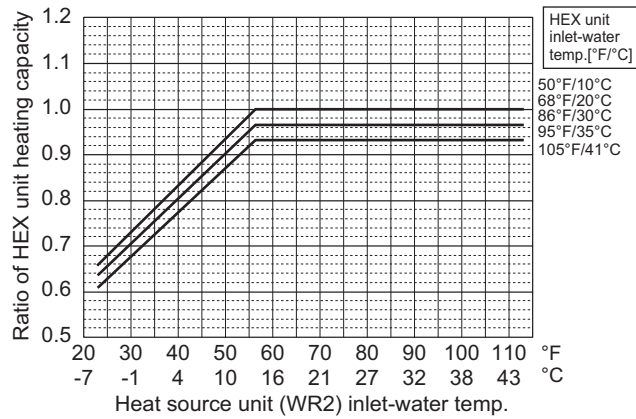
8. CAPACITY TABLES

8-5-2. Connection with PWFY-P36/72NMU-E2-AU (HEX unit)

Cooling

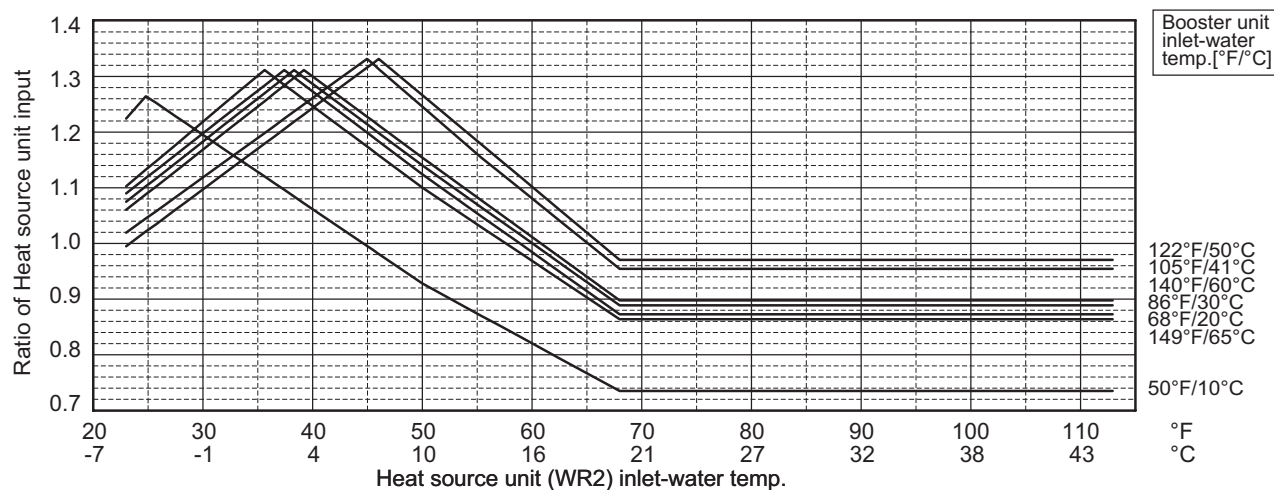
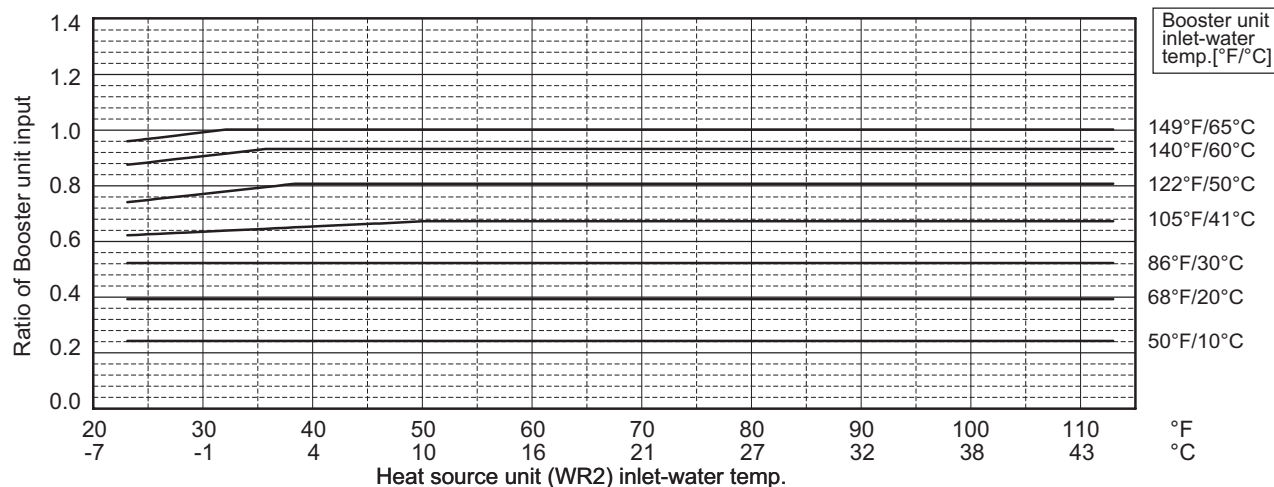
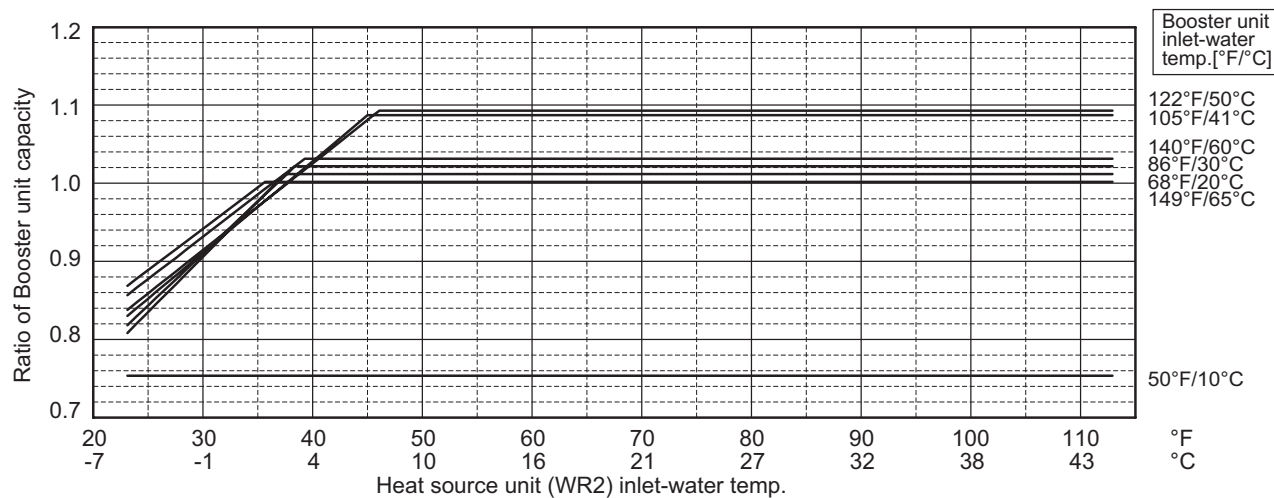


Heating



8. CAPACITY TABLES

8-5-2. Connection with PWFY-P36NMU-E-BU (Booster unit)

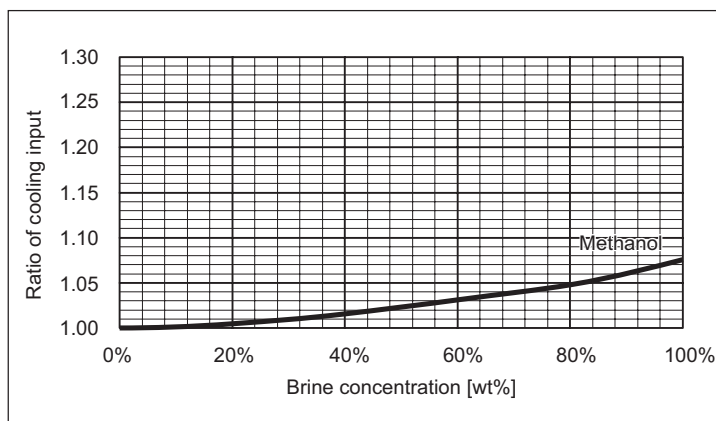
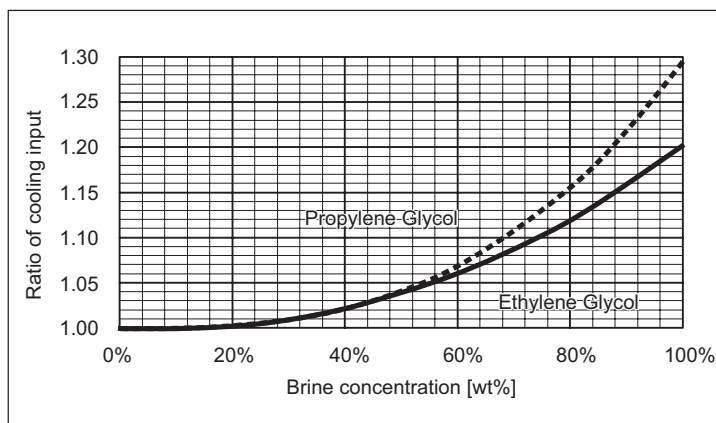
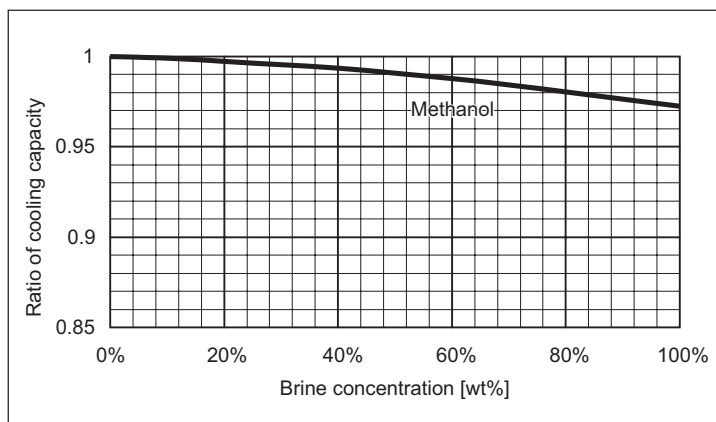
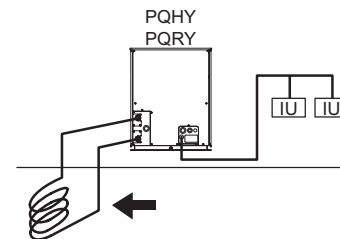
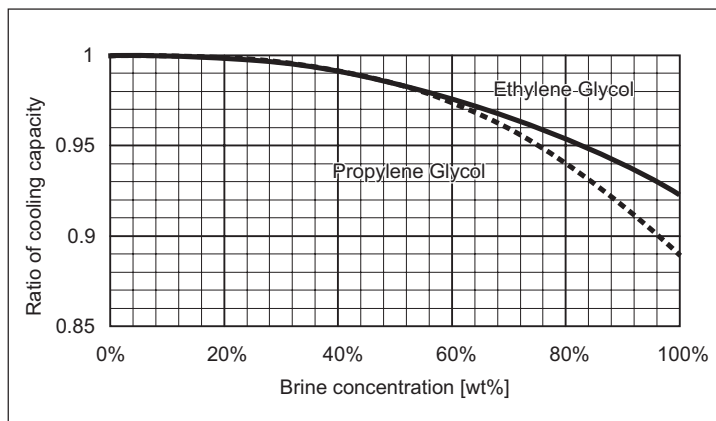


8. CAPACITY TABLES

8-6. Glycol correction factors

PQRY-P-T(S)LMU-A/Y(S)LMU-A

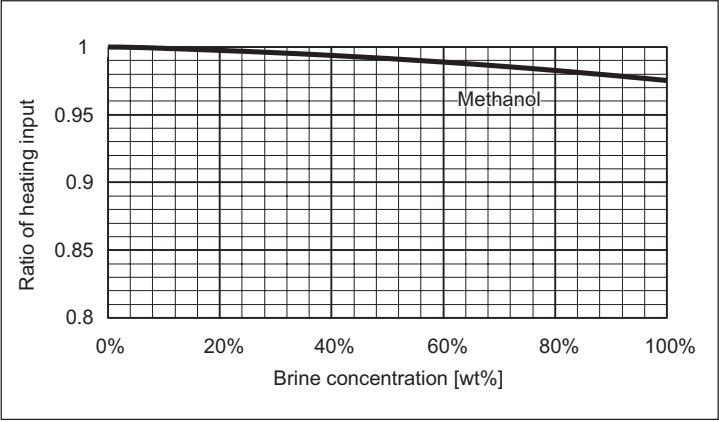
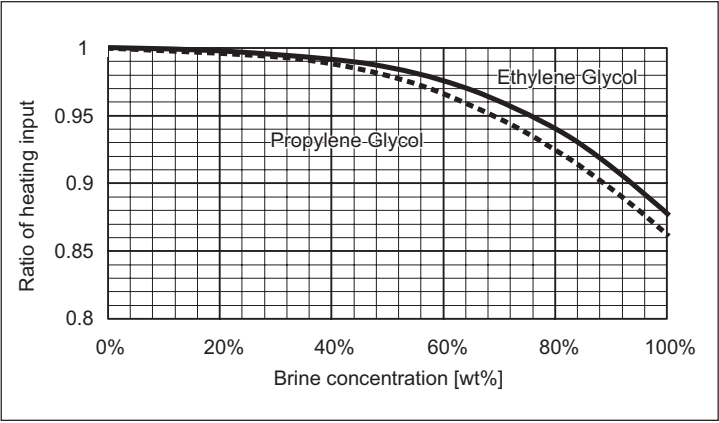
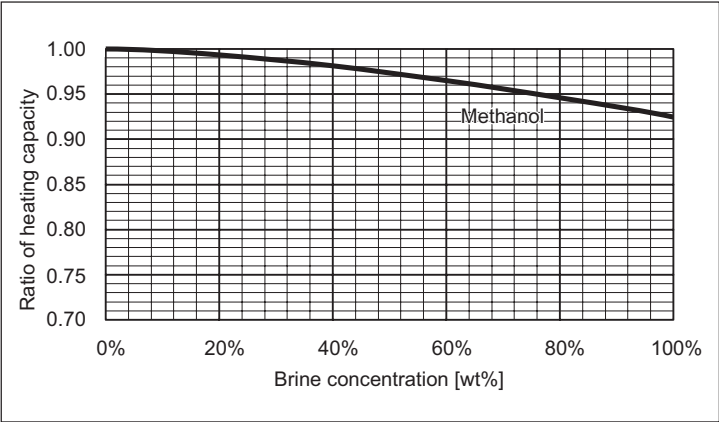
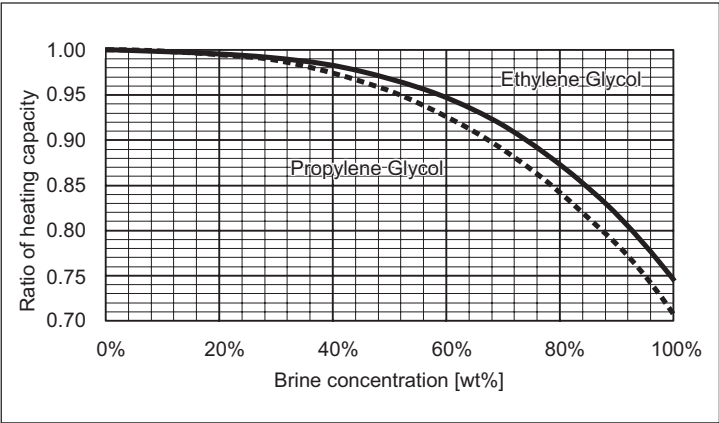
Cooling



8-6. Glycol correction factors, cont.

PQRY-P-T(S)LMU-A/Y(S)LMU-A

Heating

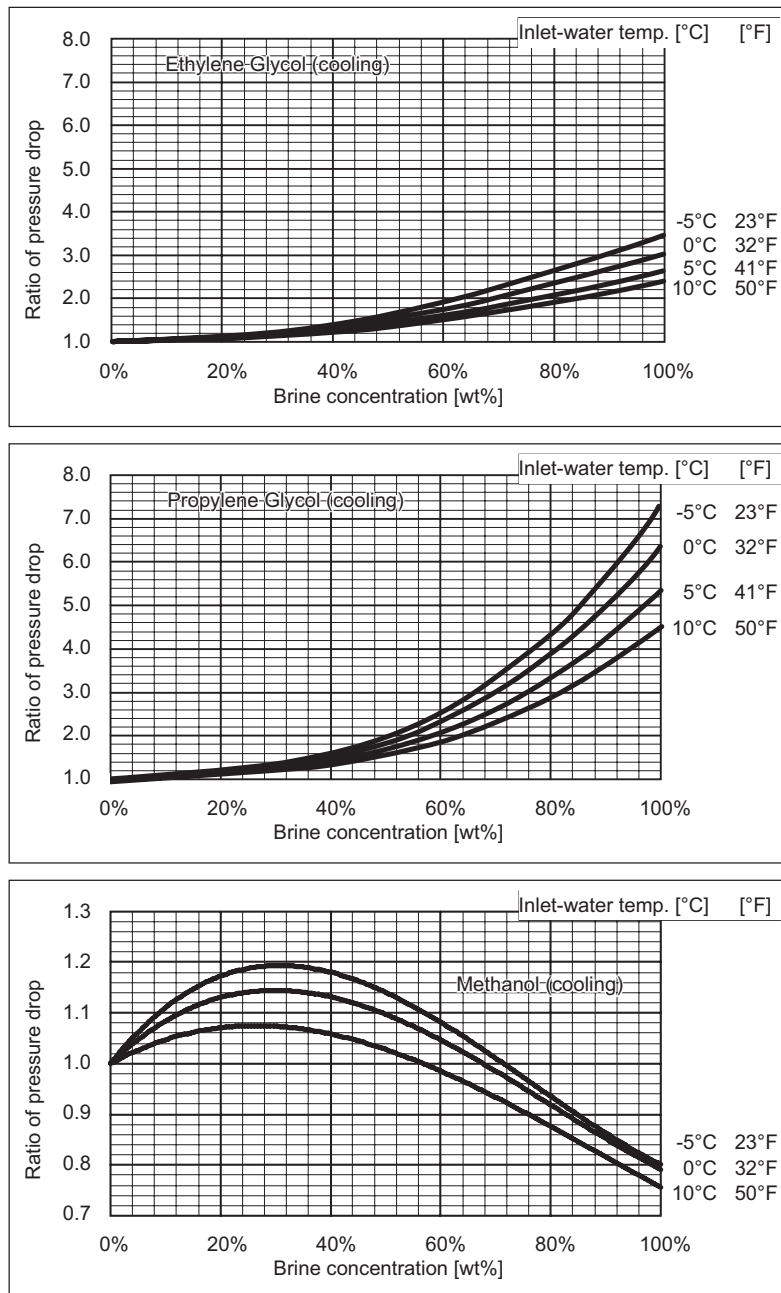


8. CAPACITY TABLES

8-6. Glycol correction factors

PQRY-P-T(S)LMU-A/Y(S)LMU-A

Cooling

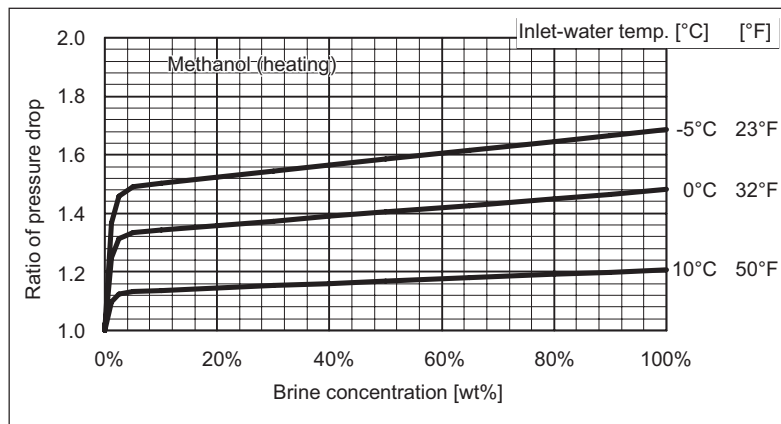
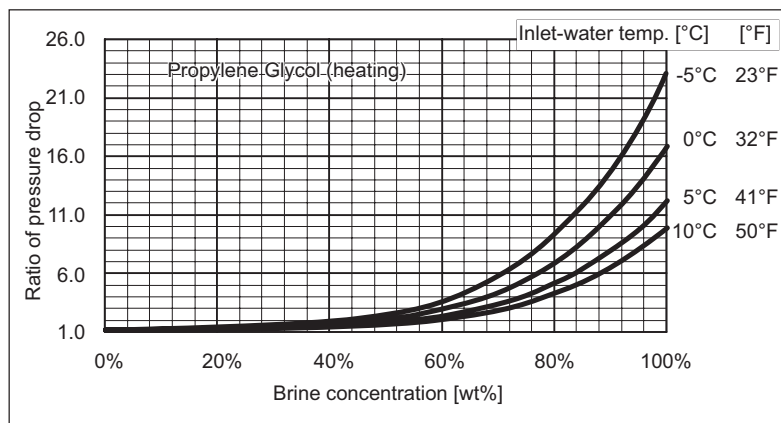
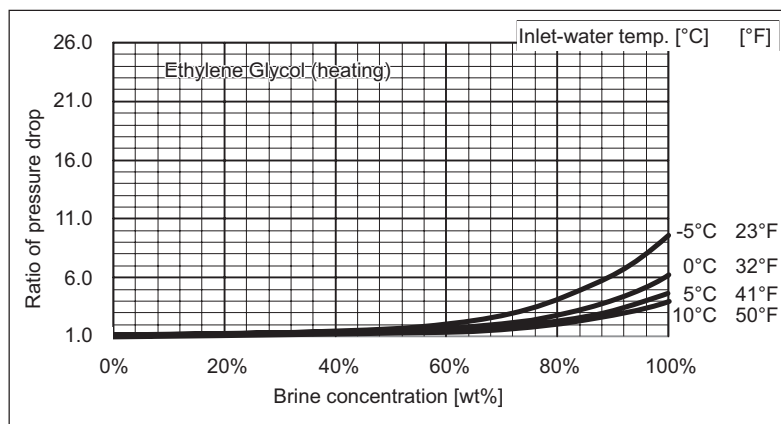


8. CAPACITY TABLES

8-6. Glycol correction factors, cont.

PQRY-P-T(S)LMU-A/Y(S)LMU-A

Heating

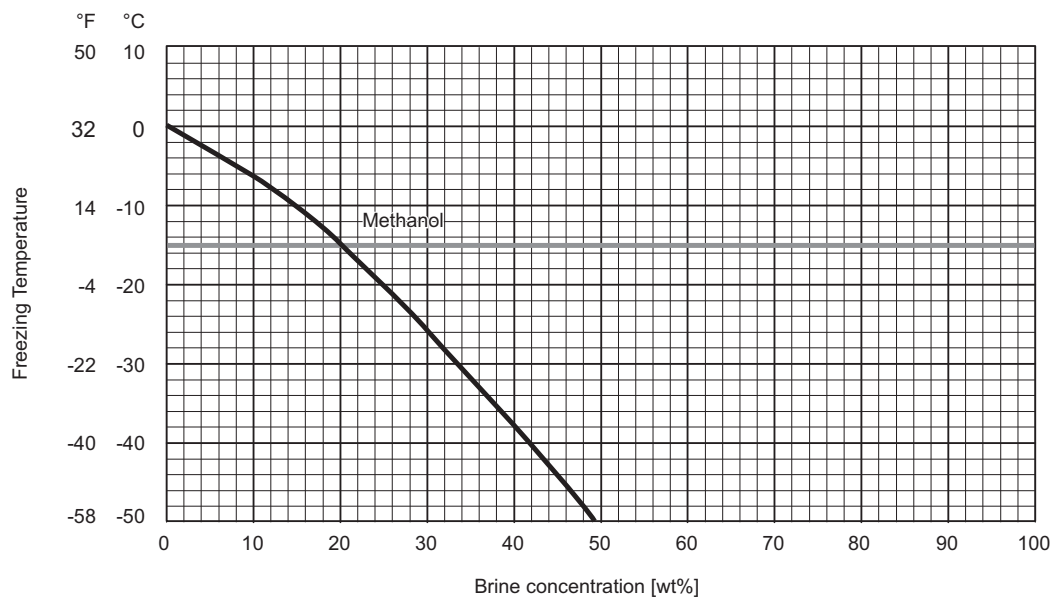
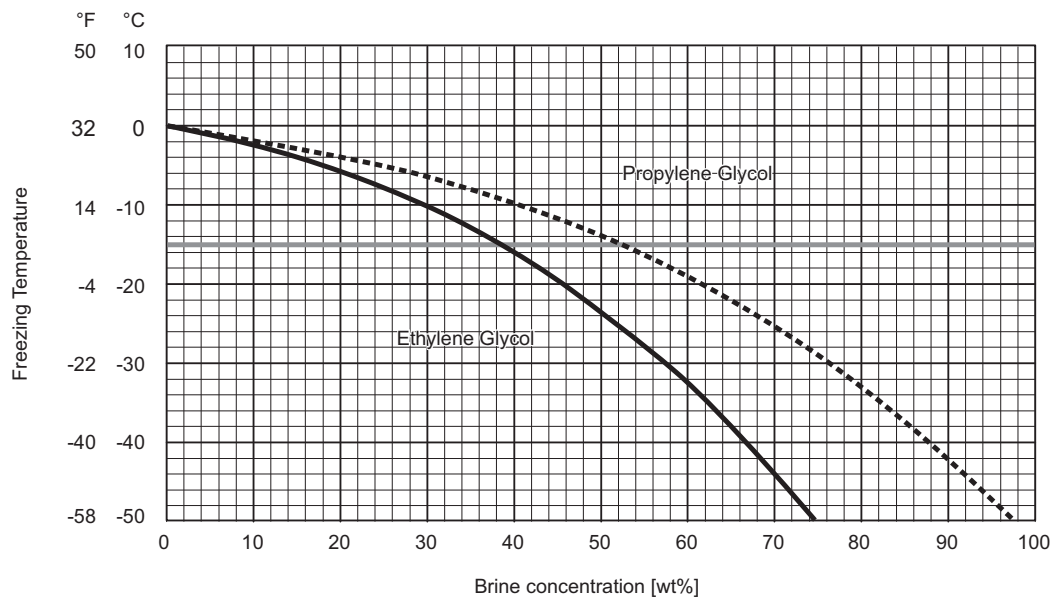


* Please supply strainer on site.

8. CAPACITY TABLES

8-7. Glycol freeze protection %

PQRY-P-T(S)LMU-A/Y(S)LMU-A



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 -15deg°C or less.

8. CAPACITY TABLES

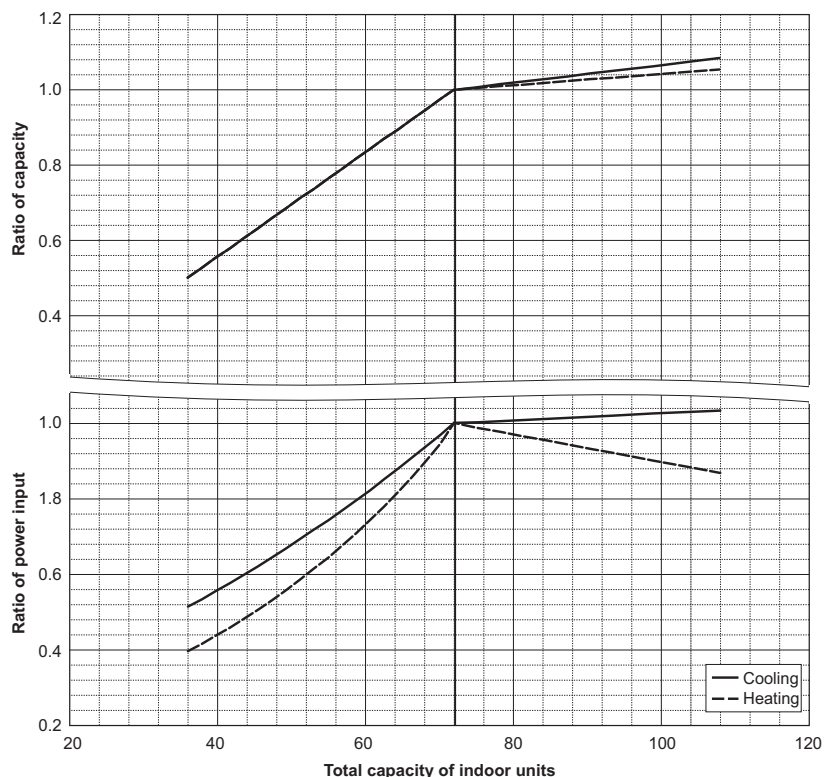
8-8. Correction by Total Indoor

CITY MULTI systems have different capacities and inputs when different combinations of indoor units with different total capacities are connected. Using the following tables, the maximum capacity can be found to ensure the system is installed with enough capacity for a particular application.

PQRY-		P72TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	72,000	
	kW	21.1	
	Input kW	3.23	
Rated cooling capacity	BTU/h	69,000	
	kW	20.2	
	Input kW	2.96	3.12

PQRY-		P72TLMU/YLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	80,000	
	kW	23.4	
	Input kW	3.63	
Rated Heating capacity	BTU/h	76,000	
	kW	22.3	
	Input kW	3.34	3.36

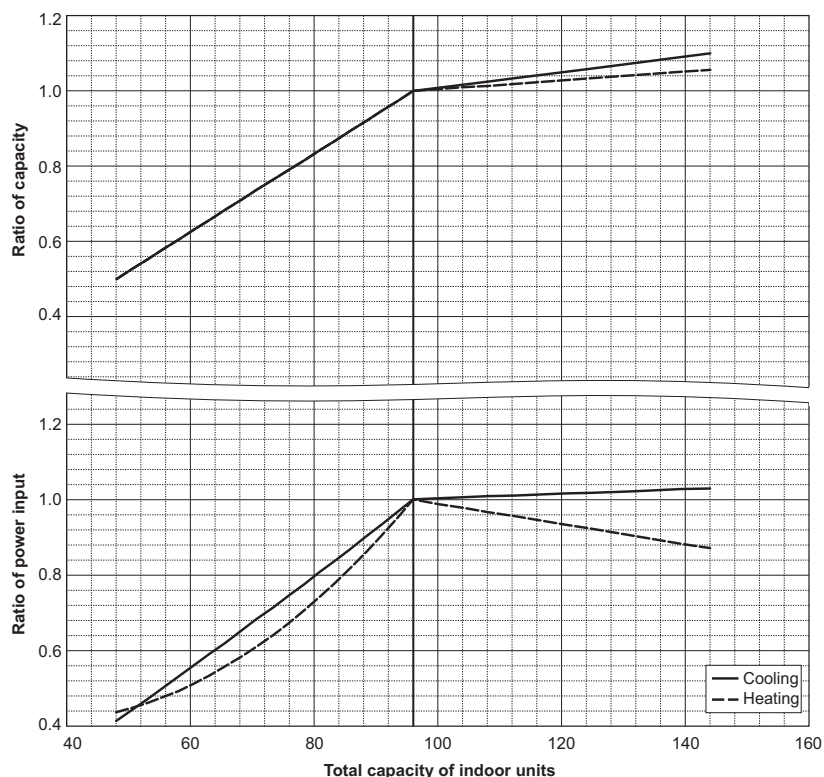
PQRY-P72TLMU/YLMU-A



PQRY-		P96TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	96,000	
	kW	28.1	
	Input kW	4.65	
Rated cooling capacity	BTU/h	92,000	
	kW	27.0	
	Input kW	4.26	5.19

PQRY-		P96TLMU/YLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	108,000	
	kW	31.7	
	Input kW	5.05	
Rated Heating capacity	BTU/h	103,000	
	kW	30.2	
	Input kW	4.65	4.48

PQRY-P96TLMU/YLMU-A

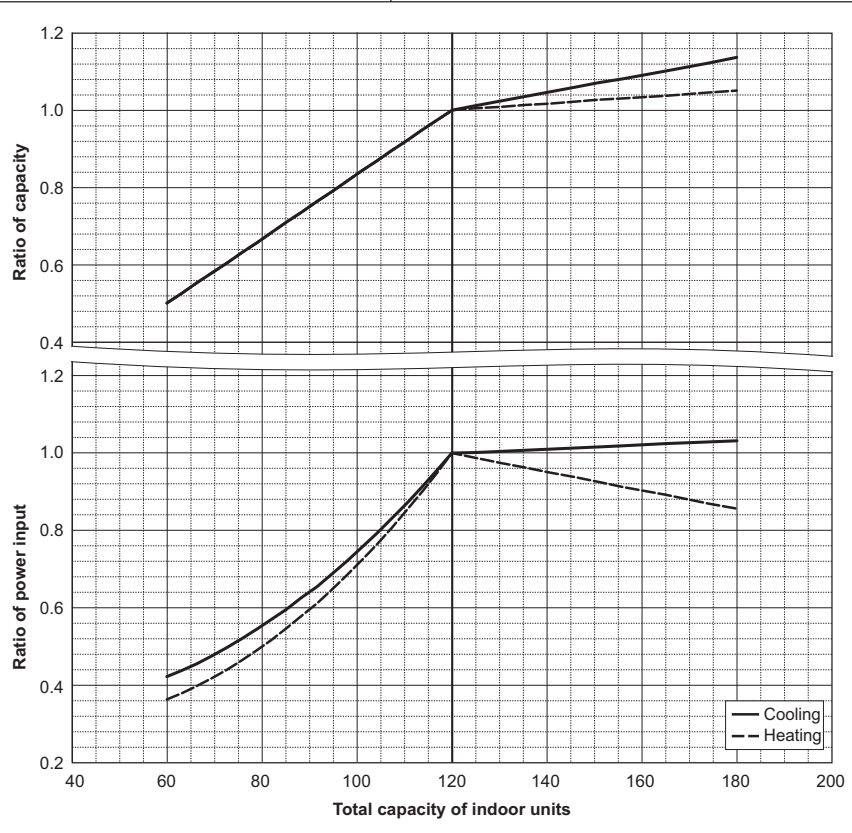


8. CAPACITY TABLES

PQRY-		P120TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	120,000	
	kW	35.2	
	Input kW	7.24	
Rated cooling capacity	BTU/h	114,000	
	kW	33.4	
	Input kW	6.66	7.35

PQRY-		P120TLMU/YLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	135,000	
	kW	39.6	
	Input kW	6.83	
Rated Heating capacity	BTU/h	129,000	
	kW	37.8	
	Input kW	6.29	5.92

PQRY-P120TLMU/YLMU-A



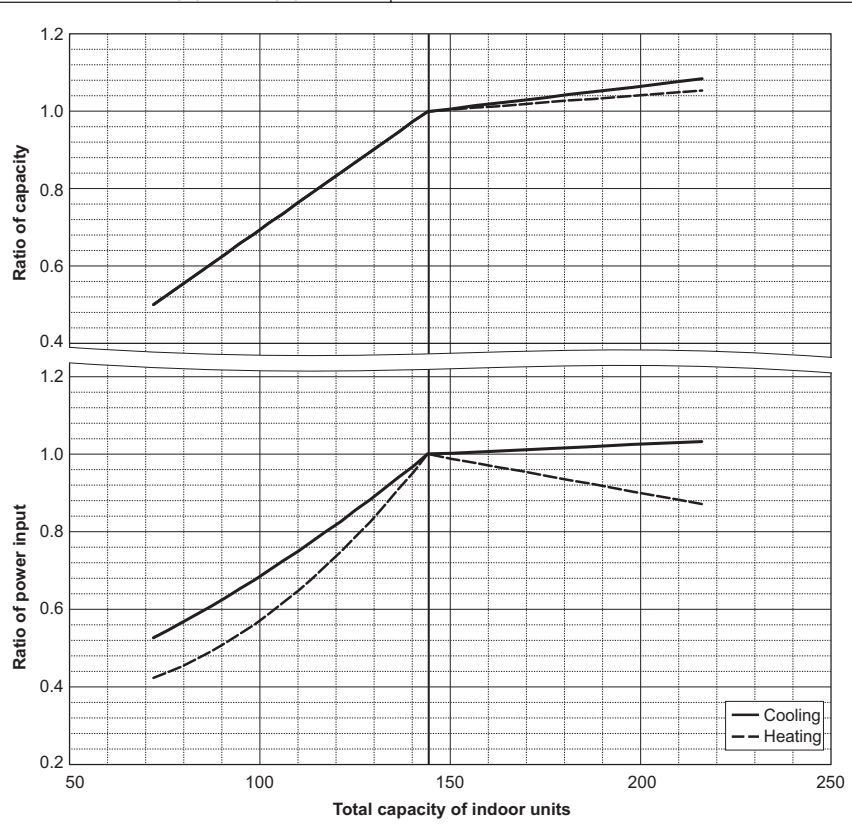
PQRY-		P144TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	144,000	
	kW	42.2	
	Input kW	8.78	
Rated cooling capacity	BTU/h	137,000	
	kW	40.2	
	Input kW	8.07	9.98

PQRY-		P144TLMU/YLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	160,000	
	kW	46.9	
	Input kW	8.11	
Rated Heating capacity	BTU/h	152,000	
	kW	44.5	
	Input kW	7.47	7.90

PQRY-		P144TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	144,000	
	kW	42.2	
	Input kW	7.11	
Rated cooling capacity	BTU/h	137,000	
	kW	40.2	
	Input kW	6.53	7.72

PQRY-		P144TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	160,000	
	kW	46.9	
	Input kW	7.45	
Rated Heating capacity	BTU/h	152,000	
	kW	44.5	
	Input kW	6.86	7.22

PQRY-P144T(S)LMU/Y(S)LMU-A



8. CAPACITY TABLES

PQRY-		P168TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	168,000	
	kW	49.2	
	Input kW	12.05	
Rated cooling capacity	BTU/h	161,000	
	kW	47.2	
	Input kW	11.10	11.88

PQRY-		P168TLMU/YLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	188,000	
	kW	55.1	
	Input kW	9.86	
Rated Heating capacity	BTU/h	179,000	
	kW	52.5	
	Input kW	9.09	9.72

PQRY-		P168TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	168,000	
	kW	49.2	
	Input kW	9.33	
Rated cooling capacity	BTU/h	161,000	
	kW	47.2	
	Input kW	8.58	9.22

PQRY-		P168TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	188,000	
	kW	55.1	
	Input kW	9.34	
Rated Heating capacity	BTU/h	179,000	
	kW	52.5	
	Input kW	8.60	8.03

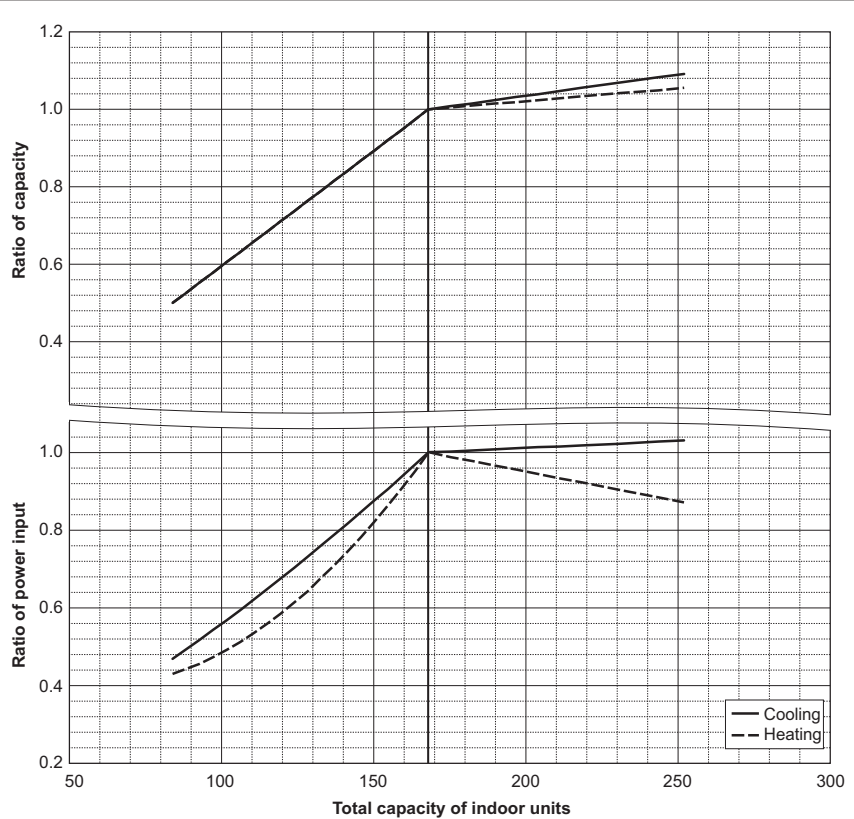
PQRY-		P192TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	192,000	
	kW	56.3	
	Input kW	15.05	
Rated cooling capacity	BTU/h	183,000	
	kW	53.6	
	Input kW	13.87	14.19

PQRY-		P192TLMU/YLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	215,000	
	kW	63.0	
	Input kW	11.90	
Rated Heating capacity	BTU/h	205,000	
	kW	60.1	
	Input kW	10.97	11.56

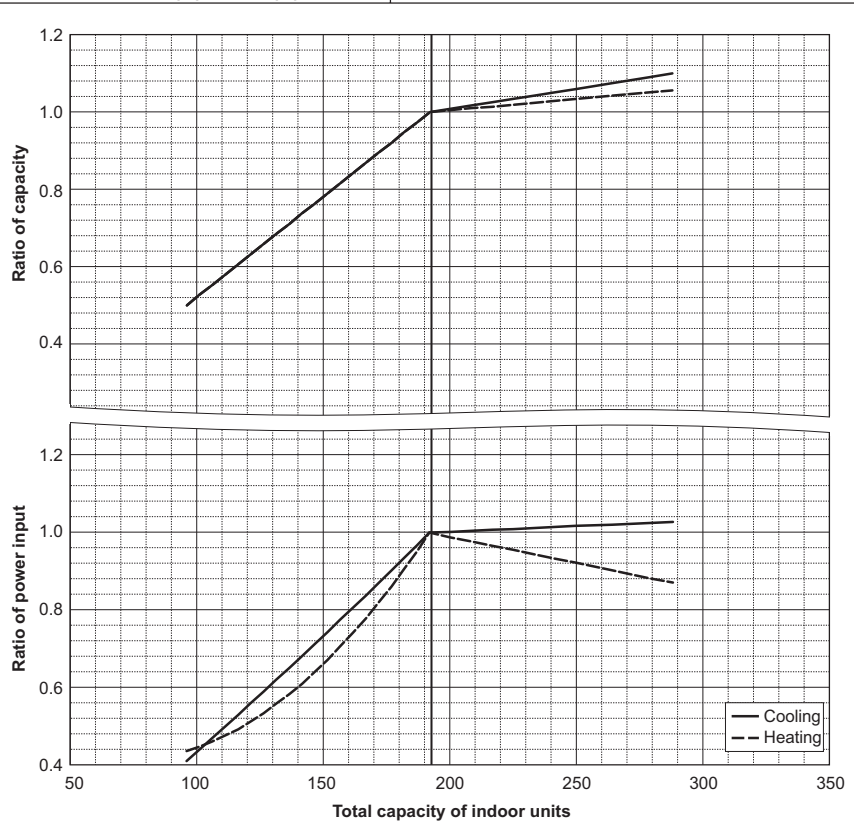
PQRY-		P192TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	192,000	
	kW	56.3	
	Input kW	11.30	
Rated cooling capacity	BTU/h	183,000	
	kW	53.6	
	Input kW	10.40	10.98

PQRY-		P192TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	215,000	
	kW	63.0	
	Input kW	11.02	
Rated Heating capacity	BTU/h	205,000	
	kW	60.1	
	Input kW	10.16	8.90

PQRY-P168T(S)LMU/Y(S)LMU-A



PQRY-P192T(S)LMU/Y(S)LMU-A



8. CAPACITY TABLES

PQRY-		P216TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	216,000	
	kW	63.3	
	Input kW	19.23	
Rated cooling capacity	BTU/h	206,000	
	kW	60.4	
	Input kW	17.72	16.10

PQRY-		P216TLMU/YLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	243,000	
	kW	71.2	
	Input kW	13.04	
Rated Heating capacity	BTU/h	232,000	
	kW	68.0	
	Input kW	12.01	12.34

PQRY-		P216TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	216,000	
	kW	63.3	
	Input kW	14.03	
Rated cooling capacity	BTU/h	206,000	
	kW	60.4	
	Input kW	12.93	13.24

PQRY-		P216TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	243,000	
	kW	71.2	
	Input kW	12.88	
Rated Heating capacity	BTU/h	232,000	
	kW	68.0	
	Input kW	11.88	10.35

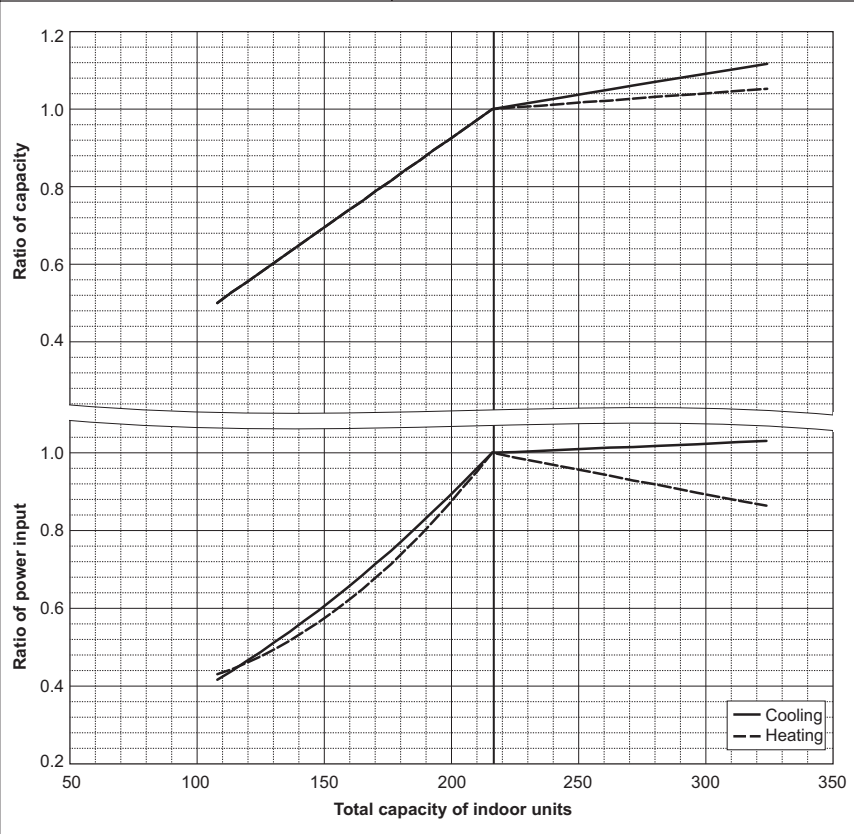
PQRY-		P240TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	240,000	
	kW	70.3	
	Input kW	21.14	
Rated cooling capacity	BTU/h	228,000	
	kW	66.8	
	Input kW	19.49	18.74

PQRY-		P240TLMU/YLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	270,000	
	kW	79.1	
	Input kW	15.12	
Rated Heating capacity	BTU/h	258,000	
	kW	75.6	
	Input kW	13.93	14.62

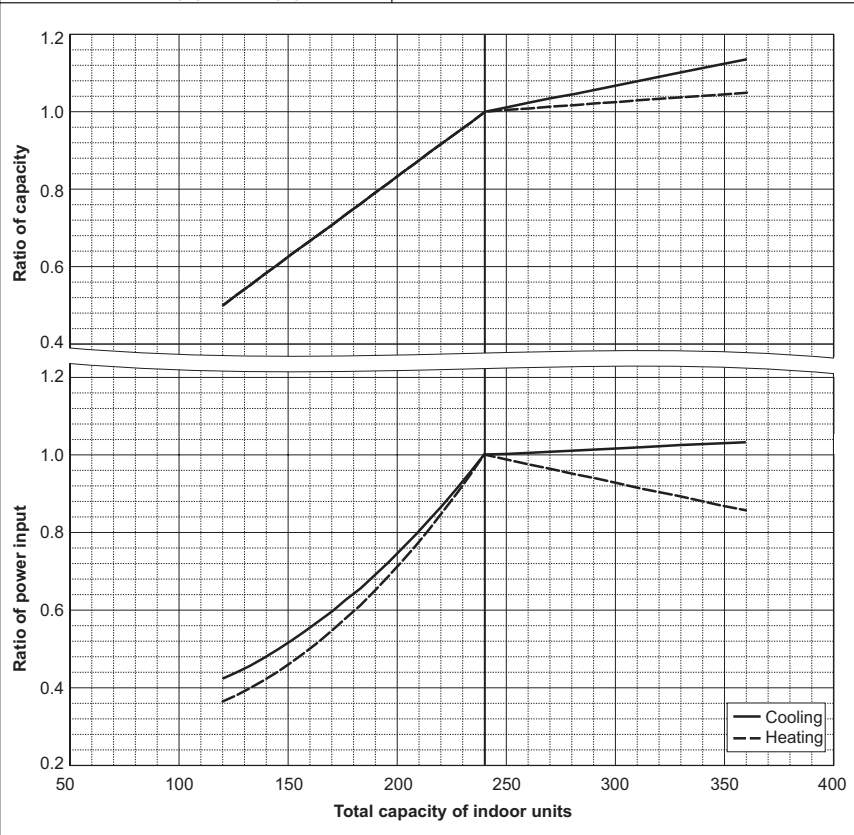
PQRY-		P240TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	240,000	
	kW	70.3	
	Input kW	16.89	
Rated cooling capacity	BTU/h	228,000	
	kW	66.8	
	Input kW	15.57	16.15

PQRY-		P240TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	270,000	
	kW	79.1	
	Input kW	14.58	
Rated Heating capacity	BTU/h	258,000	
	kW	75.6	
	Input kW	13.45	12.02

PQRY-P216T(S)LMU/Y(S)LMU-A



PQRY-P240T(S)LMU/Y(S)LMU-A

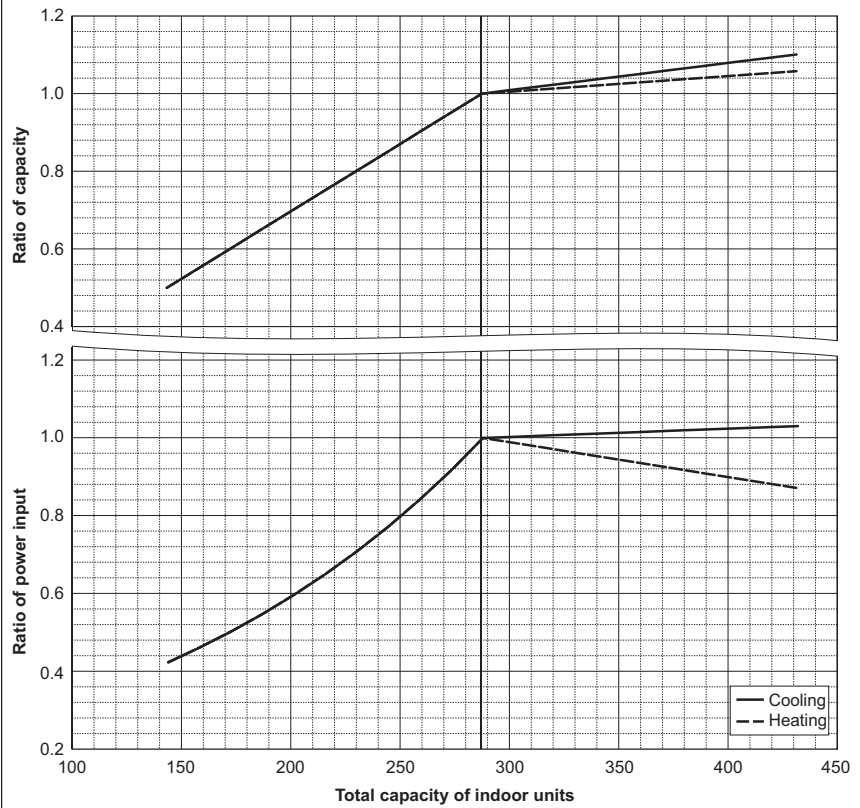


8. CAPACITY TABLES

PQRY-		P288TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	288,000	
	kW	84.4	
	Input kW	20.42	
Rated cooling capacity	BTU/h	275,000	
	kW	80.6	
	Input kW	18.82	21.43

PQRY-		P288TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	323,000	
	kW	94.7	
	Input kW	17.50	
Rated Heating capacity	BTU/h	308,000	
	kW	90.3	
	Input kW	16.13	16.05

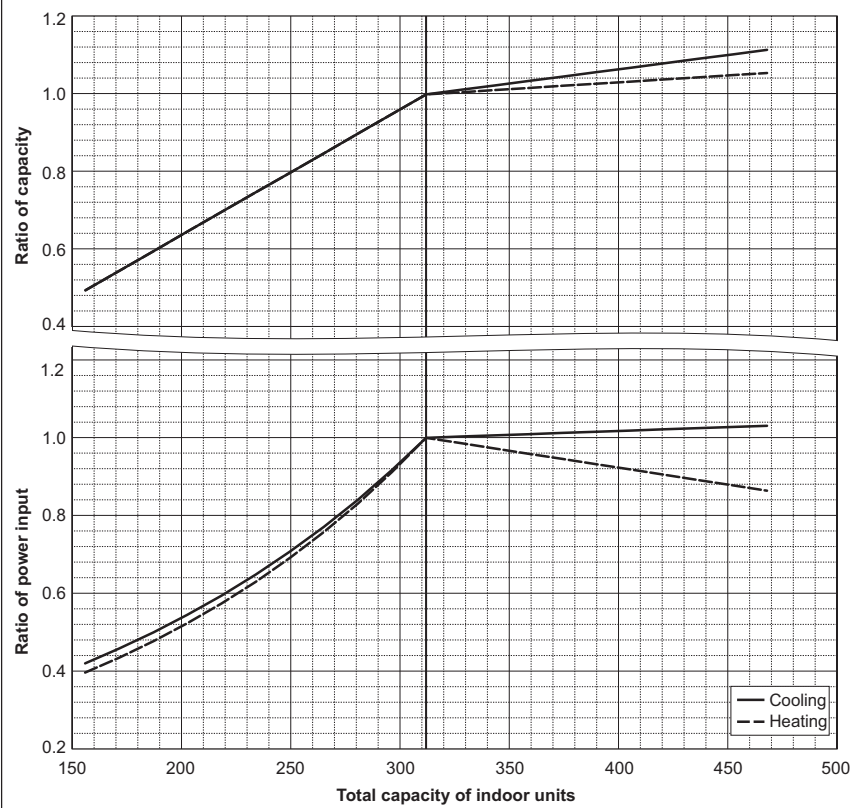
PQRY-P288TSLMU/YSLMU-A



PQRY-		P312TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	312,000	
	kW	91.4	
	Input kW	23.41	
Rated cooling capacity	BTU/h	297,000	
	kW	87.0	
	Input kW	21.59	23.67

PQRY-		P312TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	350,000	
	kW	102.6	
	Input kW	19.11	
Rated Heating capacity	BTU/h	334,000	
	kW	97.9	
	Input kW	17.62	17.96

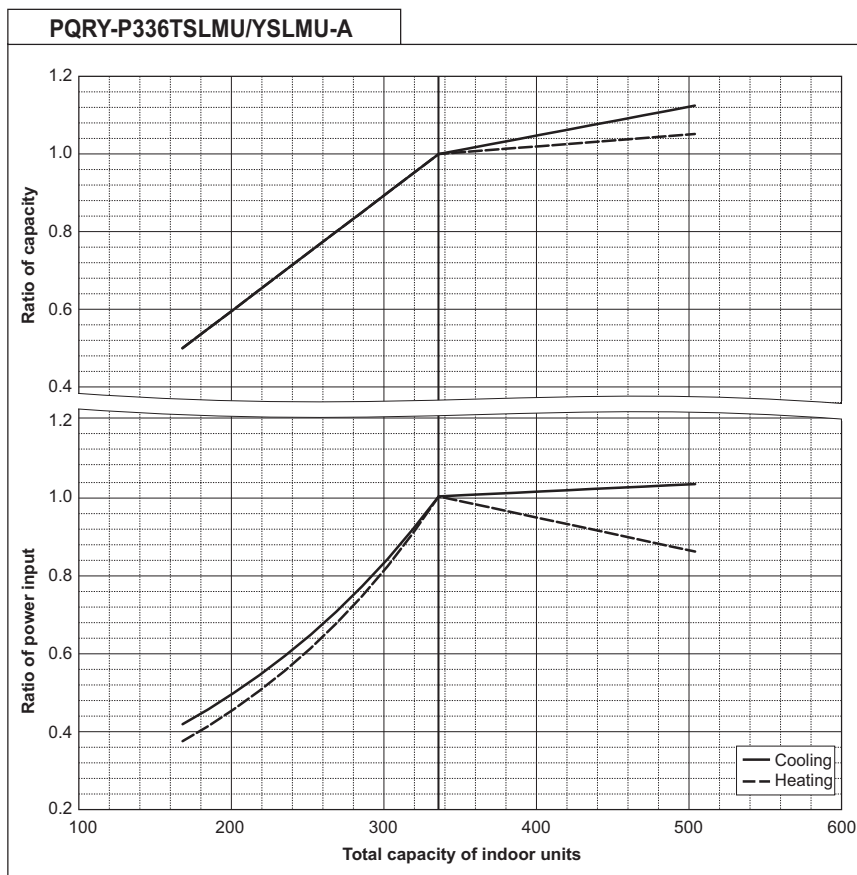
PQRY-P312TSLMU/YSLMU-A



8. CAPACITY TABLES

PQRY-		P336TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	336,000	
	kW	98.5	
	Input kW	26.84	
Rated cooling capacity	BTU/h	320,000	
	kW	93.8	
	Input kW	24.76	25.85

PQRY-		P336TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	378,000	
	kW	110.8	
	Input kW	20.77	
Rated Heating capacity	BTU/h	361,000	
	kW	105.8	
	Input kW	19.16	20.05

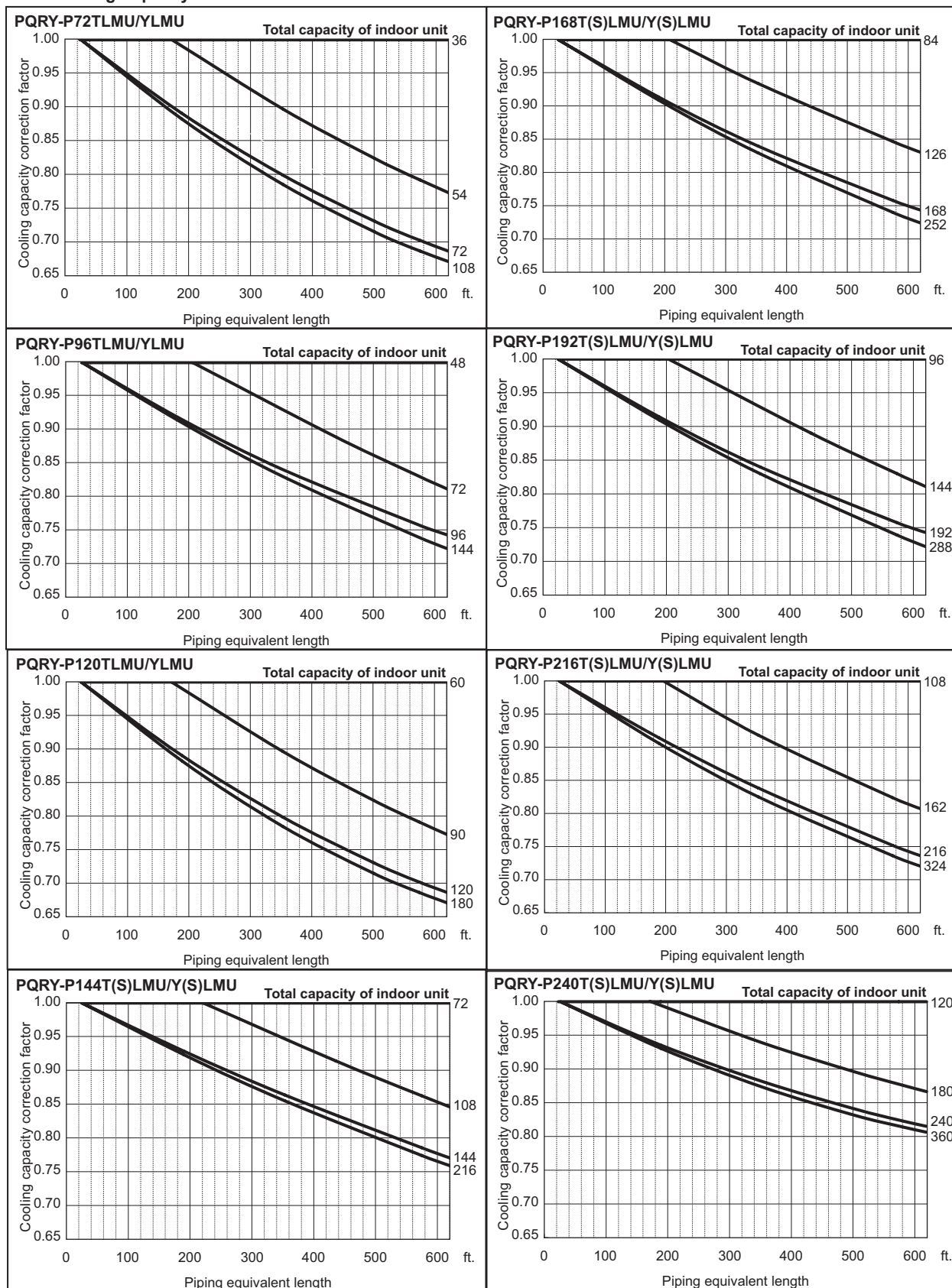


8. CAPACITY TABLES

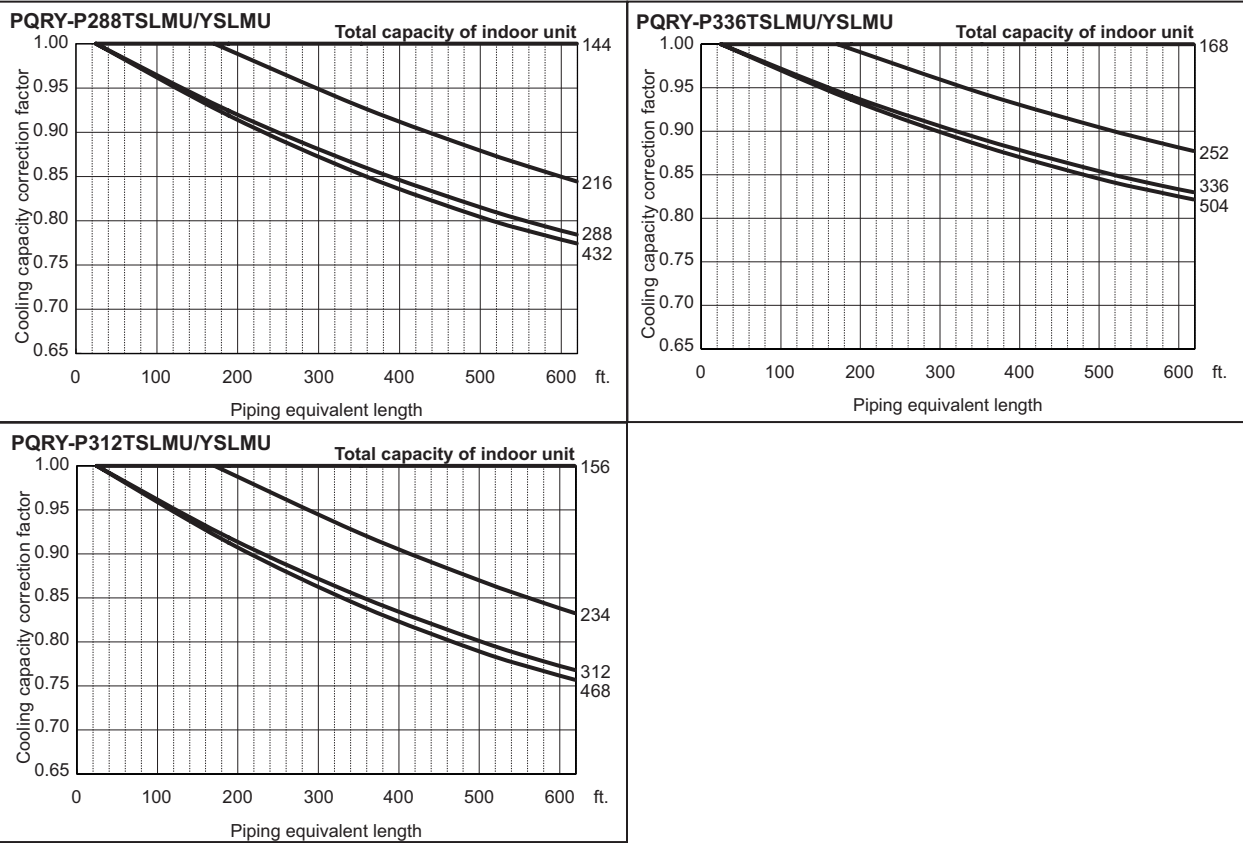
8-9. Correction by Refrigerant Piping Length

CITY MULTI systems can have extended piping lengths if certain limitations are followed, but cooling/heating capacity could be reduced. Using the following correction factor by equivalent piping length shown at 7-3-1 and 7-3-2, capacity can be found. 7-3-3 shows how to obtain the equivalent piping length.

8-9-1. Cooling Capacity Correction

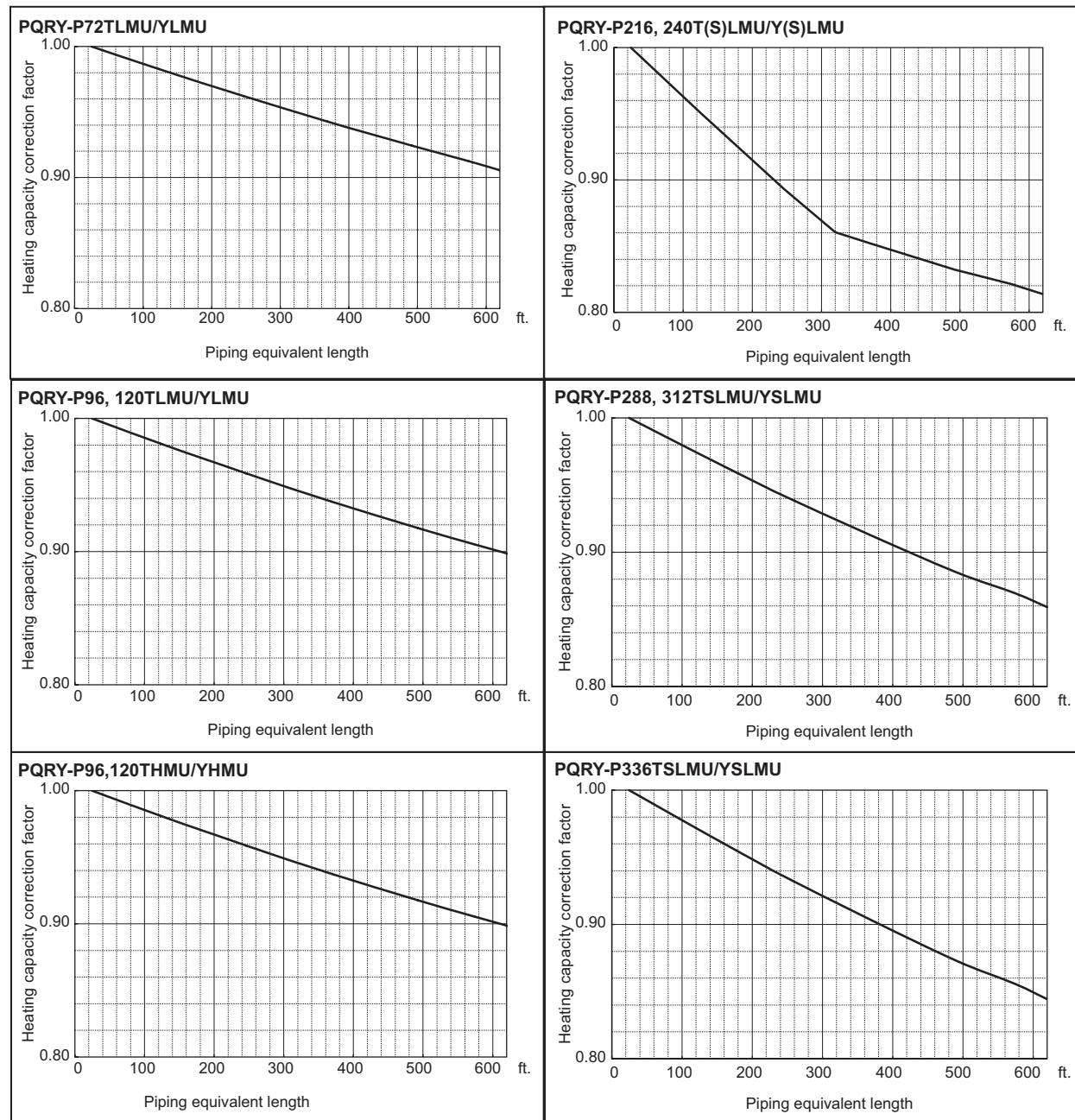


8. CAPACITY TABLES



8. CAPACITY TABLES

8-9-2. Heating Capacity Correction



8. CAPACITY TABLES

8-9-3. How to Obtain the Equivalent Piping Length

PQRY-P72TLMU/YLMU

Equivalent length = (Actual piping length to the farthest indoor unit) + (1.15 x number of bent on the piping) [ft.]

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 x number of bent on the piping) [m]

PQRY-P96TLMU/YLMU

Equivalent length = (Actual piping length to the farthest indoor unit) + (1.38 x number of bent on the piping) [ft.]

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 x number of bent on the piping) [m]

PQRY-P120TLMU/YLMU

Equivalent length = (Actual piping length to the farthest indoor unit) + (1.54 x number of bent on the piping) [ft.]

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.47 x number of bent on the piping) [m]

PQRY-P144, 168, 192, 216, 240T(S)LMU/Y(S)LMU

Equivalent length = (Actual piping length to the farthest indoor unit) + (1.64 x number of bent on the piping) [ft.]

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 x number of bent on the piping) [m]

PQRY-P288, 312TSLMU/YSLMU

Equivalent length = (Actual piping length to the farthest indoor unit) + (2.29 x number of bent on the piping) [ft.]

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.70 x number of bent on the piping) [m]

PQRY-P336TSLMU/YSLMU

Equivalent length = (Actual piping length to the farthest indoor unit) + (2.70 x number of bent on the piping) [ft.]

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.80 x number of bent on the piping) [m]

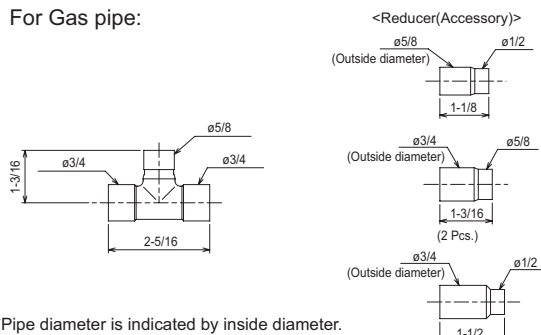
9. Optional parts

9-1. Branch Joint

Piping for CITY MULTI systems can be easily performed with branch joints and headers provided by MITSUBISHI ELECTRIC CORP. For PQR-Y-P-T(S)LMU/Y(S)LMU, the following sets of branch joints are available. Details for installing the branch joint sets are found in the System Design section, or in the Branch Joint Installation Manual.

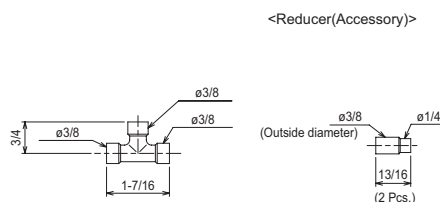
CMY-Y102SS-G2

For Gas pipe:



*Pipe diameter is indicated by inside diameter.

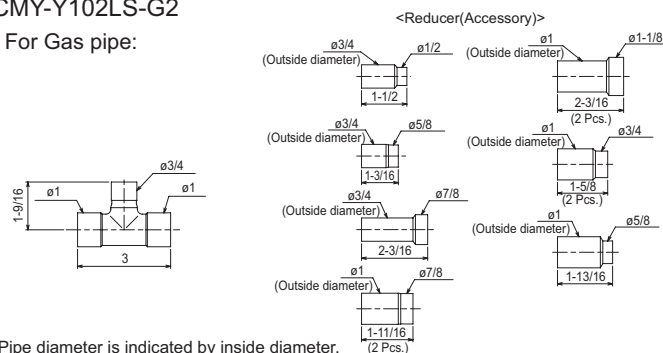
For Liquid pipe:



in.

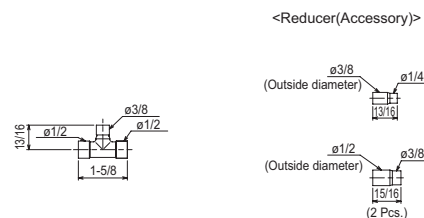
CMY-Y102LS-G2

For Gas pipe:



*Pipe diameter is indicated by inside diameter.

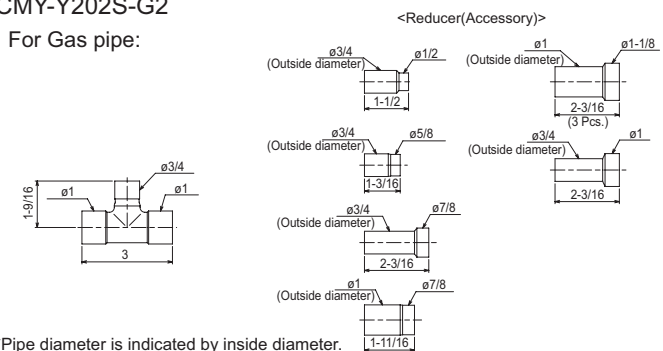
For Liquid pipe:



in.

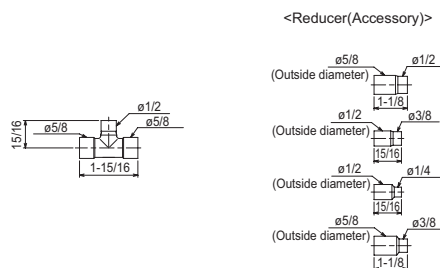
CMY-Y202S-G2

For Gas pipe:



*Pipe diameter is indicated by inside diameter.

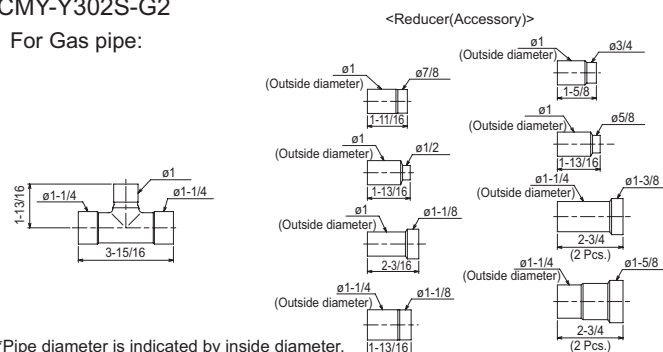
For Liquid pipe:



in.

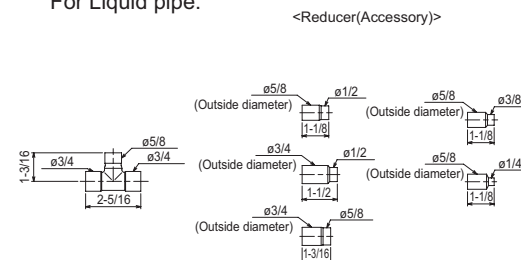
CMY-Y302S-G2

For Gas pipe:



*Pipe diameter is indicated by inside diameter.

For Liquid pipe:



in.

9. Optional parts

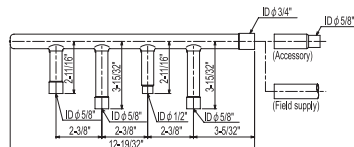
9-2. Headers

Piping for CITY MULTI systems can be easily performed with branch joints and headers provided by MITSUBISHI ELECTRIC CORP. For PQRY-P-T(S)LMU/Y(S)LMU, the following sets of headers are available. Details for installing the headers are found in the System Design section, or in the Water-source Unit's Installation Manual.

CMY-Y104C-G

Ref.: W901636 in.

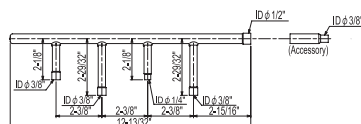
For gas pipe:



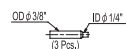
<Reducer(Accessory)>



For liquid pipe:



<Reducer(Accessory)>



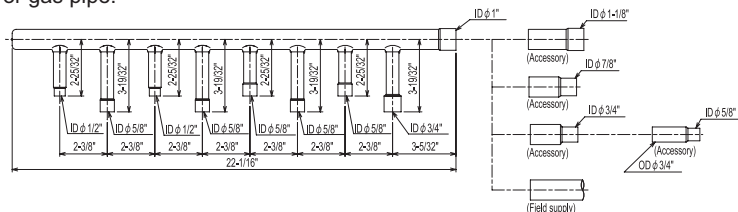
ID: Inner Diameter OD: Outer Diameter

NOTE: Besides above mentioned accessories, caps for 1/4", 3/8", 1/2", 5/8" pipes (each diameter 1 piece) are included in the Header set.

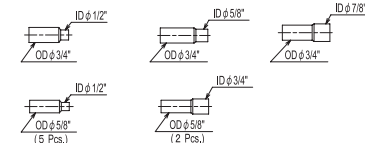
CMY-Y108C-G

Ref.: W901637 in.

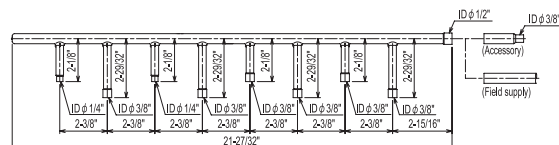
For gas pipe:



<Reducer(Accessory)>



For liquid pipe:



<Reducer(Accessory)>



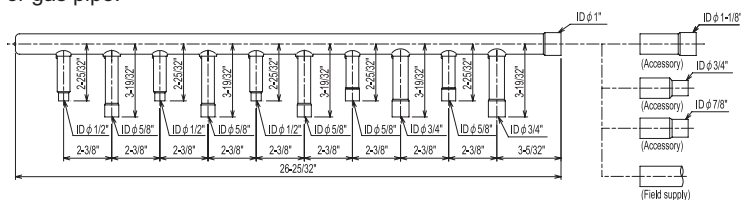
ID: Inner Diameter OD: Outer Diameter

NOTE: Besides above mentioned accessories, caps for 1/4", 3/8", 1/2", 5/8" pipes (each diameter 2 pieces) and 1 cap for 3/4" pipe are included in the Header set.

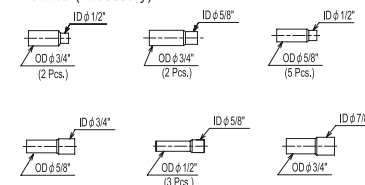
CMY-Y1010C-G

Ref.: W901638 in.

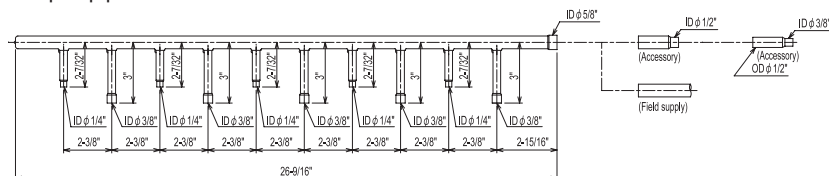
For gas pipe:



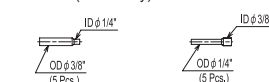
<Reducer(Accessory)>



For liquid pipe:



<Reducer(Accessory)>



ID: Inner Diameter OD: Outer Diameter

NOTE: Besides above mentioned accessories, caps for 1/4", 3/8", 1/2", 5/8" pipes (each diameter 2 pieces) and 1 cap for 3/4" pipe are included in the Header set.

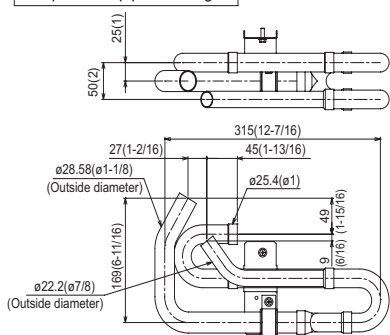
9. Optional parts

9-3. Water-source Unit Twinning Kit

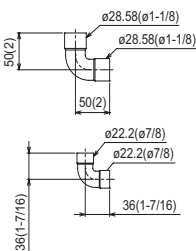
The water-source unit twinning kit is needed to PQRY-P-TSLMU/YSLMU to combine the refrigerant flows of the PQRY-P-TLMU/YLMU units.

CMY-Q100CBK2

Low-pressure pipe twinning kit

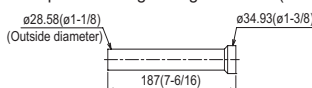


<Elbow pipe(Accessory)>

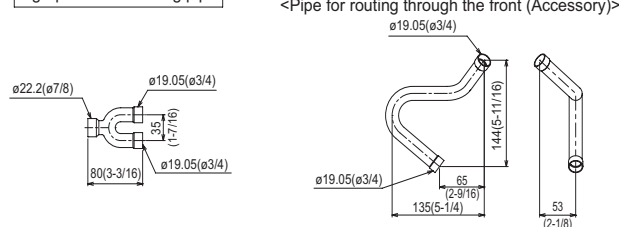


<Accessory>	Fixing screw	...	1
	Insulation cover	...	1
	Pipe cover (150mm(5-15/16) Length)	...	2
	Pipe cover (60mm(2-3/8) Length)	...	1
	Pipe cover (80mm(3-3/16) Length)	...	2
	Cable tie	...	2
	Water stopper	...	1
	Sealing material (Small)	...	1
	Sealing material (Large)	...	1

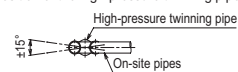
<Pipe for routing through the front (Accessory)>



High-pressure twinning pipe



Note 1. Refer to the figure below for the installation position of the high-pressure twinning pipe.

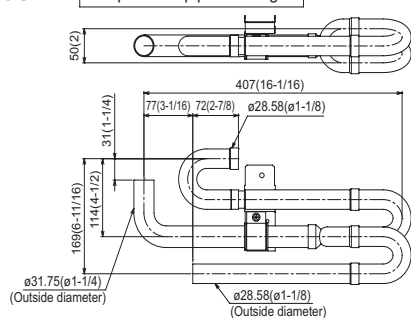


Inclination tolerance of the high-pressure twinning pipe is $\pm 15^\circ$ relative to the ground.

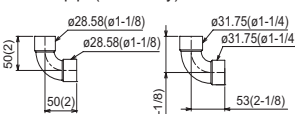
2. Pipe diameter is indicated by inside diameter.

CMY-Q200CBK

Low-pressure pipe twinning kit

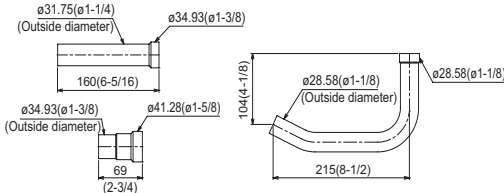


<Elbow pipe(Accessory)>

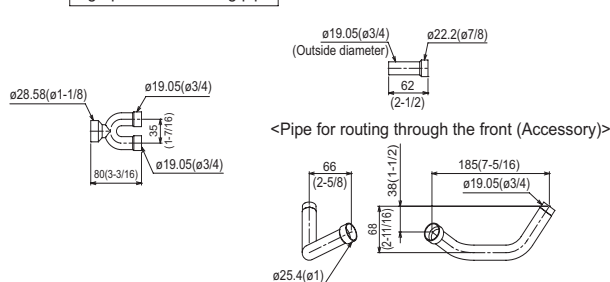


<Accessory>	Fixing screw	...	1
	Insulation cover	...	1
	Pipe cover (75mm(3) Length)	...	1
	Pipe cover (360mm(14-3/16) Length)	...	1
	Pipe cover (70mm(2-13/16) Length)	...	1
	Pipe cover (130mm(5-1/8) Length)	...	1
	Pipe cover (100mm(3-15/16) Length)	...	1
	Pipe cover (160mm(6-5/16) Length)	...	1
	Cable tie	...	2
	Water stopper	...	1
	Sealing material (Small)	...	1
	Sealing material (Large)	...	1

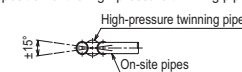
<Pipe for routing through the front (Accessory)>



High-pressure twinning pipe



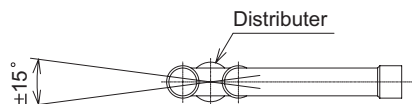
Note 1. Refer to the figure below for the installation position of the high-pressure twinning pipe.



Inclination tolerance of the high-pressure twinning pipe is $\pm 15^\circ$ relative to the ground.

2. Pipe diameter is indicated by inside diameter.

Note 1. Reference the attitude angle of the branch pipe below the fig.



The angle of the branch pipe for high pressure is within $\pm 15^\circ$ against the horizontal plane.

2. Use the attached pipe to braze the port-opening of the distributor.
3. Pipe diameter is indicated by inside diameter.

9. Optional parts

9-4. Joint Adapter Kit

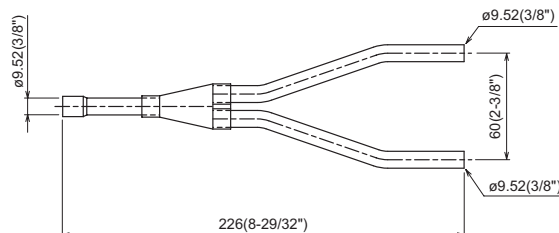
Joint Adapter Kit CMY-R160-J1 for BC Controllers is used to combine two ports of the BC Controller for a PQR-Y-P-T(S)LMU/ Y(S)LMU system to enable downstream indoor unit capacity above P54 as shown in Figure 1.

The Joint kit include following items:

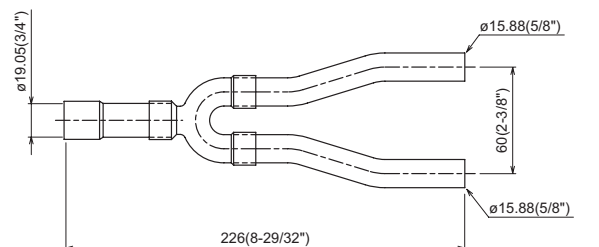
① Instruction	② Joint pipe(Small)	③ Joint pipe(Large)	④ Cover 1	⑤ Cover 2	⑥ Cover 3	⑦ Band	⑧ Reducer 1	⑨ Reducer 2
 This sheet 1pc	 1pc	 1pc	 2pcs	 1pc for gas side	 1pc for liquid side	 8pcs	 OD19.05-ID22.2 1pc	 OD19.05-ID15.88 1pc

Please prepare the following items in the field. ① Tape for insulation material sealing ② Extension pipe for refrigerant circuit

② Joint pipe (for liquid side)



③ Joint pipe (for gas side)



mm (in.)

1. Designing CMY-R160-J1 to a PURY/PQRY system

The maximum down-stream Indoor capacity for 1 port of BC controller is P54. When the down-stream Indoor capacity is above P54, Joint kit CMY-R160-J1 is needed to combined 2 ports of BC controller to enlarge the capacity, like Group 2 and 3 in Fig. 1.

Maximum 3 Indoor units are allowed to connect to 1 port of BC controller or 2 combined ports of BC controller using CMY-R160-J1.

When connecting Indoor units to 1 port of BC controller or 2 combined ports of BC controller using CMY-R160-J1 or CMY-Y102SS-G2 is applicable, like Group 1 and 2 in Fig. 1

Caution: Mixed cooling and heating mode at the same time for Indoor units connecting to 1 port or 2 combined ports is not available.

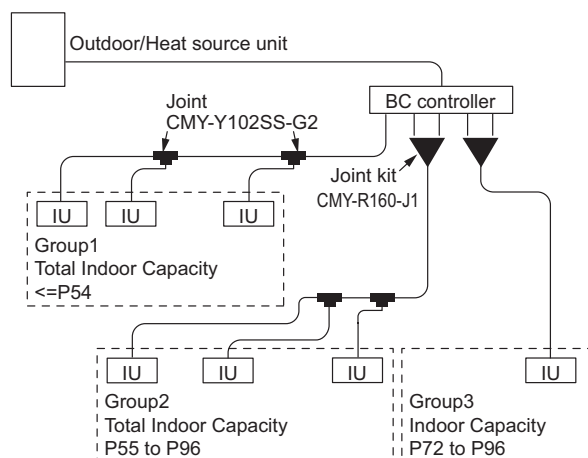


Fig.1. CMY-R160-J1 applying scheme

2. Piping at the installation site

The connection of CMY-R160-J1 to BC controller and pipe leading to Indoor units is referable to Fig. 2. Non-oxidized brazing is necessary. All piping must be careful to avoid foreign material getting inside.

After piping and air-tight testing, insulation work to the Joint and pipe should be done. Details is available at the Installation Manual.

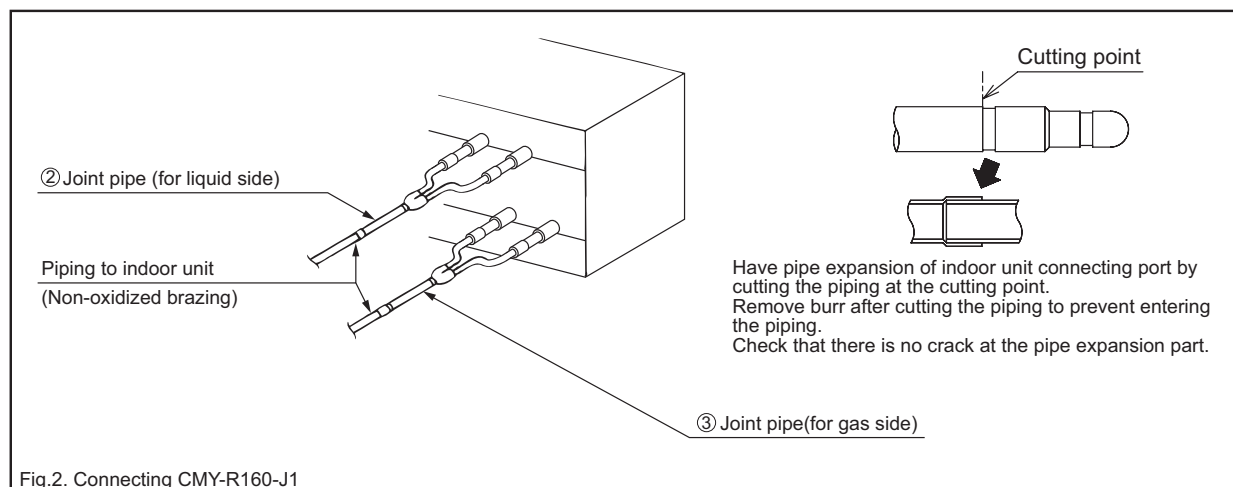
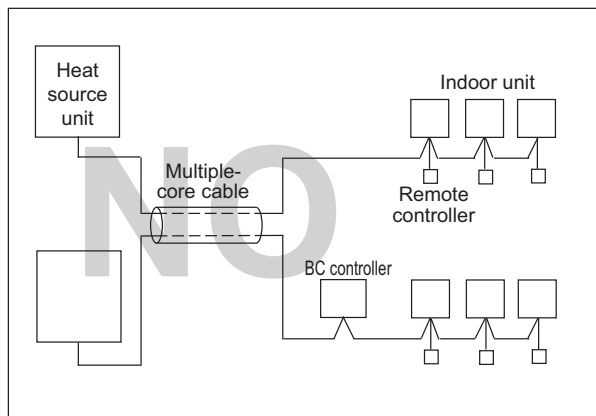
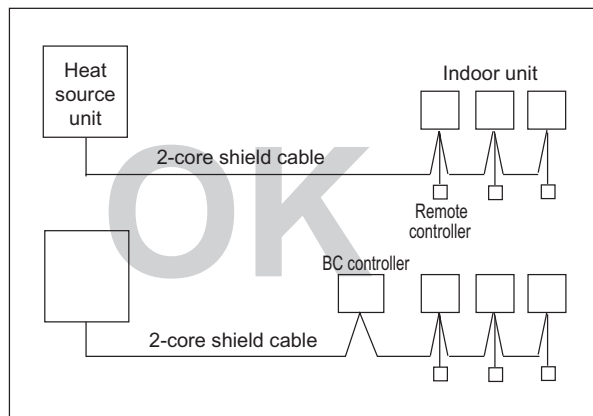


Fig.2. Connecting CMY-R160-J1

10. ELECTRICAL WORK

10-1. General Cautions

- ① Follow ordinance of your governmental organization for technical standard related to electrical equipment, wiring regulations, and guidance of each electric power company.
- ② Wiring for control (hereinafter referred to as transmission cable) shall be (50mm[1-5/8in] or more) apart from power source wiring so that it is not influenced by electric noise from power source wiring. (Do not insert transmission cable and power source wire in the same conduit.)
- ③ Be sure to provide designated grounding work to heat source unit.
- ④ Give some allowance to wiring for electrical part box of indoor and heat source unit, because the box is sometimes removed at the time of service work.
- ⑤ Never connect 100V, 208~230V, 460V power source to terminal block of transmission cable. If connected, electrical parts will be damaged.
- ⑥ Use 2-core shield cable for transmission cable. If transmission cables of different systems are wired with the same multicore cable, the resultant poor transmitting and receiving will cause erroneous operations.
- ⑦ When extending the transmission line, make sure to extend the shield cable as well.



10. ELECTRICAL WORK

10-2. Power Supply for Indoor Unit and Outdoor Unit

10-2-1. Electrical Characteristics of Indoor Unit

Symbols: MCA : Min.Circuit Amps (=1.25xFLA) FLA : Full Load Amps					
IFM :Indoor Fan Motor					
Model	Indoor Unit				IFM
	Hz	Volts	Voltage range	MCA(A)	FLA(A)
PLFY-P08NCMU-ER4	60Hz	208 / 230V	198 to 253V	0.29 / 0.29	0.23 / 0.23
PLFY-P12NCMU-ER4				0.35 / 0.35	0.28 / 0.28
PLFY-P15NCMU-ER4				0.35 / 0.35	0.28 / 0.28
PLFY-P08NBMU-E2				0.39 / 0.39	0.31 / 0.31
PLFY-P12NBMU-E2				0.39 / 0.39	0.31 / 0.31
PLFY-P15NBMU-E2				0.39 / 0.39	0.31 / 0.31
PLFY-P18NBMU-E2				0.42 / 0.42	0.33 / 0.33
PLFY-P24NBMU-E2				0.59 / 0.59	0.47 / 0.47
PLFY-P30NBMU-E2				0.63 / 0.63	0.50 / 0.50
PLFY-P36NBMU-E2				1.09 / 1.09	0.87 / 0.87
PMFY-P06NBMU-ER5	60Hz	208 / 230V	188 to 253V	0.25 / 0.25	0.20 / 0.20
PMFY-P08NBMU-ER5				0.25 / 0.25	0.20 / 0.20
PMFY-P12NBMU-ER5				0.26 / 0.26	0.21 / 0.21
PMFY-P15NBMU-ER5				0.33 / 0.33	0.26 / 0.26
PEFY-P06NMAU-E3	60Hz	208 / 230V	188 to 253V	1.05 / 1.05	0.84 / 0.84
PEFY-P08NMAU-E3				1.05 / 1.05	0.84 / 0.84
PEFY-P12NMAU-E3				1.20 / 1.20	0.96 / 0.96
PEFY-P15NMAU-E3				1.45 / 1.45	1.16 / 1.16
PEFY-P18NMAU-E3				1.56 / 1.56	1.25 / 1.25
PEFY-P24NMAU-E3				2.73 / 2.73	2.18 / 2.18
PEFY-P27NMAU-E3				2.73 / 2.73	2.18 / 2.18
PEFY-P30NMAU-E3				2.73 / 2.73	2.18 / 2.18
PEFY-P36NMAU-E3				3.32 / 3.32	2.66 / 2.66
PEFY-P48NMAU-E3				3.41 / 3.41	2.73 / 2.73
PEFY-P54NMAU-E3				3.31 / 3.31	2.65 / 2.65
PEFY-P06NMSU-ER2	60Hz	208 / 230V	188 to 253V	0.47 / 0.50	0.32 / 0.31
PEFY-P08NMSU-ER2				0.47 / 0.50	0.41 / 0.39
PEFY-P12NMSU-ER2				0.68 / 0.74	0.46 / 0.43
PEFY-P15NMSU-ER2				1.20 / 1.33	0.47 / 0.45
PEFY-P18NMSU-ER2				1.20 / 1.33	0.64 / 0.60
PEFY-P24NMSU-ER2				1.57 / 1.73	0.88 / 0.83
PEFY-P15NMHU-E2				1.63 / 1.50	1.30 / 1.20
PEFY-P18NMHU-E2				1.63 / 1.50	1.30 / 1.20
PEFY-P24NMHU-E2				2.11 / 1.83	1.69 / 1.46
PEFY-P27NMHU-E2				2.35 / 2.13	1.88 / 1.70
PEFY-P30NMHU-E2				2.70 / 2.45	2.16 / 1.96
PEFY-P36NMHU-E2				4.16 / 3.67	3.32 / 2.94
PEFY-P48NMHU-E2				4.16 / 3.67	3.32 / 2.94
PEFY-P54NMHU-E2				4.18 / 3.69	3.34 / 2.95
PEFY-P72NMHSU-E			187 to 253V	7.7	6.2
PEFY-P96NMHSU-E				8.2	6.6

10. ELECTRICAL WORK

Symbols: MCA : Min.Circuit Amps (=1.25xFLA) FLA : Full Load Amps					
IFM :Indoor Fan Motor					
Model	Indoor Unit				IFM
	Hz	Volts	Voltage range	MCA(A)	FLA(A)
PCFY-P15NKMU-ER1	60Hz	208 / 230V	188 to 253V	0.44 / 0.44	0.35 / 0.35
PCFY-P24NKMU-ER1				0.52 / 0.52	0.41 / 0.41
PCFY-P30NKMU-ER1				1.22 / 1.22	0.97 / 0.97
PCFY-P36NKMU-ER1				1.22 / 1.22	0.97 / 0.97
PKFY-P06NBMU-E2	60Hz	208 / 230V	198 to 253V	0.19 / 0.19	0.15 / 0.15
PKFY-P08NBMU-E2				0.38 / 0.38	0.30 / 0.30
PKFY-P12NBMU-E2				0.38 / 0.38	0.30 / 0.30
PKFY-P15NBMU-E2				0.38 / 0.38	0.30 / 0.30
PKFY-P18NBMU-E2				0.38 / 0.38	0.30 / 0.30
PKFY-P24NKMU-E2.TH				0.63 / 0.63	0.50 / 0.50
PKFY-P30NKMU-E2.TH				0.63 / 0.63	0.50 / 0.50
PFFY-P06NEMU-E	60Hz	208 / 230V	188 to 253V	0.32 / 0.34	0.25 / 0.27
PFFY-P08NEMU-E				0.32 / 0.34	0.25 / 0.27
PFFY-P12NEMU-E				0.34 / 0.38	0.27 / 0.30
PFFY-P15NEMU-E				0.40 / 0.44	0.32 / 0.35
PFFY-P18NEMU-E				0.48 / 0.53	0.38 / 0.42
PFFY-P24NEMU-E				0.59 / 0.64	0.47 / 0.51
PFFY-P06NRMU-E	60Hz	208 / 230V	188 to 253V	0.32 / 0.34	0.25 / 0.27
PFFY-P08NRMU-E				0.32 / 0.34	0.25 / 0.27
PFFY-P12NRMU-E				0.34 / 0.38	0.27 / 0.30
PFFY-P15NRMU-E				0.40 / 0.44	0.32 / 0.35
PFFY-P18NRMU-E				0.48 / 0.53	0.38 / 0.42
PFFY-P24NRMU-E				0.59 / 0.64	0.47 / 0.51
PVFY-P12NAMU-E	60Hz	208 / 230V	188 to 253V	3.00 / 3.00	2.4 / 2.4
PVFY-P18NAMU-E				3.00 / 3.00	2.4 / 2.4
PVFY-P24NAMU-E				3.00 / 3.00	2.4 / 2.4
PVFY-P30NAMU-E				4.13 / 4.13	3.3 / 3.3
PVFY-P36NAMU-E				4.13 / 4.13	3.3 / 3.3
PVFY-P48NAMU-E				5.63 / 5.63	4.5 / 4.5
PVFY-P54NAMU-E				5.63 / 5.63	4.5 / 4.5
PWFY-P36NEMU-E-AU	60Hz	208 / 230V	188 to 253V	0.09	-
PWFY-P72NEMU-E-AU				0.09	-

10. ELECTRICAL WORK

10-2-2. Electrical Characteristics of Water-source Unit

Symbols: MCA : Min.Circuit Amps (=1.25xFLA) FLA : Full Load Amps SC : Starting Current							
PQRY-P-T(S)LMU							
Model	Unit Combination	Water-source unit					Compressor
		Hz	Volts	Voltage range	MCA(A)	MOP (A)	SC(A)
PQRY-P72TLMU-A	-	60Hz	208/230V	188 to 253V	13 / 12	20 / 20	15
PQRY-P96TLMU-A	-				19 / 17	30 / 25	15
PQRY-P120TLMU-A	-				29 / 26	50 / 45	15
PQRY-P144TLMU-A	-				35 / 32	60 / 50	15
PQRY-P168TLMU-A	-				44 / 39	70 / 70	15
PQRY-P192TLMU-A	-				54 / 49	90 / 80	15
PQRY-P216TLMU-A	-				69 / 63	110 / 110	15
PQRY-P249TLMU-A	-				79 / 71	125 / 125	15
PQRY-P144TSLMU-A	PQRY-P72TLMU-A				13 / 12	20 / 20	15
	PQRY-P72TLMU-A				13 / 12	20 / 20	15
PQRY-P168TSLMU-A	PQRY-P72TLMU-A				13 / 12	20 / 20	15
	PQRY-P96TLMU-A				19 / 17	30 / 25	15
PQRY-P192TSLMU-A	PQRY-P96TLMU-A				19 / 17	30 / 25	15
	PQRY-P96TLMU-A				19 / 17	30 / 25	15
PQRY-P216TSLMU-A	PQRY-P96TLMU-A				19 / 17	30 / 25	15
	PQRY-P120TLMU-A				29 / 26	50 / 45	15
PQRY-P240TSLMU-A	PQRY-P120TLMU-A				29 / 26	50 / 45	15
	PQRY-P120TLMU-A				29 / 26	50 / 45	15
PQRY-P288TSLMU-A	PQRY-P144TLMU-A				35 / 32	60 / 50	15
	PQRY-P144TLMU-A				35 / 32	60 / 50	15
PQRY-P312TSLMU-A	PQRY-P144TLMU-A				35 / 32	60 / 50	15
	PQRY-P168TLMU-A				44 / 39	70 / 70	15
PQRY-P336TSLMU-A	PQRY-P168TLMU-A				44 / 39	70 / 70	15
	PQRY-P168TLMU-A				44 / 39	70 / 70	15

Symbols: MCA : Min.Circuit Amps (=1.25xFLA) FLA : Full Load Amps SC : Starting Current							
PQRY-P-T(S)HLMU							
Model	Unit Combination	Water-source unit					Compressor
		Hz	Volts	Voltage range	MCA(A)	MOP (A)	SC(A)
PQRY-P72YLMU-A	-	60Hz	460V	414 to 506V	6	15	7
PQRY-P96YLMU-A	-				9	15	7
PQRY-P120YLMU-A	-				13	20	7
PQRY-P144YLMU-A	-				16	25	7
PQRY-P168YLMU-A	-				20	35	7
PQRY-P192YLMU-A	-				25	40	7
PQRY-P216YLMU-A	-				31	50	7
PQRY-P240YLMU-A	-				36	60	7
PQRY-P144YSLMU-A	PQRY-P72YLMU-A				6	15	7
	PQRY-P72YLMU-A				6	15	7
PQRY-P168YSLMU-A	PQRY-P72YLMU-A				6	15	7
	PQRY-P96YLMU-A				9	15	7
PQRY-P192YSLMU-A	PQRY-P96YLMU-A				9	15	7
	PQRY-P96YLMU-A				9	15	7
PQRY-P216YSLMU-A	PQRY-P96YLMU-A				9	15	7
	PQRY-P120YLMU-A				13	20	7
PQRY-P240YSLMU-A	PQRY-P120YLMU-A				13	20	7
	PQRY-P120YLMU-A				13	20	7
PQRY-P288YSLMU-A	PQRY-P144YLMU-A				16	25	7
	PQRY-P144YLMU-A				16	25	7
PQRY-P312YSLMU-A	PQRY-P144YLMU-A				16	25	7
	PQRY-P168YLMU-A				20	35	7
PQRY-P336YSLMU-A	PQRY-P168YLMU-A				20	35	7
	PQRY-P168YLMU-A				20	35	7

10. ELECTRICAL WORK

10-2-3. Electrical Characteristics of BC Controller

Symbols: MCA : Min.Circuit Amps (=1.25 x RLA) FLA : Full Load Amps RLA : Rated Load Amps						
BC-Controller for PQRY-P-THMU, PQRY-P-YHMU						
Model	Hz	Volts	Voltage range	MCA(A)	FLA(A)	RLA(A)
CMB-P105NU-G1	60Hz	208 / 230V	198 to 253V	0.44 / 0.40	15 / 15	0.35 / 0.32
CMB-P106NU-G1				0.52 / 0.47	15 / 15	0.41 / 0.37
CMB-P108NU-G1				0.68 / 0.61	15 / 15	0.54 / 0.49
CMB-P1010NU-G1				0.83 / 0.75	15 / 15	0.66 / 0.60
CMB-P1013NU-G1				1.08 / 0.97	15 / 15	0.86 / 0.77
CMB-P1016NU-G1				1.30 / 1.18	15 / 15	1.04 / 0.94
CMB-P1013NU-GA1				1.08 / 0.97	15 / 15	0.86 / 0.77
CMB-P104NU-GB1				0.32 / 0.29	15 / 15	0.25 / 0.23
CMB-P108NU-GB1				0.64 / 0.58	15 / 15	0.51 / 0.46
CMB-P108NU-HA1				1.45 / 1.70	15 / 15	1.16 / 1.36
CMB-P1010NU-HA1				1.60 / 1.88	15 / 15	1.28 / 1.50
CMB-P1016NU-HA1				1.65 / 1.93	15 / 15	1.32 / 1.54
CMB-P1016NU-HB1			188 to 253V	1.46 / 1.71	15 / 15	1.17 / 1.37

10. ELECTRICAL WORK

10-3. Power Cable Specifications

Thickness of wire for main power supply, capacities of the switch and system impedance

	Model	Minimum wire thickness (mm ² /AWG)		
		Main cable	Branch	Ground
Heat source unit	PQRY-P72TLMU-A	3.3/12	-	3.3/12
	PQRY-P96TLMU-A	5.3/10	-	5.3/10
	PQRY-P120TLMU-A	8.4/8	-	8.4/8
	PQRY-P144TLMU-A	13.3/6	-	13.3/6
	PQRY-P168TLMU-A	13.3/6	-	13.3/6
	PQRY-P192TLMU-A	21.2/4	-	21.2/4
	PQRY-P216TLMU-A	33.6/2	-	33.6/2
	PQRY-P240TLMU-A	33.6/2	-	33.6/2
Total operating current of the indoor unit	F0 = 15 or less *1	2.1/14	2.1/14	2.1/14
	F0 = 20 or less *1	3.3/12	3.3/12	3.3/12
	F0 = 30 or less *1	5.3/10	5.3/10	5.3/10

	Model	Minimum wire thickness (mm ² /AWG)		
		Main cable	Branch	Ground
Heat source unit	PQRY-P72YLMU-A	2.1/14	-	2.1/14
	PQRY-P96YLMU-A	2.1/14	-	2.1/14
	PQRY-P120YLMU-A	3.3/12	-	3.3/12
	PQRY-P144YLMU-A	3.3/12	-	3.3/12
	PQRY-P168YLMU-A	5.3/10	-	5.3/10
	PQRY-P192YLMU-A	5.3/10	-	5.3/10
	PQRY-P216YLMU-A	8.4/8	-	8.4/8
	PQRY-P240YLMU-A	13.3/6	-	13.3/6
Total operating current of the indoor unit	F0 = 15 or less *1	2.1/14	2.1/14	2.1/14
	F0 = 20 or less *1	3.3/12	3.3/12	3.3/12
	F0 = 30 or less *1	5.3/10	5.3/10	5.3/10

*1 Please take the larger of F1 or F2 as the value for F0.

F1 = Total operating maximum current of the indoor units × 1.2

F2 = {V1 × (Quantity of Type1)/C} + {V1 × (Quantity of Type2)/C} + {V1 × (Quantity of Type3)/C} + {V1 × (Quantity of Others)/C}

Indoor unit		V1	V2
Type1	PLFY-NBMU, PMFY-NBMU, PEFY-NMSU, PCFY-NKMU, PKFY-NHMu, PKFY-NKMU	18.6	2.4
Type2	PEFY-NMAU	38	1.6
Type3	PEFY-NMHSU	13.8	4.8
Others	Other indoor unit	0	0

C: Multiple of tripping current at tripping time 0.01s

Please pick up "C" from the tripping characteristic of the breaker.

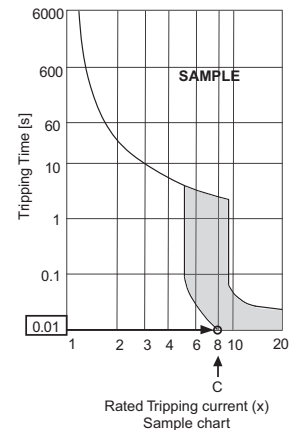
<Example of "F2" calculation>

*Condition PEFY-NMSU × 4 + PEFY-NMAU × 1, C = 8 (refer to right sample chart)

F2 = 18.6 × 4/8 + 38 × 1/8

= 14.05

→16 A breaker (Tripping current = 8 × 16 A at 0.01s)



*2 Current sensitivity is calculated using the following formula.

G1 = (V2 × Quantity of Type1) + (V2 × Quantity of Type2) + (V2 × Quantity of Type3) + (V2 × Quantity of Others) + (V3 × Wire length [km])

G1	Current sensitivity
30 or less	30 mA 0.1sec or less
100 or less	100 mA 0.1sec or less

Wire thickness	V3
1.5 mm ²	48
2.5 mm ²	56
4.0 mm ²	66

1. Use dedicated power supplies for the heat source unit and indoor unit. Ensure OC and OS are wired individually.
2. Bear in mind ambient conditions (ambient temperature, direct sunlight, rain water, etc.) when proceeding with the wiring and connections.
3. The wire size is the minimum value for metal conduit wiring. If the voltage drops, use a wire that is one rank thicker in diameter. Make sure the power-supply voltage does not drop more than 10%. Make sure that the voltage imbalance between the phases is 2% or less.
4. Specific wiring requirements should adhere to the wiring regulations of the region.
5. Power supply cords of parts of appliances for heat source use shall not be lighter than polychloroprene sheathed flexible cord (design 245 IEC57). For example, use wiring such as YZW.
6. A switch with at least 3 mm [1/8 in.] contact separation in each pole shall be provided by the Air Conditioner installer.

⚠ WARNING

- ◆ Be sure to use specified wires for connections and ensure no external force is imparted to terminal connections. If connections are not fixed firmly, heating or fire may result.
- ◆ Be sure to use the appropriate type of overcurrent protection switch. Note that generated overcurrent may include some amount of direct current.

⚠ CAUTION

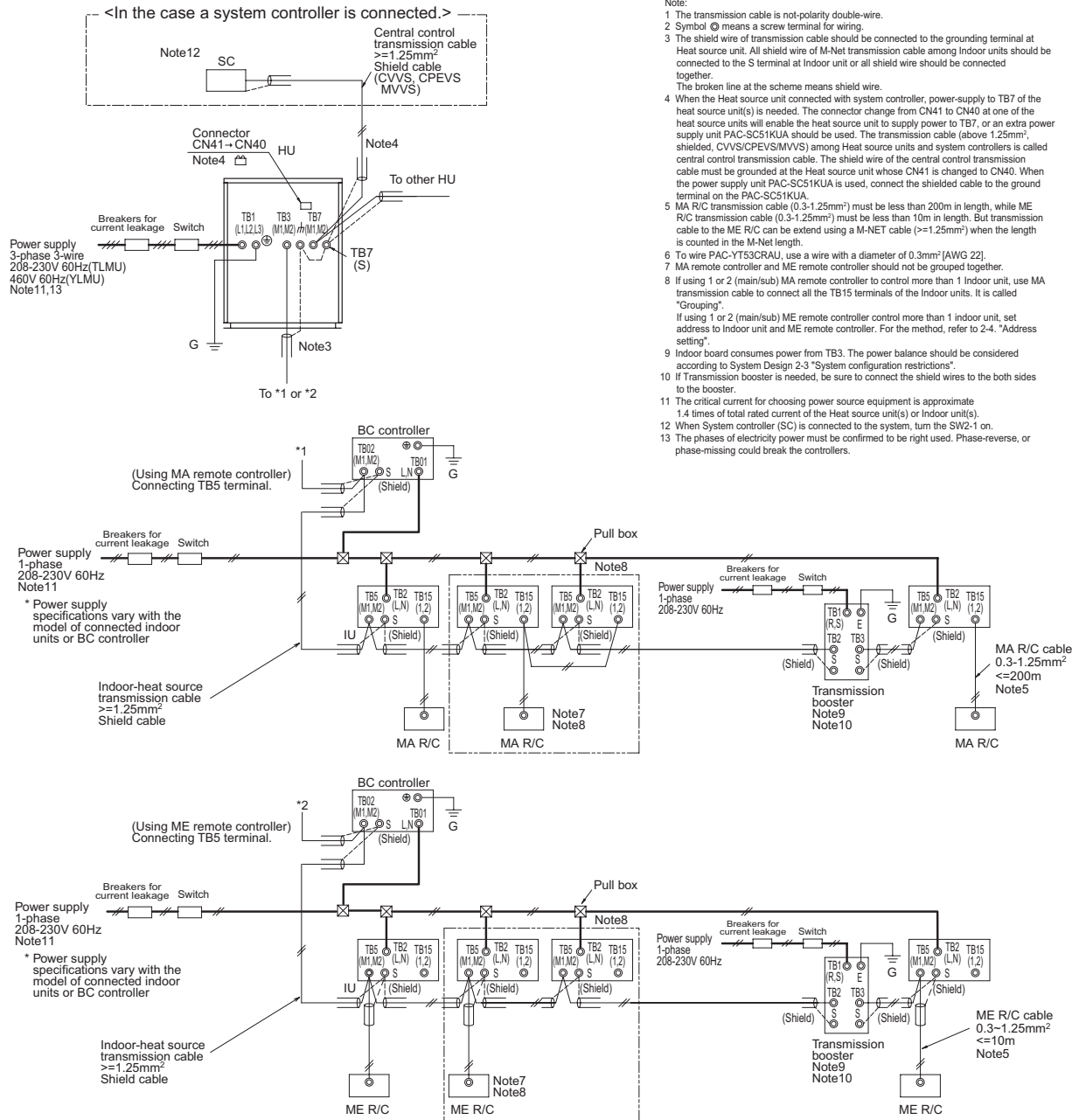
- ◆ The breakers for current leakage should support Inverter circuit. (e.g. Mitsubishi Electric's NV-C series or equivalent). If no earth leakage breaker is installed, it may cause an electric shock.
- ◆ Breakers for current leakage should combine using of switch.
- ◆ Do not use anything other than a breaker with the correct capacity. Using a breaker of too large capacity may cause malfunction or fire.
- ◆ If a large electric current flows due to malfunction or faulty wiring, earth-leakage breakers on the unit side and on the upstream side of the power supply system may both operate. Depending on the importance of the system, separate the power supply system or take protective coordination of breakers.

10. ELECTRICAL WORK

10-4. Power Supply Examples

The local standards and/or regulations is applicable at a higher priority.

10-4-1. PQRY-P72, 96, 120, 144, 168, 192, 216, 240TLMU/YLMU

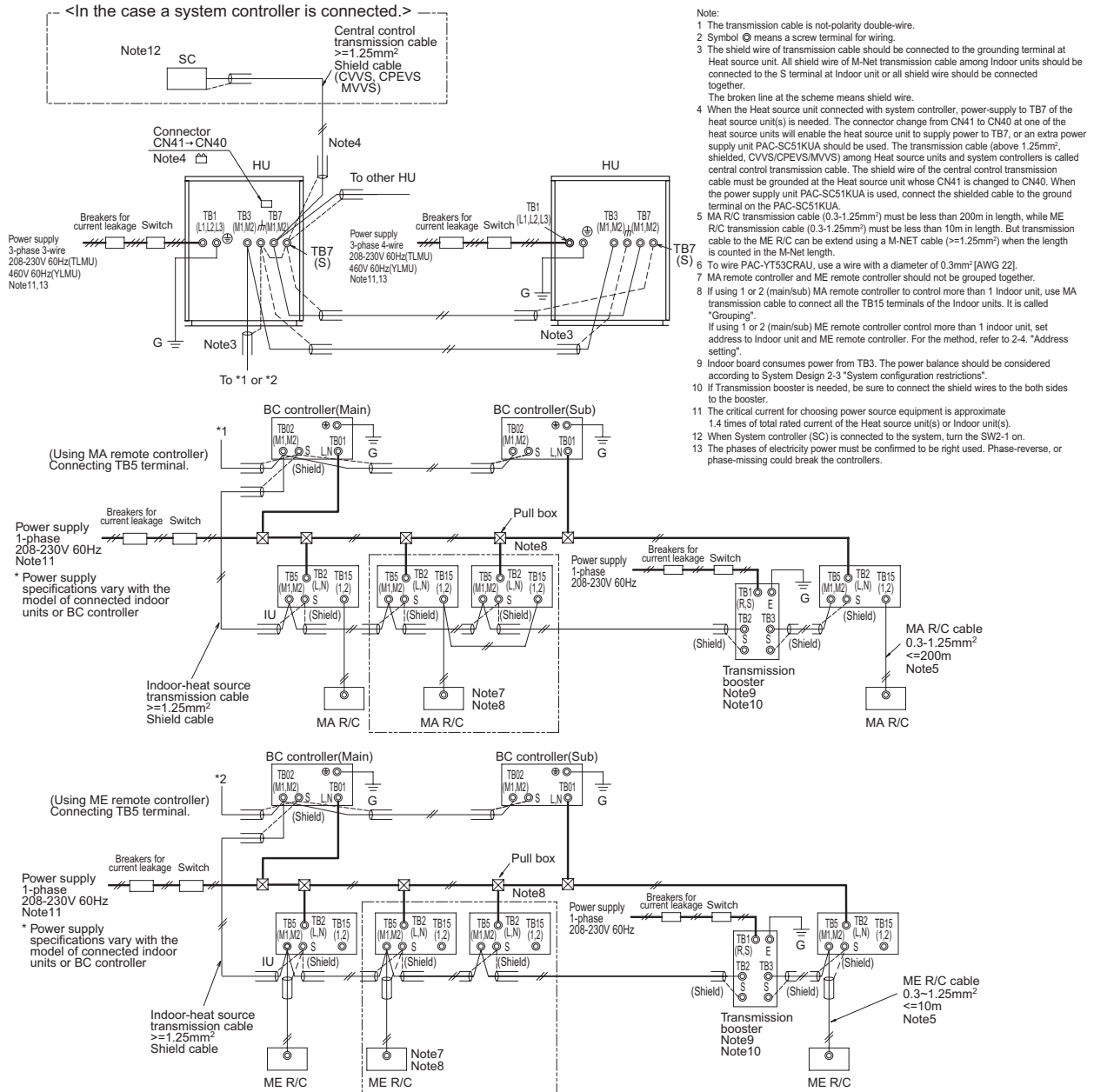


Symbol		Model	Minimum Wire thickness	
			Power wire <mm²/AWG>	G wire <mm²/AWG>
BKC	Breaker capacity	PQRY-P72TLMU-A	3.3/12	3.3/12
OC	Over-current protector	PQRY-P96TLMU-A	5.3/10	5.3/10
NFB	Non-fuse breaker	PQRY-P120TLMU-A	8.4/8	8.4/8
HU	Heat source unit	PQRY-P144TLMU-A	13.3/6	13.3/6
IU	Indoor unit	PQRY-P168TLMU-A	13.3/6	13.3/6
SC	System controller	PQRY-P192TLMU-A	21.2/4	21.2/4
MA R/C	MA remote controller	PQRY-P216TLMU-A	33.6/2	33.6/2
ME R/C	ME remote controller	PQRY-P240TLMU-A	33.6/2	33.6/2
		PQRY-P72YLMU-A	2.1/14	2.1/14
		PQRY-P96YLMU-A	2.1/14	2.1/14
		PQRY-P120YLMU-A	3.3/12	3.3/12
		PQRY-P144YLMU-A	3.3/12	3.3/12
		PQRY-P168YLMU-A	5.3/10	5.3/10
		PQRY-P192YLMU-A	5.3/10	5.3/10
		PQRY-P216YLMU-A	8.4/8	8.4/8

10. ELECTRICAL WORK

The local standards and/or regulations is applicable at a higher priority.

10-4-2. PQRY-P144, 168, 192, 216, 240, 288, 312, 336TSLMU/YSLMU



Symbol		Model	Minimum Wire thickness	
			Power wire <mm²/AWG>	G wire <mm²/AWG>
BKC	Breaker capacity	PQRY-P72TLMU-A	3.3/12	3.3/12
OC	Over-current protector	PQRY-P96TLMU-A	5.3/10	5.3/10
NFB	Non-fuse breaker	PQRY-P120TLMU-A	8.4/8	8.4/8
HU	Heat source unit	PQRY-P144TLMU-A	13.3/6	13.3/6
IU	Indoor unit	PQRY-P168TLMU-A	13.3/6	13.3/6
SC	System controller	PQRY-P192TLMU-A	21.2/4	21.2/4
MA R/C	MA remote controller	PQRY-P216TLMU-A	33.6/2	33.6/2
ME R/C	ME remote controller	PQRY-P240TLMU-A	33.6/2	33.6/2
		PQRY-P72YLMU-A	2.1/14	2.1/14
		PQRY-P96YLMU-A	2.1/14	2.1/14
		PQRY-P120YLMU-A	3.3/12	3.3/12
		PQRY-P144YLMU-A	3.3/12	3.3/12
		PQRY-P168YLMU-A	5.3/10	5.3/10
		PQRY-P192YLMU-A	5.3/10	5.3/10
		PQRY-P216YLMU-A	8.4/8	8.4/8
		PQRY-P240YLMU-A	13.3/6	13.3/6

11. M-NET CONTROL

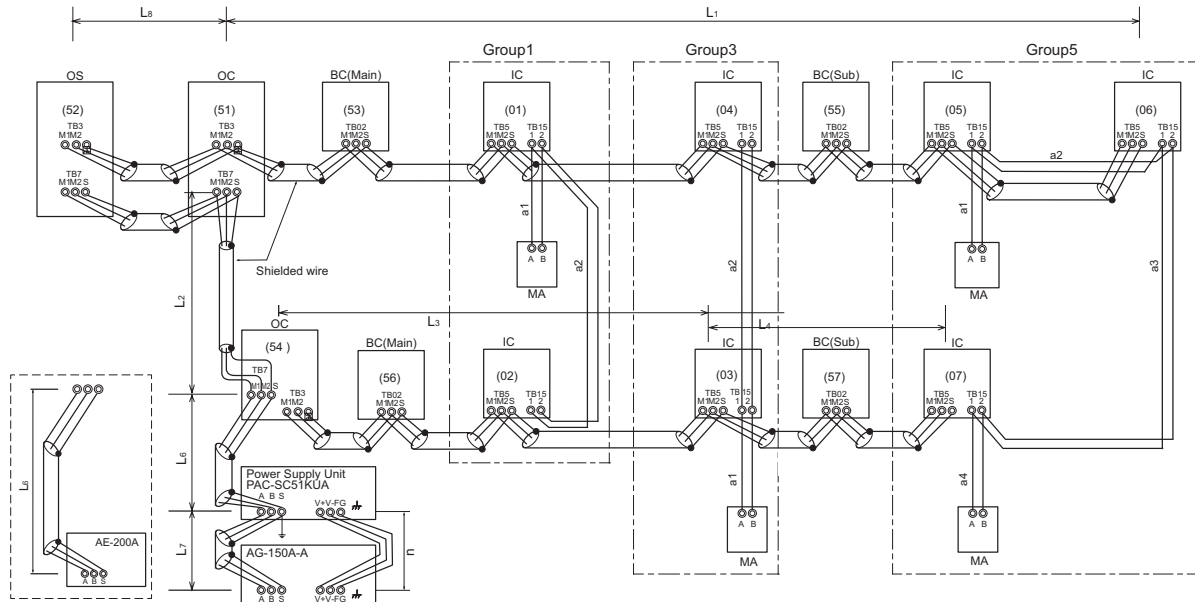
11-1. Transmission Cable Length Limitation

11-1-1. Using MA Remote controller

MA remote controller refers to Simple MA remote controller and wireless remote controller.

Long transmission cable causes voltage down, therefore, the length limitation should be obeyed to secure proper transmission.

Max. length via Heat source (M-NET cable)	$L1+L2+L3+L4, L1+L2+L6+L7, L3+L4+L6+L7$	$\leq 500\text{m}[1640\text{ft.}]$	1.25mm ² [AWG16] or thicker
Max. length to Heat source (M-NET cable)	$L1+L8, L3+L4, L6, L2+L6+L8, L7$	$\leq 200\text{m}[656\text{ft.}]$	1.25mm ² [AWG16] or thicker
Max. length from MA to Indoor	$a1+a2, a1+a2+a3+a4$	$\leq 200\text{m}[656\text{ft.}]$	0.3-1.25 mm ² [AWG22-16]
24VDC to AG-150A-A	n	$\leq 50\text{m}[164\text{ft.}]$	0.75-2.0 mm ² [AWG18-14]



OC, OS: Heat source unit controller; IC: Indoor unit controller; ME: ME remote controller

NOTE
Do not daisy-chain remote controllers.

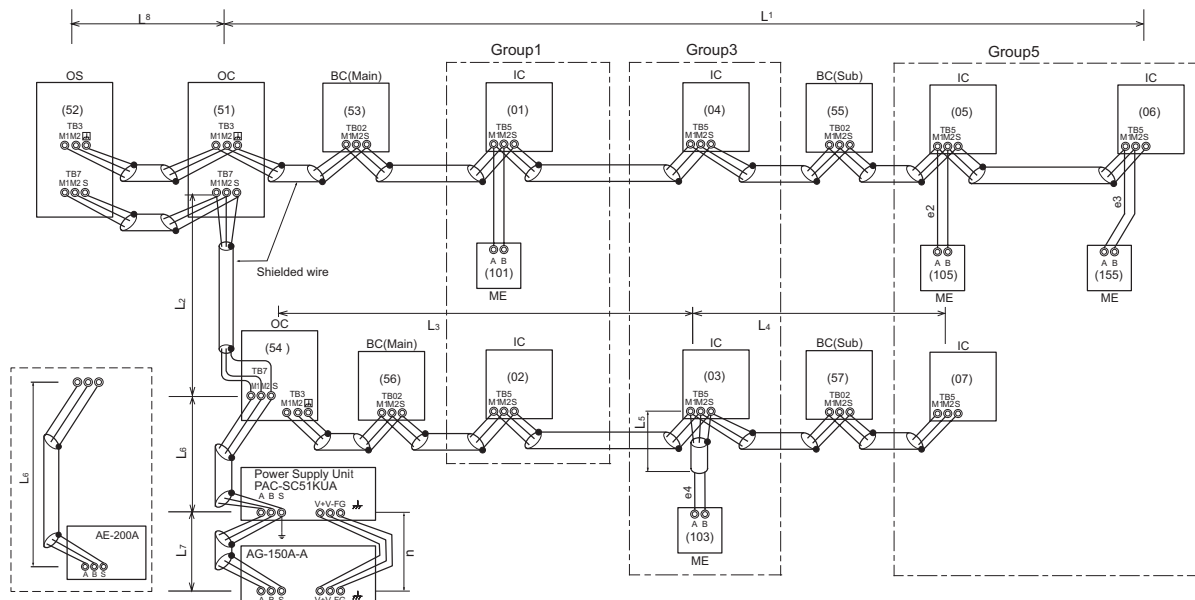
11-1-2. Using ME Remote controller

ME remote controller refers to Smart ME Controller.

Long transmission cable causes voltage down, therefore, the length limitation should be obeyed to secure proper transmission.

Max. length via Heat source (M-NET cable)	$L1+L2+L3+L4, L1+L2+L6+L7, L1+L2+L3+L5, L3+L4+L6+L7$	$\leq 500\text{m}[1640\text{ft.}]$	1.25mm ² [AWG16] or thicker
Max. length to Heat source (M-NET cable)	$L1+L8, L3+L4, L6, L2+L6+L8, L7, L3+L5$	$\leq 200\text{m}[656\text{ft.}]$	1.25mm ² [AWG16] or thicker
Max. length from ME to Indoor	$e1, e2+e3, e4$	$\leq 10\text{m}[32\text{ft.}]^*1$	0.3-1.25 mm ² [AWG22-16] *1
24VDC to AG-150A-A	n	$\leq 50\text{m}[164\text{ft.}]$	0.75-2.0 mm ² [AWG18-14]

*1. If the length from ME to Indoor exceed 10m, use 1.25 mm² [AWG16] shielded cable, but the total length should be counted into Max. length via Heat source.



NOTE

11. M-NET CONTROL

11-2. Transmission Cable Specifications

	Transmission cables (L)	ME Remote controller cables	MA Remote controller cables
Type of cable	Shielding wire (2-core) CVVS, CPEVS or MVVS	Sheathed 2-core cable (unshielded) CVV	
Cable size	More than 1.25mm ² [AWG16]	0.3~1.25mm ² [AWG22~16]*2	0.3~1.25mm ² [AWG22~16]*1 *2
Remarks	—	When 10m [32ft] is exceeded, use cables with the same specification as transmission cables.	Max length : 200m [656ft]

*1 To wire PAC-YT53CRAU, use a wire with a diameter of 0.3 mm² [AWG22]

*2 The use of cables 0.75 mm² [AWG18] or greater is recommended for easy handling.

CVVS, MVVS: PVC insulated PVC jacketed shielded control cable

CPEVS: PE insulated PVC jacketed shielded communication cable

CVV: PV insulated PVC sheathed control cable

11-3. System Configuration Restrictions

11-3-1. Common restrictions for the CITY MULTI system

For each Heat source unit, the maximum connectable quantity of Indoor unit is specified at its Specifications table.

- A) 1 Group of Indoor units can have 1-16 Indoor units;
- B) Maximum 2 remote controllers for 1 Group;
 *MA/ME remote controllers cannot be present together in 1group.
 *To wire PAC-YT53CRAU, use a wire with a diameter of 0.3 mm² [AWG22]
- C) 1 LOSSNAY unit can interlock maximum 16 Indoor units; 1 Indoor unit can interlock only 1 LOSSNAY unit.
- D) Maximum 3 System controllers are connectable when connecting to TB3 of the Heat source unit.
- E) Maximum 6 System controllers are connectable when connecting to TB7 of the Heat source unit, if the transmission power is supplied by the Heat source unit.
- F) 4 System controllers or more are connectable when connecting to TB7 of the Heat source unit, if the transmission power is supplied by the power supply unit PAC-SC51KUA. Details refer to 2-3-3-C.
 *System controller connected as described in D) and E) would have a risk that the failure of connected Heat source unit would stop power supply to the System controller

11-3-2. Ensuring proper communication power for M-NET

In order to ensure proper communication among Heat source unit, Indoor unit, LOSSNAY and Controllers, the transmission power situation for the M-NET should be observed. In some cases, Transmission booster should be used. Taking the power consumption index of Indoor unit sized P06-P54 as 1, the equivalent power consumption index and supply capability index of others are listed at Table 11-3-1 and Table 11-3-2.

Table 11-3-1 The equivalent power consumption

Indoor unit			LOSSNAY	BC controller	PWFY			MA RC.	ME Remote controller/Adapter	
Sized P06-P54	Sized P72, 96	PEFY-AF1200 CFMR	LGH-RX-E	CMB	P36NMU-E-BU	P36NMU-E-AU	P72NMU-E-AU	PAC-YT53CRAU PAR-FA32MA PZ-41SLB PZ-60DR-E	PZ-52SF PAC-YG60MCA PAC-YG66DCA PAC-YG63MCA	PAR-U01MEDU PAR-IF01AHC-J
1	7	2	0	2	6	1	5	0	0.25	0.5

Centralized Remote controller					ON/OFF controller	MN Converter	M-NET Interface/Converter	Heat source unit
AE-200A AE-50A	AG-150A-A EB-50GU-A	TC-24B	EW-50A	LMAP04U-E BAC-HD150	PAC-YT40ANRA	CMS-MNG-E	MAC-333 PAC-SF83MA-E	TB7 power consumption
0	0.5	4	0	0	1	2	0	0

*RC: Remote Controller

Table 11-3-2 The equivalent power supply

Transmission Booster	Power supply unit	Expansion controller	BM ADAPTER	System Controller		Heat source unit	Heat source unit (except TLMU)	Heat source unit TLMU
PAC-SF46EPA	PAC-SC51KUA	PAC-YG50ECA	BAC-HD150	AE-200A/AE-50A	EW-50A	Connector TB3 and TB7 total *	Connector TB7 only	Connector TB7 only
25	5	6	6	0*	1.5	32	6	0

*If PAC-SC51KUA is used to supply power at TB7 side, no power supply need from Heat source unit at TB7, Connector TB3 itself will therefore have 32.

*1 AE-200A/AE-50A has a built-in function to supply power to the M-NET transmission line. The amount of power that an AE-200A or an AE-50A can supply is equivalent to the power required by an MN converter (CMS-MNG-E) that is used for maintenance.

With the equivalent power consumption values in Table 11-3-1 and Table 11-3-2, PAC-SF46EPA can be designed into the air-conditioner system to ensure proper system communication according to 11-3-2-A, B, C.

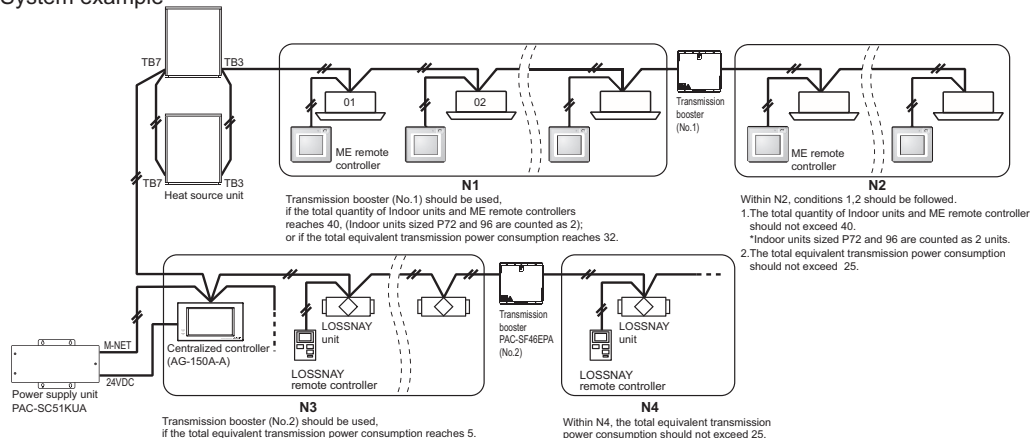
11-3-2-A) Firstly, count from TB3 at TB3 side the total quantity of Indoor units, ME remote controller, and System controllers.

If the total quantity reaches 40, a PAC-SF46EPA should be set. In this case, Indoor units sized P72 and 96 are counted as 2 indoor units, but MA remote controller(s) and PZ-41SLB are NOT counted.

11-3-2-B) Secondly, count from TB7 side the total transmission power consumption index. If the total power consumption reaches 32, a PAC-SF46EPA should be set. Yet, if a PAC-SC51KUA or another controller with a built-in power supply, such as PAC-YG50ECA, is used to supply power at TB7 side, count from index TB3 side only.

11-3-2-C) Thirdly, count from TB7 at TB7 side the total transmission power consumption index, If the total power consumption reaches 6, a PAC-SF46EPA should be set.

■ System example



11. M-NET CONTROL

11-3-3. Ensuring proper power supply to System controller

The power to System controller (excluding AE-200A, AE-50A, EW-50A, BAC-HD150, LM-AP) is supplied via M-NET transmission line. M-NET transmission line at TB7 side is called Centralized control transmission line while one at TB3 side is called Indoor-Heat source transmission line. There are 3 ways to supply power to the System controller.

A) Connecting to TB3 of the Heat source unit and receiving power from the Heat source unit.

B) Connecting to TB7 of the Heat source unit and receiving power from the Heat source unit.

C) Connecting to TB7 of the Heat source unit but receiving power from power supply unit PAC-SC51KUA.

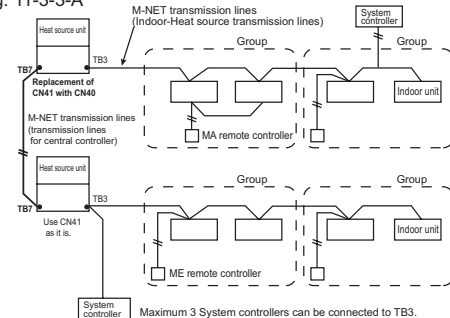
* System controllers (AE-200A, AE-50A, EW-50A, BAC-HD150, LM-AP) have a built-in function to supply power to the M-NET transmission lines, so no power needs to be supplied to the M-NET transmission lines from the Heat source units or from PAC-SC51KUA.

11-3-3-A. When connecting to TB3 of the Heat source unit and receiving power from the Heat source unit.

Maximum 3 System controllers can be connected to TB3.

If there is more than 1 Heat source unit, it is necessary to replace power supply switch connector CN41 with CN40 on one Heat source unit.

Fig. 11-3-3-A

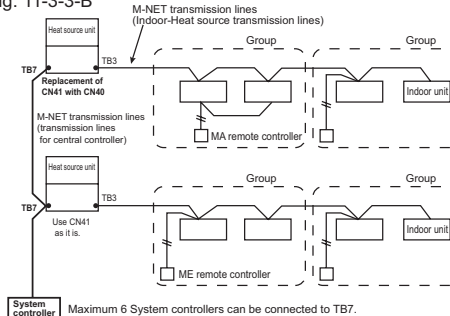


11-3-3-B. When connecting to TB7 of the Heat source unit and receiving power from the Heat source unit.

Maximum 6 System controllers can be connected to TB7 and receiving power from the Heat source unit.

It is necessary to replace power supply switch connector CN41 with CN40 on one Heat source unit.

Fig. 11-3-3-B

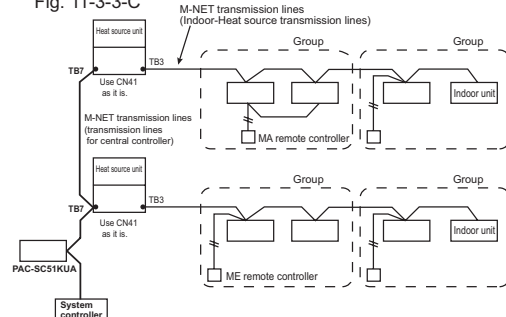


11-3-3-C. When connecting to TB7 of the Heat source unit but receiving power from PAC-SC51KUA.

When using PAC-SC51KUA to supply transmission power, the power supply connector CN41 on the Heat source units should be kept as it is. It is also a factory setting.

1 PAC-SC51KUA supports maximum 1 AG-150A-A or 1 EB-50GU-A unit due to the limited power 24VDC at its TB3. However, 1 PAC-SC51KUA supplies transmission power at its TB2 equal to 5 Indoor units, which is referable at Table 2-3-2. If PZ-52SF, System controller, ON/OFF controller connected to TB7 consume transmission power more than 5 (Indoor units), Transmission booster PAC-SF46EPA is needed. PAC-SF46EPA supplies transmission power equal to 25 Indoor units.

Fig. 11-3-3-C



CAUTION

■AG-150A-A/EB-50GU-A* are recommended to connect to TB7 because it performs back-up to a number of data.

In an air conditioner system has more than 1 Heat source units, AG-150A-A/EB-50GU-A receiving transmission power at TB3 or TB7 on one of the Heat source units would have a risk that the connected Heat source unit failure would stop power supply to AG-150A-A/EB-50GU-A, and disrupt the whole system.

When applying apportioned electric power function, AG-150A-A/EB-50GU-A are necessary to be connected to TB7 and has its own power supply unit PAC-SC51KUA.

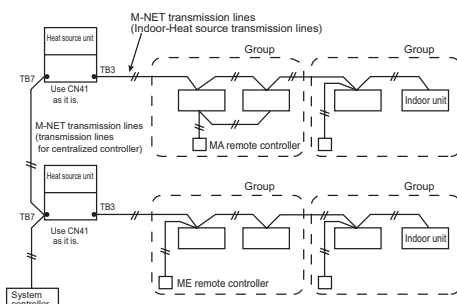
Note: Power supply unit PAC-SC51KUA is for AG-150A-A/EB-50GU-A.

*1: AG-150A-A is an example model of system controllers.

■How to connect system controllers (AE-200A, AE-50A, EW-50A, BAC-HD150, LM-AP) to a given system
System controllers (AE-200A, AE-50A, EW-50A, BAC-HD150, LM-AP) have a built-in function to supply power to the M-NET transmission lines, so no power needs to be supplied to the M-NET transmission lines from the Heat source units or from PAC-SC51KUA.

Leave the power supply connector on the Heat source unit connected to CN41 as it is.
Refer to 2-3-2 for information about the power-supply capacity of each system controller (EW-50A, BAC-HD150, LM-AP) to the low-level system controllers.

Fig. 11-3-3-D



11. M-NET CONTROL

11-3-4. Power supply to LM-AP

1-phase 208-230V AC power supply is needed.

The power supply unit PAC-SC51KUA is not necessary when connecting only the LM-AP. Yet, make sure to change the power supply changeover connector CN41 to CN40 on the LM-AP.

11-3-5. Power supply to expansion controller

1-phase 100-240VAC power supply is needed.

The power supply unit PAC-SC51KUA is not necessary.

The expansion controller supplies power through TB3, which equals 6 indoor units. (refer to Table 2-3-2)

11-3-6. Power supply to BM ADAPTER

1-phase 100-240VAC power supply is needed.

The power supply unit PAC-SC51KUA is not necessary when only BM ADAPTER is connected.

Yet, make sure to move the power jumper from CN41 to CN40 on the BM ADAPTER.

11-3-7. Power supply to AE-200A/AE-50A/EW-50A

1-phase 100-240VAC power supply is needed.

The power supply unit PAC-SC51KUA is not necessary when connecting only the AE-200A/AE-50A/EW-50A.

11-4. Address Setting

11-4-1. Switch operation

In order to constitute CITY MULTI in a complete system, switch operation for setting the unit address No. and connection No. is required.

① Address No. of heat source unit, indoor unit and ME remote controller.

The address No. is set at the address setting board.

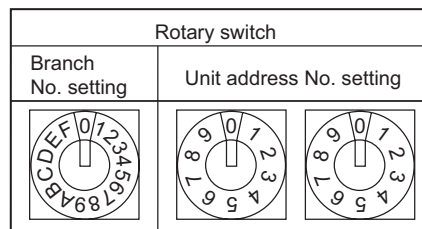
In the case of WR2 system, it is necessary to set the same No. at the branch No. switch of indoor unit as that of the BC controller connected. (When connecting two or more branches, use the lowest branch No.)

② Caution for switch operations

- Be sure to shut off power source before switch setting. If operated with power source on, switch can not operate properly.
- No units with identical unit address shall exist in one whole air conditioner system. If set erroneously, the system can not operate.

③ MA remote controller

- When connecting only one remote controller to one group, it is always the main remote controller. When connecting two remote controllers to one group, set one remote controller as the main remote controller and the other as the sub remote controller.
- The factory setting is "Main".



PAC-YT53CRAU

Setting the dip switches

There are switches on the back of the top case. Remote controller Main/Sub and other function settings are performed using these switches. Ordinarily, only change the Main/Sub setting of SW1.

(The factory settings are ON for SW1, 3, and 4 and OFF for SW2.)

SW No	SW contents Main	ON	OFF	Comment
1	Remote controller Main/Sub setting	Main	Sub	Set one of the two remote controllers at one group to "ON".
2	Temperature display units setting	Celsius	Fahrenheit	When the temperature is displayed in [Fahrenheit], set to "OFF".
3	Cooling/heating display in AUTO mode	Yes	No	When you do not want to display "Cooling" and "Heating" in the AUTO mode, set to "OFF".
4	Indoor temperature display	Yes	No	When you do not want to display the indoor temperature, set to "OFF".

11. M-NET CONTROL

11-4-2. Rule of setting address

Unit		Address setting	Example	Note
Indoor unit		01 ~ 50	 	Use the most recent address within the same group of indoor units. Make the indoor units address connected to the BC controller (Sub) larger than the indoor units address connected to the BC controller (Main). If applicable, set the sub BC controllers in an PQR system in the following order: (1) Indoor unit to be connected to the BC controller (Main) (2) Indoor unit to be connected to the BC controller (No.1 Sub) (3) Indoor unit to be connected to the BC controller (No.2 Sub) Set the address so that (1)<(2)<(3)
Heat source unit		51 ~ 99, 100 (Note1)	 	The smallest address of indoor unit in same refrigerant system + 50 Assign sequential address numbers to the heat source units in one refrigerant circuit system. OC and OS are automatically detected. (Note 2) * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
BC controller (Main)		52 ~ 99, 100	 	The address of heat source unit + 1 * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
BC controller (Sub)		52 ~ 99, 100	 	Lowest address within the indoor units connected to the BC controller (Sub) plus 50.
Local remote controller	ME, LOSSNAY Remote controller (Main)	101 ~ 150	1 Fixed  	The smallest address of indoor unit in the group + 100 * The place of "100" is fixed to "1"
	ME, LOSSNAY Remote controller (Sub)	151 ~ 199, 200	1 Fixed  	The address of main remote controller + 50 * The address automatically becomes "200" if it is set as "00"
System controller	ON/OFF remote controller	000, 201 ~ 250	  	The smallest group No. to be managed + 200 * The smallest group No. to be managed is changeable.
	AE-200A/AE-50A AG-150A-A EB-50GU-A EW-50A	000, 201 ~ 250	  	
	PAC-YG50ECA	000, 201 ~ 250	  	* Settings are made on the initial screen of AG-150A-A.
	BAC-HD150	000, 201 ~ 250	  	* Settings are made with setting tool of BM ADAPTER.
	LMAP04U-E	201 ~ 250	2 Fixed  	

Note1: To set the address to "100", set it to "50"

Note2: Heat source units OC and OS in one refrigerant circuit system are automatically detected.

OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

11. M-NET CONTROL

11-4-3. System examples

Factory setting

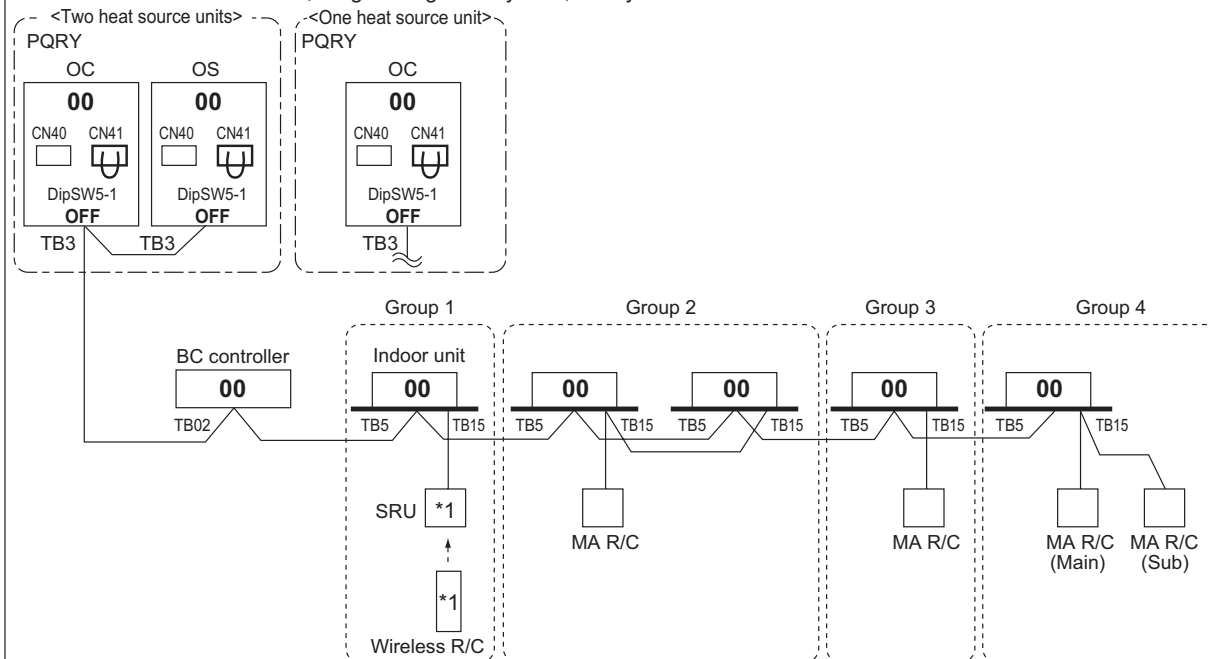
Original switch setting of the heat sources, indoors, controllers, LM-AP, and BM ADAPTER at shipment is as follows.

- Heat source unit : Address: 00, CN41: ON (Jumper), DipSW5-1: OFF
- Indoor unit : Address: 00
- BC controller : Address: 00
- ME remote controller : Address: 101
- LM-AP : Address: 247, CN41: ON (Jumper), DipSW1-2: OFF
- BM ADAPTER : Address: 000, CN41: ON (Jumper)
- AE-200A/AE-50A/EW-50A : Address: 000, CN21: ON (Jumper)

Setting at the site

- DipSW5-1(Heat source) : When the System Controller is used, all the Dip SW5-1 at the heat source units should be set to "ON". * Dip SW5-1 remains OFF when only LM-AP is used.
- DipSW1-2(LM-AP) : When the LM-AP is used together with System Controller, DipSW1-2 at the LM-AP should be set to "ON".
- CN40/CN41 : Change jumper from CN41 to CN 40 at heat source control board will activate central transmission power supply to TB7;
(Change jumper at only one heat source unit when activating the transmission power supply without using a power supply unit.)
Change jumper from CN41 to CN 40 at LM-AP/BM ADAPTER will activate transmission power supply to LM-AP/BM ADAPTER itself;
Power supply unit is recommended to use for a system having more than 1 heat source unit, because the central transmission power supply from TB7 of one of heat source units is risking that the heat source unit failure may let down the whole central control system.
- CN21(AE-200A/AE-50A/EW-50A) : Activates the power supply to M-NET transmission line from AE-200A/AE-50A/EW-50A
(CN21: ON (power supplied), OFF (power not supplied))

11-4-3-1. MA remote controller, Single-refrigerant-system, No System Controller



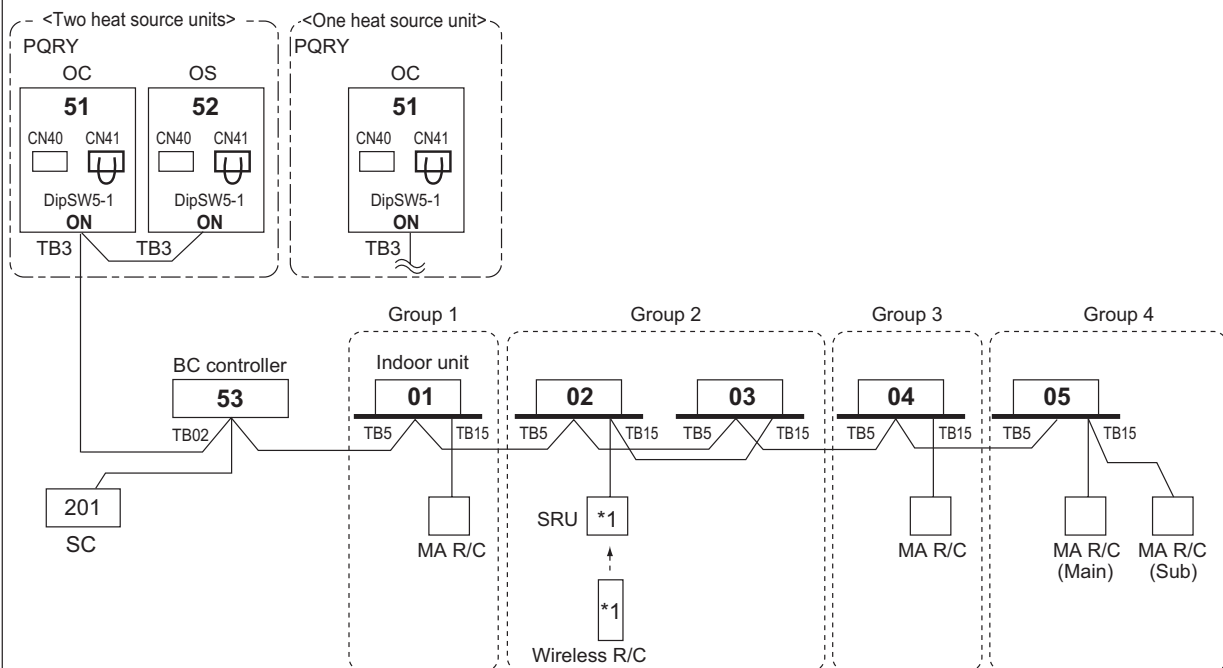
*1 For Wireless R/C and Signal receiver unit (SRU), channel 1, 2 and 3 are selectable and should be set to same channel.

NOTE:

1. Heat source units OC and OS in one refrigerant circuit system are automatically detected.
OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.
2. No address setting is needed.
3. For a system having more than 32 indoor unit (P06-P54), confirm the need of Booster at 11-3 "System configuration restrictions".
4. Indoor units should be set with a branch number.
5. Address setting is required if a sub BC controller is connected.

11. M-NET CONTROL

11-4-3-2. MA remote controller, Single-refrigerant-system, System Controller



*1 For Wireless R/C and Signal receiver unit (SRU), channel 1, 2 and 3 are selectable and should be set to same channel.

*SC can be connected to TB3 side or TB7 side;

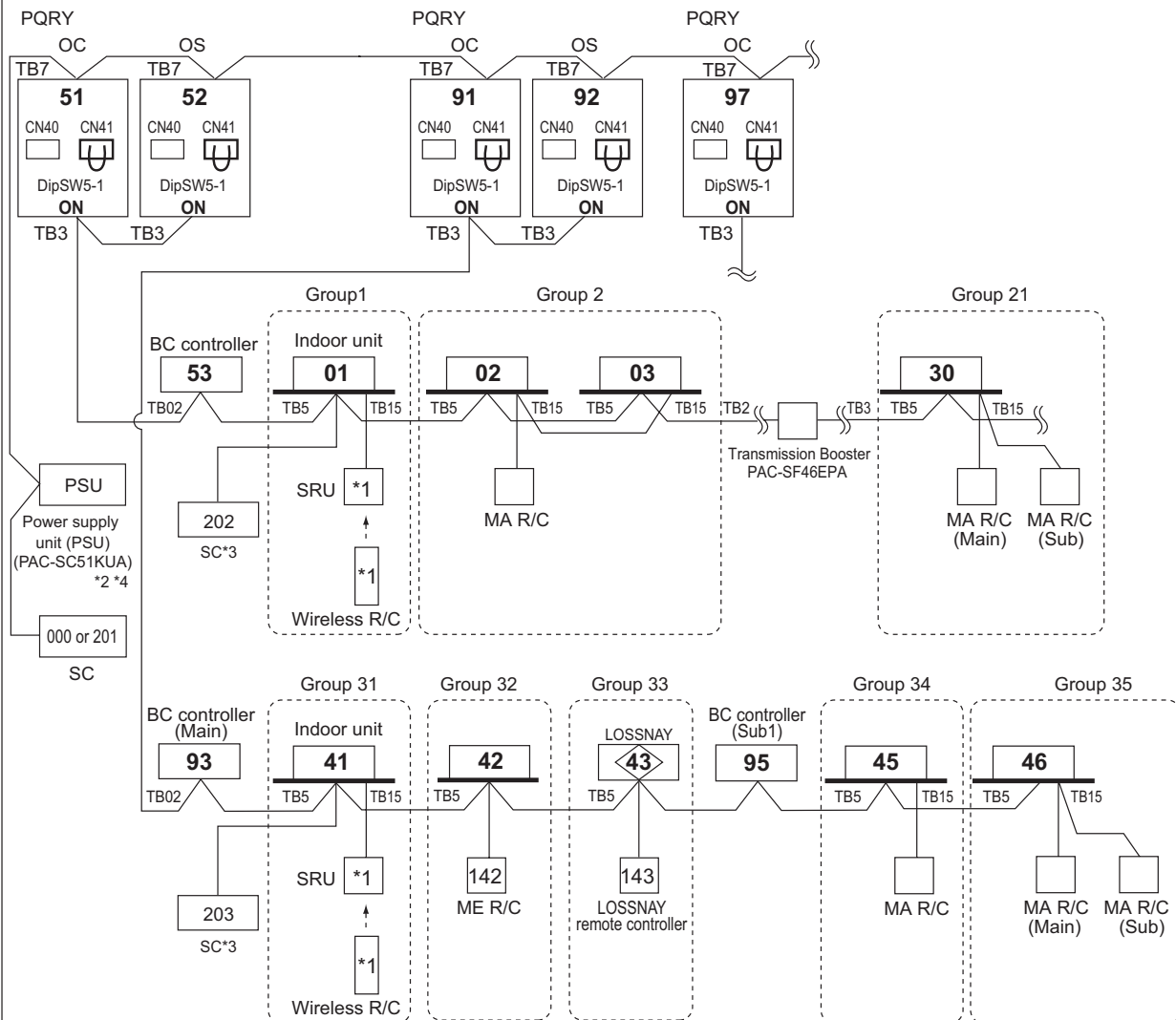
Should SC connected to TB7 side, change Jumper from CN41 to CN40 at the Heat source unit module so as to supply power to the SC.

NOTE:

- Heat source units OC and OS in one refrigerant circuit system are automatically detected.
OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.
- Address should be set to Indoor units and central controller.
- For a system having more than 32 indoor unit (P06-P54), confirm the need of Booster at 11-3 "**System configuration restrictions**".
- Indoor units should be set with a branch number.

11. M-NET CONTROL

11-4-3-3. MA remote controller, Multi-refrigerant-system, System Controller at TB7/TB3 side, Booster for long M-NET wiring



*1 For Wireless R/C and Signal receiver unit (SRU), channel 1, 2 and 3 are selectable and should be set to same channel.

*2 System controller should connect to TB7 at the Heat source unit and use power supply unit together in Multi-Refrigerant-System.
For AG-150A-A, 24VDC should be used with the PAC-SC51KUA.

For AE-200A, AE-50A, and EW-50A the power supply unit PAC-SC51KUA is unused.

*3 When multiple system controllers are connected in the system, set the controller with more functions than others as a "main" controller and others as "sub".

AE-200A, AE-50A, EW-50A, BAC-HD150, and LM-AP are for exclusive use as a "main" system controller and cannot be used as a "sub" system controller. Make the setting to only one of the system controllers for "prohibition of operation from local remote controller".

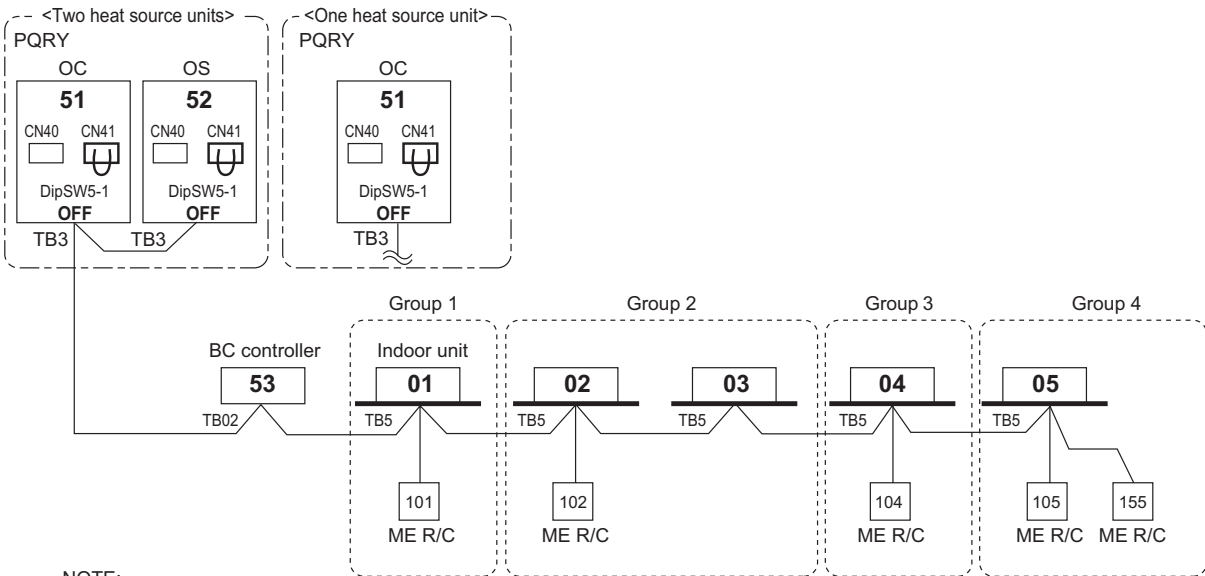
*4 The power supply unit is not necessary for AE-200A, AE-50A, EW-50A, BAC-HD150, and LM-AP.

NOTE:

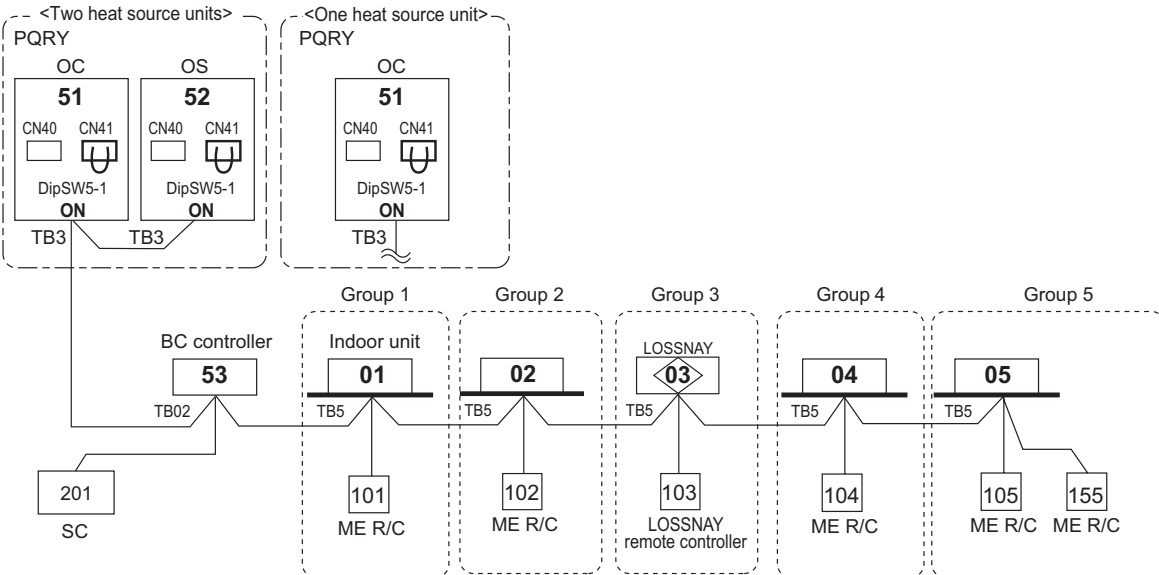
- Heat source units OC and OS in one refrigerant circuit system are automatically detected.
OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.
- Address should be set to Indoor units, LOSSNAY and system controller.
- M-NET power is supplied by the Heat source unit at TB3, while Indoor unit and ME remote controller consume the M-NET power for transmission use. The power balance is needed to consider for long M-NET wiring. Details refer to 11-3 "System configuration restrictions".
- Indoor units should be set with a branch number.
- Assign an address to each of the sub BC controllers which equals the sum of the smallest address of the indoor units that are connected to each sub BC controller and 50.

11. M-NET CONTROL

11-4-3-4. ME remote controller, Single-refrigerant-system, No system controller

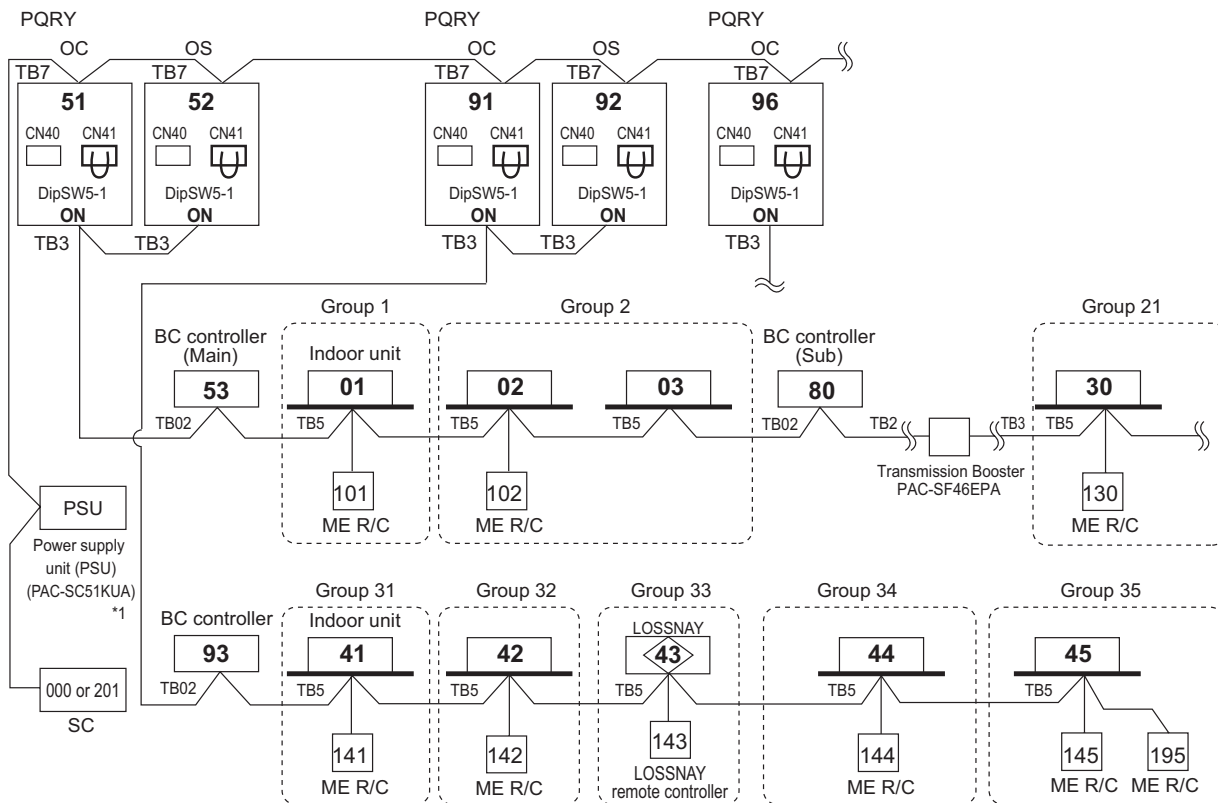


11-4-3-5. ME remote controller, Single-refrigerant-system, System controller, LOSSNAY



11. M-NET CONTROL

11-4-3-6. ME remote controller, Multi-refrigerant-system, System Controller at TB7 side, LOSSNAY, Booster for long M-NET wiring



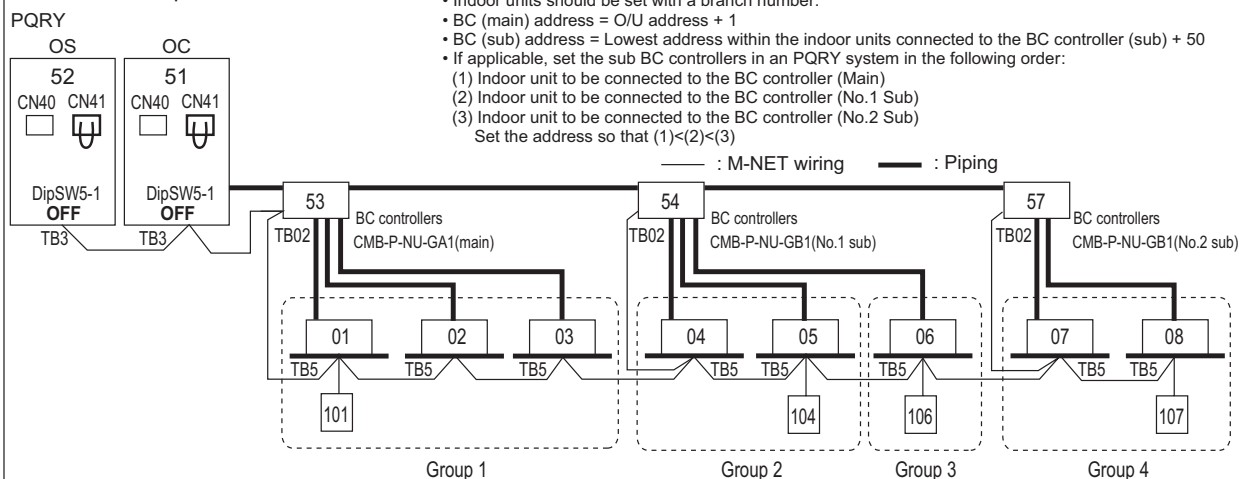
*1 System controller should connect to TB7 at the Heat source unit and use power supply unit together in Multi-Refrigerant-System.

For AG-150A-A, 24VDC should be used with the PAC-SC51KUA. For AE-200A, AE-50A, and EW-50A the power supply unit PAC-SC51KUA is unused.

NOTE:

- Heat source units OC and OS in one refrigerant circuit system are automatically detected.
OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.
- M-NET power is supplied by the Heat source unit at TB3, while Indoor unit and ME R/C consume the M-NET power for transmission use. The power balance is needed to consider for long M-NET wiring. Details refer to 11-3 "System configuration restrictions".
- Indoor units should be set with a branch number.
- Assign an address to each of the sub BC controllers which equals the sum of the smallest address of the indoor units that are connected to each sub BC controller and 50.
When the address assigned to sub BC controller overlaps those of any other units including heat source units (OC/OS) or main BC controller, sub BC controller will be given priority to have the address.

11-4-3-7. Example: BC, BC sub



NOTE

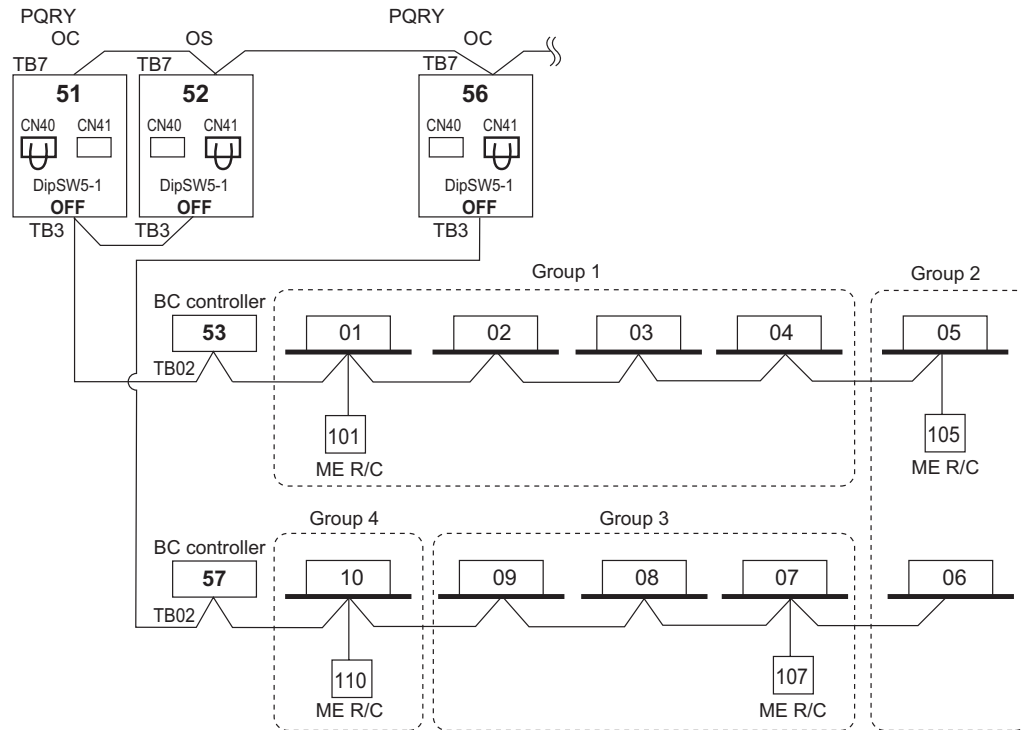
- Indoor units should be set with a branch number.
- BC (main) address = O/U address + 1
- BC (sub) address = Lowest address within the indoor units connected to the BC controller (sub) + 50
- If applicable, set the sub BC controllers in an PQR system in the following order:
 - Indoor unit to be connected to the BC controller (Main)
 - Indoor unit to be connected to the BC controller (No.1 Sub)
 - Indoor unit to be connected to the BC controller (No.2 Sub)

Set the address so that (1)<(2)<(3)

— : M-NET wiring — : Piping

11. M-NET CONTROL

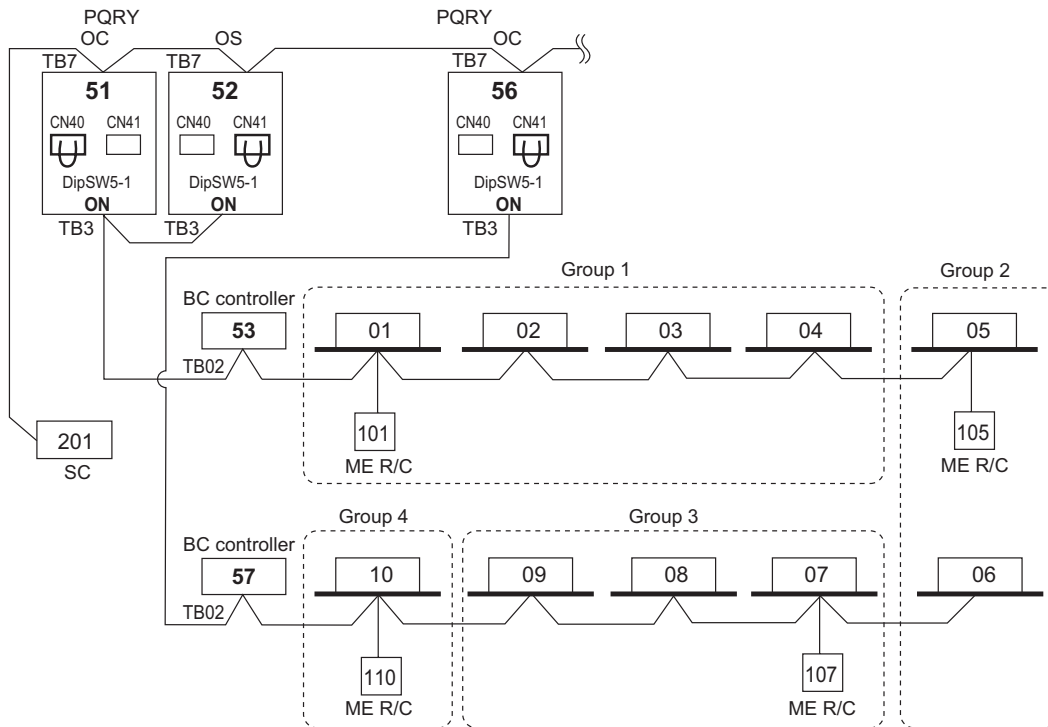
11-4-3-8. ME remote controller, Multi-refrigerant-system, No Power supply unit



NOTE

- It is necessary to change the connector to CN40 on the heat source unit control board (only one heat source unit) when the group is set between other refrigerant systems.
- It is necessary to set on the remote controller by manual when group sets on the different refrigerant system. Please refer to remote controller installation manual.

11-4-3-9. ME remote controller, Multi-refrigerant-system, System Controller at TB7 side, No Power supply unit



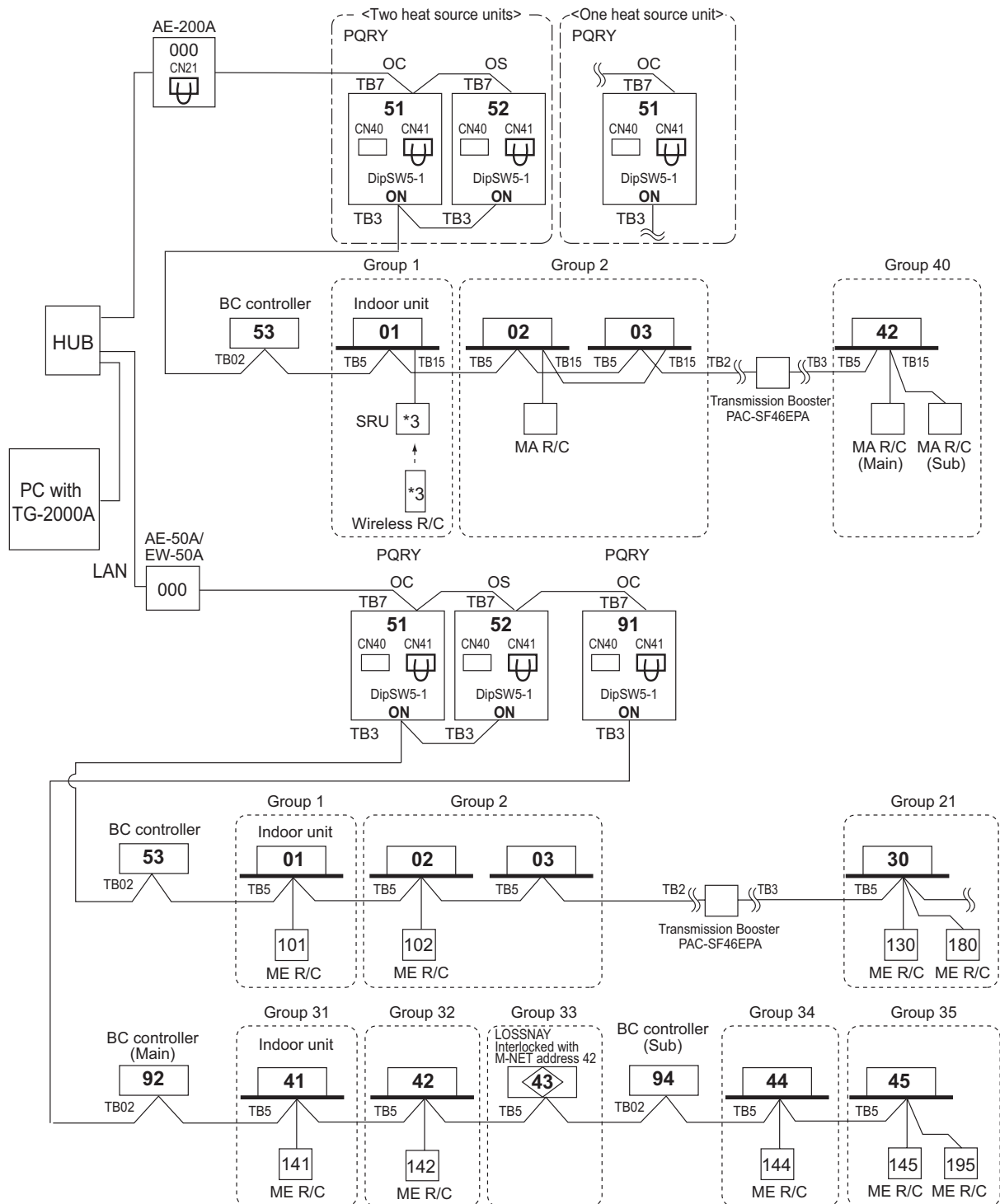
11. M-NET CONTROL

11-4-3-10. TG-2000A(*1)+AE-200A/AE-50A/EW-50A

AE-200A can control max. 50 indoor units;

TG-2000A can control max. 40 AE-200A, AE-50A, and EW-50A;*2

TG-2000A can control max. 2000 indoor units.



*1 TG-2000A (Ver.6.5 or later) supports AE-200A/AE-50A (Ver.7.10 or later).

TG-2000A (Ver.6.60 or later) supports EW-50A.

*2 When AE-200A connected with AE-50A is connected, the number of AE-50A will be the maximum controllable number.

TG-2000A can control up to 40 AE-200A/AE-50A or AE-200A without AE-50A connection.

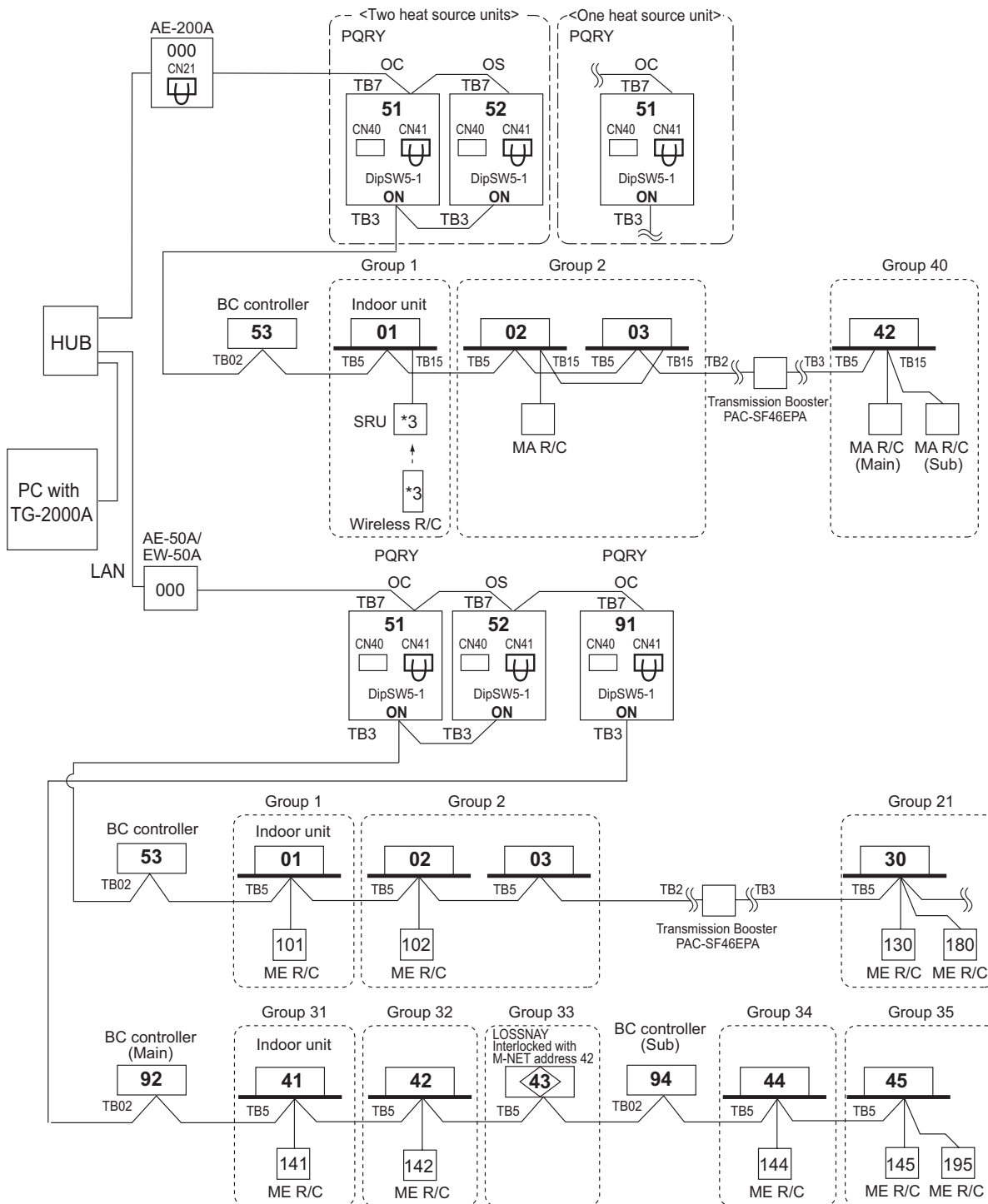
*3 For Wireless R/C and Signal receiver unit (SRU), channel 1, 2 and 3 are selectable and should be set to same channel.

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PQRY-P-T(S)LMU, Y(S)LMU (April 2017 Ver2)

WR2-135

AE-200A can control max. 50 indoor units;
TG-2000A can control max. 40 AE-200A, AE-50A, and EW-50A;*2
TG-2000A can control max. 2000 indoor units.



TG-2000A (Ver.6.60 or later) supports EW-50A.

*2 When AE-200A connected with AE-50A is connected, the number of AE-50A will be the maximum controllable number.

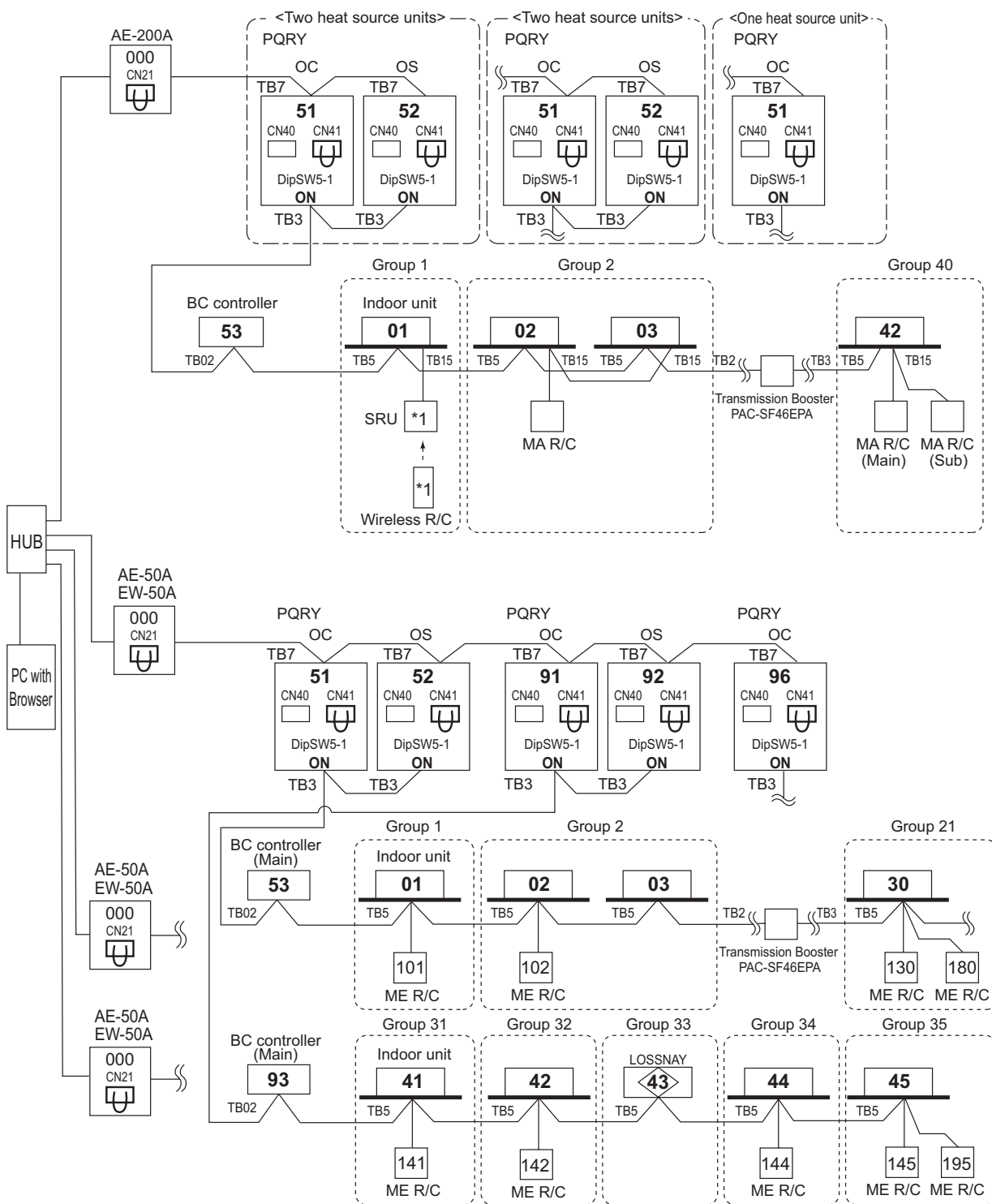
TG-2000A can control up to 40 AE-200A/AE-50A or AE-200A without AE-50A connection.

*3 For Wireless R/C and Signal receiver unit (SRU), channel 1, 2 and 3 are selectable and should be set to same channel.

11. M-NET CONTROL

11-4-3-11. AE-200A + AE-50A, EW-50A

AE-200A can control max. 200 indoor units/via AE-50A.



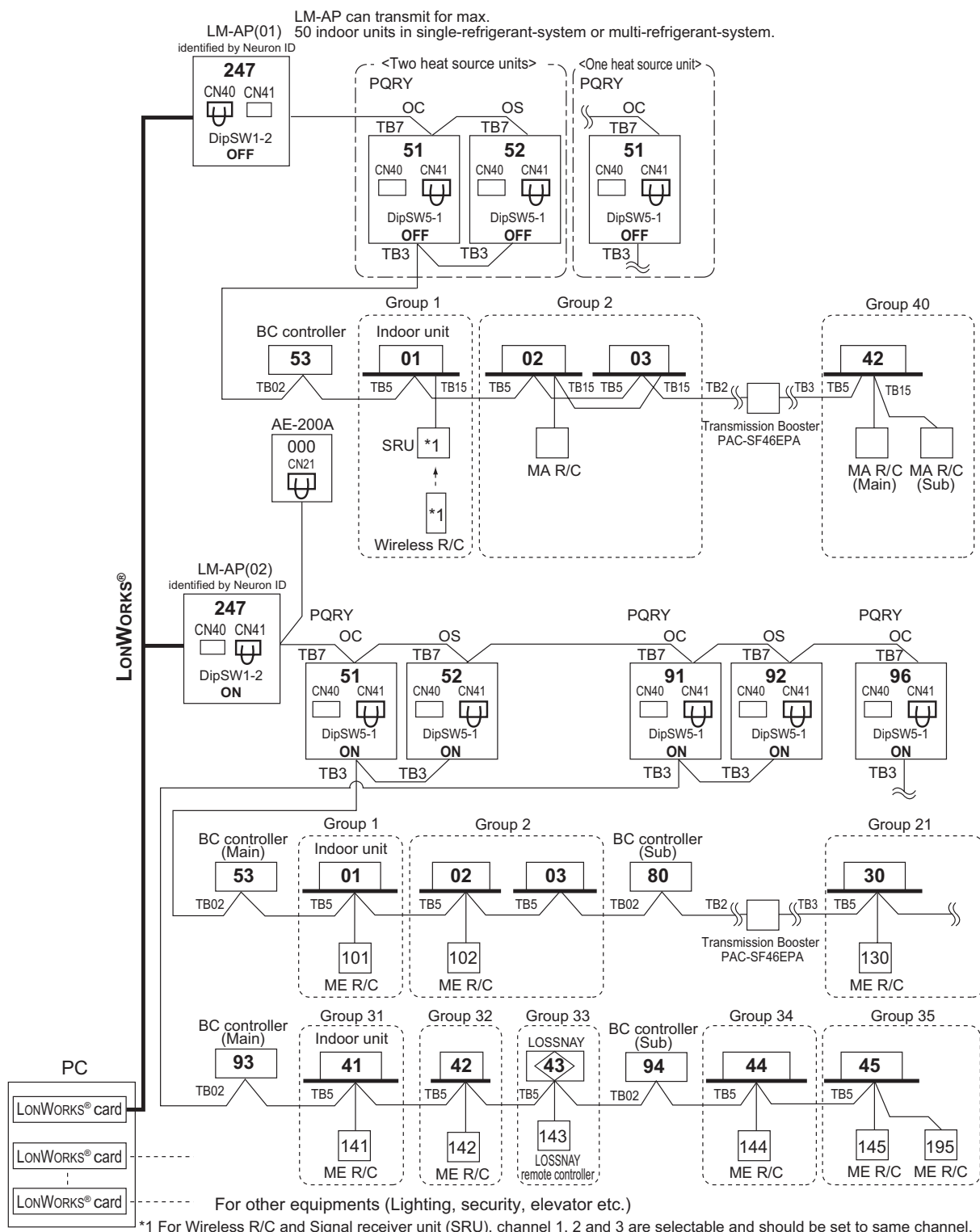
*1 For Wireless R/C and Signal receiver unit (SRU), channel 1, 2 and 3 are selectable and should be set to same channel.

11-4-3-12. LM-AP

LM-AP can transmit max. 50 indoor units;

If system controller (SC) is used, DipSW1-2 at LM-AP and DipSW5-1 at Heat source unit should set to "ON".

Change Jumper from CN41 to CN40 to activate power supply to LM-AP itself for those LM-AP connected without system controller (SC).

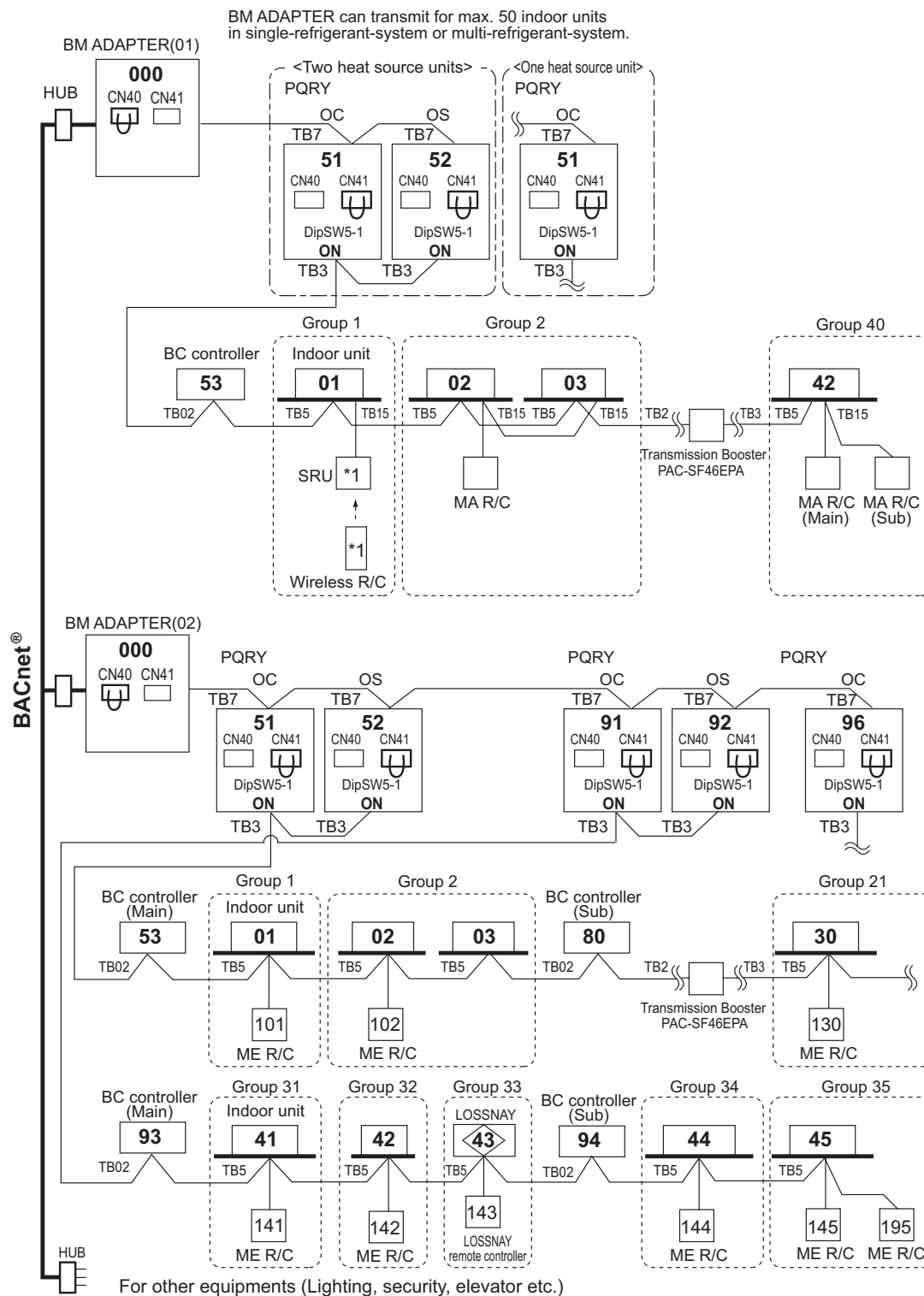


11. M-NET CONTROL

11-4-3-13. BM ADAPTER

BM ADAPTER can transmit max. 50 indoor units;

Change Jumper from CN41 to CN40 to activate power supply to BM ADAPTER itself for those BM ADAPTER connected without the power supply unit.



12. PIPING DESIGN

12-1. R410A Piping Material

The maximum operation pressure of R410A air conditioner is 4.15 MPa [601 psi]. The refrigerant piping should ensure the safety under the maximum operation pressure. You shall follow the loca and/or regulations is applicable at a higher priority.

12-2. Piping Design

12-2-1. IF 16 ports or less are in use, i.e., if only one BC controller is in use with no sub BC controller.

Note1. PQRY systems do not require headers.

Note2. Indoor units sized P72-P96 should be connected to a BC controller using the Y-shaped CMY-R160-J1 joint adapter. These indoor units cannot use the same BC controller ports as other units. (They must use their own individual BC controller port.)

Note3. As bends cause pressure loss on transportation of refrigerant, the fewer bends in the system, the better it is. Piping length needs to factor in the actual length and equivalent length in which the bends are counted.

Note4. Indoor units connected to the BC controller sharing one port cannot operate separately in heating and cooling modes simultaneously; i.e., they must function in either heating or cooling in tandem.

Note5. Indoor unit capacities are included in the model name. For example, PEFY-P24NMSU-E has a capacity of 24,000 BTUs.

Note6. Total "downstream indoor capacity" is the total of all the indoor units connected downstream. For example, PEFY-P24NMSU-E + PEFY-P12NMSU-E: Total Indoor Unit Capacity = P24 + P12 = P36.

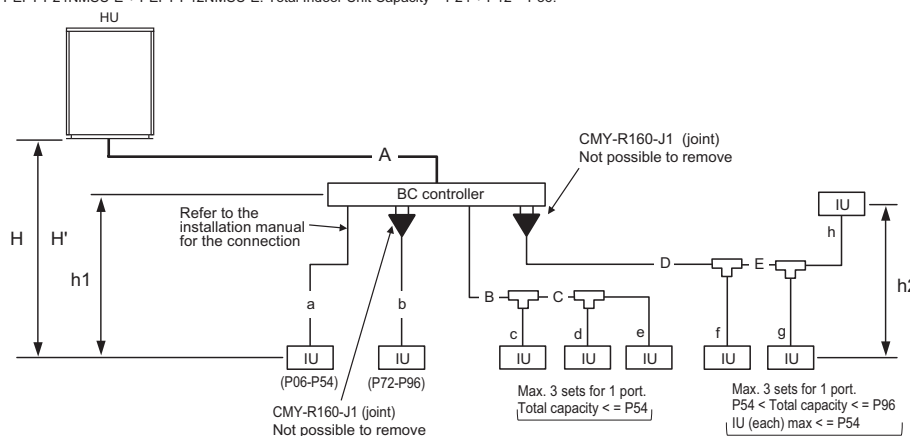


Table 12-2-1-1. Piping length limitation

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length	A+B+C+D+E+a+b+c+d+e+f+g+h *1	-	-
Farthest IU from HU	A+D+E+h	165 [541']	190 [623']
Distance between HU and BC	A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+h	40 [131'] *2	40 [131'] *2
Height between HU and IU (HU above IU)	H	50 [164']	-
Height between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32']) *3	-
Height between IU and IU	h2	15 [49'] (10 [32']) *3	-

HU: Heat source Unit ; IU: Indoor Unit ; BC: BC controller

*1. Please refer to Fig.3-2-4

*2. Farthest Indoor from BC controller "D+E+h" can exceed 40 m [131 ft.] till 60 m [197 ft.] if no Indoor sized P72, P96 connected. Details refer to Fig.12-2-1-2

*3. Distance of Indoor sized P72, P96 from BC must be less than 10 m [32 ft.], if any.

Table 11-2-1-2. Bends equivalent length "M"

Heat source Model	M (m/bends [ft./bends])
P72TLMU,YLMU	0.35 [1.15']
P96TLMU,YLMU	0.42 [1.38']
P120TLMU,YLMU	0.47 [1.54']
P144TLMU,YLMU	0.50 [1.64']
P168TLMU,YLMU	0.50 [1.64']
P192TLMU,YLMU	0.50 [1.64']
P216TLMU,YLMU	0.50 [1.64']
P240TLMU,YLMU	0.50 [1.64']

Fig. 12-2-1-2 Piping length and height between IU and BC controller

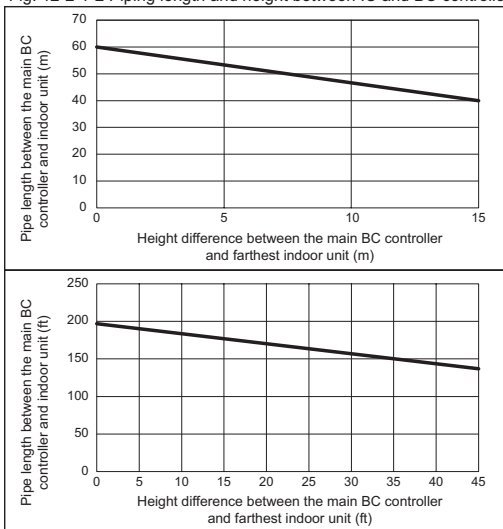


Table 12-2-1-3. Piping "A" size selection rule (mm [in.])

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P72TLMU,YLMU	ø15.88 [5/8"]	ø19.05 [3/4"]
P96-120TLMU,YLMU	ø19.05 [3/4"]	ø22.20 [7/8"]
P144-192TLMU,YLMU	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P216TLMU,YLMU	ø22.20 [7/8"] *4	ø28.58 [1-1/8"]
P240TLMU,YLMU	ø22.20 [7/8"] *4	ø34.93 [1-3/8"]

*4. When the piping length is 65 m or longer, use the ø28.58 [1-1/8"] pipe for the part that exceeds 65 m.

Table 12-2-1-4. Piping "B", "C", "D", "E" size selection rule (mm [in.])

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P54 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P55-P72	ø9.52 [3/8"]	ø19.05 [3/4"]
P73-P96	ø9.52 [3/8"]	ø22.20 [7/8"]

Table 12-2-1-5. Piping "a", "b", "c", "d", "e", "f", "g", "h" size selection rule (mm [in.])

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P06 to P18	ø6.35 [1/4"]	ø12.70 [1/2"]
P24 to P54	ø9.52 [3/8"]	ø15.88 [5/8"]
P72	ø9.52 [3/8"]	ø19.05 [3/4"]
P96	ø9.52 [3/8"]	ø22.20 [7/8"]

12. PIPING DESIGN

12-2-2. IF more than 16 ports are in use, or if there is more than one BC controller in use for one heat source unit

Note1. PQRY systems do not require headers.

Note2. Indoor units sized P72-P96 should be connected to a BC controller using the Y-shaped CMY-R160-J1 joint adapter. These indoor units cannot use the same BC controller ports as other units. (They must use their own individual BC controller port.)

Note3. As bends cause pressure loss on transportation of refrigerant, the fewer bends in the system, the better it is. Piping length needs to factor in the actual length and equivalent length in which the bends are counted.

Note4. Indoor units connected to the BC controller sharing one port cannot operate separately in heating and cooling modes simultaneously; i.e., they must function in either heating or cooling in tandem.

Note5. For sub BC controller CMB-P-NU-GB1, the total connectable indoor unit capacity can be 126,000 BTUs or less.

If two sub BC controllers are used, the total indoor unit capacity connected to BOTH sub BC controllers also cannot exceed 126,000 BTUs.

For sub BC controller CMB-P1016NU-HB1 the total connectable indoor unit capacity can be 126,000 BTUs or less. However, if two sub controllers are used, the total indoor unit capacity connected to BOTH sub controllers must NOT exceed 168,000 BTUs.

Note6. Indoor unit capacities are included in the model name. For example, PEFY-P24NMSU-E has a capacity of 24,000 BTUs.

Note7. Total "downstream indoor capacity" is the total of all the indoor units connected downstream.

For example, PEFY-P24NMSU-E + PEFY-P12NMSU-E: Total Indoor Unit Capacity = P24 + P12 = P36.

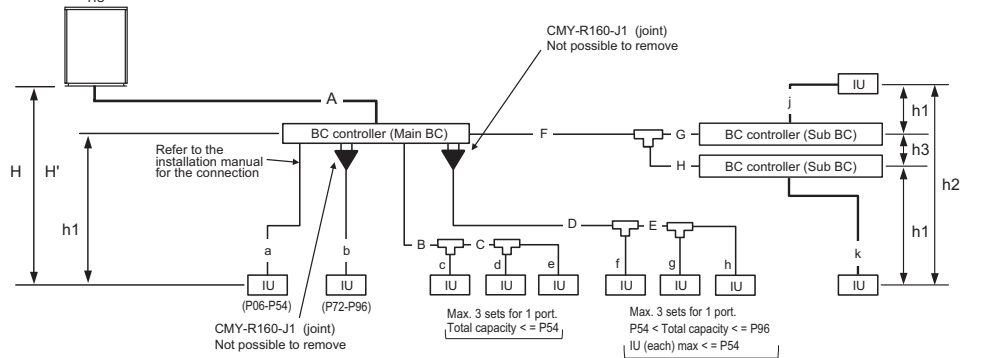


Table 12-2-2-1. Piping length limitation

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length	A+B+C+D+E+F+G+H+I+a+b+c+d+e+f+g+h+i+j+k	*1	-
Farthest IU from HU	A+F+H+k	165 [541']	190 [623']
Distance between HU and BC	A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+h or F+H+k	40 [131'] *2	40 [131'] *2
Height between HU and IU (HU above IU)	H	50 [164']	-
Height between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32']) *3	-
Height between IU and IU	h2	15 [49'] (10 [32']) *3	-
Height between BC(Main or Sub) and BC(Sub)	h3	15 [49'] (10 [32']) *4	-

HU: Heat source Unit; IU: Indoor Unit; BC: BC controller

*1. Please refer to Fig.12-2-4

*2. Farthest Indoor from BC controller "D+E+h or F+H+k" can exceed 40 m [131 ft.] till 60 m [197 ft.] if no Indoor sized P72, P96 connected. Details refer to Fig.12-2-2-2

*3. Distance of Indoor sized P72, P96 from BC must be less than 10 m [32 ft.], if any.

*4. When using 2 Sub BC controllers, max. height "h3" should be considered.

Table12-2-2. Bends equivalent length "M"

Heat source Model	M (m/bends [ft./bends])
P72TLMU,YLMU	0.35 [1.15']
P96TLMU,YLMU	0.42 [1.38']
P120TLMU,YLMU	0.47 [1.54']
P144TLMU,YLMU	0.50 [1.64']
P168TLMU,YLMU	0.50 [1.64']
P192TLMU,YLMU	0.50 [1.64']
P216TLMU,YLMU	0.50 [1.64']
P240TLMU,YLMU	0.50 [1.64']

Fig. 3-2-2-2 Piping length and height between IU and BC controller

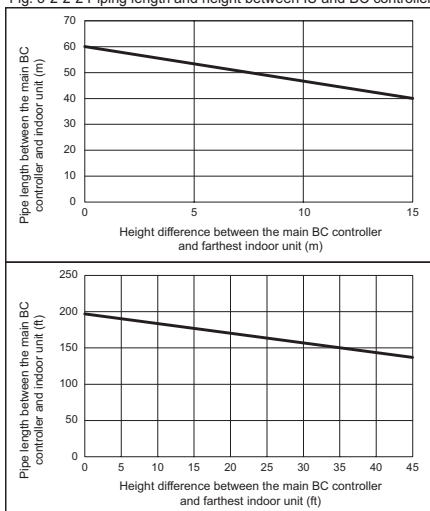


Table12-2-2-3. Piping "A" size selection rule

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P72TLMU,YLMU	ø15.88 [5/8"]	ø19.05 [3/4"]
P96-120TLMU,YLMU	ø19.05 [3/4"]	ø22.20 [7/8"]
P144-192TLMU,YLMU	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P216TLMU,YLMU	ø22.20 [7/8"] *5	ø28.58 [1-1/8"]
P240TLMU,YLMU	ø22.20 [7/8"] *5	ø34.93 [1-3/8"]

*5. When the piping length is 65 m or longer, use the ø28.58 [1-1/8"] pipe for the part that exceeds 65 m.

Table12-2-2-4. Piping "B", "C", "D", "E" size selection rule

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P54 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P55-P72	ø9.52 [3/8"]	ø19.05 [3/4"]
P73-P96	ø9.52 [3/8"]	ø22.20 [7/8"]

Table12-2-2-5. Piping "F", "G", "H" size selection rule

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(HP Gas)	Pipe(LP Gas)
P72 or less	ø9.52 [3/8"]	ø15.88 [5/8"]	ø19.05 [3/4"]
P73 to P108	ø9.52 [3/8"]	ø19.05 [3/4"]	ø22.20 [7/8"]
P109 to P126	ø12.70 [1/2"]	ø19.05 [3/4"]	ø28.58 [1-1/8"]
P127 to P144	ø12.70 [1/2"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P145 to P168	ø15.88 [5/8"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]

HP: High pressure, LP: Low pressure

Table12-2-2-6. Piping "a", "b", "c", "d", "e", "f", "g", "h", "i", "j", "k" size selection rule

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P06 to P18	ø6.35 [1/4"]	ø12.70 [1/2"]
P24 to P54	ø9.52 [3/8"]	ø15.88 [5/8"]

12. PIPING DESIGN

12-2-3. IF more than 16 ports are in use, or if there is more than one BC controller in use for two heat source units

- Note1. PQRY systems do not require headers.
 Note2. Indoor units sized P72-P96 should be connected to a BC controller using the Y-shaped CMY-R160-J1 joint adapter. These indoor units cannot use the same BC controller ports as other units. (They must use their own individual BC controller port.)
 Note3. As bends cause pressure loss on transportation of refrigerant, the fewer bends in the system, the better it is. Piping length needs to factor in the actual length and equivalent length in which the bends are counted.
 Note4. Indoor units connected to the BC controller sharing one port cannot operate separately in heating and cooling modes simultaneously; i.e., they must function in either heating or cooling in tandem.

- Note5. For sub BC controller CMB-P-NU-GB1, the total connectable indoor unit capacity can be 126,000 BTUs or less. If two sub BC controllers are used, the total indoor unit capacity connected to BOTH sub BC controllers also cannot exceed 126,000 BTUs.
 For sub BC controller CMB-P1016NU-HB1 the total connectable indoor unit capacity can be 126,000 BTUs or less. However, if two sub controllers are used, the total indoor unit capacity connected to BOTH sub controllers must NOT exceed 168,000 BTUs.
 Note6. Indoor unit capacities are included in the model name. For example, PEFY-P24NMSU-E has a capacity of 24,000 BTUs.
 Note7. Total "downstream indoor capacity" is the total of all the indoor units connected downstream. For example, PEFY-P24NMSU-E + PEFY-P12NMSU-E: Total Indoor Unit Capacity = P24 + P12 = P36.

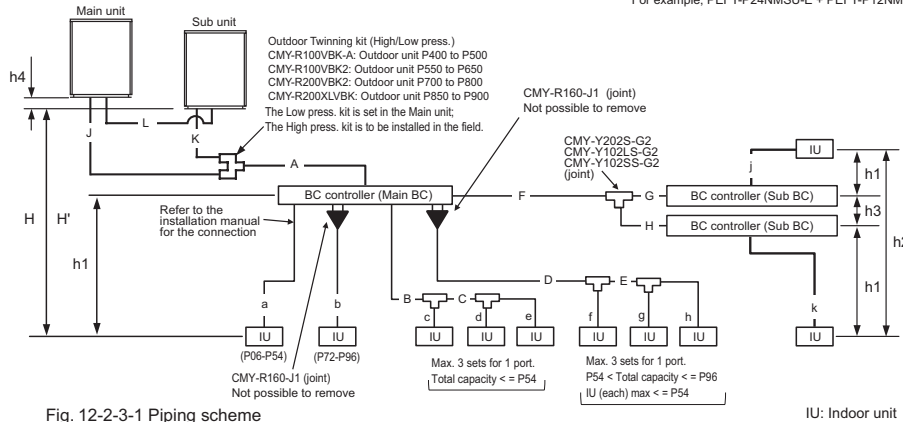


Fig. 12-2-3-1 Piping scheme

Table 12-2-3-1. Piping length limitation

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length	J+K+L+A+B+C+D+E+F+G+H+I+J+K+L	*1	-
Farthest IU from HU	J(K)+A+F+H+K	165 [541']	190 [623']
Distance between HU and BC	J(K)+A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+h or F+G+j or F+H+K	40 [131'] *2	40 [131'] *2
Height between HU and IU (HU above IU)	H	50 [164']	-
Height between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32']) *3	-
Height between IU and IU	h2	15 [49'] (10 [32']) *3	-
Height between BC(Main or Sub) and BC(Sub)	h3	15 [49'] (10 [32']) *4	-
Distance between Main unit and Sub unit	J+K or L	5 [16']	-
Height between Main unit and Sub unit	h4	0.1 [0.3']	-

HU: Heat source Unit; IU: Indoor Unit; BC: BC controller

*1. Please refer to Fig. 12-2-4

*2. Farthest Indoor from BC controller "D+E+h or F+G+j or F+H+K" can exceed 40 m [131 ft.] till 60 m [197 ft.] if no Indoor sized P72, P96 connected. Details refer to Fig. 12-2-3-2

*3. Distance of Indoor sized P72, P96 from BC must be less than 10 m [32 ft.], if any.

*4. When using 2 Sub BC controllers, max. height "h3" should be considered.

Fig. 12-2-3-2 Piping length and height between IU and BC controller

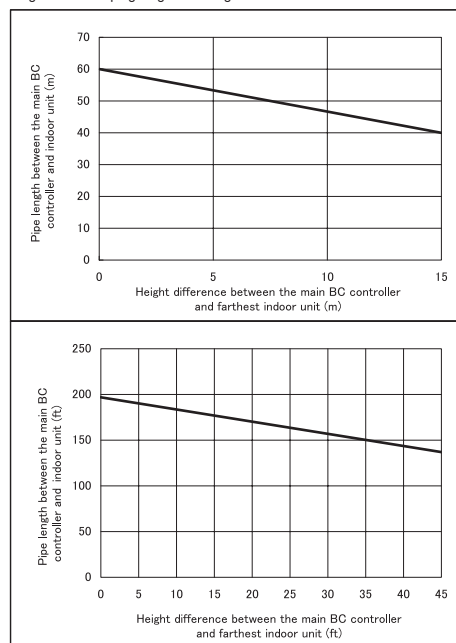


Table 12-2-3-3. Piping "A" size selection rule

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P144-192TSLMU, YSLMU	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P216TSLMU, YSLMU	ø22.20 [7/8"] *5	ø28.58 [1-1/8"]
P240TSLMU, YSLMU	ø22.20 [7/8"] *5	ø34.93 [1-3/8"]
P288-312TSLMU, YSLMU	ø28.58 [1-1/8"]	ø34.93 [1-3/8"]
P336TSLMU, YSLMU	ø28.58 [1-1/8"]	ø41.28 [1-5/8"]

*5. When the piping length is 65 m or longer, use the ø28.58 [1-1/8"] pipe for the part that exceeds 65 m.

Table 12-2-3-4. Piping "B", "C", "D", "E" size selection rule

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P54 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P55-P72	ø9.52 [3/8"]	ø19.05 [3/4"]
P73-P96	ø9.52 [3/8"]	ø22.20 [7/8"]

Table 12-2-3-5. Piping "F", "G", "H" size selection rule

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(HP Gas)	Pipe(LP Gas)
P72 or less	ø9.52 [3/8"]	ø15.88 [5/8"]	ø19.05 [3/4"]
P73 to P108	ø9.52 [3/8"]	ø19.05 [3/4"]	ø22.20 [7/8"]
P109 to P126	ø12.70 [1/2"]	ø19.05 [3/4"]	ø28.58 [1-1/8"]
P127 to P144	ø12.70 [1/2"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P145 to P168	ø15.88 [5/8"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]

HP: High pressure, LP: Low pressure

Table 12-2-3-6. Piping "J", "K", "L" size selection rule

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P72THMU, YHMu	ø15.88 [5/8"]	ø19.05 [3/4"]
P96THMU, YHMu	ø19.05 [3/4"]	ø22.20 [7/8"]
P120THMU, YHMu	ø19.05 [3/4"]	ø28.58 [1-1/8"]

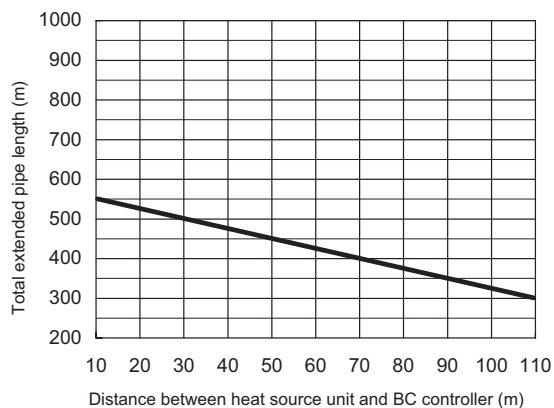
Table 12-2-3-7. Piping "a", "b", "c", "d", "e", "f", "g", "h", "i", "j", "k" size selection rule

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P06 to P18	ø6.35 [1/4"]	ø12.70 [1/2"]
P24 to P54	ø9.52 [3/8"]	ø15.88 [5/8"]
P72	ø9.52 [3/8"]	ø19.05 [3/4"]
P96	ø9.52 [3/8"]	ø22.20 [7/8"]

12. PIPING DESIGN

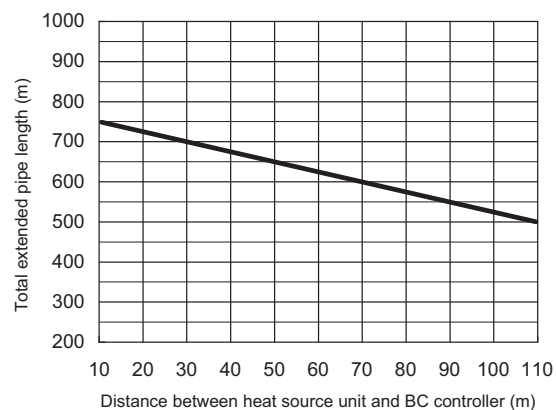
12-2-4. Total piping length restrictions (m)

[PQRY-P72, 96, 120TLMU-A/YLMU-A]



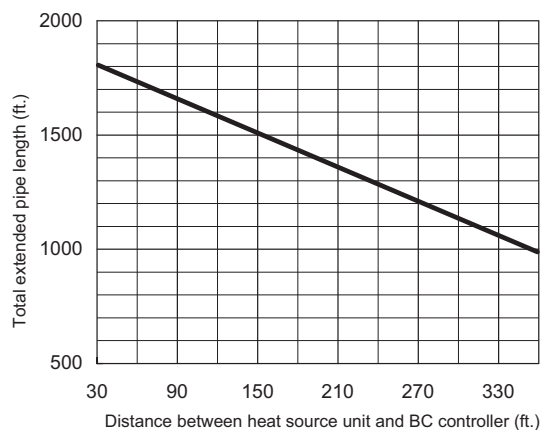
[PQRY-P144, 168, 192, 216, 240TLMU-A/YLMU-A]

[PQRY-P144, 168, 192, 216, 240, 288, 312, 336TSLMU-A/YSLMU-A]



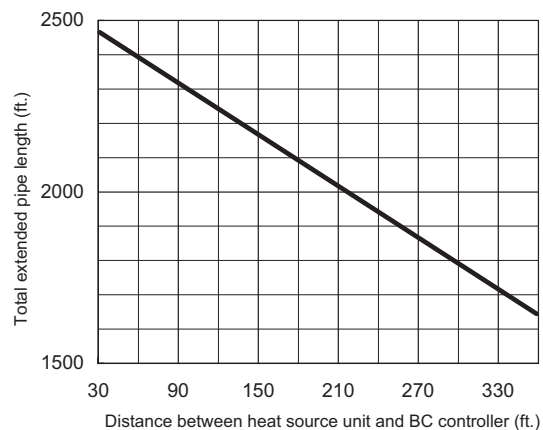
12-2-5. Total piping length restrictions (ft.)

[PQRY-P72, 96, 120TLMU-A/YLMU-A]



[PQRY-P144, 168, 192, 216, 240TLMU-A/YLMU-A]

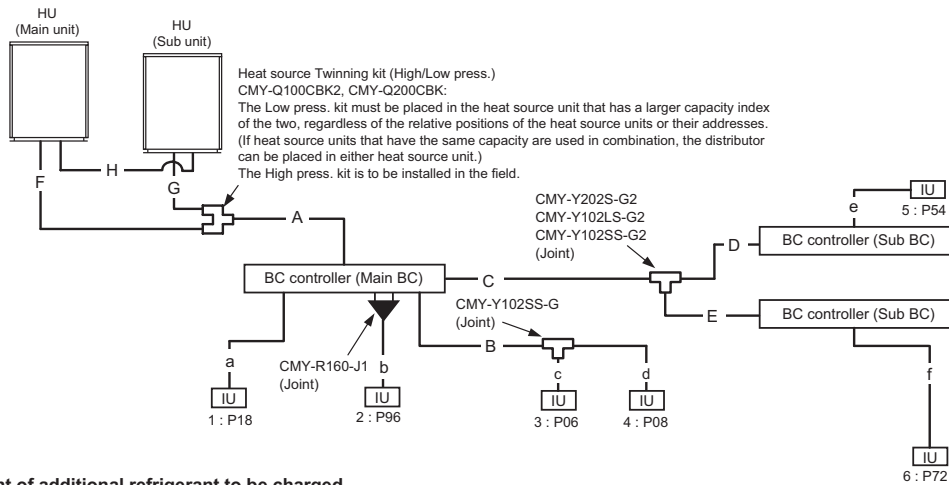
[PQRY-P144, 168, 192, 216, 240, 288, 312, 336TSLMU-A/YSLMU-A]



12. PIPING DESIGN

12-3. Refrigerant Charging Calculation

Sample connection (with 3 BC controller and 6 indoor units)



Amount of additional refrigerant to be charged

Refrigerant for extended pipes (field piping) is not factory-charged to the heat source unit. Add an appropriate amount of refrigerant for each pipes on sit
Record the size of each high pressure pipe and liquid pipe, and the amount of refrigerant that was charged on the heat source unit for future reference.

Calculating the amount of additional refrigerant to be charged

The amount of refrigerant to be charged is calculated with the size of the on-site-installed high pressure pipes and liquid pipes, and their length.

Calculate the amount of refrigerant to be charged according to the formula below.

Round up the calculation result to the nearest 0.1kg[4oz]. (i.e., 16.08 kg = 16.1 kg)

<Amount of additional refrigerant to be charged>

Calculating the amount of additional refrigerant to be charged

- Piping length from heat source unit to the most farthest indoor unit ≤ 30.5 m [100 ft] use the table [A]
- Piping length from heat source unit to the most farthest indoor unit > 30.5 m [100 ft] use the table [B]

Additional refrigerant charge		=	High pressure pipe size Total length of ø 28.58mm [1-1/8 in]		+	High pressure pipe size Total length of ø 22.2mm [7/8 in]		+	High pressure pipe size Total length of ø 19.05mm [3/4 in]		+	High pressure pipe size Total length of ø 15.88mm [5/8 in]	
[A]	(kg) [oz]		[A]	(m) × 0.36 (kg/m) (ft) × 3.88 (oz/ft)		[A]	(m) × 0.23 (kg/m) (ft) × 2.48 (oz/ft)		[A]	(m) × 0.16 (kg/m) (ft) × 1.73 (oz/ft)		[A]	(m) × 0.11 (kg/m) (ft) × 1.19 (oz/ft)
[B]	(kg) [oz]		[B]	(m) × 0.33 (kg/m) (ft) × 3.55 (oz/ft)		[B]	(m) × 0.21 (kg/m) (ft) × 2.26 (oz/ft)		[B]	(m) × 0.14 (kg/m) (ft) × 1.51 (oz/ft)		[B]	(m) × 0.10 (kg/m) (ft) × 1.08 (oz/ft)

		+	Liquid Piping size Total length of ø 15.88mm [5/8 in]		+	Liquid Piping size Total length of ø 12.7mm [1/2 in]		+	Liquid Piping size Total length of ø 9.52mm [3/8 in]		+	Liquid Piping size Total length of ø 6.35mm [1/4 in]	
[A]	(m) × 0.20 (kg/m) (ft) × 2.16 (oz/ft)		[A]	(m) × 0.12 (kg/m) (ft) × 1.30 (oz/ft)		[A]	(m) × 0.06 (kg/m) (ft) × 0.65 (oz/ft)		[A]	(m) × 0.024 (kg/m) (ft) × 0.26 (oz/ft)		[A]	(m) × 0.024 (kg/m) (ft) × 0.26 (oz/ft)
[B]	(m) × 0.18 (kg/m) (ft) × 1.94 (oz/ft)		[B]	(m) × 0.11 (kg/m) (ft) × 1.19 (oz/ft)		[B]	(m) × 0.054 (kg/m) (ft) × 0.59 (oz/ft)		[B]	(m) × 0.021 (kg/m) (ft) × 0.23 (oz/ft)		[B]	(m) × 0.021 (kg/m) (ft) × 0.23 (oz/ft)

Additional charge		
Heat source unit model		Charged amount
Single	P216	1.0 kg
	P240	1.0 kg

BC controller (Standard / Main)		+	BC controller (Main) HA-Type		+	BC controller (Sub) Total Units		Charged amount	
3.0 kg[106oz]			2.0 kg[71oz]			1		1.0 kg[36oz]	
						2		2.0 kg[71oz]	

Total Capacity of Connected Indoor Units		Charged amount
Models ~ 27		2.0 kg [71 oz]
Models 28 ~ 54		2.5 kg [89 oz]
Models 55 ~ 126		3.0 kg [106 oz]
Models 127 ~ 144		3.5 kg [124 oz]
Models 145 ~ 180		4.5 kg [159 oz]
Models 181 ~ 234		5.0 kg [177 oz]
Models 235 ~ 273		6.0 kg [212 oz]
Models 274 ~ 307		8.0 kg [283 oz]
Models 308 ~ 342		9.0 kg [318 oz]
Models 343 ~ 411		10.0 kg [353 oz]
Models 412 ~		12.0 kg [424 oz]

12. PIPING DESIGN

■ Amount of factory charged refrigerant ■ Sample calculation

Heat source unit Model	Charged amount
P72	5.0 kg
P96	
P120	
P144	6.0 kg
P168	
P192	
P216	11.7 kg
P240	

Indoor					
A : ø28.58 [1-1/8"]	40m [131ft.]	1 : P18	a : ø6.35 [1/4"]	5m [16ft.]	
B : ø9.52 [3/8"]	10m [32ft.]	2 : P96	b : ø9.52 [3/8"]	3m [10ft.]	
C : ø12.70 [1/2"]	10m [32ft.]	3 : P06	c : ø6.35 [1/4"]	2m [6ft.]	
D : ø9.52 [3/8"]	5m [16ft.]	4 : P08	d : ø6.35 [1/4"]	3m [10ft.]	
E : ø9.52 [3/8"]	5m [16ft.]	5 : P54	e : ø9.52 [3/8"]	3m [10ft.]	
F : ø22.20 [7/8"]	2m [6ft.]	6 : P72	f : ø9.52 [3/8"]	10m [32ft.]	
G : ø22.20 [7/8"]	1m [4ft.]				
Total length for each pipe size :		ø28.58	A = 40m [131ft.]		
		ø22.20	F+G = 2+1 = 3m [10ft.]		
		ø12.70	C = 10m [32ft.]		
		ø9.52	B+D+E+b+e+f = 36m [116ft.]		
		ø6.35	a+c+d = 10m [32ft.]		
Therefore, additional refrigerant charge		(kg)	= 40×0.33+3×0.21+10×0.11+36×0.054+10×0.021+3.0+2.0+6.0		
			= 28.08kg		
			≈ 28.1kg		
or					
Therefore, additional refrigerant charge		(oz)	= 131×3.55+10×2.26+32×1.19+116×0.59+32×0.23+106+71+212		
			= 990.5oz		
			≈ 991oz		

■ Limitation of the amount of refrigerant to be charged

The above calculation result of the amount of refrigerant to be charged must become below the value in the table below.

Total index of the heat source units		P72 T/YLMU	P96 T/YLMU	P120 T/YLMU	P144 T/YLMU	P168 T/YLMU	P192 T/YLMU	P216 T/YLMU	P240 T/YLMU	P144 T/YSLMU	P168 T/YSLMU
Maximum refrigerant charge	Factory charged	5.0kg	5.0kg	5.0kg	6.0kg	6.0kg	6.0kg	11.7kg	11.7kg	10.0kg	10.0kg
	Charged on site	28.0kg	32.0kg	33.0kg	44.0kg	45.0kg	52.0kg	57.0kg	58.0kg	44.0kg	45.0kg
	Total for system	33.0kg	37.0kg	38.0kg	50.0kg	51.0kg	58.0kg	68.7kg	69.7kg	54.0kg	55.0kg
	Factory charged	11 lbs 1 oz	11 lbs 1 oz	11 lbs 1 oz	13 lbs 4 oz	13 lbs 4 oz	13 lbs 4 oz	25 lbs 13 oz	25 lbs 13 oz	22 lbs 1 oz	22 lbs 1 oz
	Charged on site	61 lbs 12 oz	70 lbs 9 oz	72 lbs 13 oz	97 lbs 1 oz	99 lbs 4 oz	114 lbs 11 oz	125 lbs 11 oz	127 lbs 14 oz	97 lbs 1 oz	99 lbs 4 oz
	Total for system	72 lbs 13 oz	81 lbs 10 oz	83 lbs 13 oz	110 lbs 4 oz	112 lbs 7 oz	127 lbs 14 oz	151 lbs 8 oz	153 lbs 11 oz	119 lbs 1 oz	121 lbs 5 oz

Total index of the heat source units		P192 T/YSLMU	P216 T/YSLMU	P240 T/YSLMU	P288 T/YSLMU	P312 T/YSLMU	P336 T/YSLMU
Maximum refrigerant charge	Factory charged	10.0kg	10.0kg	10.0kg	12.0kg	12.0kg	12.0kg
	Charged on site	50.0kg	56.0kg	59.0kg	74.0kg	74.0kg	76.0kg
	Total for system	60.0kg	66.0kg	69.0kg	86.0kg	86.0kg	88.0kg
	Factory charged	22 lbs 1 oz	22 lbs 1 oz	22 lbs 1 oz	26 lbs 8 oz	26 lbs 8 oz	26 lbs 8 oz
	Charged on site	110 lbs 4 oz	123 lbs 8 oz	130 lbs 2 oz	163 lbs 3 oz	163 lbs 3 oz	167 lbs 9 oz
	Total for system	132 lbs 5 oz	145 lbs 9 oz	152 lbs 2 oz	189 lbs 10 oz	189 lbs 10 oz	194 lbs 1 oz

13. INSTALLATION

13-1. PQRY-P-T(S)LMU/Y(S)LMU's Installation

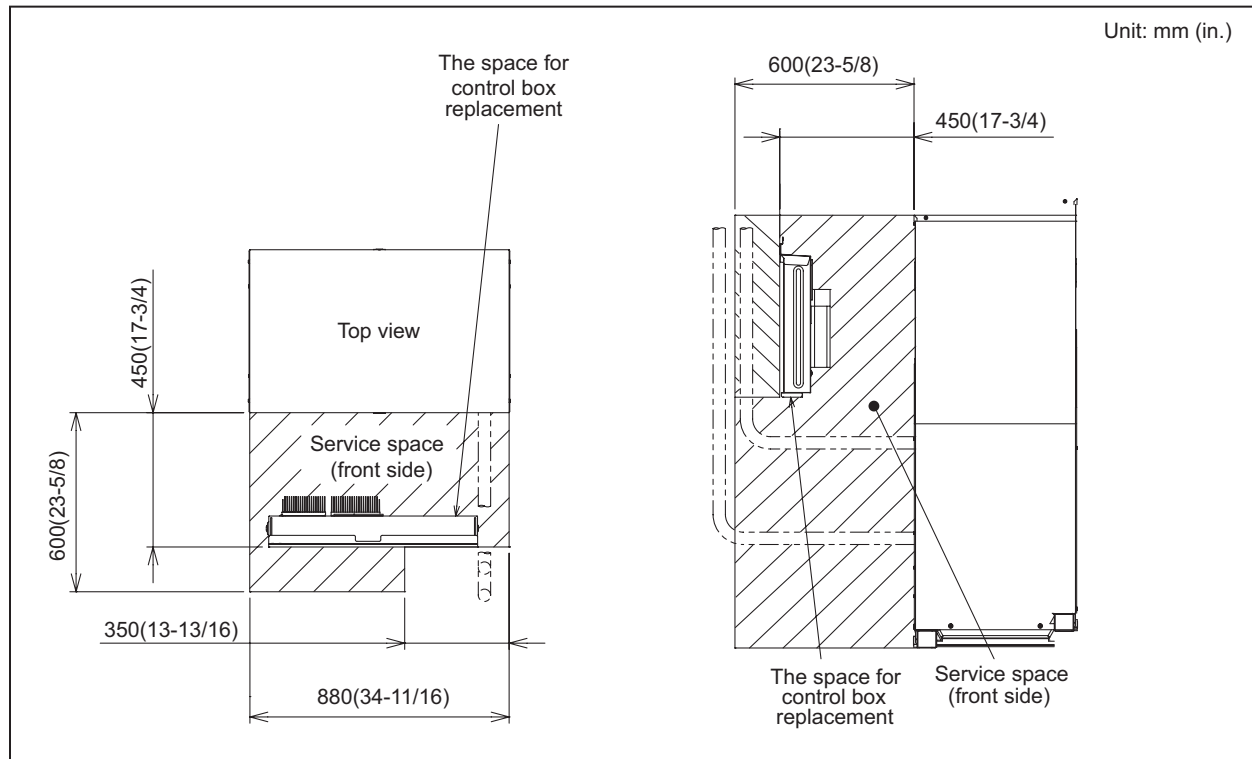
1. No direct thermal radiation to the unit.
2. No possibility of annoying the neighbors by the sound of the unit.

Valves and refrigerant flow on the Heat source unit may generate noise.

3. Avoid the sites where strong winds blow.
4. With strength to bear the weight of the unit.
5. Drain flow from the unit is cared at heating mode.
6. Enough space for installation and service as shown at 13-2.
7. Avoid the sites where acidic solutions or chemical sprays (sulfur series) are used frequently.
8. The unit should be secure from combustible gas, oil, steam, chemical gas like acidic solution, sulfur gas and so on.

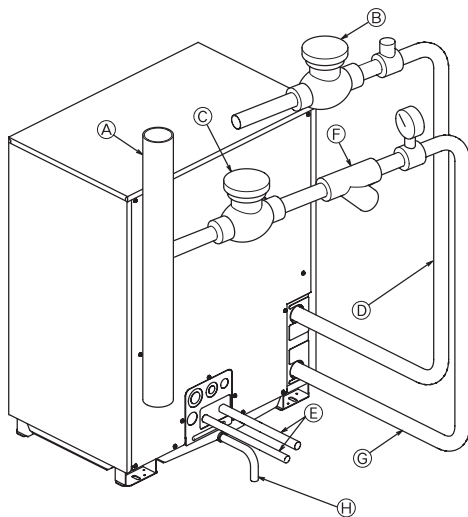
13-2. Installation Space

In case of a single unit installation, 23-11/16 in. (600mm) or more of clearance space in the front of the unit makes for easier access when servicing the unit.



13. INSTALLATION

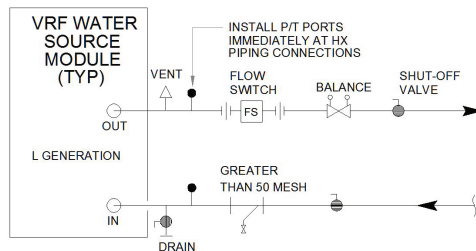
13-3. Piping Direction



- (A) Main circulating water pipe
- (B) Shutoff valve
- (C) Shutoff valve
- (D) Water outlet (upper)
- (E) Refrigerant pipes
- (F) Y-type strainer
- (G) Water inlet (lower)
- (H) Drain pipe

Notes:

- Install flow switch and properly wire to TB8-terminal 3-4 for proof of flow protection.
- Provide P/T" ports near piping connections to unit on supply and return condenser water pipe.



With City Multi WY/ WR2 Series piping, as long as the temperature range of the circulating water is kept to average temperatures year-round (29.4°C[85°F] in the summer, 21.1°C[70°F] in the winter), there is no need to insulate or otherwise protect indoor piping from exposure. You should use insulation in the following situations:

- Any heat source piping.
- Indoor piping in cold-weather regions where frozen pipes are a problem.
- When air coming from the outside causes condensation to form on piping.
- Any drainage piping.

2. Water processing and water quality control

To preserve water quality, use the closed type of cooling tower for WY/ WR2. When the circulating water quality is poor, the water heat exchanger can develop scales, leading to a reduction in heat-exchange power and possible corrosion of the heat exchanger. Please pay careful attention to water processing and water quality control when installing the water circulation system.

- Removal of foreign objects or impurities within the pipes. During installation, be careful that foreign objects, such as welding fragments, sealant particles, or rust, do not enter the pipes.
- Water Quality Processing
 - ① Depending on the quality of the cold-temperature water used in the air conditioner, the copper piping of the heat exchanger may become corroded. We recommend regular water quality processing. Cold water circulation systems using open heat storage tanks are particularly prone to corrosion. When using an open-type heat storage tank, install a water-to-water heat exchanger, and use a closed-loop circuit on the air conditioner side. 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 1mg/ℓ.
 - ② Water quality standard

Items	Lower mid-range temperature water system		Tendency	
	Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
pH (25°C)[77°F]	7.0 ~ 8.0	7.0 ~ 8.0	○	○
Electric conductivity (mS/m) (25°C)[77°F]	30 or less	30 or less	○	○
(μS/cm) (25°C)[77°F]	[300 or less]	[300 or less]		
Chloride ion (mg Cl/ℓ)	50 or less	50 or less	○	
Sulfate ion (mg SO ₄ ²⁻ /ℓ)	50 or less	50 or less	○	
Acid consumption (pH4.8) (mg CaCO ₃ /ℓ)	50 or less	50 or less		○
Total hardness (mg CaCO ₃ /ℓ)	70 or less	70 or less		○
Calcium hardness (mg CaCO ₃ /ℓ)	50 or less	50 or less		○
Ionic silica (mg SiO ₂ /ℓ)	30 or less	30 or less		○
Iron (mg Fe/ℓ)	1.0 or less	0.3 or less	○	○
Copper (mg Cu/ℓ)	1.0 or less	0.1 or less	○	
Sulfide ion (mg S ²⁻ /ℓ)	not to be detected	not to be detected	○	
Ammonium ion (mg NH ₄ ⁺ /ℓ)	0.3 or less	0.1 or less	○	
Residual chlorine (mg Cl/ℓ)	0.25 or less	0.3 or less	○	
Free carbon dioxide (mg CO ₂ /ℓ)	0.4 or less	4.0 or less	○	
Ryzner stability index	-	-	○	○

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

- ③ Please consult with a water quality control specialist about water quality control methods and water quality calculations before using anti-corrosive solutions for water quality management.
- ④ When replacing a previously installed air conditioning device (even when only the heat exchanger is being replaced), first conduct a water quality analysis and check for possible corrosion. Corrosion can occur in cold-water systems even if there has been no prior signs of corrosion. If the water quality level has dropped, please adjust water quality sufficiently before replacing the unit.

14. INSTALLATION INFORMATION

14-1. General Precautions

14-1-1. Usage

- The air-conditioning system described in this Data Book is designed for human comfort.
- This product is not designed for preservation of food, animals, plants, precision equipment, or art objects.
To prevent quality loss, do not use the product for purposes other than what it is designed for.
- To reduce the risk of water leakage and electric shock, do not use the product for air-conditioning vehicles or vessels.

14-1-2. Installation Environment

- Do not install any unit other than the dedicated unit in a place where the voltage changes a lot, large amounts of mineral oil (e.g., cutting oil) are present, cooking oil may splash, or a large quantity of steam can be generated such as a kitchen.
- Do not install the unit in acidic or alkaline environment.
- Installation should not be performed in the locations exposed to chlorine or other corrosive gases. Avoid near a sewer.
- To reduce the risk of fire, do not install the unit in a place where flammable gas may be leaked or inflammable material is present.
- This air conditioning unit has a built-in microcomputer. Take the noise effects into consideration when deciding the installation position. Especially in a place where antenna or electronic device are installed, it is recommended that the air conditioning unit be installed away from them.
- Install the unit on a solid foundation according to the local safety measures against typhoons, wind gusts, and earthquakes to prevent the unit from being damaged, toppling over, and falling.

14-1-3. Backup System

- In a place where air conditioner's malfunctions may exert crucial influence, it is recommended to have two or more systems of single outdoor units with multiple indoor units.

14-1-4. Unit Characteristics

- Heat pump efficiency depends on outdoor temperature. In the heating mode, performance drops as the outside air temperature drops. In cold climates, performance can be poor. Warm air would continue to be trapped near the ceiling and the floor level would continue to stay cold. In this case, heat pumps require a supplemental heating system or air circulator. Before purchasing them, consult your local distributor for selecting the unit and system.
- When the outdoor temperature is low and the humidity is high, the heat exchanger on the outdoor unit side tends to collect frost, which reduces its heating performance. To remove the frost, Auto-defrost function will be activated and the heating mode will temporarily stop for 3-10 minutes. Heating mode will automatically resume upon completion of defrost process.
- Air conditioner with a heat pump requires time to warm up the whole room after the heating operation begins, because the system circulates warm air in order to warm up the whole room.
- The sound levels were obtained in an anechoic room. The sound levels during actual operation are usually higher than the simulated values due to ambient noise and echoes. Refer to the section on "SOUND LEVELS" for the measurement location.
- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes even when operating normally. Please consider to avoid location where quietness is required. For BC controller, it is recommended to unit to be installed in places such as ceilings of corridor, restrooms and plant rooms.
- The total capacity of the connected indoor units can be greater than the capacity of the outdoor unit. However, when the connected indoor units operate simultaneously, each unit's capacity may become smaller than the rated capacity.
- When the unit is started up for the first time within 12 hours after power on or after power failure, it performs initial startup operation (capacity control operation) to prevent damage to the compressor. The initial startup operation requires 90 minutes maximum to complete, depending on the operation load.

14-1-5. Relevant Equipment

- Use an earth leakage breaker (ELB) with medium sensitivity, and an activation speed of 0.1 second or less.
- Consult your local distributor or a qualified technician when installing an earth leakage breaker.
- If the unit is inverter type, select an earth leakage breaker for handling high harmonic waves and surges.
- Leakage current is generated not only through the air conditioning unit but also through the power wires. Therefore, the leakage current of the main power supply is greater than the total leakage current of each unit. Take into consideration the capacity of the earth leakage breaker or leakage alarm when installing one at the main power supply. To measure the leakage current simply on site, use a measurement tool equipped with a filter, and clamp all the four power wires together. The leakage current measured on the ground wire may not accurate because the leakage current from other systems may be included to the measurement value.
- Do not install a phase advancing capacitor on the unit connected to the same power system with an inverter type unit and its equipment.
- If a large current flows due to the product malfunctions or faulty wiring, both the earth leakage breaker on the product side and the upstream overcurrent breaker may trip almost at the same time. Separate the power system or coordinate all the breakers depending on the system's priority level.

14-1-6. Unit Installation

- Your local distributor or a qualified technician must read the Installation Manual that is provided with each unit carefully before performing installation work.
- Consult your local distributor or a qualified technician when installing the unit. Improper installation by an unqualified person may result in water leakage, electric shock, or fire.
- Ensure there is enough space around each unit.

14. INSTALLATION INFORMATION

14-1-7. Optional Accessories

- Only use accessories recommended by Mitsubishi Electric. Consult your local distributor or a qualified technician when installing them. Improper installation by an unqualified person may result in water leakage, electric leakage, system breakdown, or fire.
- Some optional accessories may not be compatible with the air conditioning unit to be used or may not be suitable for the installation conditions. Check the compatibility when considering any accessories.
- Note that some optional accessories may affect the air conditioner's external form, appearance, weight, operating sound, and other characteristics.

14-1-8. Operation/Maintenance

- Read the Instruction Book that is provided with each unit carefully prior to use.
- Maintenance or cleaning of each unit may be risky and require expertise. Read the Instruction Book to ensure safety. Consult your local distributor or a qualified technician when special expertise is required such as when the indoor unit needs to be cleaned.

14-2. Precautions for Indoor unit

14-2-1. Operating Environment

- The refrigerant (R410A) used for air conditioner is non-toxic and nonflammable. However, if the refrigerant leaks, the oxygen level may drop to harmful levels. If the air conditioner is installed in a small room, measures must be taken to prevent the refrigerant concentration from exceeding the safety limit even if the refrigerant should leak.
- If the units operate in the cooling mode at the humidity above 80%, condensation may collect and drip from the indoor units.

14-2-2. Unit characteristics

- The return air temperature display on the remote controller may differ from the ones on the other thermometers.
- The clock on the remote controller may be displayed with a time lag of approximately one minute every month.
- The temperature using a built-in temperature sensor on the remote controller may differ from the actual room temperature due to the effect of the wall temperature.
- Use a built-in thermostat on the remote controller or a separately-sold thermostat when indoor units installed on or in the ceiling operate the automatic cooling/heating switchover.
- The room temperature may rise drastically due to Thermo OFF in the places where the air conditioning load is large such as computer rooms.
- Be sure to use a regular filter. If an irregular filter is installed, the unit may not operate properly, and the operation noise may increase.
- The room temperature may rise over the preset temperature in the environment where the heating air conditioning load is small.

14-2-2. Unit Installation

- For simultaneous cooling/heating operation type air conditioners (R2, H2i R2, WR2 series), the G-type BC controller cannot be connected to the P144 outdoor unit model or above, and the G- and GA-type BC controllers cannot be connected to the P264 model or above. The GB- and HB-type BC controllers (sub) cannot be connected to the outdoor unit directly, and be sure to use them with GA- and HA-type BC controllers (main).
- The insulation for low pressure pipe between the BC controller and outdoor unit shall be at least 20 mm thick. If the unit is installed on the top floor or in a high-temperature, high-humidity environment, thicker insulation may be necessary.
- Do not have any branching points on the downstream of the refrigerant pipe header.
- When a field-supplied external thermistor is installed or when a device for the demand control is used, abnormal stop of the unit or damage of the electromagnetic contactor may occur. Consult your local distributor for details.
- When indoor units operate a fresh air intake, install a filter in the duct (field-supplied) to remove the dust from the air.
- The 4-way or 2-way Airflow Ceiling Cassette Type units that have an outside air inlet can be connected to the duct, but need a booster fan to be installed at site. Refer to the chapter "Indoor Unit" for the available range for fresh air intake volume.
- Operating fresh air intake on the indoor unit may increase the sound pressure level.

14-3. Precautions for Outdoor unit/Heat source unit

14-3-1. Installation environment

- Outdoor unit with salt-resistant specification is recommended to use in a place where it is subject to salt air.
 - Even when the unit with salt-resistant specification is used, it is not completely protected against corrosion.
Be sure to follow the directions or precautions described in Instructions Book and Installation Manual for installation and maintenance. The salt-resistant specification is referred to the guidelines published by JRAIA (JRA9002).
 - Install the unit in a place where the flow of discharge air is not obstructed. If not, the short-cycling of discharge air may occur.
 - Provide proper drainage around the unit base, because the condensation may collect and drip from the outdoor units.
Provide water-proof protection to the floor when installing the units on the rooftop.
 - In a region where snowfall is expected, install the unit so that the outlet faces away from the direction of the wind, and install a snow guard to protect the unit from snow. Install the unit on a base approximately 50 cm higher than the expected snowfall.
Close the openings for pipes and wiring, because the ingress of water and small animals may cause equipment damage.
If SUS snow guard is used, refer to the Installation Manual that comes with the snow guard and take caution for the installation to avoid the risk of corrosion.
 - When the unit is expected to operate continuously for a long period of time at outside air temperatures of below 0°C, take appropriate measures, such as the use of a unit base heater, to prevent icing on the unit base.
(Not applicable to the PUMY-P-NHMu series)
 - Install the snow guard so that the outlet/inlet faces away from the direction of the wind.
 - When the snow accumulates approximately 50 cm or more on the snow guard, remove the snow from the guard.
Install a roof that is strong enough to withstand snow loads in a place where snow accumulates.
 - Provide proper protection around the outdoor units in places such as schools to avoid the risk of injury.
 - A cooling tower and heat source water circuit should be a closed circuit that water is not exposed to the atmosphere.
When a tank is installed to ensure that the circuit has enough water, minimize the contact with outside air so that the oxygen from being dissolved in the water should be 1 mg/L or less.
 - Install a strainer (50 mesh or more recommended) on the water pipe inlet on the heat source unit.
 - Interlock the heat source unit and water circuit pump.
 - Note the followings to prevent the freeze bursting of pipe when the heat source unit is installed in a place where the ambient temperature can be 0°C or below.
 - Keep the water circulating to prevent it from freezing when the ambient temperature is 0°C or below.
 - Before a long period of non use, be sure to purge the water out of the unit.
 - Salt-resistant unit is resistant to salt corrosion, but not salt-proof.
- Please note the following when installing and maintaining outdoor units in marine atmosphere.
1. Install the salt-resistant unit out of direct exposure to sea breeze, and minimize the exposure to salt water mist.
 2. Avoid installing a sun shade over the outdoor unit, so that rain will wash away salt deposits off the unit.
 3. Install the unit horizontally to ensure proper water drainage from the base of the unit.
Accumulation of water in the base of the outdoor unit will significantly accelerate corrosion.
 4. Periodically wash salt deposits off the unit, especially when the unit is installed in a coastal area.
 5. Repair all noticeable scratches after installation and during maintenance.
 6. Periodically check the unit, and apply anti-rust agent and replace corroded parts as necessary.

14-3-2. Unit characteristics

- When the Thermo ON and OFF is frequently repeated on the indoor unit, the operation status of outdoor units may become unstable.

14-3-3. Relevant equipment

- Provide grounding in accordance with the local regulations.

14-4. Precautions for Control-related items

14-2-1. Product specification

- To introduce the MELANS system, a consultation with us is required in advance. Especially to introduce the electricity charge apportioning function or energy-save function, further detailed consultation is required. Consult your local distributor for details.
- Billing calculation for AE-200A/AE-50A/EW-50A/AG-150A-A/EB-50GU-A/TG-2000A, or the billing calculation unit is unique and based on our original method. (Backup operation is included.) It is not based on the metering method, and do not use it for official business purposes. It is not the method that the amount of electric power consumption (input) by air conditioner is calculated. Note that the electric power consumption by air conditioner is apportioned by using the ratio corresponding to the operation status (output) for each air conditioner (indoor unit) in this method.
- In the apportioned billing function for AE-200A/AE-50A/EW-50A/AG-150A-A and EB-50GU-A, use separate watthour meters for A-control units, K-control units*1., and packaged air conditioner for City Multi air conditioners. It is recommended to use an individual watthour meter for the large-capacity indoor unit (with two or more addresses).
- When using the peak cut function on the AE-200A/AE-50A/EW-50A/AG-150A-A or EB-50GU-A, note that the control is performed once every minute and it takes time to obtain the effect of the control. Take appropriate measures such as lowering the criterion value. Power consumption may exceed the limits if AE-200A/AE-50A/EW-50A/AG-150A-A or EB-50GU-A malfunctions or stops. Provide a back-up remedy as necessary.
- The controllers cannot operate while the indoor unit is OFF. (No error)
- Turn ON the power to the indoor unit when operating the controllers.
- When using the interlocked control function on the AE-200A/AE-50A/EW-50A/AG-150A-A/EB-50GU-A/PAC-YG66DCA or PAC-YG63MCA, do not use it for the control for the fire prevention or security. (This function should never be used in the way that would put people's lives at risk.) Provide any methods or circuit that allow ON/OFF operation using an external switch in case of failure.

14-2-3. Installation environment

- The surge protection for the transmission line may be required in areas where lightning strikes frequently occur.
- A receiver for a wireless remote controller may not work properly due to the effect of general lighting. Leave a space of at least 1 m between the general lighting and receiver.
- When the Auto-elevating panel is used and the operation is made by using a wired remote controller, install the wired remote controller to the place where all air conditioners controlled (at least the bottom part of them) can be seen from the wired remote controller. If not, the descending panel may cause damage or injury, and be sure to use a wireless remote controller designed for use with elevating panel (sold separately).
- Install the wired remote controller (switch box) to the place where the following conditions are met.
 - Where installation surface is flat
 - Where the remote controller can detect an accurate room temperatureThe temperature sensors that detect a room temperature are installed both on the remote controller and indoor unit. When a room temperature is detected using the sensor on the remote controller, the main remote controller is used to detect a room temperature. In this case, follow the instructions below.
 - Install the controller in a place where it is not subject to the heat source.
(If the remote controller faces direct sunlight or supply air flow direction, the remote controller cannot detect an accurate room temperature.)
 - Install the controller in a place where an average room temperature can be detected.
 - Install the controller in a place where no other wires are present around the temperature sensor.
(If other wires are present, the remote controller cannot detect an accurate room temperature.)
- To prevent unauthorized access, always use a security device such as a VPN router AE-200A/AE-50A/EW-50A/AG-150A/EB-50GU-A or TG-2000A to the Internet.

15. CAUTION FOR REFRIGERANT LEAKAGE

The water-source unit twinning kit is needed to PQHY-P-TSLMU/YSLMU to combine the refrigerant flows of the PQRY-P-TLMU/YLMU units.

15-1. Refrigerant property

R410A refrigerant is harmless and incombustible. The R410A is heavier than the indoor air in density. Leakage of the refrigerant in a room has possibility to lead to a hypoxia situation. Therefore, the critical concentration specified below shall not be exceeded even if the leakage happens.

- **Critical concentration**

Critical concentration hereby is the refrigerant concentration in which no human body would be hurt if immediate measures can be taken when refrigerant leakage happens.

Critical concentration of R410A: 0.44kg/m^3

(The weight of refrigeration gas per 1 m^3 air conditioning space.);

* The Critical concentration is subject to ISO5149, EN378-1.

For the CITY MULTI system, the concentration of refrigerant leaked should not have a chance to exceed the critical concentration in any situation.

15-2. Confirm the Critical concentration and take countermeasure

The maximum refrigerant leakage concentration (Rmax) is defined as the result of the possible maximum refrigerant weight (Wmax) leaked into a room divided by its room capacity (V). It is referable to Fig.15-1. The refrigerant of Heat source unit here includes its original charge and additional charge at the site.

The additional charge is calculated according to the refrigerant charging calculation of each kind of Heat source unit, and shall not be over charger at the site. Procedure 15-2-1~3 tells how to confirm maximum refrigerant leakage concentration (Rmax) and how to take countermeasure against a possible leakage.

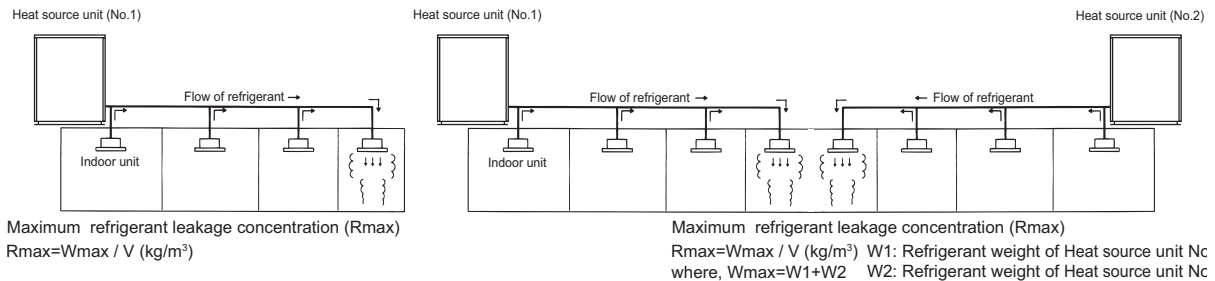


Fig. 15-1 The maximum refrigerant leakage concentration

-2-1. Find the room capacity (V),

If a room having total opening area more than 0.15% of the floor area at a low position with another room/space, the two rooms/space : considered as one. The total space shall be added up.

-2-2. Find the possible maximum leakage (Wmax) in the room. If a room has Indoor unit(s) from more than 1 Heat source unit, add up the refrigerant of the Heat source units.

-2-3. Divide (Wmax) by (V) to get the maximum refrigerant leakage concentration (Rmax).

-2-4. Find if there is any room in which the maximum refrigerant leakage concentration (Rmax) is over 0.44kg/m^3 .

If no, then the CITY MULTI is safe against refrigerant leakage.

If yes, following countermeasure is recommended to do at site.

Countermeasure 1: Let-out (making V bigger)

Design an opening of more than 0.15% of the floor area at a low position of the wall to let out the refrigerant whenever leaked.

e.g. make the upper and lower seams of door big enough.

Countermeasure 2: Smaller total charge (making Wmax smaller)

e.g. Avoid connecting more than 1 Heat source unit to one room.

e.g. Using smaller model size but more Heat source units.

e.g. Shorten the refrigerant piping as much as possible.

Countermeasure 3: Fresh air in from the ceiling (Ventilation)

As the density of the refrigerant is bigger than that of the air. Fresh air supply from the ceiling is better than air exhausting from the ceiling.

Fresh air supply solution refers to Fig.15-2~4.

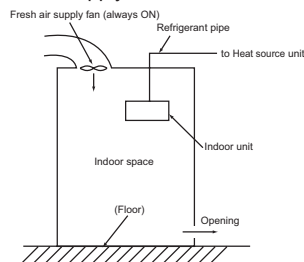


Fig.15-2. Fresh air supply always ON

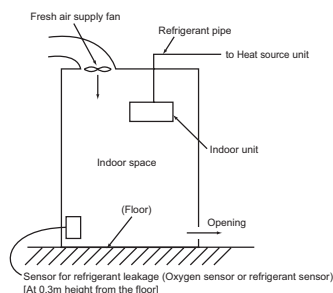


Fig.15-3. Fresh air supply upon sensor action

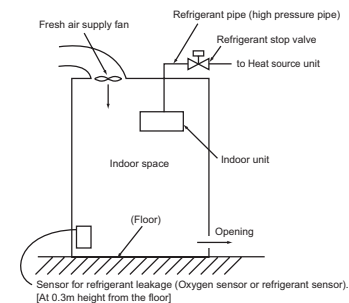


Fig.15-4. Fresh air supply and refrigerant shut-off upon sensor action

Note 1. Countermeasure 3 should be done in a proper way in which the fresh air supply shall be on whenever the leakage happens.

Note 2. In principle, MITSUBISHI ELECTRIC requires proper piping design, installation and air-tight testing after installation to avoid leakage happening.

In the area should earthquake happen, anti-vibration measures should be fully considered.

The piping should consider the extension due to the temperature variation.

