

HEAT SOURCE UNITS

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1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P72TLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz	
Cooling capacity (Nominal)		*1	BTU/h	72,000
			kW	21.1
(208-230)	Power input	kW	3.23	
	Current input	A	9.9-9.0	
(Rated)		BTU/h	69,000	
		kW	20.2	
(208-230)	Power input	kW	2.96	3.12
	Current input	A	9.1-8.2	9.6-8.7
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)
		Circulating water	°F	50~113°F (10~45°C)
Heating capacity (Nominal)		*2	BTU/h	80,000
			kW	23.4
(208-230)	Power input	kW	3.63	
	Current input	A	11.1-10.1	
(Rated)		BTU/h	76,000	
		kW	22.3	
(208-230)	Power input	kW	3.34	3.36
	Current input	A	10.3-9.3	10.3-9.3
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)
		Circulating water	°F	50~113°F (10~45°C)
Indoor unit connectable		Total capacity	50~150% of heat source unit capacity	
		Model/Quantity	P06~P96/1~18	
Sound pressure level (measured in anechoic room)			dB <A>	46.0
Refrigerant piping diameter		High pressure	in. (mm)	5/8 (15.88) Brazed
		Low pressure	in. (mm)	3/4 (19.05) Brazed
Minimum Circuit Ampacity			A	13-12
Maximum Overcurrent Protection			A	20-20
Circulating water		Water flow rate	G/h	1,522
			G/min	25.4
			m³/h	5.76
			L/min	96
			cfm	3.4
		Pressure drop	psi	3.48
			kPa	24
		Operating volume range	G/h	793 ~ 1,902
			G/min	13.2 ~ 31.7
			m³/h	3.0 ~ 7.2
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
		Starting method		Inverter
		Motor output	kW	4.3
		Case heater	kW	-
		Lubricant	MEL32	
External finish			Galvanized steel sheets	
External dimension H x W x D		in.	43-5/16 x 34-11/16 x 21-11/16	
		mm	1,100 x 880 x 550	
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
		Inverter circuit		Over-heat protection, Over-current protection
		Compressor		Over-heat protection
Refrigerant		Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)
		Control		Indoor LEV and BC controller
Net weight		lbs (kg)	380 (172)	
Heat exchanger				plate type
		Water volume in plate	G	1.32
			l	5.0
		Water pressure Max.	psi	290
MPa	2.0			
HIC circuit (HIC: Heat Inter-Changer)			-	
Drawing		External		KJ94T127
		Wiring		KE94C966
Standard attachment		Document		Installation Manual
		Accessory		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230)		BTU/h =kW x 3.412
Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		cfm =m³/min x 35.31
2.Nominal heating conditions (Test conditions are based on AHRI 1230)		lbs =kg/0.4536
Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P96TLMU-A		
Indoor Model			Non-Ducted	Ducted	
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz		
Cooling capacity (Nominal)		*1	BTU/h		96,000
			kW		28.1
(208-230)		Power input	kW		4.65
		Current input	A		14.3-12.9
(Rated)			BTU/h		92,000
			kW		27.0
(208-230)		Power input	kW		4.26
		Current input	A		13.1-11.8
Temp. range of cooling		Indoor	W.B.		59~75°F (15~24°C)
		Circulating water	°F		50~113°F (10~45°C)
Heating capacity (Nominal)		*2	BTU/h		108,000
			kW		31.7
(208-230)		Power input	kW		5.05
		Current input	A		15.5-14.0
(Rated)			BTU/h		103,000
			kW		30.2
(208-230)		Power input	kW		4.65
		Current input	A		14.3-12.9
Temp. range of heating		Indoor	D.B.		59~81°F (15~27°C)
		Circulating water	°F		50~113°F (10~45°C)
Indoor unit connectable		Total capacity			50~150% of heat source unit capacity
		Model/Quantity			P06~P96/1~24
Sound pressure level (measured in anechoic room)			dB <A>		48.0
Refrigerant piping diameter		High pressure	in. (mm)		3/4 (19.05) Brazed
		Low pressure	in. (mm)		7/8 (22.2) Brazed
Minimum Circuit Ampacity			A		19-17
Maximum Overcurrent Protection			A		30-25
Circulating water		Water flow rate	G/h		1,522
			G/min		25.4
			m³/h		5.76
			L/min		96
			cfm		3.4
		Pressure drop	psi		3.48
			kPa		24
		Operating volume range	G/h		793 ~ 1,902
G/min			13.2 ~ 31.7		
m³/h			3.0 ~ 7.2		
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1	
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
		Starting method		Inverter	
		Motor output	kW	6.0	
		Case heater	kW	-	
		Lubricant			MEL32
External finish			Galvanized steel sheets		
External dimension H x W x D		in.	43-5/16 x 34-11/16 x 21-11/16		
		mm	1,100 x 880 x 550		
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
		Inverter circuit		Over-heat protection, Over-current protection	
		Compressor		Over-heat protection	
Refrigerant		Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	
		Control		Indoor LEV and BC controller	
Net weight		lbs (kg)	380 (172)		
Heat exchanger			plate type		
			Water volume in plate	G	1.32
				l	5.0
			Water pressure Max.	psi	290
MPa	2.0				
HIC circuit (HIC: Heat Inter-Changer)			-		
Drawing		External		KJ94T127	
		Wiring		KE94C966	
Standard attachment		Document		Installation Manual	
		Accessory		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.		

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHR1 1230)		BTU/h =kW x 3,412
Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		cfm =m³/min x 35.31
2.Nominal heating conditions (Test conditions are based on AHR1 1230)		lbs =kg/0.4536
Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P120TLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz	
Cooling capacity (Nominal)		*1	BTU/h	120,000
			kW	35.2
(208-230)	Power input		kW	7.24
	Current input		A	22.3-20.1
(Rated)			BTU/h	114,000
			kW	33.4
(208-230)	Power input		kW	6.66
	Current input		A	20.5-18.5
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)
		Circulating water	°F	50~113°F (10~45°C)
Heating capacity (Nominal)		*2	BTU/h	135,000
			kW	39.6
(208-230)	Power input		kW	6.83
	Current input		A	21.0-19.0
(Rated)			BTU/h	129,000
			kW	37.8
(208-230)	Power input		kW	6.29
	Current input		A	19.3-17.5
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)
		Circulating water	°F	50~113°F (10~45°C)
Indoor unit connectable		Total capacity	50~150% of heat source unit capacity	
		Model/Quantity	P06~P96/1~30	
Sound pressure level (measured in anechoic room)		dB <A>	54.0	
Refrigerant piping diameter		High pressure	in. (mm)	3/4 (19.05) Brazed
		Low pressure	in. (mm)	7/8 (22.2) Brazed
Minimum Circuit Ampacity		A	29-26	
Maximum Overcurrent Protection		A	50-45	
Circulating water		Water flow rate	G/h	1,522
			G/min	25.4
			m³/h	5.76
			L/min	96
			cfm	3.4
		Pressure drop	psi	3.48
			kPa	24
		Operating volume range	G/h	793 ~ 1,902
			G/min	13.2 ~ 31.7
			m³/h	3.0 ~ 7.2
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
		Starting method		Inverter
		Motor output	kW	7.7
		Case heater	kW	-
		Lubricant		MEL32
External finish		Galvanized steel sheets		
External dimension H x W x D		in.	43-5/16 x 34-11/16 x 21-11/16	
		mm	1,100 x 880 x 550	
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
		Inverter circuit		Over-heat protection, Over-current protection
		Compressor		Over-heat protection
Refrigerant		Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)
		Control		Indoor LEV and BC controller
Net weight		lbs (kg)	380 (172)	
Heat exchanger		plate type		
		Water volume in plate	G	1.32
			l	5.0
		Water pressure Max.	psi	290
			MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)		-		
Drawing		External		KJ94T127
		Wiring		KE94C966
Standard attachment		Document		Installation Manual
		Accessory		Details refer to External Drw
Optional parts		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.		

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P144TLMU-A			
Indoor Model			Non-Ducted		Ducted	
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz			
Cooling capacity (Nominal)		*1	BTU/h	144,000		
			kW	42.2		
(208-230)	Power input		kW	8.78		
	Current input		A	27.0-24.4		
(Rated)			BTU/h	137,000		
			kW	40.2		
(208-230)	Power input		kW	8.07	9.98	
	Current input		A	24.8-22.5	30.7-27.8	
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)		
		Circulating water	°F	50~113°F (10~45°C)		
Heating capacity (Nominal)		*2	BTU/h	160,000		
			kW	46.9		
(208-230)	Power input		kW	8.11		
	Current input		A	25.0-22.6		
(Rated)			BTU/h	152,000		
			kW	44.5		
(208-230)	Power input		kW	7.47	7.90	
	Current input		A	23.0-20.8	24.3-22.0	
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)		
		Circulating water	°F	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>	54.0		
Refrigerant piping diameter		High pressure	in. (mm)	7/8 (22.2) Brazed		
		Low pressure	in. (mm)	1-1/8 (28.58) Brazed		
Minimum Circuit Ampacity			A	35-32		
Maximum Overcurrent Protection			A	60-50		
Circulating water		Water flow rate	G/h	1,902		
			G/min	31.7		
			m ³ /h	7.20		
			L/min	120		
			cfm	4.2		
			Pressure drop	psi	6.38	
		Operating volume range	kPa	44		
			G/h	1,189 ~ 3,054		
			G/min	19.8 ~ 50.9		
			m ³ /h	4.5 ~ 11.6		
Compressor		Type x Quantity	Inverter scroll hermetic compressor x 1			
		Manufacture	AC&R Works, MITSUBISHI ELECTRIC CORPORATION			
		Starting method	Inverter			
		Motor output	kW	9.5		
		Case heater	kW	-		
		Lubricant	MEL32			
External finish			Galvanized steel sheets			
External dimension H x W x D			in.	57-1/8 x 34-11/16 x 21-11/16		
			mm	1,450 x 880 x 550		
Protection devices		High pressure protection	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)			
		Inverter circuit	Over-heat protection, Over-current protection			
		Compressor	Over-heat protection			
Refrigerant		Type x original charge	R410A x 13 lbs + 4 oz (6.0 kg)			
		Control	Indoor LEV and BC controller			
Net weight		lbs (kg)	479 (217)			
Heat exchanger			plate type			
			Water volume in plate	G	1.32	
				I	5.0	
			Water pressure Max.	psi	290	
				MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-			
Drawing		External	KJ94T128			
		Wiring	KE94C968			
Standard attachment		Document	Installation Manual			
		Accessory	Details refer to External Drw			
Optional parts			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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.			

Notes:	Unit converter
1. Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)	BTU/h = kW x 3,412
2. Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)	cfm = m³/min x 35.31
	lbs = kg/0.4536
	*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P168TLMU-A		
Indoor Model			Non-Ducted	Ducted	
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz		
Cooling capacity (Nominal)	*1	BTU/h	168,000		
		kW	49.2		
	(208-230)	Power input	12.05		
		Current input	37.1-33.6		
	(Rated)	BTU/h	161,000		
		kW	47.2		
	(208-230)	Power input	11.10	11.88	
		Current input	34.2-30.9	36.6-33.1	
	Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
		Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	188,000		
		kW	55.1		
	(208-230)	Power input	9.86		
		Current input	30.4-27.5		
	(Rated)	BTU/h	179,000		
		kW	52.5		
	(208-230)	Power input	9.09	9.72	
		Current input	28.0-25.3	29.9-27.1	
	Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
		Circulating water	°F	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>	56.0		
Refrigerant piping diameter	High pressure	in. (mm)	7/8 (22.2) Brazed		
	Low pressure	in. (mm)	1-1/8 (28.58) Brazed		
Minimum Circuit Ampacity		A	44-39		
Maximum Overcurrent Protection		A	70-70		
Circulating water	Water flow rate	G/h	1,902		
		G/min	31.7		
		m³/h	7.20		
		L/min	120		
		cfm	4.2		
		Pressure drop	psi	6.38	
	kPa		44		
	Operating volume range	G/h	1,189 ~ 3,054		
		G/min	19.8 ~ 50.9		
		m³/h	4.5 ~ 11.6		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method		Inverter		
	Motor output	kW	11.0		
	Case heater	kW	-		
	Lubricant	MEL32			
External finish		Galvanized steel sheets			
External dimension H x W x D		in.	57-1/8 x 34-11/16 x 21-11/16		
		mm	1,450 x 880 x 550		
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
	Inverter circuit		Over-heat protection, Over-current protection		
	Compressor		Over-heat protection		
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)		
	Control		Indoor LEV and BC controller		
Net weight		lbs (kg)	479 (217)		
Heat exchanger		plate type			
		Water volume in plate	G	1.32	
			l	5.0	
		Water pressure Max.	psi	290	
			MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)		-			
Drawing	External	KJ94T128			
	Wiring	KE94C968			
Standard attachment	Document	Installation Manual			
	Accessory	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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.			

Notes:	Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)	BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)	cfm =m³/min x 35.31
	lbs =kg/0.4536
	*Above specification data is subject to rounding variation.

WR2

1. SPECIFICATIONS

U11 2nd

Heat Source Model				PQRY-P192TLMU-A			
Indoor Model				Non-Ducted		Ducted	
Power source				3-phase 3-wire 208-230 V ±10% 60 Hz			
Cooling capacity (Nominal)		*1	BTU/h	192,000			
			kW	56.3			
(208-230)	Power input	kW	15.05				
	Current input	A	46.4-41.9				
(Rated)		BTU/h	183,000				
		kW	53.6				
(208-230)	Power input	kW	13.87		14.19		
	Current input	A	42.7-38.6		43.7-39.5		
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)			
		Circulating water	°F	50~113°F (10~45°C)			
Heating capacity (Nominal)		*2	BTU/h	215,000			
			kW	63.0			
(208-230)	Power input	kW	11.90				
	Current input	A	36.7-33.1				
(Rated)		BTU/h	205,000				
		kW	60.1				
(208-230)	Power input	kW	10.97		11.56		
	Current input	A	33.8-30.5		35.6-32.2		
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)			
		Circulating water	°F	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>	58.0			
Refrigerant piping diameter		High pressure	in. (mm)	7/8 (22.2) Brazed			
		Low pressure	in. (mm)	1-1/8 (28.58) Brazed			
Minimum Circuit Ampacity			A	54-49			
Maximum Overcurrent Protection			A	90-80			
Circulating water		Water flow rate	G/h	1,902			
			G/min	31.7			
			m ³ /h	7.20			
			L/min	120			
			cfm	4.2			
			Pressure drop	psi	6.38		
		Operating volume range	kPa	44			
			G/h	1,189 ~ 3,054			
			G/min	19.8 ~ 50.9			
			m ³ /h	4.5 ~ 11.6			
Compressor		Type x Quantity	Inverter scroll hermetic compressor x 1				
		Manufacture	AC&R Works, MITSUBISHI ELECTRIC CORPORATION				
		Starting method	Inverter				
		Motor output	kW	12.4			
		Case heater	kW	-			
		Lubricant	MEL32				
External finish				Galvanized steel sheets			
External dimension H x W x D			in.	57-1/8 x 34-11/16 x 21-11/16			
			mm	1,450 x 880 x 550			
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)			
		Inverter circuit		Over-heat protection, Over-current protection			
		Compressor		Over-heat protection			
Refrigerant		Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)			
		Control		Indoor LEV and BC controller			
Net weight			lbs (kg)	479 (217)			
Heat exchanger				plate type			
				Water volume in plate	G	1.32	
					l	5.0	
				Water pressure Max.	psi	290	
					MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)				-			
Drawing		External		KJ94T128			
		Wiring		KE94C968			
Standard attachment		Document		Installation Manual			
		Accessory		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.			

Notes:	Unit converter
1. Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)	BTU/h = kW x 3,412
2. Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)	cfm = m³/min x 35.31
	lbs = kg/0.4536
	*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P216TLMU-A						
Indoor Model			Non-Ducted	Ducted					
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz						
Cooling capacity (Nominal)		*1	BTU/h	216,000					
			kW	63.3					
			Power input	kW	19.23				
		(208-230)	Current input	A	59.3-53.6				
		(Rated)		BTU/h	206,000				
				kW	60.4				
		(208-230)	Power input	kW	17.72	16.10			
			Current input	A	54.6-49.4	49.6-44.9			
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)					
		Circulating water	°F	50~113°F (10~45°C)					
Heating capacity (Nominal)		*2	BTU/h	243,000					
			kW	71.2					
			Power input	kW		13.04			
		(208-230)	Current input	A		40.2-36.3			
		(Rated)		BTU/h	232,000				
				kW	68.0				
		(208-230)	Power input	kW		12.01		12.34	
			Current input	A		37.0-33.4		38.0-34.4	
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)					
		Circulating water	°F	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>	58.0					
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					
Minimum Circuit Ampacity			A	69-63					
Maximum Overcurrent Protection			A	110-110					
Circulating water		Water flow rate	G/h	3,044					
			G/min	50.7					
			m ³ /h	11.52					
			L/min	192					
			cfm	6.8					
		Pressure drop	psi	6.53					
			kPa	45					
		Operating volume range	G/h	1,585 ~ 3,804					
			G/min	26.4 ~ 63.4					
			m ³ /h	6.0 ~ 14.4					
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1					
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION					
		Starting method		Inverter					
		Motor output	kW	14.5					
		Case heater	kW	0.045 (240 V)					
		Lubricant		MEL32					
External finish			Galvanized steel sheets						
External dimension H x W x D		in.	57-1/8 x 34-11/16 x 21-11/16						
		mm	1,450 x 880 x 550						
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)					
		Inverter circuit		Over-heat protection, Over-current protection					
		Compressor		Over-heat protection					
Refrigerant		Type x original charge		R410A x 25 lbs + 13 oz (11.7 kg)					
		Control		Indoor LEV and BC controller					
Net weight		lbs (kg)	556 (252)						
Heat exchanger				plate type					
		Water volume in plate	G	2.64					
			l	10.0					
		Water pressure Max.	psi	290					
			MPa	2.0					
HIC circuit (HIC: Heat Inter-Changer)			-						
Drawing		External		KJ94T172					
		Wiring		KE94G037					
Standard attachment		Document		Installation Manual					
		Accessory		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, 1010, 1018NU-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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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 65 m.						

Notes:	Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)	BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)	cfm =m³/min x 35.31
	lbs =kg/0.4536
	*Above specification data is subject to rounding variation.

WR2

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P240TLMU-A			
Indoor Model			Non-Ducted	Ducted		
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz			
Cooling capacity (Nominal)		*1	BTU/h	240,000		
			kW	70.3		
		(208-230)	Power input	kW	21.14	
			Current input	A	65.1-58.9	
		(Rated)		BTU/h	228,000	
				kW	66.8	
		(208-230)	Power input	kW	19.49	18.74
			Current input	A	60.1-54.3	57.7-52.2
		Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)
				Circulating water	°F	50~113°F (10~45°C)
Heating capacity (Nominal)		*2	BTU/h	270,000		
			kW	79.1		
		(208-230)	Power input	kW	15.12	
			Current input	A	46.6-42.1	
		(Rated)		BTU/h	258,000	
				kW	75.6	
		(208-230)	Power input	kW	13.93	14.62
			Current input	A	42.9-38.8	45.0-40.7
		Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)
				Circulating water	°F	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>	58.0			
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		
Minimum Circuit Ampacity		A	79-71			
Maximum Overcurrent Protection		A	125-125			
Circulating water		Water flow rate	G/h	3,044		
			G/min	50.7		
			m³/h	11.52		
			L/min	192		
			cfm	6.8		
		Pressure drop	psi	6.53		
			kPa	45		
		Operating volume range	G/h	1,585 ~ 3,804		
			G/min	26.4 ~ 63.4		
			m³/h	6.0 ~ 14.4		
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1		
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
		Starting method		Inverter		
		Motor output	kW	16.1		
		Case heater	kW	0.045 (240 V)		
		Lubricant	MEL32			
External finish		Galvanized steel sheets				
External dimension H x W x D		in.	57-1/8 x 34-11/16 x 21-11/16			
		mm	1,450 x 880 x 550			
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
		Inverter circuit		Over-heat protection, Over-current protection		
		Compressor		Over-heat protection		
Refrigerant		Type x original charge		R410A x 25 lbs + 13 oz (11.7 kg)		
		Control		Indoor LEV and BC controller		
Net weight		lbs (kg)	556 (252)			
Heat exchanger				plate type		
		Water volume in plate	G	2.64		
			l	10.0		
		Water pressure Max.	psi	290		
			MPa	2.0		
HIC circuit (HIC: Heat Inter-Changer)		-				
Drawing		External		KJ94T172		
		Wiring		KE94G037		
Standard attachment		Document		Installation Manual		
		Accessory		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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 65 m.				

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P144TSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	144,000	
		kW	42.2	
		Power input	7.11	
		Current input	21.9-19.8	
		(Rated)	137,000	
	(208-230)	BTU/h	40.2	
		kW	6.53	
		Power input	7.72	
		Current input	20.1-18.2	
		(208-230)	23.8-21.5	
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	160,000	
		kW	46.9	
		Power input	7.45	
		Current input	22.9-20.7	
		(Rated)	152,000	
	(208-230)	BTU/h	44.5	
		kW	6.86	
		Power input	7.22	
		Current input	21.1-19.1	
		(208-230)	22.2-20.1	
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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)			49.0	
Refrigerant	High pressure	in. (mm)	7/8 (22.2) Brazed	
	Low pressure	in. (mm)	1-1/8 (28.58) Brazed	

Set Model				
Model			PQRY-P72TLMU-A	
Minimum Circuit Ampacity		A	13-12	
Maximum Overcurrent Protection		A	20-20	
Circulating water	Water flow rate	G/h	1,522 + 1,522	
		G/min	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	13.2 + 13.2 ~ 31.7 + 31.7	
m³/h		3.0 + 3.0 ~ 7.2 + 7.2		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	4.3	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Galvanized steel sheets	
External dimension H x W x D		in.	43-5/16 x 34-11/16 x 21-11/16	
		mm	1,100 x 880 x 550	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	
	Control		Indoor LEV and BC controller	
Net weight		lbs (kg)	380 (172)	
Heat exchanger			plate type	
	Water volume in plate	G	1.32	
		l	5.0	
	Water pressure Max.	psi	290	
		MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-	
Pipe between unit and distributor	High pressure	in. (mm)	5/8 (15.88) 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-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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.	

Notes:	Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)	BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)	cfm =m³/min x 35.31
	lbs =kg/0.4536
	*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P168TSLMU-A						
Indoor Model			Non-Ducted		Ducted				
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz						
Cooling capacity (Nominal)			*1	BTU/h	168,000				
				kW	49.2				
			(208-230)	Power input	kW	9.33			
				Current input	A	28.7-26.0			
			(Rated)		BTU/h	161,000			
					kW	47.2			
			(208-230)	Power input	kW	8.58	9.22		
				Current input	A	26.4-23.9	28.4-25.7		
			Temp. range of cooling			Indoor	W.B.	59~75°F (15~24°C)	
						Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)			*2	BTU/h	188,000				
				kW	55.1				
			(208-230)	Power input	kW	9.34			
				Current input	A	28.8-26.0			
			(Rated)		BTU/h	179,000			
					kW	52.5			
			(208-230)	Power input	kW	8.60	8.03		
				Current input	A	26.5-23.9	24.7-22.3		
			Temp. range of heating			Indoor	D.B.	59~81°F (15~27°C)	
						Circulating water	°F	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>			50.0			
Refrigerant			High pressure			7/8 (22.2) Brazed			
piping diameter			Low pressure			1-1/8 (28.58) Brazed			
Set Model									
Model			PQRY-P96TLMU-A		PQRY-P72TLMU-A				
Minimum Circuit Ampacity			A		13-12				
Maximum Overcurrent Protection			A		20-20				
Circulating water			Water flow rate	G/h	1,522 + 1,522				
				G/min	25.4 + 25.4				
				m ³ /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	13.2 + 13.2 ~ 31.7 + 31.7				
				m ³ /h	3.0 + 3.0 ~ 7.2 + 7.2				
Compressor			Type x Quantity		Inverter scroll hermetic compressor x 1				
			Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION				
			Starting method		Inverter				
			Motor output	kW	6.0				
			Case heater	kW	-				
			Lubricant	MEL32					
External finish			Galvanized steel sheets		Galvanized steel sheets				
External dimension H x W x D			in.	43-5/16 x 34-11/16 x 21-11/16					
			mm	1,100 x 880 x 550					
Protection devices			High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)				
			Inverter circuit		Over-heat protection, Over-current protection				
			Compressor		Over-heat protection				
Refrigerant			Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)				
			Control		Indoor LEV and BC controller				
Net weight			lbs (kg)		380 (172)				
Heat exchanger			plate type		plate type				
			Water volume in plate	G	1.32				
				l	5.0				
			Water pressure Max.	psi	290				
				MPa	2.0				
HIC circuit (HIC: Heat Inter-Changer)			-		-				
Pipe between unit and distributor			High pressure		3/4 (19.05) Brazed				
			Low pressure		7/8 (22.2) Brazed				
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.						
Notes:					Unit converter				
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)					BTU/h =kW x 3,412				
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)					cfm =m ³ /min x 35.31				
					lbs =kg/0.4536				
					*Above specification data is subject to rounding variation.				

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P192TSLMU-A			
Indoor Model			Non-Ducted		Ducted	
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz			
Cooling capacity (Nominal)		*1	BTU/h	192,000		
			kW	56.3		
(208-230)		Power input	kW	11.30		
		Current input	A	34.8-31.5		
	(Rated)		BTU/h	183,000		
			kW	53.6		
	(208-230)	Power input	kW	10.40	10.98	
		Current input	A	32.0-29.0	33.8-30.6	
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)		
		Circulating water	°F	50~113°F (10~45°C)		
Heating capacity (Nominal)		*2	BTU/h	215,000		
			kW	63.0		
(208-230)		Power input	kW	11.02		
		Current input	A	33.9-30.7		
	(Rated)		BTU/h	205,000		
			kW	60.1		
	(208-230)	Power input	kW	10.16	8.90	
		Current input	A	31.3-28.3	27.4-24.8	
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)		
		Circulating water	°F	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>	51.0		
Refrigerant piping diameter		High pressure	in. (mm)	7/8 (22.2) Brazed		
		Low pressure	in. (mm)	1-1/8 (28.58) Brazed		

Set Model				
Model			PQRY-P96TLMU-A	
Minimum Circuit Ampacity		A	19-17	
Maximum Overcurrent Protection		A	30-25	
Circulating water	Water flow rate	G/h	1,522 + 1,522	
		G/min	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	13.2 + 13.2 ~ 31.7 + 31.7	
		m³/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	6.0	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Galvanized steel sheets	
External dimension H x W x D		in.	43-5/16 x 34-11/16 x 21-11/16	
		mm	1,100 x 880 x 550	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	
	Control		Indoor LEV and BC controller	
Net weight		lbs (kg)	380 (172)	
Heat exchanger	Water volume in plate	G	plate type 1.32	
		l	5.0	
		psi	290	
	Water pressure Max.	MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-	
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		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.	

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P216TSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	216,000	
		kW	63.3	
		(208-230) Power input	14.03	
		(208-230) Current input	43.2-39.1	
	(Rated)	BTU/h	206,000	
		kW	60.4	
		(208-230) Power input	12.93	13.24
		(208-230) Current input	39.8-36.0	40.8-36.9
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	243,000	
		kW	71.2	
		(208-230) Power input	12.88	
		(208-230) Current input	39.7-35.9	
	(Rated)	BTU/h	232,000	
		kW	68.0	
		(208-230) Power input	11.88	10.35
		(208-230) Current input	36.6-33.1	31.9-28.8
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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> 55.0	
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	

Set Model			PQRY-P120TLMU-A		PQRY-P96TLMU-A	
Minimum Circuit Ampacity			A		29-26	
Maximum Overcurrent Protection			A		50-45	
Circulating water	Water flow rate	G/h			1,522 + 1,522	
		G/min			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			13.2 + 13.2 ~ 31.7 + 31.7	
m³/h				3.0 + 3.0 ~ 7.2 + 7.2		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter		Inverter	
	Motor output	kW	7.7		6.0	
	Case heater	kW	-		-	
	Lubricant		MEL32		MEL32	
External finish			Galvanized steel sheets		Galvanized steel sheets	
External dimension H x W x D		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	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection		Over-heat protection	
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			
Net weight		lbs (kg)	380 (172)		380 (172)	
Heat exchanger			plate type		plate type	
	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	
HIC circuit (HIC: Heat Inter-Changer)			-		-	
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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 65 m.			

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P240TSLMU-A		
Indoor Model			Non-Ducted		Ducted
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz		
Cooling capacity (Nominal)		*1	BTU/h	240,000	
			kW	70.3	
(208-230)	Power input		kW	16.89	
		Current input		A	52.0-47.1
	(Rated)			BTU/h	228,000
			kW	66.8	
(208-230)	Power input		kW	15.57	16.15
	Current input		A	48.0-43.4	49.8-45.0
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)	
		Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)		*2	BTU/h	270,000	
			kW	79.1	
(208-230)	Power input		kW	14.58	
		Current input		A	44.9-40.6
	(Rated)			BTU/h	258,000
			kW	75.6	
(208-230)	Power input		kW	13.45	12.02
	Current input		A	41.4-37.5	37.0-33.5
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)	
		Circulating water	°F	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>	57.0	
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	

Set Model			PQRY-P120TLMU-A	PQRY-P120TLMU-A	
Model					
Minimum Circuit Ampacity		A	29-26	29-26	
Maximum Overcurrent Protection		A	50-45	50-45	
Circulating water	Water flow rate	G/h	1,522 + 1,522		
		G/min	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	13.2 + 13.2 ~ 31.7 + 31.7		
m³/h		3.0 + 3.0 ~ 7.2 + 7.2			
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter	
	Motor output	kW	7.7	7.7	
	Case heater	kW	-	-	
	Lubricant		MEL32	MEL32	
External finish		Galvanized steel sheets		Galvanized steel sheets	
External dimension H x W x D		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	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	Over-heat protection	
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		
Net weight		lbs (kg)	380 (172)	380 (172)	
Heat exchanger	Water volume in plate		plate type	plate type	
			G	1.32	1.32
			l	5.0	5.0
			psi	290	290
			MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)		-		-	
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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 65 m.			

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P288TSLMU-A				
Indoor Model			Non-Ducted		Ducted		
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz				
Cooling capacity (Nominal)		*1	BTU/h	288,000			
			kW	84.4			
		(208-230)	Power input	kW	20.42		
			Current input	A	62.9-56.9		
		(Rated)		BTU/h	275,000		
				kW	80.6		
		(208-230)	Power input	kW	18.82	21.43	
			Current input	A	58.0-52.4	66.1-59.7	
		Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)	
				Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)		*2	BTU/h	323,000			
			kW	94.7			
		(208-230)	Power input	kW	17.50		
			Current input	A	53.9-48.8		
		(Rated)		BTU/h	308,000		
				kW	90.3		
		(208-230)	Power input	kW	16.13	16.05	
			Current input	A	49.7-44.9	49.5-44.7	
		Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)	
				Circulating water	°F	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>	57.0			
Refrigerant piping diameter		High pressure	in. (mm)	1-1/8 (28.58) Brazed			
		Low pressure	in. (mm)	1-3/8 (34.93) Brazed			

Set Model			PQRY-P144TLMU-A		PQRY-P144TLMU-A	
Minimum Circuit Ampacity			35-32		35-32	
Maximum Overcurrent Protection			60-50		60-50	
Circulating water	Water flow rate	G/h	1,902 + 1,902			
		G/min	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		19.8 + 19.8 ~ 50.9 + 50.9				
m³/h		4.5 + 4.5 ~ 11.6 + 11.6				
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter		Inverter	
	Motor output	kW	9.5		9.5	
	Case heater	kW	-		-	
	Lubricant		MEL32		MEL32	
External finish			Galvanized steel sheets		Galvanized steel sheets	
External dimension H x W x D		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	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection		Over-heat protection	
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			
Net weight		lbs (kg)	479 (217)		479 (217)	
Heat exchanger			plate type		plate type	
	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	
HIC circuit (HIC: Heat Inter-Changer)			-		-	
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.			

Notes:	Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)	BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)	cfm =m³/min x 35.31
	lbs =kg/0.4536
	*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P312TSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	312,000	
		kW	91.4	
		kW	23.41	
		A	72.1-65.2	
		BTU/h	297,000	
	(Rated)	kW	87.0	
		kW	21.59	
		A	66.5-60.2	
		BTU/h	23.67	
		A	73.0-66.0	
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	350,000	
		kW	102.6	
		kW	19.11	
		A	58.9-53.3	
		BTU/h	334,000	
	(Rated)	kW	97.9	
		kW	17.62	
		A	54.3-49.1	
		BTU/h	17.96	
		A	55.3-50.0	
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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>	
			58.0	
Refrigerant	High pressure	in. (mm)	1-1/8 (28.58) Brazed	
	Low pressure	in. (mm)	1-3/8 (34.93) Brazed	

Set Model				
Model		PQRY-P168TLMU-A		PQRY-P144TLMU-A
Minimum Circuit Ampacity		A	44-39	35-32
Maximum Overcurrent Protection		A	70-70	60-50
Circulating water	Water flow rate	G/h	1,902 + 1,902	
		G/min	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		19.8 + 19.8 ~ 50.9 + 50.9		
m³/h		4.5 + 4.5 ~ 11.6 + 11.6		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	11.0	9.5
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish		Galvanized steel sheets	Galvanized steel sheets	
External dimension H x W x D	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	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
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	
Net weight	lbs (kg)	479 (217)	479 (217)	
Heat exchanger			plate type	plate type
	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
HIC circuit (HIC: Heat Inter-Changer)		-	-	
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.		

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P336TSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 208-230 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	336,000	
		kW	98.5	
		Power input	26.84	
		Current input	82.7-74.8	
	(Rated)	BTU/h	320,000	
		kW	93.8	
		Power input	24.76	
		Current input	76.3-69.0	
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	378,000	
		kW	110.8	
		Power input	20.77	
		Current input	64.0-57.9	
	(Rated)	BTU/h	361,000	
		kW	105.8	
		Power input	19.16	
		Current input	59.0-53.4	
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Indoor unit connectable			50~150% of heat source unit capacity	
Sound pressure level (measured in anechoic room)			P06~P96/2~50 (Connectable branch pipe number is max. 48.)	
Refrigerant			59.0	
piping diameter	High pressure	in. (mm)	1-1/8 (28.58) Brazed	
	Low pressure	in. (mm)	1-5/8 (41.28) Brazed	

Model			PQRY-P168TLMU-A		PQRY-P168TLMU-A		
Minimum Circuit Ampacity			A		44-39		
Maximum Overcurrent Protection			A		70-70		
Circulating water	Water flow rate	G/h	1,902 + 1,902				
		G/min	31.7 + 31.7				
		m ³ /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	19.8 + 19.8 ~ 50.9 + 50.9				
m ³ /h		4.5 + 4.5 ~ 11.6 + 11.6					
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		Inverter scroll hermetic compressor x 1		
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method		Inverter		Inverter		
	Motor output	kW	11.0		11.0		
	Case heater	kW	-		-		
	Lubricant		MEL32		MEL32		
External finish			Galvanized steel sheets		Galvanized steel sheets		
External dimension H x W x D		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		
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
	Inverter circuit		Over-heat protection, Over-current protection		Over-heat protection, Over-current protection		
	Compressor		Over-heat protection		Over-heat protection		
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				
Net weight		lbs (kg)	479 (217)		479 (217)		
Heat exchanger	Water volume in plate		G	plate type		plate type	
			l	1.32		1.32	
	Water pressure Max.	psi	5.0		5.0		
		psi	290		290		
		MPa	2.0		2.0		
HIC circuit (HIC: Heat Inter-Changer)			-		-		
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.				

Notes:		Unit converter
1. Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3.412
2. Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P72YLMU-A			
Indoor Model			Non-Ducted	Ducted		
Power source			3-phase 3-wire 460 V ±10% 60 Hz			
Cooling capacity (Nominal)		*1	BTU/h		72,000	
			kW		21.1	
(460)		Power input	kW		3.23	
		Current input	A		4.5	
(Rated)			BTU/h		69,000	
			kW		20.2	
(460)		Power input	kW		2.96	3.12
		Current input	A		4.1	4.3
Temp. range of cooling		Indoor	W.B.		59~75°F (15~24°C)	
		Circulating water	°F		50~113°F (10~45°C)	
Heating capacity (Nominal)		*2	BTU/h		80,000	
			kW		23.4	
(460)		Power input	kW		3.63	
		Current input	A		5.0	
(Rated)			BTU/h		76,000	
			kW		22.3	
(460)		Power input	kW		3.34	3.36
		Current input	A		4.6	4.6
Temp. range of heating		Indoor	D.B.		59~81°F (15~27°C)	
		Circulating water	°F		50~113°F (10~45°C)	
Indoor unit connectable		Total capacity		50~150% of heat source unit capacity		
		Model/Quantity		P06~P96/1~18		
Sound pressure level (measured in anechoic room)			dB <A>		46.0	
Refrigerant piping diameter		High pressure	in. (mm)		5/8 (15.88) Brazed	
		Low pressure	in. (mm)		3/4 (19.05) Brazed	
Minimum Circuit Ampacity			A		6	
Maximum Overcurrent Protection			A		15	
Circulating water		Water flow rate	G/h		1,522	
			G/min		25.4	
			m³/h		5.76	
			L/min		96	
			cfm		3.4	
		Pressure drop	psi		3.48	
			kPa		24	
		Operating volume range	G/h		793 ~ 1,902	
			G/min		13.2 ~ 31.7	
m³/h			3.0 ~ 7.2			
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1		
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
		Starting method		Inverter		
		Motor output	kW	4.3		
		Case heater	kW	-		
		Lubricant		MEL32		
External finish			Galvanized steel sheets			
External dimension H x W x D			in.	43-5/16 x 34-11/16 x 21-11/16		
			mm	1,100 x 880 x 550		
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
		Inverter circuit		Over-heat protection, Over-current protection		
		Compressor		Over-heat protection		
Refrigerant		Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)		
		Control		Indoor LEV and BC controller		
Net weight		lbs (kg)	404 (183)			
Heat exchanger			plate type			
			Water volume in plate	G	1.32	
				l	5.0	
			Water pressure Max.	psi	290	
MPa	2.0					
HIC circuit (HIC: Heat Inter-Changer)			-			
Drawing		External		KJ94T129		
		Wiring		KE94C952		
Standard attachment		Document		Installation Manual		
		Accessory		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.			

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230)		BTU/h =kW x 3.412
Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		cfm =m³/min x 35.31
2.Nominal heating conditions (Test conditions are based on AHRI 1230)		lbs =kg/0.4536
Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P96YLMU-A			
Indoor Model			Non-Ducted		Ducted	
Power source			3-phase 3-wire 460 V ±10% 60 Hz			
Cooling capacity (Nominal)		*1	BTU/h	96,000		
			kW	28.1		
(460)	Power input		kW	4.65		
	Current input		A	6.4		
(Rated)			BTU/h	92,000		
			kW	27.0		
(460)	Power input		kW	4.26	5.19	
	Current input		A	5.9	7.2	
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)		
		Circulating water	°F	50~113°F (10~45°C)		
Heating capacity (Nominal)		*2	BTU/h	108,000		
			kW	31.7		
(460)	Power input		kW	5.05		
	Current input		A	7.0		
(Rated)			BTU/h	103,000		
			kW	30.2		
(460)	Power input		kW	4.65	4.48	
	Current input		A	6.4	6.2	
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)		
		Circulating water	°F	50~113°F (10~45°C)		
Indoor unit connectable		Total capacity	50~150% of heat source unit capacity			
		Model/Quantity	P06~P96/1~24			
Sound pressure level (measured in anechoic room)			dB <A>	48.0		
Refrigerant piping diameter		High pressure	in. (mm)	3/4 (19.05) Brazed		
		Low pressure	in. (mm)	7/8 (22.2) Brazed		
Minimum Circuit Ampacity			A	9		
Maximum Overcurrent Protection			A	15		
Circulating water		Water flow rate	G/h	1,522		
			G/min	25.4		
			m³/h	5.76		
			L/min	96		
			cfm	3.4		
			psi	3.48		
		Pressure drop	kPa	24		
			Operating volume range	G/h	793 ~ 1,902	
				G/min	13.2 ~ 31.7	
				m³/h	3.0 ~ 7.2	
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1		
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
		Starting method		Inverter		
		Motor output	kW	6.0		
		Case heater	kW	-		
		Lubricant		MEL32		
External finish			Galvanized steel sheets			
External dimension H x W x D		in.	43-5/16 x 34-11/16 x 21-11/16			
		mm	1,100 x 880 x 550			
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
		Inverter circuit		Over-heat protection, Over-current protection		
		Compressor		Over-heat protection		
Refrigerant		Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)		
		Control		Indoor LEV and BC controller		
Net weight		lbs (kg)	404 (183)			
Heat exchanger			plate type			
			Water volume in plate	G	1.32	
				l	5.0	
			Water pressure Max.	psi	290	
				MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-			
Drawing		External		KJ94T129		
		Wiring		KE94C952		
Standard attachment		Document		Installation Manual		
		Accessory		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.			

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230)		BTU/h =kW x 3,412
Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		cfm =m³/min x 35.31
2.Nominal heating conditions (Test conditions are based on AHRI 1230)		lbs =kg/0.4536
Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P120YLMU-A		
Indoor Model			Non-Ducted	Ducted	
Power source			3-phase 3-wire 460 V ±10% 60 Hz		
Cooling capacity (Nominal)	*1	BTU/h	120,000		
		kW	35.2		
	(460)	Power input	kW	7.24	
		Current input	A	10.0	
	(Rated)	BTU/h	114,000		
		kW	33.4		
	(460)	Power input	kW	6.66	7.35
		Current input	A	9.2	10.2
	Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
		Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	135,000		
		kW	39.6		
	(460)	Power input	kW	6.83	
		Current input	A	9.5	
	(Rated)	BTU/h	129,000		
		kW	37.8		
	(460)	Power input	kW	6.29	5.92
		Current input	A	8.7	8.2
	Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
		Circulating water	°F	50~113°F (10~45°C)	
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity		
	Model/Quantity		P06~P96/1~30		
Sound pressure level (measured in anechoic room)		dB <A>	54.0		
Refrigerant piping diameter	High pressure	in. (mm)	3/4 (19.05) Brazed		
	Low pressure	in. (mm)	7/8 (22.2) Brazed		
Minimum Circuit Ampacity		A	13		
Maximum Overcurrent Protection		A	20		
Circulating water	Water flow rate	G/h	1,522		
		G/min	25.4		
		m³/h	5.76		
		L/min	96		
		cfm	3.4		
	Pressure drop	psi	3.48		
		kPa	24		
	Operating volume range	G/h	793 ~ 1,902		
		G/min	13.2 ~ 31.7		
m³/h		3.0 ~ 7.2			
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
	Starting method		Inverter		
	Motor output	kW	7.7		
	Case heater	kW	-		
	Lubricant		MEL32		
External finish			Galvanized steel sheets		
External dimension H x W x D		in.	43-5/16 x 34-11/16 x 21-11/16		
		mm	1,100 x 880 x 550		
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
	Inverter circuit		Over-heat protection, Over-current protection		
	Compressor		Over-heat protection		
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)		
	Control		Indoor LEV and BC controller		
Net weight		lbs (kg)	404 (183)		
Heat exchanger			plate type		
	Water volume in plate	G	1.32		
		l	5.0		
	Water pressure Max.	psi	290		
		MPa	2.0		
HIC circuit (HIC: Heat Inter-Changer)			-		
Drawing	External		KJ94T129		
	Wiring		KE94C952		
Standard attachment	Document		Installation Manual		
	Accessory		Details refer to External Drw		
Optional parts			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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.		

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230)		BTU/h =kW x 3.412
Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		cfm =m³/min x 35.31
2.Nominal heating conditions (Test conditions are based on AHRI 1230)		lbs =kg/0.4536
Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P144YLMU-A			
Indoor Model			Non-Ducted		Ducted	
Power source			3-phase 3-wire 460 V ±10% 60 Hz			
Cooling capacity (Nominal)		*1	BTU/h	144,000		
			kW	42.2		
(460)	Power input		kW	8.78		
	Current input		A	12.2		
(Rated)			BTU/h	137,000		
			kW	40.2		
(460)	Power input		kW	8.07	9.98	
	Current input		A	11.2	13.9	
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)		
		Circulating water	°F	50~113°F (10~45°C)		
Heating capacity (Nominal)		*2	BTU/h	160,000		
			kW	46.9		
(460)	Power input		kW	8.11		
	Current input		A	11.3		
(Rated)			BTU/h	152,000		
			kW	44.5		
(460)	Power input		kW	7.47	7.90	
	Current input		A	10.4	11.0	
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)		
		Circulating water	°F	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>	54.0		
Refrigerant piping diameter		High pressure	in. (mm)	7/8 (22.2) Brazed		
		Low pressure	in. (mm)	1-1/8 (28.58) Brazed		
Minimum Circuit Ampacity			A	16		
Maximum Overcurrent Protection			A	25		
Circulating water		Water flow rate	G/h	1,902		
			G/min	31.7		
			m³/h	7.20		
			L/min	120		
			cfm	4.2		
		Pressure drop	psi	6.38		
			kPa	44		
		Operating volume range	G/h	1,189 ~ 3,054		
			G/min	19.8 ~ 50.9		
m³/h	4.5 ~ 11.6					
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1		
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
		Starting method		Inverter		
		Motor output	kW	9.5		
		Case heater	kW	-		
		Lubricant		MEL32		
External finish			Galvanized steel sheets			
External dimension H x W x D			in.	57-1/8 x 34-11/16 x 21-11/16		
			mm	1,450 x 880 x 550		
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		
		Inverter circuit		Over-heat protection, Over-current protection		
		Compressor		Over-heat protection		
Refrigerant		Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)		
		Control		Indoor LEV and BC controller		
Net weight		lbs (kg)	505 (229)			
Heat exchanger			plate type			
			Water volume in plate	G	1.32	
				I	5.0	
			Water pressure Max.	psi	290	
				MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-			
Drawing		External		KJ94T130		
		Wiring		KE94C952		
Standard attachment		Document		Installation Manual		
		Accessory		Details refer to External Drw		
Optional parts			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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.			

Notes:	Unit converter
1. Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)	BTU/h = kW x 3,412
2. Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)	cfm = m³/min x 35.31
	lbs = kg/0.4536
	*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P168YLMU-A			
Indoor Model			Non-Ducted		Ducted	
Power source			3-phase 3-wire 460 V ±10% 60 Hz			
Cooling capacity (Nominal)	*1	BTU/h	168,000			
		kW	49.2			
	(460)	Power input	12.05			
		Current input	16.8			
	(Rated)	BTU/h	161,000			
		kW	47.2			
	(460)	Power input	11.10	11.88		
		Current input	15.4	16.5		
	Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)		
		Circulating water	°F	50~113°F (10~45°C)		
Heating capacity (Nominal)	*2	BTU/h	188,000			
		kW	55.1			
	(460)	Power input	9.86			
		Current input	13.7			
	(Rated)	BTU/h	179,000			
		kW	52.5			
	(460)	Power input	9.09	9.72		
		Current input	12.6	13.5		
	Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)		
		Circulating water	°F	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>	56.0			
Refrigerant piping diameter	High pressure	in. (mm)	7/8 (22.2) Brazed			
	Low pressure	in. (mm)	1-1/8 (28.58) Brazed			
Minimum Circuit Ampacity		A	20			
Maximum Overcurrent Protection		A	35			
Circulating water	Water flow rate	G/h	1,902			
		G/min	31.7			
		m³/h	7.20			
		L/min	120			
		cfm	4.2			
	Pressure drop	psi	6.38			
		kPa	44			
	Operating volume range	G/h	1,189 ~ 3,054			
		G/min	19.8 ~ 50.9			
m³/h		4.5 ~ 11.6				
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1			
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION			
	Starting method		Inverter			
	Motor output	kW	11.0			
	Case heater	kW	-			
	Lubricant	MEL32				
External finish			Galvanized steel sheets			
External dimension H x W x D		in.	57-1/8 x 34-11/16 x 21-11/16			
		mm	1,450 x 880 x 550			
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)			
	Inverter circuit		Over-heat protection, Over-current protection			
	Compressor		Over-heat protection			
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)			
	Control		Indoor LEV and BC controller			
Net weight		lbs (kg)	505 (229)			
Heat exchanger			plate type			
			Water volume in plate	G	1.32	
				l	5.0	
			Water pressure Max.	psi	290	
				MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-			
Drawing	External		KJ94T130			
	Wiring		KE94C952			
Standard attachment	Document		Installation Manual			
	Accessory		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.			

Notes:	Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)	BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)	cfm =m³/min x 35.31
	lbs =kg/0.4536
	*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P192YLMU-A		
Indoor Model			Non-Ducted		Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz		
Cooling capacity (Nominal)		*1	BTU/h	192,000	
			kW	56.3	
(460)	Power input		kW	15.05	
	Current input		A	20.9	
(Rated)			BTU/h	183,000	
			kW	53.6	
(460)	Power input		kW	13.87	14.19
	Current input		A	19.3	19.7
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)	
		Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)		*2	BTU/h	215,000	
			kW	63.0	
(460)	Power input		kW	11.90	
	Current input		A	16.5	
(Rated)			BTU/h	205,000	
			kW	60.1	
(460)	Power input		kW	10.97	11.56
	Current input		A	15.2	16.1
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)	
		Circulating water	°F	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>	58.0		
Refrigerant piping diameter		High pressure	in. (mm)	7/8 (22.2) Brazed	
		Low pressure	in. (mm)	1-1/8 (28.58) Brazed	
Minimum Circuit Ampacity		A	25		
Maximum Overcurrent Protection		A	40		
Circulating water		Water flow rate	G/h	1,902	
			G/min	31.7	
			m³/h	7.20	
			L/min	120	
			cfm	4.2	
		Pressure drop	psi	6.38	
			kPa	44	
		Operating volume range	G/h	1,189 ~ 3,054	
			G/min	19.8 ~ 50.9	
m³/h	4.5 ~ 11.6				
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1	
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
		Starting method		Inverter	
		Motor output	kW	12.4	
		Case heater	kW	-	
		Lubricant		MEL32	
External finish			Galvanized steel sheets		
External dimension H x W x D		in.	57-1/8 x 34-11/16 x 21-11/16		
		mm	1,450 x 880 x 550		
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
		Inverter circuit		Over-heat protection, Over-current protection	
		Compressor		Over-heat protection	
Refrigerant		Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	
		Control		Indoor LEV and BC controller	
Net weight		lbs (kg)	505 (229)		
Heat exchanger			plate type		
			Water volume in plate	G	1.32
				l	5.0
			Water pressure Max.	psi	290
				MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-		
Drawing		External		KJ94T130	
		Wiring		KE94C952	
Standard attachment		Document		Installation Manual	
		Accessory		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.		

Notes:	Unit converter
1. Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)	BTU/h = kW x 3.412
2. Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)	cfm = m³/min x 35.31
	lbs = kg/0.4536
	*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P216YLMU-A		
Indoor Model			Non-Ducted		Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz		
Cooling capacity (Nominal)			*1	BTU/h	216,000
				kW	63.3
(460)			Power input	kW	19.23
			Current input	A	26.8
(Rated)				BTU/h	206,000
				kW	60.4
(460)			Power input	kW	17.72
			Current input	A	24.7
Temp. range of cooling			Indoor	W.B.	59~75°F (15~24°C)
			Circulating water	°F	50~113°F (10~45°C)
Heating capacity (Nominal)			*2	BTU/h	243,000
				kW	71.2
(460)			Power input	kW	13.04
			Current input	A	18.1
(Rated)				BTU/h	232,000
				kW	68.0
(460)			Power input	kW	12.01
			Current input	A	16.7
Temp. range of heating			Indoor	D.B.	59~81°F (15~27°C)
			Circulating water	°F	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>	58.0	
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
Minimum Circuit Ampacity			A	31	
Maximum Overcurrent Protection			A	50	
Circulating water			Water flow rate	G/h	3,044
				G/min	50.7
				m³/h	11.52
				L/min	192
				cfm	6.8
			Pressure drop	psi	6.53
				kPa	45
			Operating volume range	G/h	1,585 ~ 3,804
G/min	26.4 ~ 63.4				
m³/h	6.0 ~ 14.4				
Compressor			Inverter scroll hermetic compressor x 1		
			AC&R Works, MITSUBISHI ELECTRIC CORPORATION		
			Inverter		
			Motor output	kW	14.5
			Case heater	kW	0.045 (240 V)
			Lubricant	MEL32	
External finish			Galvanized steel sheets		
External dimension H x W x D			in.	57-1/8 x 34-11/16 x 21-11/16	
			mm	1,450 x 880 x 550	
Protection devices			High pressure protection		
			Inverter circuit		
			Compressor		
Refrigerant			Over-heat protection, Over-current protection		
			Over-heat protection		
Type x original charge			R410A x 25 lbs + 13 oz (11.7 kg)		
Control			Indoor LEV and BC controller		
Net weight			lbs (kg)	571 (259)	
Heat exchanger			plate type		
			Water volume in plate	G	2.64
				l	10.0
			Water pressure Max.	psi	290
				MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-		
Drawing			KJ94T173		
			KE94C952		
Document			Installation Manual		
Accessory			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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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 65 m.		

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P240YLMU-A		
Indoor Model			Non-Ducted		Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz		
Cooling capacity (Nominal)		*1	BTU/h	240,000	
			kW	70.3	
(460)	Power input		kW	21.14	
	Current input		A	29.4	
(Rated)			BTU/h	228,000	
			kW	66.8	
(460)	Power input		kW	19.49	18.74
	Current input		A	27.1	26.1
Temp. range of cooling		Indoor	W.B.	59~75°F (15~24°C)	
		Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)		*2	BTU/h	270,000	
			kW	79.1	
(460)	Power input		kW	15.12	
	Current input		A	21.0	
(Rated)			BTU/h	258,000	
			kW	75.6	
(460)	Power input		kW	13.93	14.62
	Current input		A	19.4	20.3
Temp. range of heating		Indoor	D.B.	59~81°F (15~27°C)	
		Circulating water	°F	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>	58.0	
Refrigerant		High pressure	in. (mm)	7/8 (22.2) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)	
piping diameter		Low pressure	in. (mm)	1-3/8 (34.93) Brazed	
Minimum Circuit Ampacity			A	36	
Maximum Overcurrent Protection			A	60	
Circulating water		Water flow rate	G/h	3,044	
			G/min	50.7	
			m ³ /h	11.52	
			L/min	192	
			cfm	6.8	
		Pressure drop	psi	6.53	
			kPa	45	
		Operating volume range	G/h	1,585 ~ 3,804	
			G/min	26.4 ~ 63.4	
m ³ /h	6.0 ~ 14.4				
Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1	
		Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
		Starting method		Inverter	
		Motor output	kW	16.1	
		Case heater	kW	0.045 (240 V)	
		Lubricant	MEL32		
External finish			Galvanized steel sheets		
External dimension H x W x D			in.	57-1/8 x 34-11/16 x 21-11/16	
			mm	1,450 x 880 x 550	
Protection devices		High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
		Inverter circuit		Over-heat protection, Over-current protection	
		Compressor		Over-heat protection	
Refrigerant		Type x original charge		R410A x 25 lbs + 13 oz (11.7 kg)	
		Control		Indoor LEV and BC controller	
Net weight			lbs (kg)	571 (259)	
Heat exchanger			plate type		
			Water volume in plate	G	2.64
				l	10.0
			Water pressure Max.	psi	290
MPa	2.0				
HIC circuit (HIC: Heat Inter-Changer)			-		
Drawing		External		KJ94T173	
		Wiring		KE94C952	
Standard attachment		Document		Installation Manual	
		Accessory		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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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 65 m.		

Notes:		Unit converter
1. Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)		BTU/h = kW x 3.412
2. Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)		cfm = m³/min x 35.31
		lbs = kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P144YSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz	
Cooling capacity (Nominal)		*1 BTU/h	144,000	
		kW	42.2	
		Power input kW	7.11	
	(460)	Current input A	9.9	
		(Rated) BTU/h	137,000	
		kW	40.2	
	(460)	Power input kW	6.53	7.72
		Current input A	9.1	10.7
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)		*2 BTU/h	160,000	
		kW	46.9	
		Power input kW	7.45	
	(460)	Current input A	10.3	
		(Rated) BTU/h	152,000	
		kW	44.5	
	(460)	Power input kW	6.86	7.22
		Current input A	9.5	10.0
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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>	49.0	
Refrigerant	High pressure	in. (mm)	7/8 (22.2) Brazed	
piping diameter	Low pressure	in. (mm)	1-1/8 (28.58) Brazed	

Set Model			PQRY-P72YLMU-A		PQRY-P72YLMU-A	
Model			6		6	
Minimum Circuit Ampacity		A	15		15	
Maximum Overcurrent Protection		A				
Circulating water	Water flow rate	G/h	1,522 + 1,522			
		G/min	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		13.2 + 13.2 ~ 31.7 + 31.7				
m³/h		3.0 + 3.0 ~ 7.2 + 7.2				
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter		Inverter	
	Motor output	kW	4.3		4.3	
	Case heater	kW	-		-	
	Lubricant		MEL32		MEL32	
	External finish		Galvanized steel sheets		Galvanized steel sheets	
External dimension H x W x D		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	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection		Over-heat protection	
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			
Net weight		lbs (kg)	404 (183)		404 (183)	
Heat exchanger			plate type		plate type	
	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	
HIC circuit (HIC: Heat Inter-Changer)			-		-	
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.			
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Notes:	Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)	BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)	cfm =m³/min x 35.31
	lbs =kg/0.4536
	*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P168YSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	168,000	
		kW	49.2	
		Power input	9.33	
		Current input	13.0	
	(Rated)	BTU/h	161,000	
		kW	47.2	
		Power input	8.58	9.22
		Current input	11.9	12.8
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	188,000	
		kW	55.1	
		Power input	9.34	
		Current input	13.0	
	(Rated)	BTU/h	179,000	
		kW	52.5	
		Power input	8.60	8.03
		Current input	11.9	11.1
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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> 50.0	
Refrigerant piping diameter	High pressure	in. (mm)	7/8 (22.2) Brazed	
	Low pressure	in. (mm)	1-1/8 (28.58) Brazed	

Set Model			PQRY-P96YLMU-A	PQRY-P72YLMU-A
Model				
Minimum Circuit Ampacity			9	6
Maximum Overcurrent Protection			15	15
Circulating water	Water flow rate	G/h	1,522 + 1,522	
		G/min	25.4 + 25.4	
		m ³ /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	13.2 + 13.2 ~ 31.7 + 31.7	
m ³ /h		3.0 + 3.0 ~ 7.2 + 7.2		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	6.0	4.3
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		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
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
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	
Net weight		lbs (kg)	404 (183)	404 (183)
Heat exchanger			plate type	plate type
	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
HIC circuit (HIC: Heat Inter-Changer)			-	-
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.	

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P192YSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	192,000	
		kW	56.3	
		Power input kW	11.30	
		Current input A	15.7	
		(Rated)		
	(460)	BTU/h	183,000	
		kW	53.6	
		Power input kW	10.40	10.98
		Current input A	14.5	15.3
		(460)		
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	215,000	
		kW	63.0	
		Power input kW	11.02	
		Current input A	15.3	
		(Rated)		
	(460)	BTU/h	205,000	
		kW	60.1	
		Power input kW	10.16	8.90
		Current input A	14.1	12.4
		(460)		
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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>	
			51.0	
Refrigerant piping diameter	High pressure	in. (mm)	7/8 (22.2) Brazed	
	Low pressure	in. (mm)	1-1/8 (28.58) Brazed	

Set Model				
Model		PQRY-P96YLMU-A		PQRY-P96YLMU-A
Minimum Circuit Ampacity		A	9	9
Maximum Overcurrent Protection		A	15	15
Circulating water	Water flow rate	G/h	1,522 + 1,522	
		G/min	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		13.2 + 13.2 ~ 31.7 + 31.7		
m³/h		3.0 + 3.0 ~ 7.2 + 7.2		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	6.0	6.0
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish		Galvanized steel sheets		Galvanized steel sheets
External dimension H x W x D		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
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
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	
Net weight		lbs (kg)	404 (183)	404 (183)
Heat exchanger	Water volume in plate		plate type	plate type
			G	1.32
	I	5.0		
	Water pressure Max.	psi	290	290
		MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)		-		-
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.		

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P216YSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	216,000	
		kW	63.3	
		Power input kW	14.03	
		Current input A	19.5	
	(Rated)	BTU/h	206,000	
		kW	60.4	
		Power input kW	12.93	13.24
		Current input A	18.0	18.4
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	243,000	
		kW	71.2	
		Power input kW	12.88	
		Current input A	17.9	
	(Rated)	BTU/h	232,000	
		kW	68.0	
		Power input kW	11.88	10.35
		Current input A	16.5	14.4
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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> 55.0	
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	

Set Model			PQRY-P120YLMU-A		PQRY-P96YLMU-A	
Minimum Circuit Ampacity			13		9	
Maximum Overcurrent Protection			20		15	
Circulating water	Water flow rate	G/h	1,522 + 1,522			
		G/min	25.4 + 25.4			
		m ³ /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	13.2 + 13.2 ~ 31.7 + 31.7			
		m ³ /h	3.0 + 3.0 ~ 7.2 + 7.2			
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter		Inverter	
	Motor output	kW	7.7		6.0	
	Case heater	kW	-		-	
	Lubricant		MEL32		MEL32	
External finish			Galvanized steel sheets		Galvanized steel sheets	
External dimension H x W x D		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	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection		Over-heat protection	
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			
Net weight		lbs (kg)	404 (183)		404 (183)	
Heat exchanger	Water volume in plate	G	plate type		plate type	
			1.32		1.32	
		l	5.0		5.0	
	Water pressure Max.	psi	290		290	
		MPa	2.0		2.0	
HIC circuit (HIC: Heat Inter-Changer)			-		-	
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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 65 m.			

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P240YSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	240,000	
		kW	70.3	
		Power input kW	16.89	
		Current input A	23.5	
		(Rated)		
	(460)	BTU/h	228,000	
		kW	66.8	
		Power input kW	15.57	16.15
		Current input A	21.7	22.5
		(460)		
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	270,000	
		kW	79.1	
		Power input kW	14.58	
		Current input A	20.3	
		(Rated)		
	(460)	BTU/h	258,000	
		kW	75.6	
		Power input kW	13.45	12.02
		Current input A	18.7	16.7
		(460)		
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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> 57.0	
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	

Set Model					
Model		PQRY-P120YLMU-A		PQRY-P120YLMU-A	
Minimum Circuit Ampacity		A	13	13	
Maximum Overcurrent Protection		A	20	20	
Circulating water	Water flow rate	G/h	1,522 + 1,522		
		G/min	25.4 + 25.4		
		m ³ /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	13.2 + 13.2 ~ 31.7 + 31.7		
m ³ /h		3.0 + 3.0 ~ 7.2 + 7.2			
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	Inverter	
	Motor output	kW	7.7	7.7	
	Case heater	kW	-	-	
	Lubricant		MEL32	MEL32	
External finish		Galvanized steel sheets		Galvanized steel sheets	
External dimension H x W x D		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	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	Over-heat protection	
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		
Net weight		lbs (kg)	404 (183)	404 (183)	
Heat exchanger	Water volume in plate		plate type	plate type	
			G	1.32	1.32
			l	5.0	5.0
			psi	290	290
			MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)		-		-	
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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 65 m.			

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P288YSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	288,000	
		kW	84.4	
		Power input	20.42	
		Current input	28.4	
	(Rated)	BTU/h	275,000	
		kW	80.6	
		Power input	18.82	21.43
		Current input	26.2	29.8
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	323,000	
		kW	94.7	
		Power input	17.50	
		Current input	24.4	
	(Rated)	BTU/h	308,000	
		kW	90.3	
		Power input	16.13	16.05
		Current input	22.4	22.3
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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>	
			57.0	
Refrigerant piping diameter	High pressure	in. (mm)	1-1/8 (28.58) Brazed	
	Low pressure	in. (mm)	1-3/8 (34.93) Brazed	

Set Model			PQRY-P144YLMU-A		PQRY-P144YLMU-A	
Model						
Minimum Circuit Ampacity			A		16	
Maximum Overcurrent Protection			A		25	
Circulating water	Water flow rate	G/h	1,902 + 1,902			
		G/min	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	19.8 + 19.8 ~ 50.9 + 50.9			
m³/h		4.5 + 4.5 ~ 11.6 + 11.6				
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter		Inverter	
	Motor output	kW	9.5		9.5	
	Case heater	kW	-		-	
	Lubricant		MEL32		MEL32	
External finish			Galvanized steel sheets		Galvanized steel sheets	
External dimension H x W x D		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	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection		Over-heat protection	
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			
Net weight		lbs (kg)	505 (229)		505 (229)	
Heat exchanger			plate type		plate type	
	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	
HIC circuit (HIC: Heat Inter-Changer)			-		-	
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.			

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P312YSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	312,000	
		kW	91.4	
		Power input kW	23.41	
		Current input A	32.6	
		(Rated)		
	(460)	BTU/h	297,000	
		kW	87.0	
		Power input kW	21.59	23.67
		Current input A	30.1	33.0
		(460)		
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	350,000	
		kW	102.6	
		Power input kW	19.11	
		Current input A	26.6	
		(Rated)		
	(460)	BTU/h	334,000	
		kW	97.9	
		Power input kW	17.62	17.96
		Current input A	24.5	25.0
		(460)		
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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>	
			58.0	
Refrigerant piping diameter	High pressure	in. (mm)	1-1/8 (28.58) Brazed	
	Low pressure	in. (mm)	1-3/8 (34.93) Brazed	

Set Model				
Model		PQRY-P168YLMU-A		PQRY-P144YLMU-A
Minimum Circuit Ampacity		A	20	16
Maximum Overcurrent Protection		A	35	25
Circulating water	Water flow rate	G/h	1,902 + 1,902	
		G/min	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	19.8 + 19.8 ~ 50.9 + 50.9	
m³/h		4.5 + 4.5 ~ 11.6 + 11.6		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	11.0	9.5
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish		Galvanized steel sheets		Galvanized steel sheets
External dimension H x W x D	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
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
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	
Net weight	lbs (kg)	505 (229)		505 (229)
Heat exchanger	Water volume in plate	G	plate type	plate type
		l	1.32	1.32
		l	5.0	5.0
	Water pressure Max.	psi	290	290
		MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)		-		-
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 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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F.D.B. (40°C.D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.		

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F.D.B./66°F.W.B. (27°C.D.B./19°C.W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3,412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F.D.B. (20°C.D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

U11 2nd

Heat Source Model			PQRY-P336YSLMU-A	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 460 V ±10% 60 Hz	
Cooling capacity (Nominal)	*1	BTU/h	336,000	
		kW	98.5	
		Power input	26.84	
		Current input	37.4	
	(Rated)	BTU/h	320,000	
		kW	93.8	
		Power input	24.76	25.85
		Current input	34.5	36.0
Temp. range of cooling	Indoor	W.B.	59~75°F (15~24°C)	
	Circulating water	°F	50~113°F (10~45°C)	
Heating capacity (Nominal)	*2	BTU/h	378,000	
		kW	110.8	
		Power input	20.77	
		Current input	28.9	
	(Rated)	BTU/h	361,000	
		kW	105.8	
		Power input	19.16	20.05
		Current input	26.7	27.9
Temp. range of heating	Indoor	D.B.	59~81°F (15~27°C)	
	Circulating water	°F	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>	
			59.0	
Refrigerant piping diameter	High pressure	in. (mm)	1-1/8 (28.58) Brazed	
	Low pressure	in. (mm)	1-5/8 (41.28) Brazed	

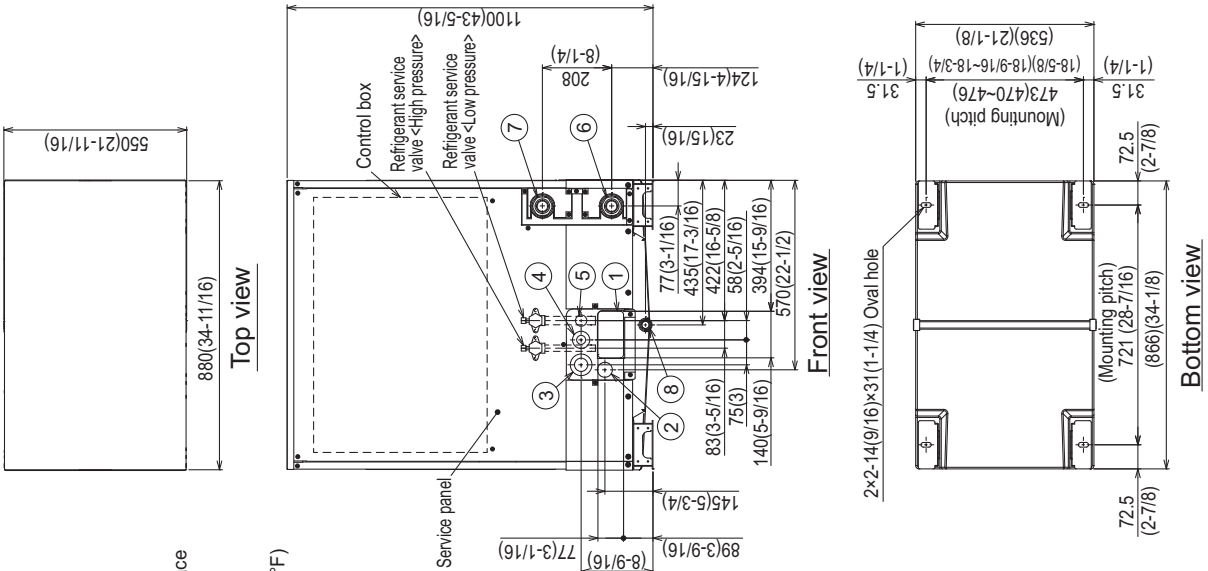
Model			PQRY-P168YLMU-A		PQRY-P168YLMU-A	
Minimum Circuit Ampacity			20		20	
Maximum Overcurrent Protection			35		35	
Circulating water	Water flow rate	G/h	1,902 + 1,902			
		G/min	31.7 + 31.7			
		m ³ /h	7.20 + 7.20			
		L/min	120 + 120			
		cfm	4.2 + 4.2			
	Pressure drop	psi	6.38		6.38	
		kPa	44		44	
	Operating volume range	G/h	1,189 + 1,189 ~ 3,054 + 3,054			
		G/min	19.8 + 19.8 ~ 50.9 + 50.9			
m ³ /h		4.5 + 4.5 ~ 11.6 + 11.6				
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		Inverter scroll hermetic compressor x 1	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter		Inverter	
	Motor output	kW	11.0		11.0	
	Case heater	kW	-		-	
	Lubricant		MEL32		MEL32	
External finish			Galvanized steel sheets		Galvanized steel sheets	
External dimension H x W x D		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	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current protection		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection		Over-heat protection	
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			
Net weight		lbs (kg)	505 (229)		505 (229)	
Heat exchanger	Water volume in plate	G	plate type		plate type	
		l	1.32		1.32	
		l	5.0		5.0	
	Water pressure Max.	psi	290		290	
		MPa	2.0		2.0	
HIC circuit (HIC: Heat Inter-Changer)			-		-	
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. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) 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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. 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.			

Notes:		Unit converter
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°F W.B. (27°C D.B./19°C W.B.), Water temperature: 86°F (30°C)		BTU/h =kW x 3.412
2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Water temperature: 68°F (20°C)		cfm =m³/min x 35.31
		lbs =kg/0.4536
		*Above specification data is subject to rounding variation.

PQRY-P72, 96, 120TLMU-A

Unit : mm(in)

- <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)



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

- Note1. Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc. (field erection work)
- Note2. At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.
- Note3. Take notice of service space as Fig. A. (In case of single installation, 600mm(23-5/8) or more of back space as front space makes easier access when servicing the unit from rear side.)
- Note4. If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig. B.
- Note5. Environmental condition for installation; -20~40°C(DB) (-4~104°F) as 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 the heat source unit is not in operation.
 - 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).

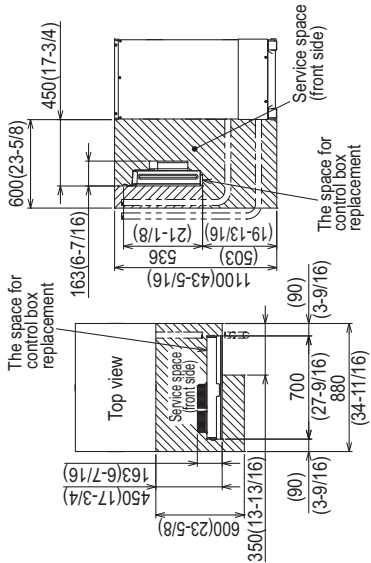


Fig. A

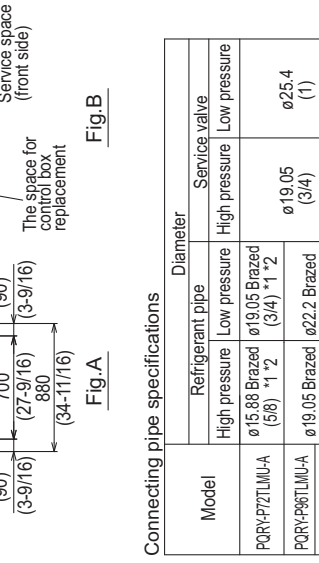


Fig. B

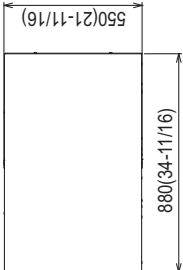
Model	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
PQRY-P72TLMU-A	ø15.88 Brazed (5/8) *1 *2	ø19.05 Brazed (3/4) *1 *2	ø19.05 (3/4)	ø25.4 (1)
PQRY-P96TLMU-A	ø19.05 Brazed (3/4) *1	ø22.2 Brazed (7/8) *1 *2		
PQRY-P120TLMU-A				

- *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.

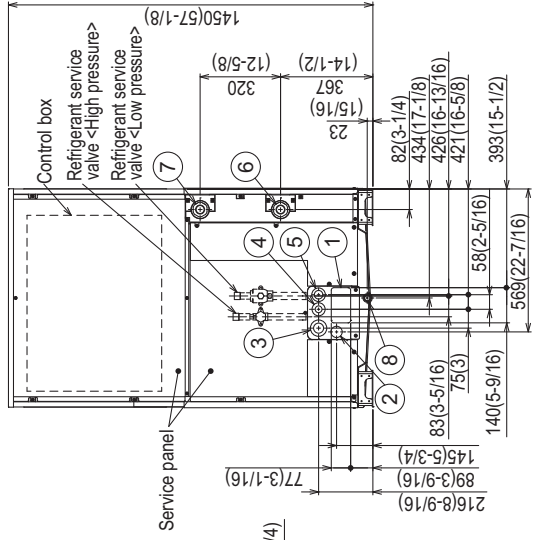
PQRY-P144, 168, 192TLMU-A

Unit : mm(in)

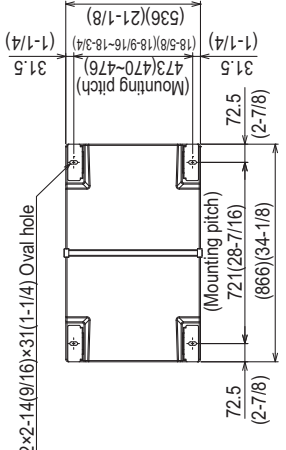
- <Accessories>
- Refrigerant (high pressure) conn. pipe.....1pc.
(P144/P168/P192 ; Packaged in the accessory kit)
 - Refrigerant (low pressure) conn. pipe.....1pc.
(P144/P168/P192 ; Packaged in the accessory kit)
 - Water stopper.....1pc.
(P144/P168/P192 ; Packaged in the accessory kit)
 - Sealing material 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).....4pc. each
(P144/P168/P192 ; Packaged in the accessory kit)
 - Sealing material for panel.....1pc.
(P144/P168/P192 ; Packaged in the accessory kit)



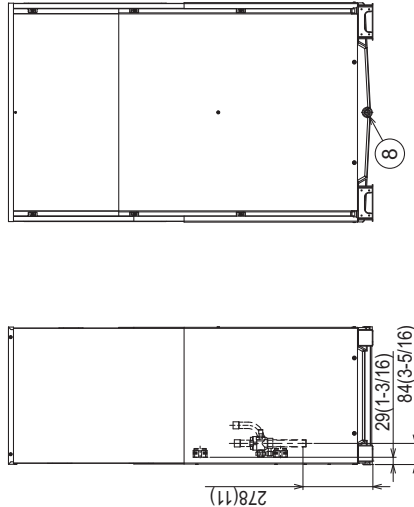
Top view



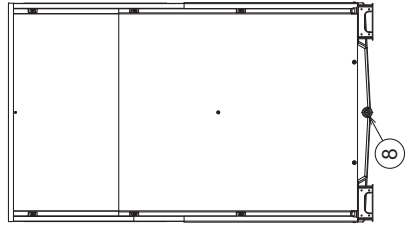
Front view



Bottom view



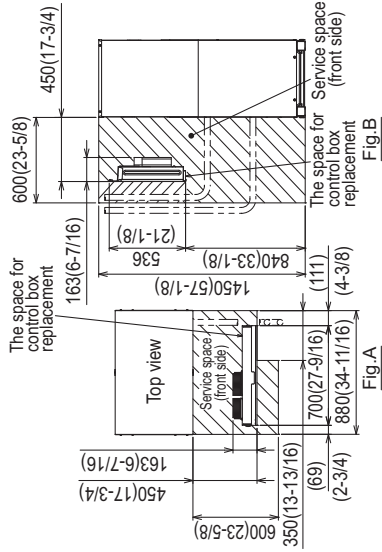
Right side view



Back view

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

- Note1. Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)
- Note2. At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.
- Note3. Take notice of service space as Fig.A. (In case of single installation, 600mm(23-5/8) or more of back space as front space makes easier access when servicing the unit from rear side.)
- Note4. If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig.B.
- Note5. Environmental condition for installation: -20~40°C(DB) (4~104°F) as 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 the heat source unit is not in operation.
 - 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).



Connecting pipe specifications

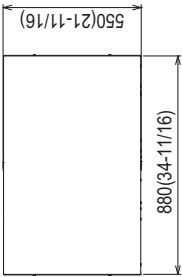
Model	Diameter		
	Refrigerant pipe	High pressure	Service valve
PQRY-P144TLMU-A	High pressure	Low pressure	Low pressure
PQRY-P168TLMU-A	High pressure	Low pressure	Low pressure
PQRY-P192TLMU-A	High pressure	Low pressure	Low pressure

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

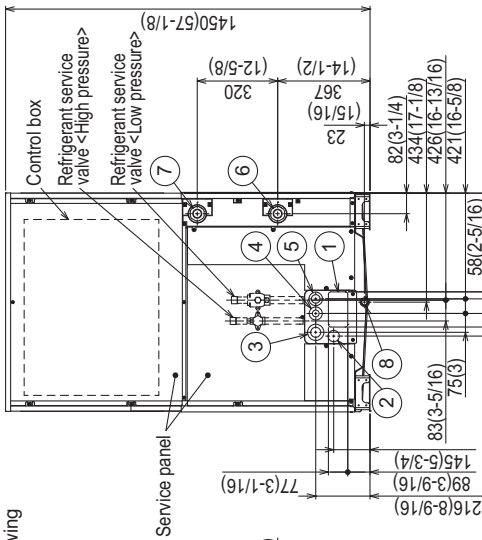
PQRY-P216, 240TLMU-A

Unit : mm(in)

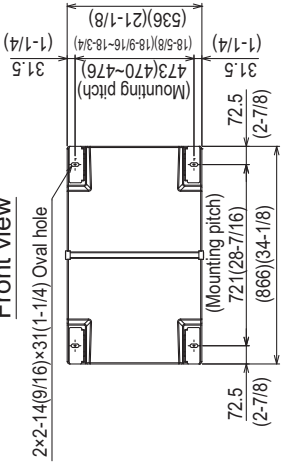
- <Accessories>
- Refrigerant (high pressure) conn. pipe.....1pc.
(P216/P240 : Packaged in the accessory kit)
 - Refrigerant (low pressure) conn. pipe.....1pc.
(P216/P240 : Packaged in the accessory kit)
 - Water stopper.....1pc.
(P216/P240 : Packaged in the accessory kit)
 - Sealing material for water stopper.....1pc.
(P216/P240 : Packaged in the accessory kit)
 - Sealing material for field piping (high pressure, low pressure).....1pc. each
(P216/P240 : Packaged in the accessory kit)
 - Sealing material for drain socket.....1pc.
(P216/P240 : Packaged in the accessory kit)
 - Pipe cover for low pressure.....1pc.
(P216/P240 : Packaged in the accessory kit)
 - Sealing material for base leg (two types).....4pc. each
(P216/P240 : Packaged in the accessory kit)
 - Sealing material for panel.....1pc.
(P216/P240 : Packaged in the accessory kit)



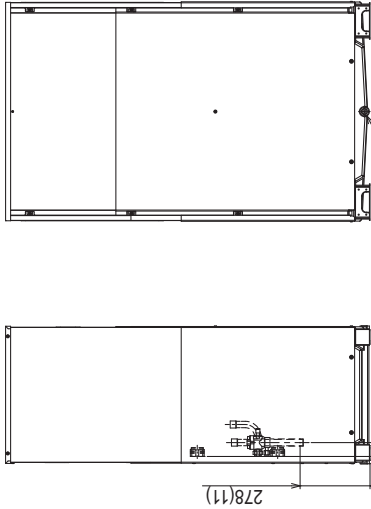
Top view



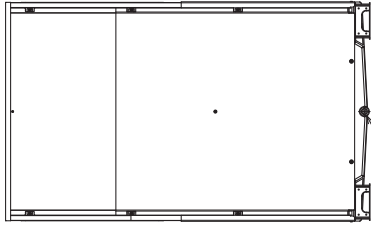
Front view



Bottom view



Right side view



Back view

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

Model	Connecting pipe specifications			
	Refrigerant pipe	Service valve	High pressure	Low pressure
PQRY-P216TLMU-A	ø22.2 Braze (7/8) * 1 * 2	ø25.4 (1)	ø28.58 Braze (1-1/8) * 1	ø28.58 (1-1/8)
PQRY-P240TLMU-A	ø34.93 Braze (1-3/8) * 1 * 3			

- *1. Connect by using the connecting pipes that are supplied.
*2. When the piping length is 65 m or longer, use the ø28.58(1-1/8) pipe for the part that exceeds 65 m.
*3. Use the pipe joint(field supply) and connect to the refrigerant service valve piping.

- Note 1. Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)
- Note 2. At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.
- Note 3. Take notice of service space as Fig.A. (In case of single installation, 600mm(23-5/8) or more of back space as front space makes easier access when servicing the unit from rear side.)
- Note 4. If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig.B.
- Note 5. Environmental condition for installation: -20~40°C(DB) (-4~104°F) as indoor installation.
- Note 6. 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 the heat source unit is not in operation.
 - Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.
- Note 7. Ensure that the drain piping is downward with a pitch of more than 1/100.
- Note 8. 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).

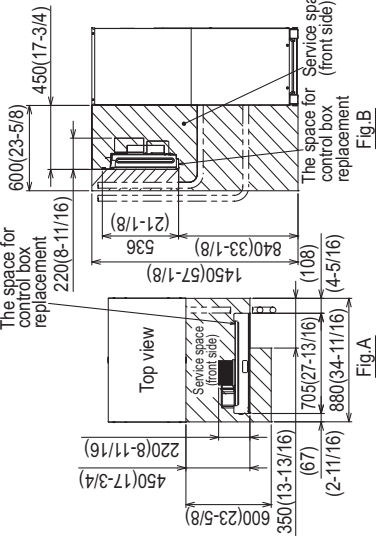
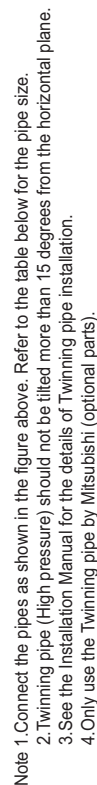


Fig.A

Fig.B

Unit : mm(in)



Twinning pipe connection size

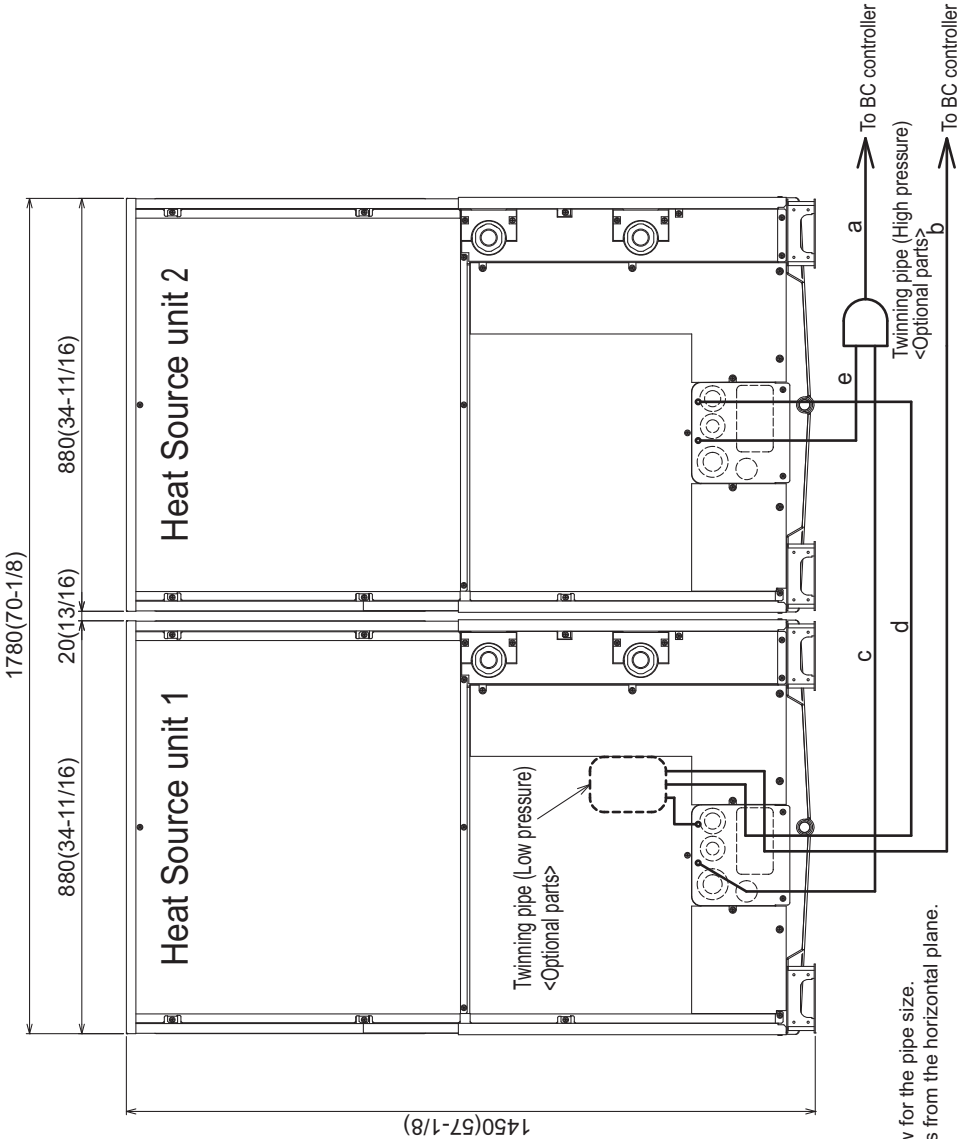
[illegible]

Unit model	High pressure	Low pressure
	c or e	d
Twinning pipe-Heat source unit	P72	ø19.05(3/4) *2
	P96	ø19.05(3/4)
	P120	ø22.2(7/8)

1. When the piping length is 65 m or longer, use the $\phi 28.58(1-1/8)$ pipe for the part that exceeds 65 m.
2. When the package unit name "PQR-P168TSLMU-A", use the $\phi 19.05(3/4)$ pipe for high pressure and the $\phi 22.2(7/8)$ pipe for low pressure.

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	PQRY-P168TLMU-A	PQRY-P188TLMU-A
	Heat Source unit 2	PQRY-P144TLMU-A	PQRY-P144TLMU-A	PQRY-P168TLMU-A
Twinning pipe Kit(optional parts)		CWIY-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)

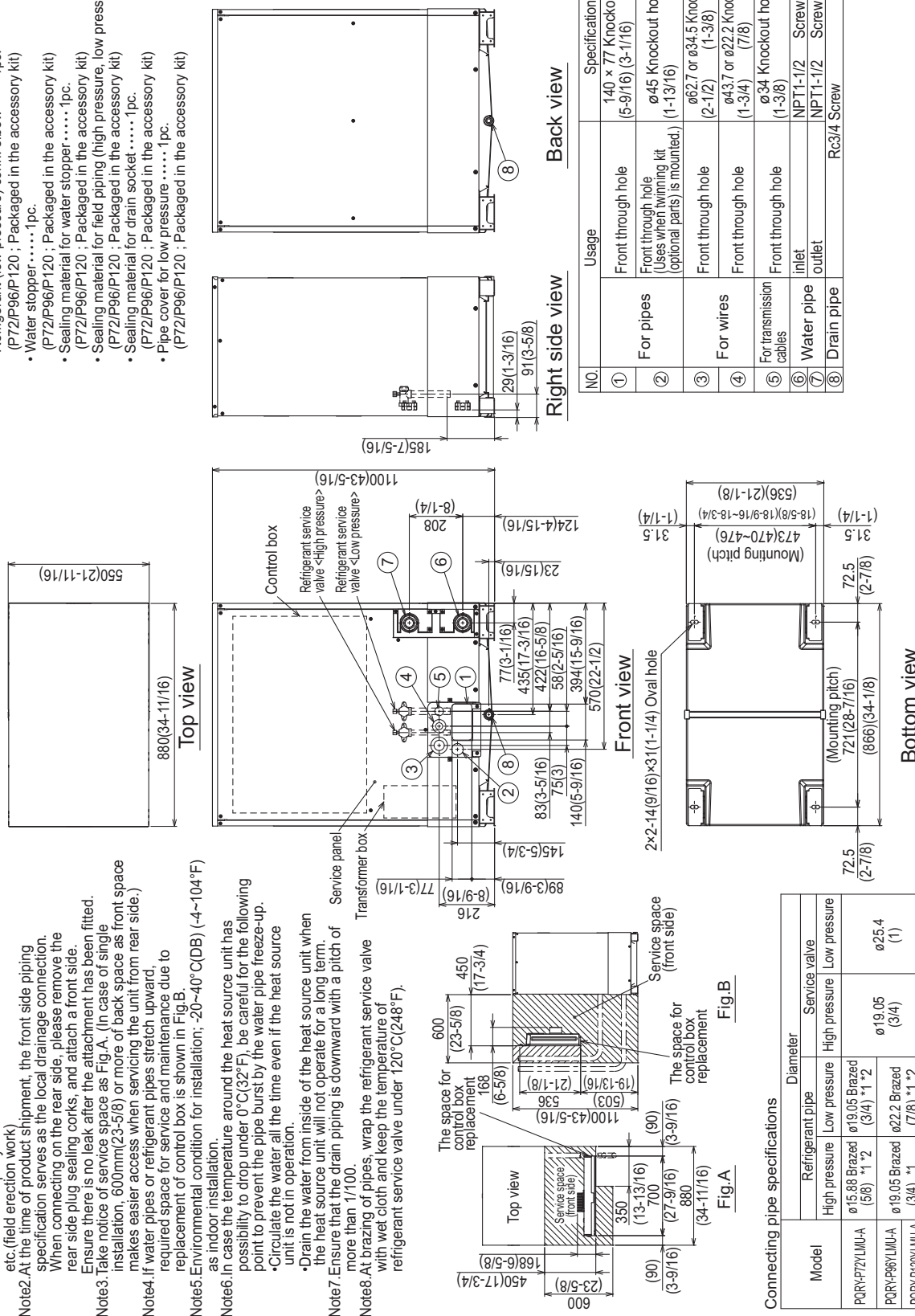
Unit model	High pressure		Low pressure	
	c	e	d	
Twinning pipe~Heat source unit	P144	ø22.2(7/8)		ø28.58(1-1/8)
	P168			

PQRY-P72, 96, 120YLMU-A

Unit : mm(in)

<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)

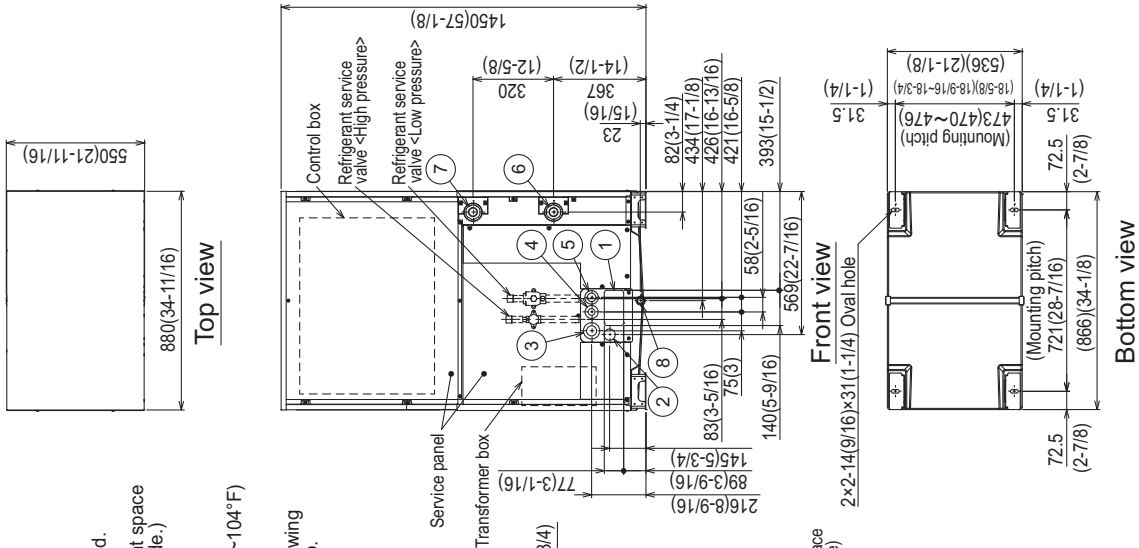


PQRY-P144, 168, 192YLMU-A

Unit : mm(in)

<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 rear side 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)



NO.	For pipes	Usage	Specifications	
			Front through hole	140 × 77 Knockout hole
①			Front through hole (Uses when twinning kit (optional parts) is mounted.)	5-9/16 (3-1/16)
②				Ø45 Knockout hole (1-13/16)
③			Front through hole	Ø62.7 or Ø34.5 Knockout hole (2-1/2 (1-3/8))
④			Front through hole	Ø43.7 or Ø22.2 Knockout hole (1-3/4 (7/8))
⑤			Front through hole	Ø34 Knockout hole (1-3/8)
⑥			inlet	NPT1-1/2 Screw
⑦			outlet	NPT1-1/2 Screw
⑧			Drain pipe	Rc3/4 Screw

- Note1. Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc. (field erection work)
- Note2. At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.
- Note3. Take notice of service space as Fig.A. (In case of single installation, 600mm(23-5/8) or more of back space as front space makes easier access when servicing the unit from rear side.)
- Note4. If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig.B.
- Note5. Environmental condition for installation: -20~40°C(DB) (-4~104°F) as 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 the heat source unit is not in operation.
 - 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).

Connecting pipe specifications

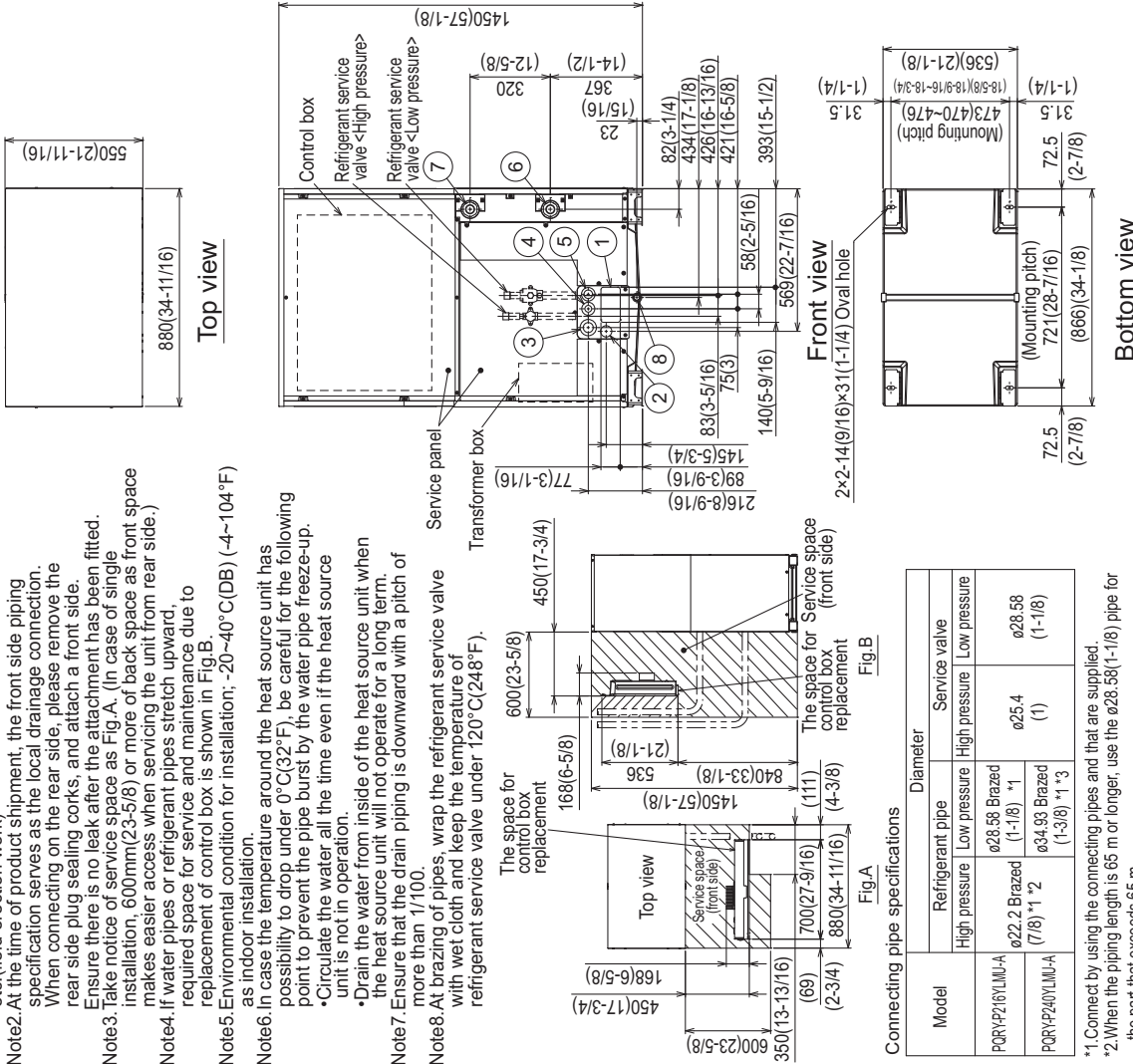
Model	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
PQRY-P144YLMU-A	Ø22.2 Braze (7/8) *1	Ø25.4 (1)	Ø28.58 (1-1/8)	
PQRY-P168YLMU-A				
PQRY-P192YLMU-A				

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

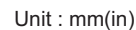
PQRY-P216, 240YLMU-A

Unit : mm(in)

- <Accessories>
- Refrigerant (high pressure) conn. pipe1pc.
 - (P216/P240 ; Packaged in the accessory kit)
 - Refrigerant (low pressure) conn. pipe1pc.
 - (P216/P240 ; Packaged in the accessory kit)
 - Water stopper 1pc.
 - (P216/P240 ; Packaged in the accessory kit)
 - Sealing material for water stopper.....1pc.
 - (P216/P240 ; Packaged in the accessory kit)
 - Sealing material for field piping (high pressure, low pressure)1pc. each
 - (P216/P240 ; Packaged in the accessory kit)
 - Sealing material for drain socket.....1pc.
 - (P216/P240 ; Packaged in the accessory kit)
 - Pipe cover for low pressure1pc.
 - (P216/P240 ; Packaged in the accessory kit)
 - Sealing material for base leg (two types)4pcs. each
 - (P216/P240 ; Packaged in the accessory kit)
 - Sealing material for panel.....1pc.
 - (P216/P240 ; Packaged in the accessory kit)



WR2



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).

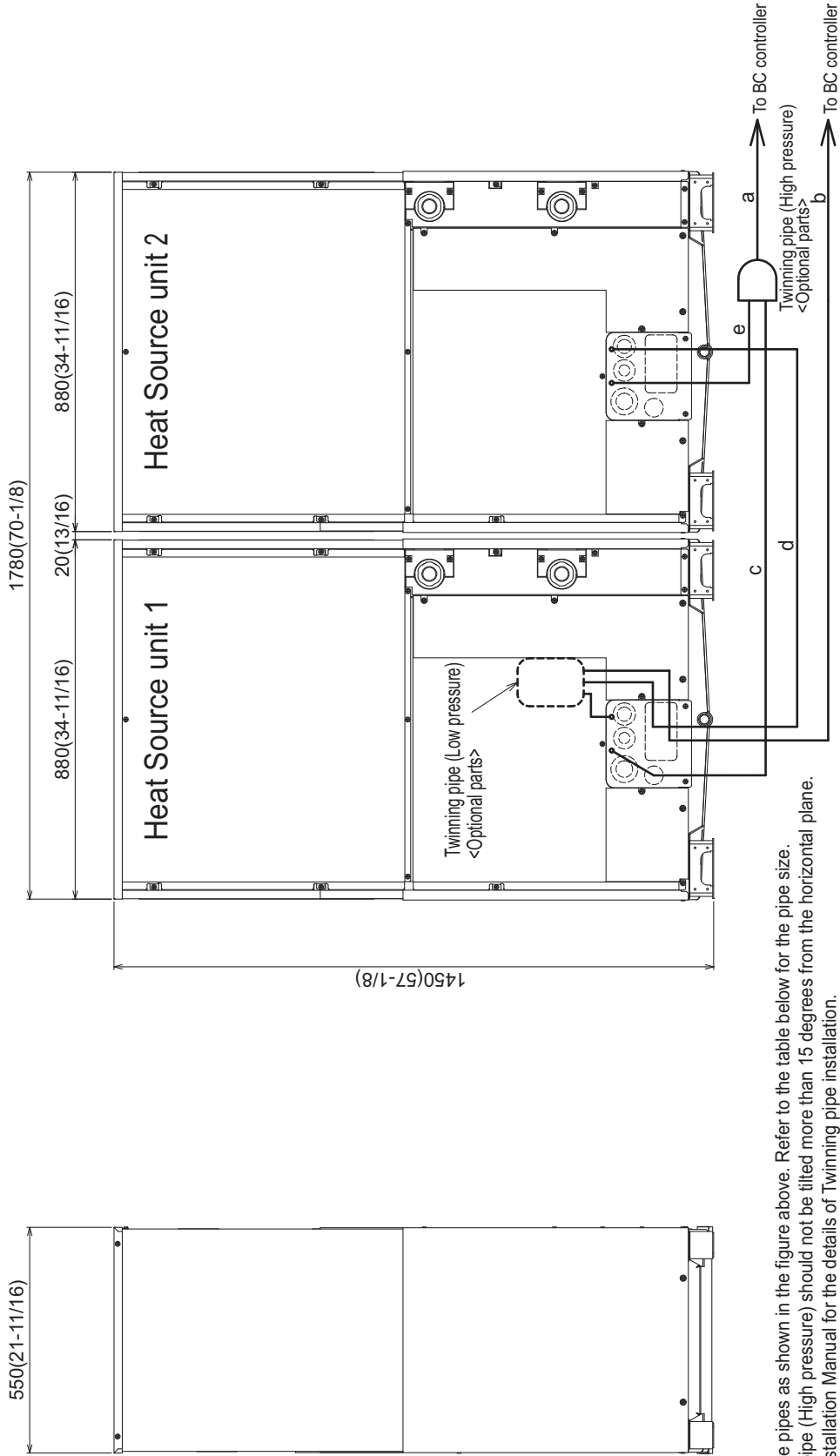
Twinning pipe connection size

Package unit name	Twinning pipe~Twinning pipe									
	Heat Source unit 1	Heat Source unit 2	High pressure	a	Low pressure	b	ø22.2(7/8) *1			
Component unit name	Twinning pipe Kif(optional parts)					ø22.2(7/8)				
	Twinning pipe~Twinning pipe					ø28.58(1-1/8)				
Twinning pipe~Heat source unit	Unit model	High pressure core	Low pressure d	ø34.93(1-3/8)						
				ø15.88(5/8) *2						
				ø19.05(3/4)						
Twinning pipe~Heat source unit	Unit model	High pressure core	Low pressure d	ø22.2(7/8)						
				ø15.88(5/8) *2						
				ø19.05(3/4)						

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.

PQRY-P288, 312, 336YSLMU-A

Unit : mm(in)



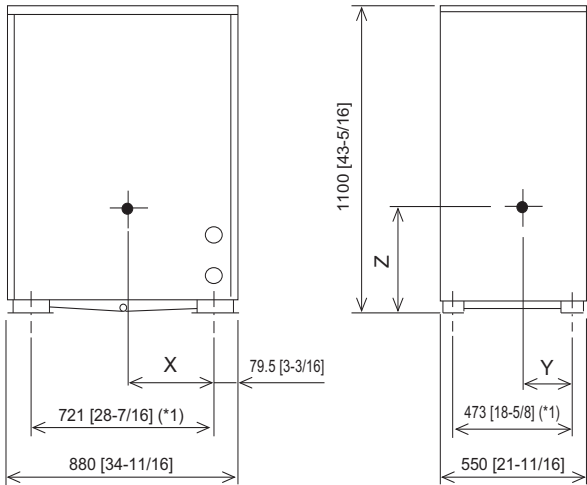
- Note 1. Connect the pipes as shown in the figure above. Refer to the table below for the pipe size.
2. Twinning pipe (High pressure) should not be tilted more than 15 degrees from the horizontal plane.
3. See the Installation Manual for the details of Twinning pipe installation.
4. Only use the Twinning 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-P144YLMU-A PQRY-P168YLMU-A
Twinning pipe Kit(optional parts)	CMY-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)

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

Unit: mm [in.]

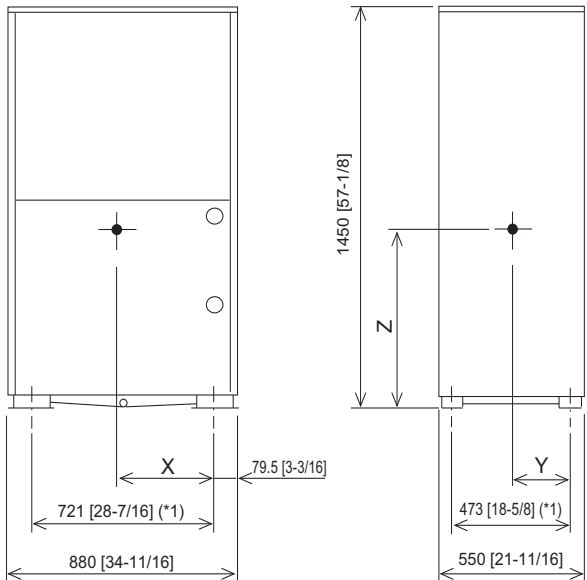


Model	X	Y	Z
PQRY-P72TLMU-A	351 [13-7/8]	235 [9-5/16]	438 [17-1/4]
PQRY-P96TLMU-A	351 [13-7/8]	235 [9-5/16]	438 [17-1/4]
PQRY-P120TLMU-A	351 [13-7/8]	235 [9-5/16]	438 [17-1/4]
PQRY-P72YLMU-A	370 [14-5/8]	224 [8-7/8]	428 [16-7/8]
PQRY-P96YLMU-A	370 [14-5/8]	224 [8-7/8]	428 [16-7/8]
PQRY-P120YLMU-A	370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

*1 Mounting Pitch

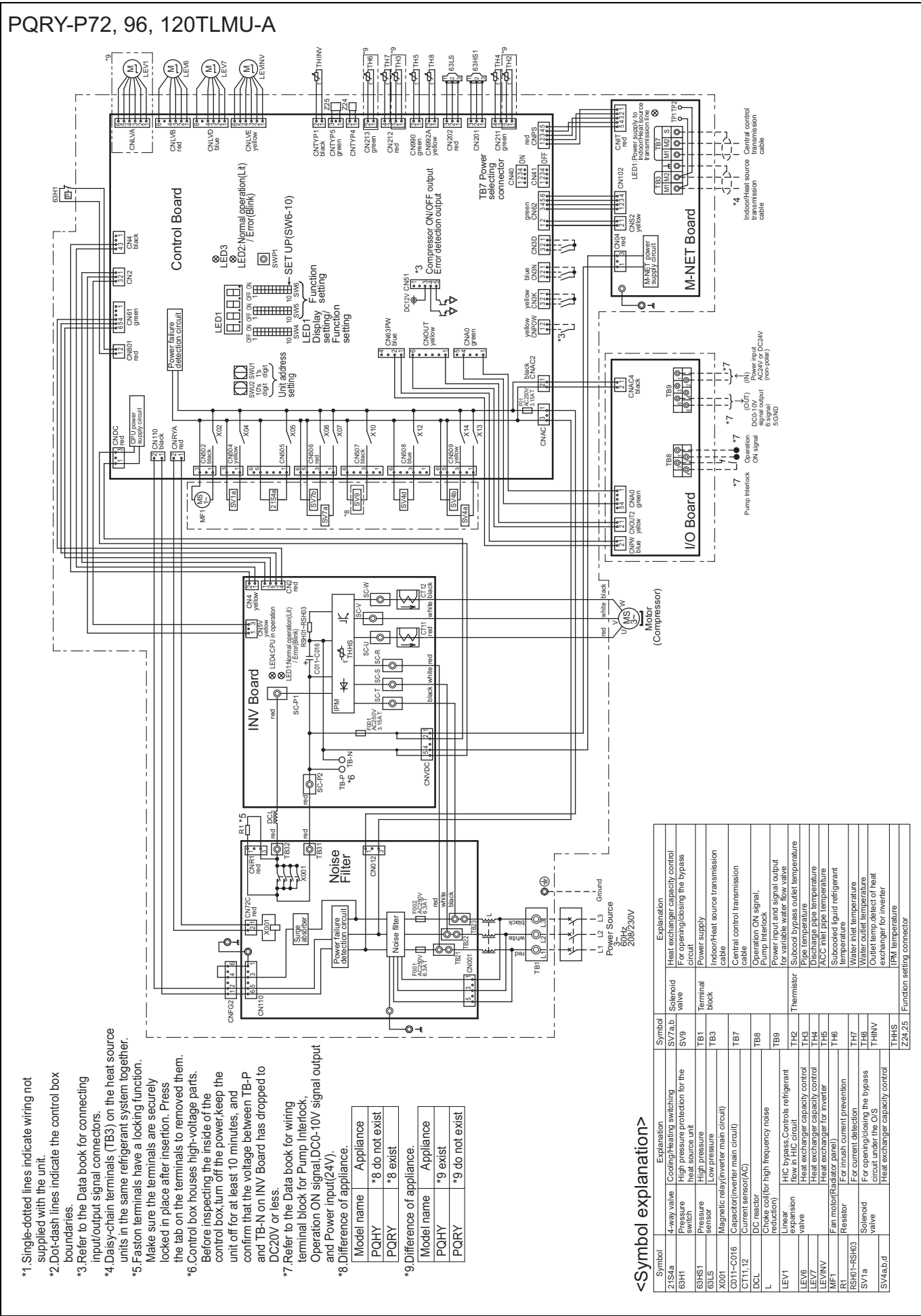
PQRY-P144, 168, 192, 216, 240TLMU-A/YLMU-A

Unit: mm [in.]

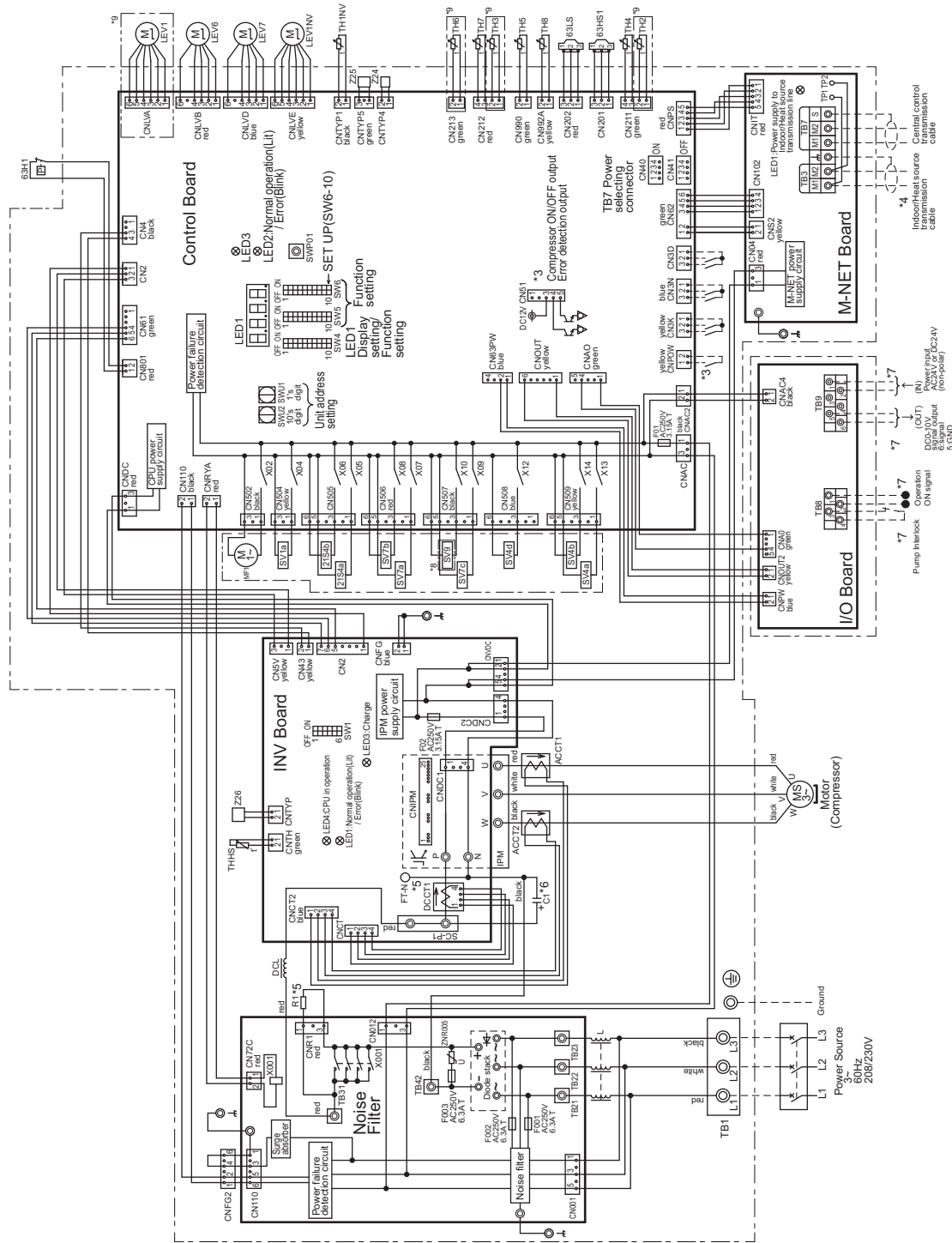


Model	X	Y	Z
PQRY-P144TLMU-A	382 [15-1/16]	233 [9-3/16]	622 [24-1/2]
PQRY-P168TLMU-A	382 [15-1/16]	233 [9-3/16]	622 [24-1/2]
PQRY-P192TLMU-A	382 [15-1/16]	233 [9-3/16]	622 [24-1/2]
PQRY-P216TLMU-A	371 [14-5/8]	232 [9-3/16]	685 [27]
PQRY-P240TLMU-A	371 [14-5/8]	232 [9-3/16]	685 [27]
PQRY-P144YLMU-A	399 [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



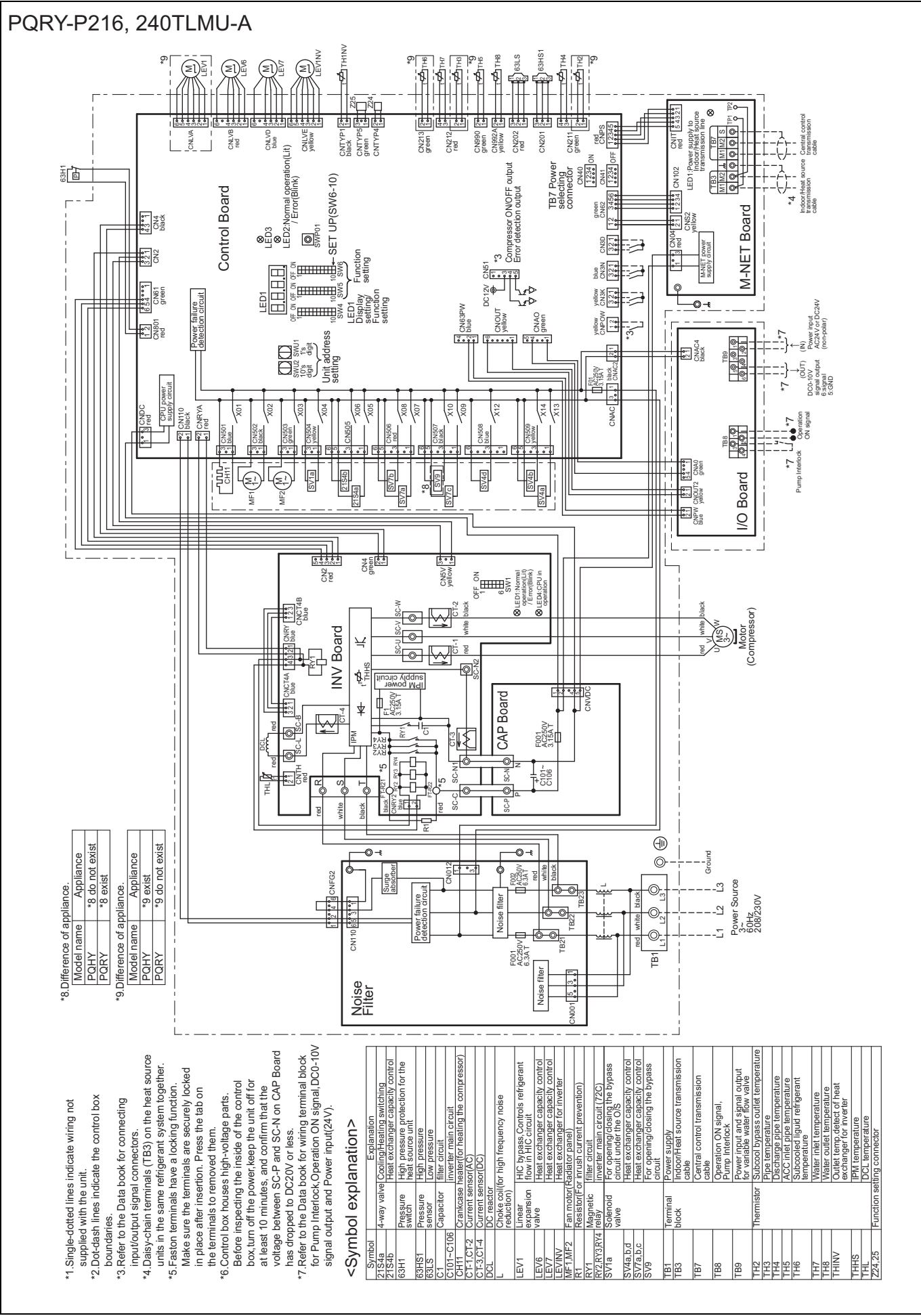
PQRY-P144, 168, 192TLMU-A



- *1. Single-dotted lines indicate wiring not supplied with the unit.
 - *2. Dot-dash 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 remove 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 at both ends of the main capacitor (C1) has dropped to DC20V or less.
 - *7. Refer to the Data book for wiring terminal block for Pump Interlock, Operation ON signal, DC0-10V signal output and Power input(24V).
 - *8. Difference of appliance.
 - *9. Difference of appliance.
- | Model name | Appliance |
|------------|-----------------|
| PQHY | *8 do not exist |
| PQRY | *8 exist |
- | Model name | Appliance |
|------------|-----------------|
| PQHY | *9 exist |
| PQRY | *9 do not exist |

<Symbol explanation>

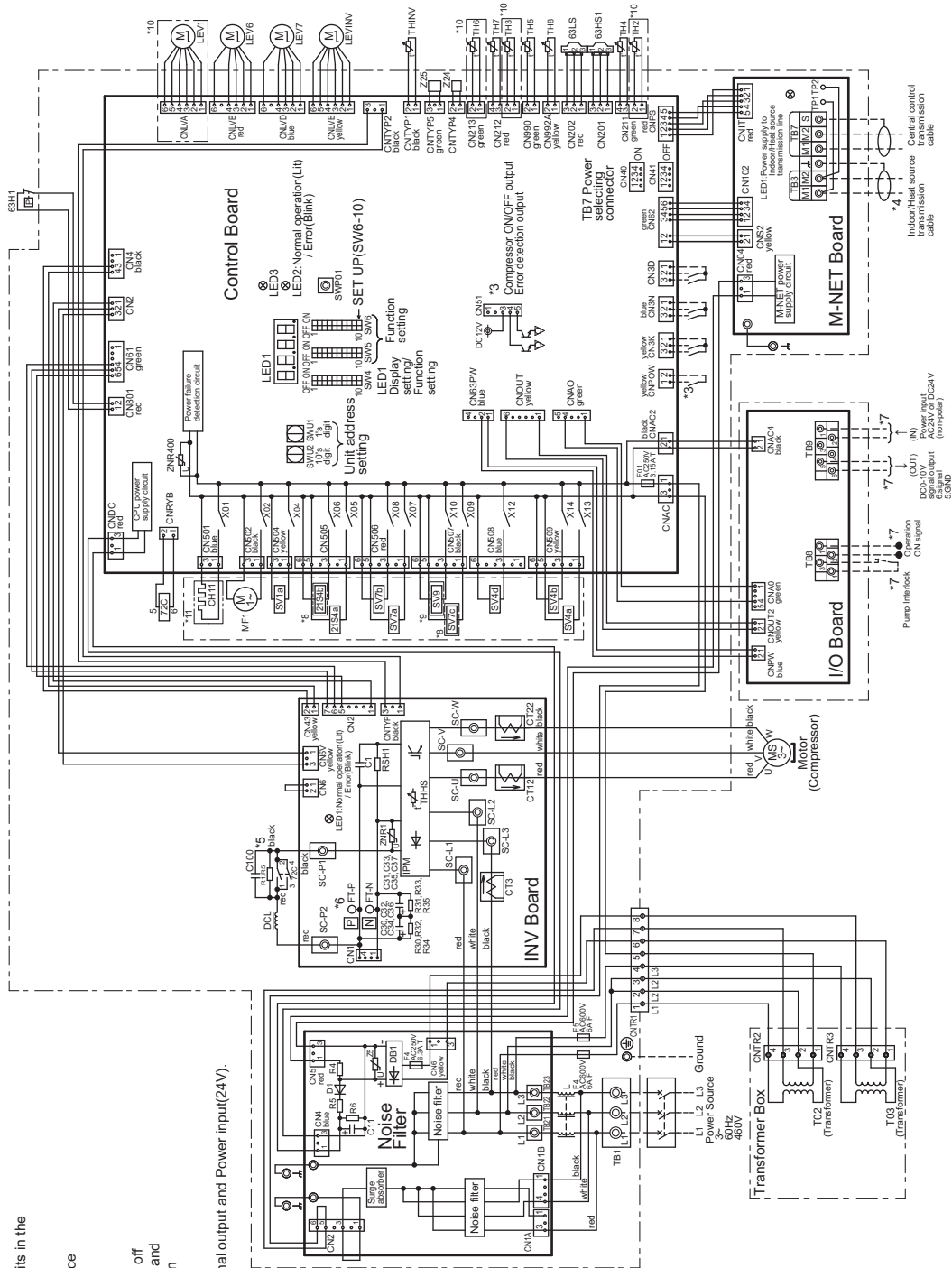
Symbol	Explanation
21S4a	Cooling/Heating switching
21S4b	Heat exchanger capacity control
63H1	Pressure switch
63HS1	High pressure
63LS	Low pressure
X001	Sensor (rel. cap. (inverter main circuit))
ACCT1.1	Current sensor(AC)
DCCT1	Current sensor(DC)
DCL	DC reactor
L	Choke coil(for high frequency noise reduction)
LEV1	Linear expansion valve
LEV6	Heat exchanger capacity control
LEV7	Heat exchanger capacity control
LEVNV	Heat exchanger for inverter
RF1	Fan motor(Radiator panel)
SV1a	Resistor
SV1b	For inrush current prevention
SV4a.b.d	For opening/closing the bypass circuit under the O/S
SV7a.b.c	Heat exchanger capacity control
SV9	For opening/closing the bypass circuit
TB1	Terminal block
TB3	Power supply
TB7	Heat source transmission cable
TB8	Central control transmission cable
TB9	Pump Interlock
TB2	Power input and signal output for variable water flow valve
TH2	Subcool bypass outlet temperature
TH4	Subcool bypass inlet temperature
TH5	Discharge pipe temperature
TH6	ACC inlet pipe temperature
TH7	Subcooled liquid refrigerant temperature
TH8	Water inlet temperature
TH9	Water outlet temperature
TH10	Outlet temp. detect of heat exchanger
TH11	Subcool bypass inlet temperature
TH12	Subcool bypass outlet temperature
TH13	Subcool bypass inlet temperature
TH14	Subcool bypass outlet temperature
TH15	Subcool bypass inlet temperature
TH16	Subcool bypass outlet temperature
TH17	Subcool bypass inlet temperature
TH18	Subcool bypass outlet temperature
TH19	Subcool bypass inlet temperature
TH20	Subcool bypass outlet temperature
TH21	Subcool bypass inlet temperature
TH22	Subcool bypass outlet temperature
TH23	Subcool bypass inlet temperature
TH24	Subcool bypass outlet temperature
TH25	Subcool bypass inlet temperature
TH26	Subcool bypass outlet temperature
TH27	Subcool bypass inlet temperature
TH28	Subcool bypass outlet temperature
TH29	Subcool bypass inlet temperature
TH30	Subcool bypass outlet temperature
TH31	Subcool bypass inlet temperature
TH32	Subcool bypass outlet temperature
TH33	Subcool bypass inlet temperature
TH34	Subcool bypass outlet temperature
TH35	Subcool bypass inlet temperature
TH36	Subcool bypass outlet temperature
TH37	Subcool bypass inlet temperature
TH38	Subcool bypass outlet temperature
TH39	Subcool bypass inlet temperature
TH40	Subcool bypass outlet temperature
TH41	Subcool bypass inlet temperature
TH42	Subcool bypass outlet temperature
TH43	Subcool bypass inlet temperature
TH44	Subcool bypass outlet temperature
TH45	Subcool bypass inlet temperature
TH46	Subcool bypass outlet temperature
TH47	Subcool bypass inlet temperature
TH48	Subcool bypass outlet temperature
TH49	Subcool bypass inlet temperature
TH50	Subcool bypass outlet temperature
TH51	Subcool bypass inlet temperature
TH52	Subcool bypass outlet temperature
TH53	Subcool bypass inlet temperature
TH54	Subcool bypass outlet temperature
TH55	Subcool bypass inlet temperature
TH56	Subcool bypass outlet temperature
TH57	Subcool bypass inlet temperature
TH58	Subcool bypass outlet temperature
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TH60	Subcool bypass outlet temperature
TH61	Subcool bypass inlet temperature
TH62	Subcool bypass outlet temperature
TH63	Subcool bypass inlet temperature
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TH65	Subcool bypass inlet temperature
TH66	Subcool bypass outlet temperature
TH67	Subcool bypass inlet temperature
TH68	Subcool bypass outlet temperature
TH69	Subcool bypass inlet temperature
TH70	Subcool bypass outlet temperature
TH71	Subcool bypass inlet temperature
TH72	Subcool bypass outlet temperature
TH73	Subcool bypass inlet temperature
TH74	Subcool bypass outlet temperature
TH75	Subcool bypass inlet temperature
TH76	Subcool bypass outlet temperature
TH77	Subcool bypass inlet temperature
TH78	Subcool bypass outlet temperature
TH79	Subcool bypass inlet temperature
TH80	Subcool bypass outlet temperature
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TH85	Subcool bypass inlet temperature
TH86	Subcool bypass outlet temperature
TH87	Subcool bypass inlet temperature
TH88	Subcool bypass outlet temperature
TH89	Subcool bypass inlet temperature
TH90	Subcool bypass outlet temperature
TH91	Subcool bypass inlet temperature
TH92	Subcool bypass outlet temperature
TH93	Subcool bypass inlet temperature
TH94	Subcool bypass outlet temperature
TH95	Subcool bypass inlet temperature
TH96	Subcool bypass outlet temperature
TH97	Subcool bypass inlet temperature
TH98	Subcool bypass outlet temperature
TH99	Subcool bypass inlet temperature
TH100	Subcool bypass outlet temperature



4. ELECTRICAL WIRING DIAGRAMS

U11 2nd

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



- *1. Single-dotted lines indicate wiring not supplied with the unit.
- *2. Dot-dash 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 F1-P and F1-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; DC0-10V signal output and Power input(24V).
- *8. Difference of appliance.

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

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

Model name	Appliance
POHY	*10 exist
PQRY	*10 do not exist

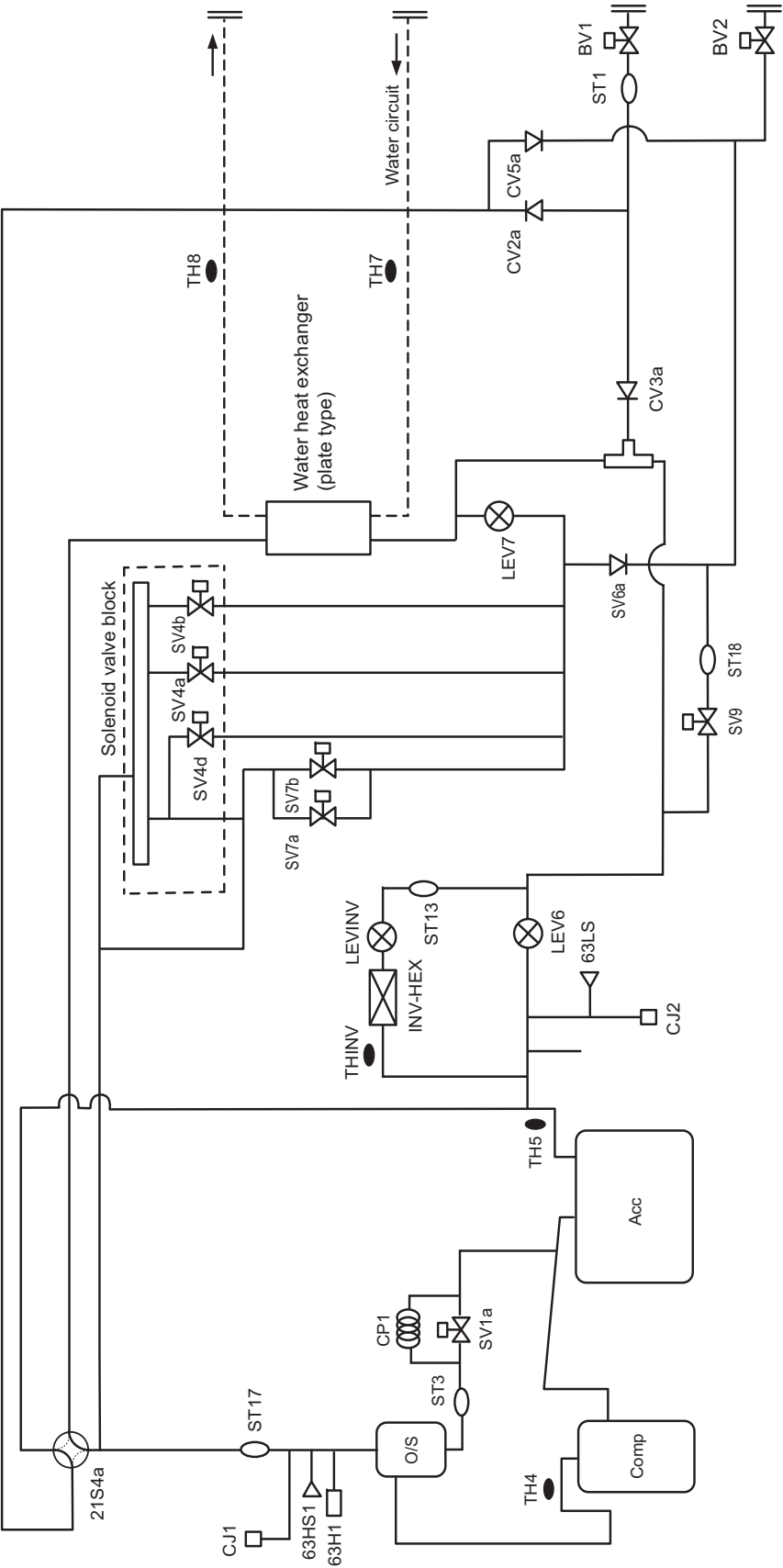
<Symbol explanation>

Symbol	Explanation
Z1S4a	4-way valve
Z1S4b	Cooling/Heating switching
63SH1	Heat exchanger capacity control
63HS1	Pressure switch
63LS	Pressure switch
63LS	Pressure switch
72C	High pressure sensor
C30-C37	Magnetic relay (inverter main circuit)
CH11	Capacitor (inverter main circuit)
CT12.22.3	Crankcase heater (for heating the compressor)
DC reactor	Current sensor (AC)
L	Choke coil (for high frequency noise)
LEV1	Linear expansion valve
LEV6	HIC bypass Controls refrigerant flow in HIC circuit
LEV/V	Heat exchanger capacity control valve
LEV/V	Heat exchanger capacity control valve
MF1.5	Fan motor (Radiator panel)
RSH1	For current detection
SV1a	For opening/closing the bypass circuit under the O/S
SV2a,b,c	Heat exchanger capacity control
SV7a,b,c	Heat exchanger capacity control
SV9	For opening/closing the bypass circuit
TB1	Power supply
TB3	Indoor/Heat source transmission cable
TB7	Central control transmission cable
TB8	Operation ON signal, Pump Interlock
TB9	Operation ON signal, Pump Interlock
TH2	Subcool bypass outlet temperature
TH3	Pipe temperature
TH4	Discharge pipe temperature
TH5	ACC inlet pipe temperature
TH6	Subcooled liquid refrigerant temperature
TH7	Water inlet temperature
TH8	Water outlet temperature
TH9	Outlet temp. detect of heat exchanger
TH10	Water inlet temperature
TH11	Water outlet temperature
Z24.25	Function setting connector

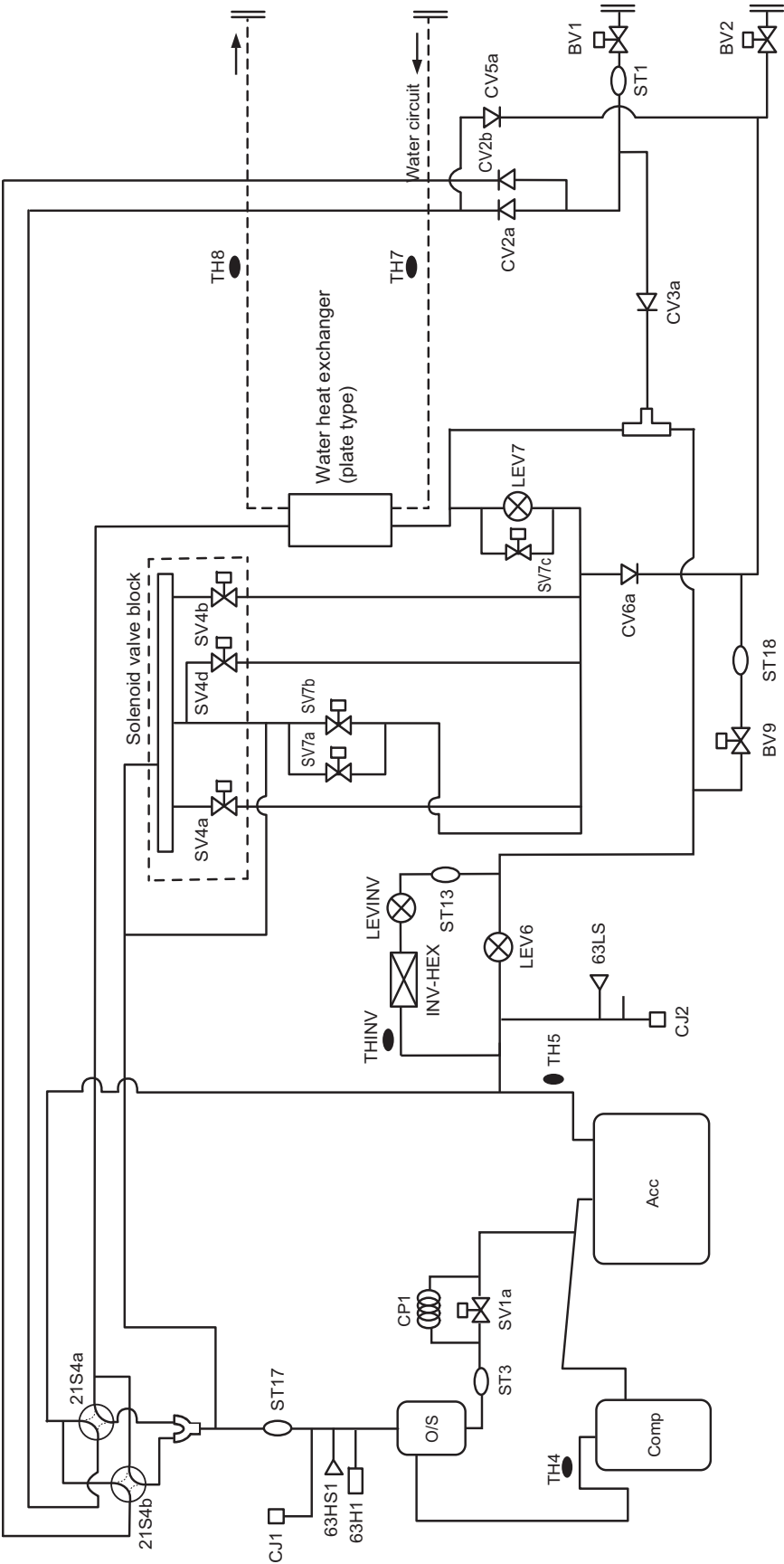
*11. Difference of appliance.

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

(1) PQRV-P72, P96, P120TLMU-A/YLMU-A



(2) PQRV-P144, P168, P192TLMU-A/YLMU-A



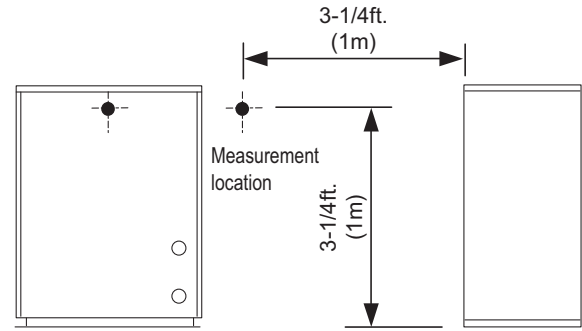
WR2

U11 2nd

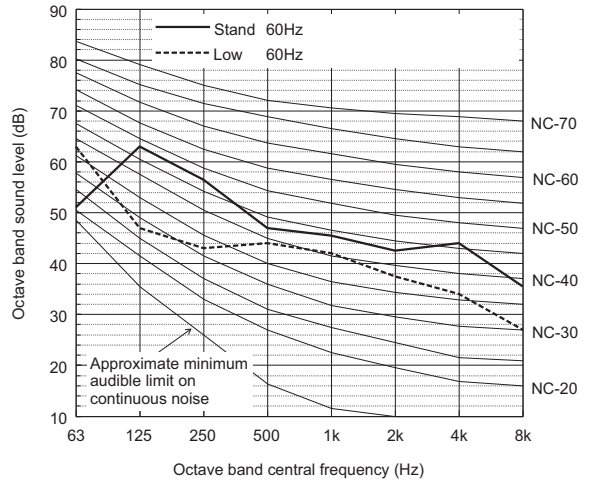
MEE15K058



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



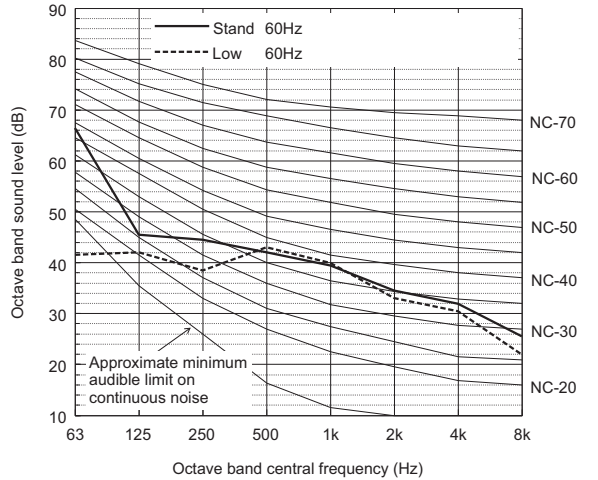
Sound level of PQRY-P120TLMU-A/YLMU-A



		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.

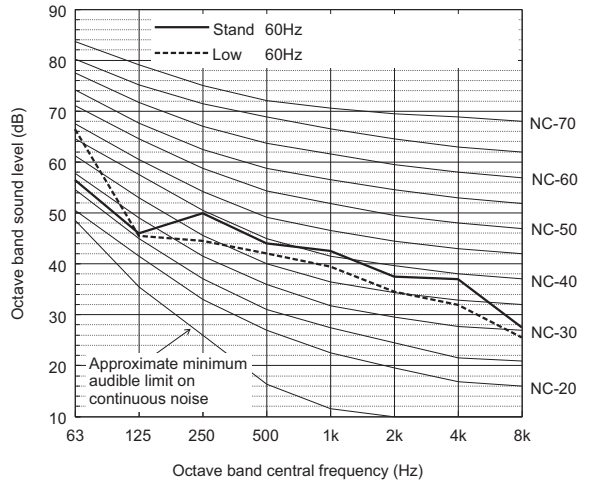
Sound level of PQRY-P72TLMU-A/YLMU-A



		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

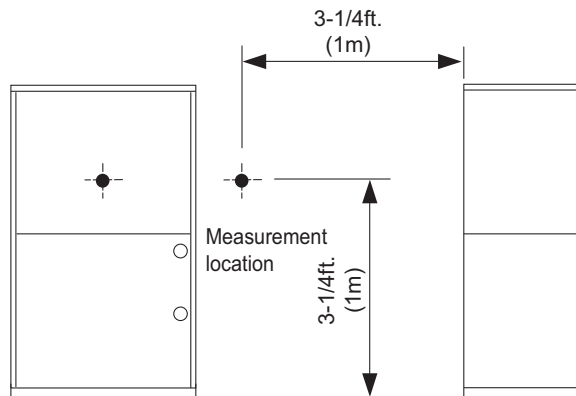
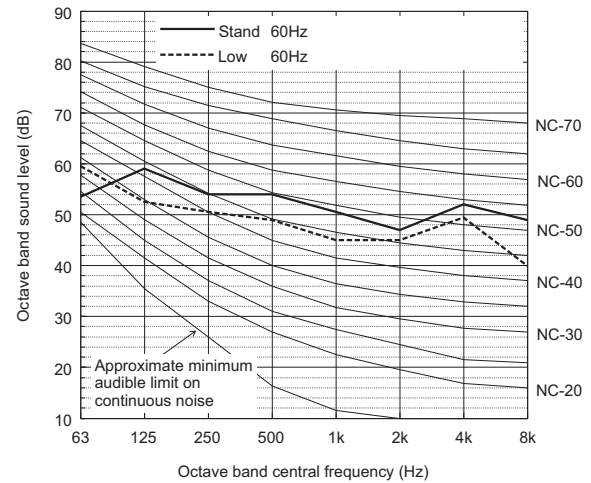


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	56.5	46.0	50.0	44.0	42.5	37.5	37.0	27.5	48.0
Low noise mode	60Hz	66.5	45.5	44.5	42.0	39.5	34.5	32.0	25.5	46.0

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.

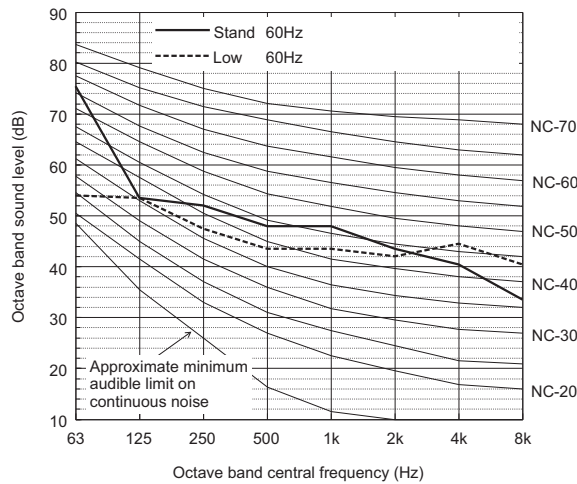
• Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
For BC controller, it is recommended to be installed in places such as ceilings of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

WR2

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

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


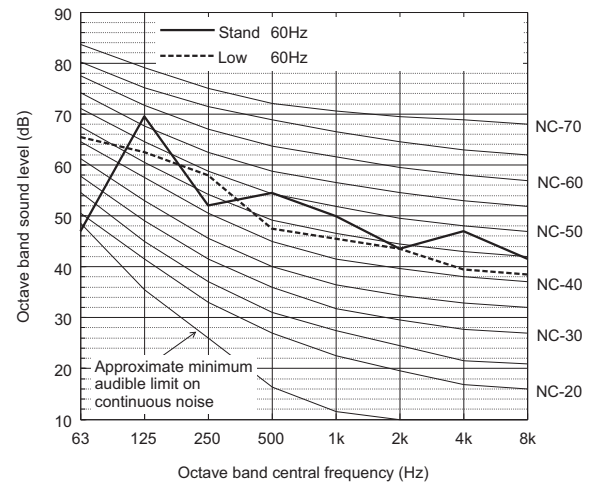
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	53.5	59.0	54.0	54.0	50.5	47.0	52.0	49.0	58.0
Low noise mode	60Hz	59.5	52.5	50.5	49.0	45.0	45.0	49.5	40.0	54.0

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


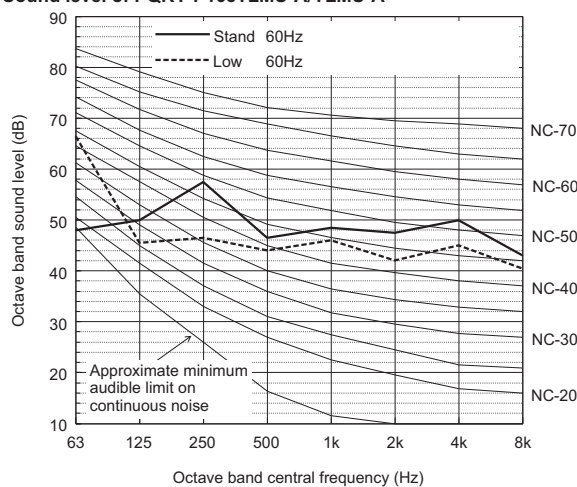
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	75.5	53.5	52.0	48.0	48.0	43.5	40.5	33.5	54.0
Low noise mode	60Hz	54.0	53.5	47.5	43.5	42.0	42.0	44.5	40.5	50.5

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


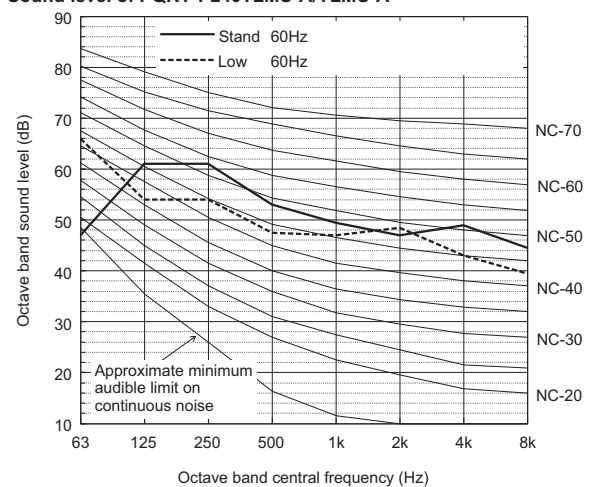
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	47.0	69.5	52.0	54.5	50.0	43.5	47.0	41.5	58.0
Low noise mode	60Hz	65.5	62.5	58.0	47.5	45.5	43.5	39.5	38.5	54.0

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.

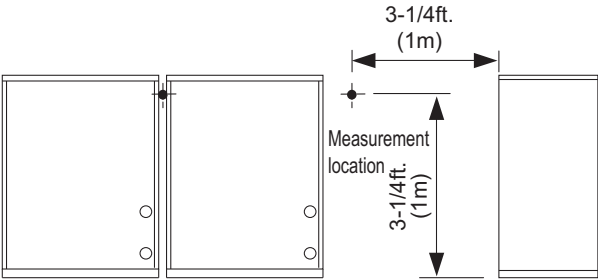
Sound level of PQRY-P240TLMU-A/YLMU-A


		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

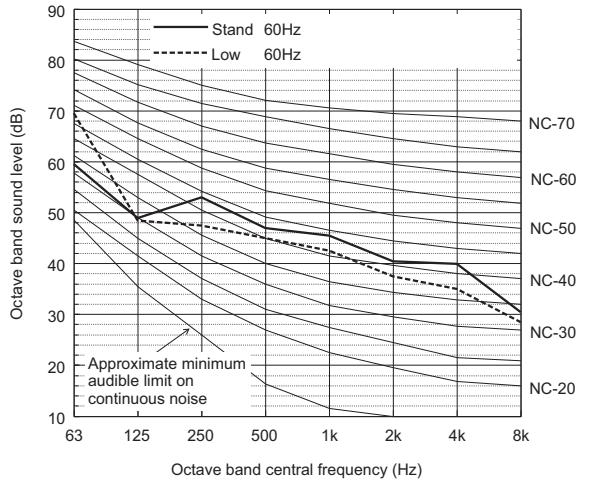
When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- 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.

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



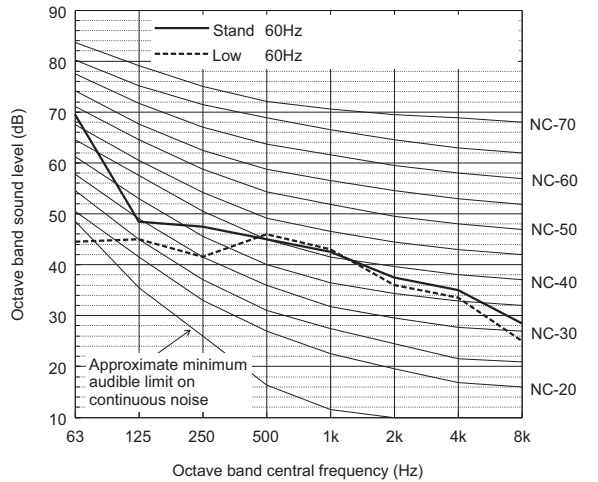
Sound level of PQRY-P192TSLMU-A/YSLMU-A



		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.

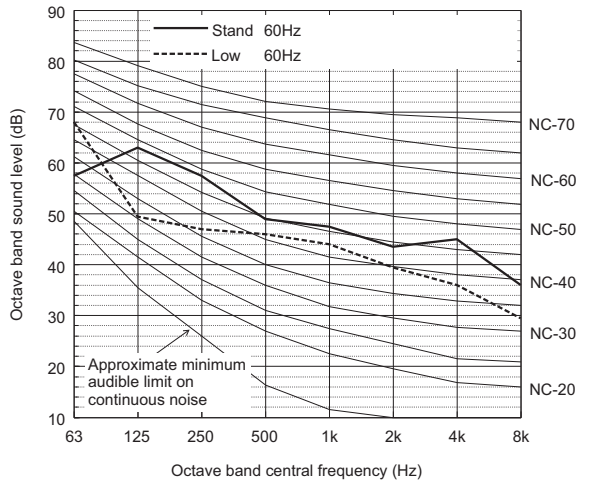
Sound level of PQRY-P144TSLMU-A/YSLMU-A



		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.

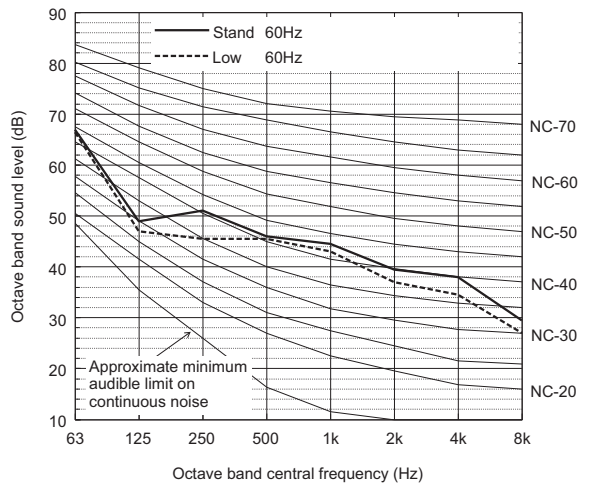
Sound level of PQRY-P216TSLMU-A/YSLMU-A



		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.

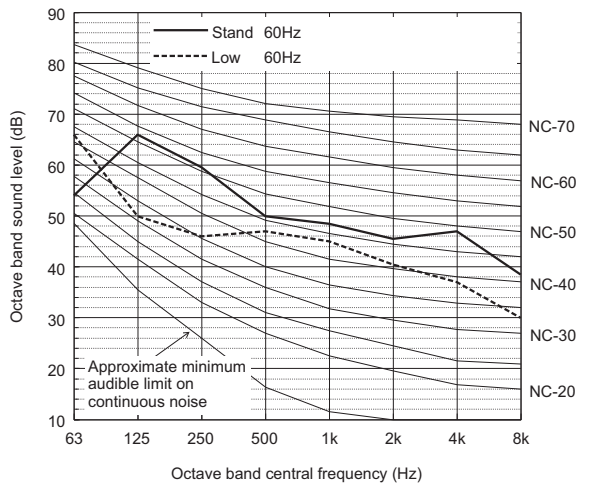
Sound level of PQRY-P168TSLMU-A/YSLMU-A



		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.

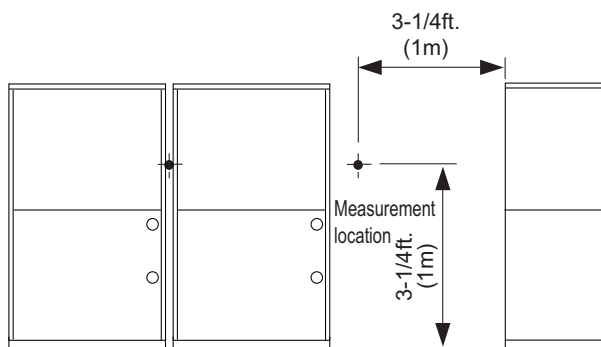
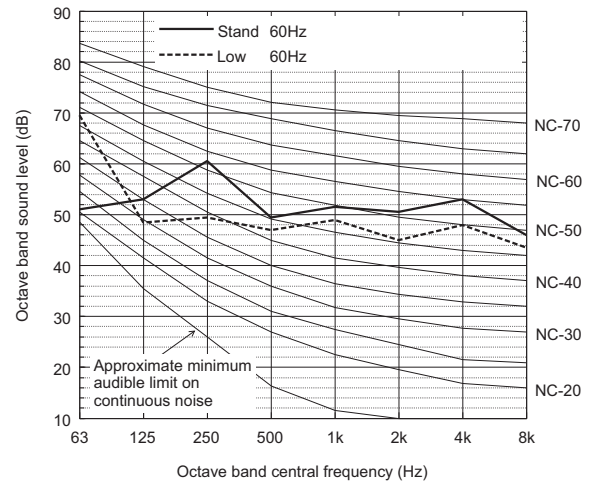
Sound level of PQRY-P240TSLMU-A/YSLMU-A



		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

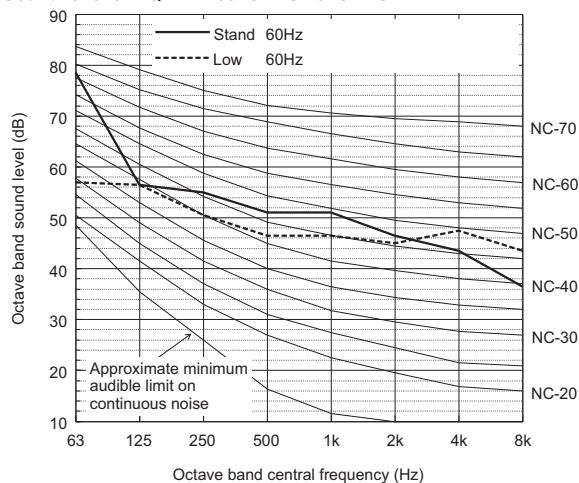
When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- 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.

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

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


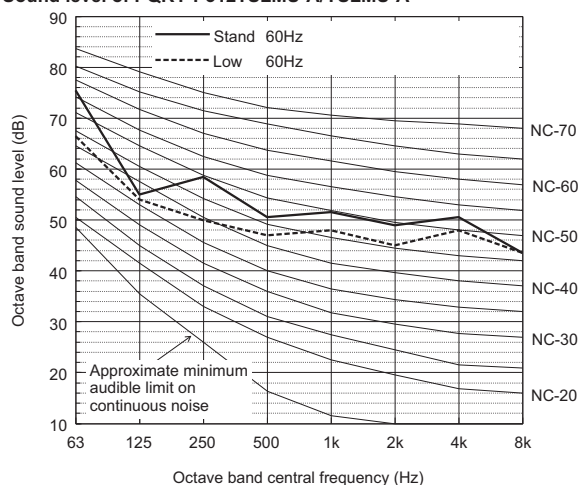
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	60Hz	51.0	53.0	60.5	49.5	51.5	50.5	53.0	46.0	59.0
Low noise mode	60Hz	69.5	48.5	49.5	47.0	49.0	45.0	48.0	43.5	54.5

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	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.

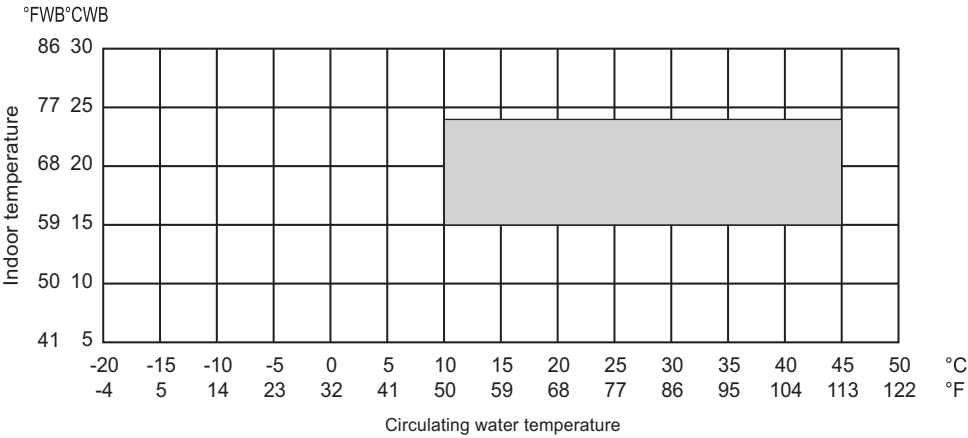
Sound level of PQRY-P312TSLMU-A/YSLMU-A


		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

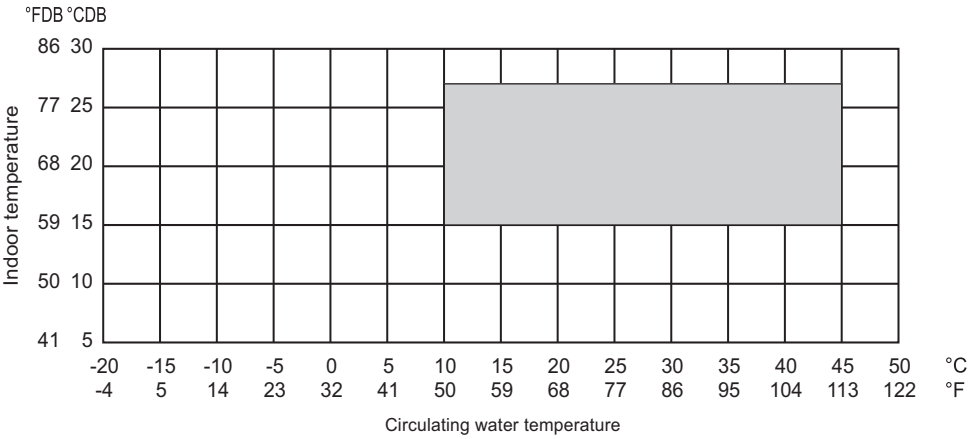
When Low noise mode is set, the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- 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.

• Cooling



• Heating



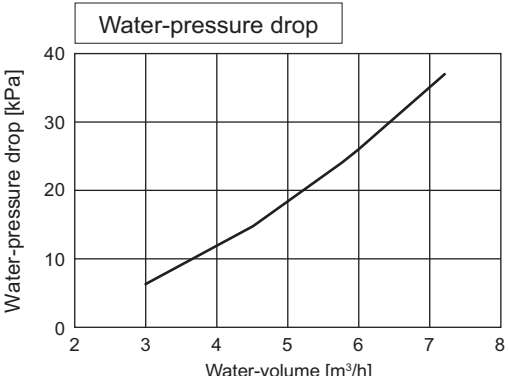
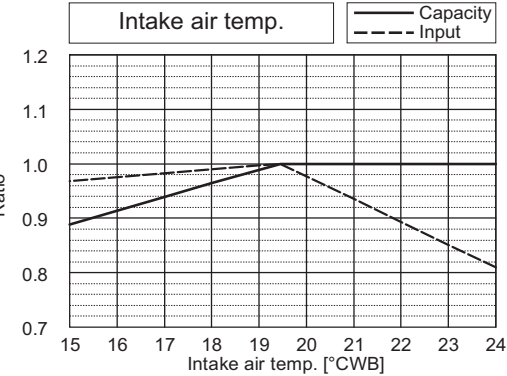
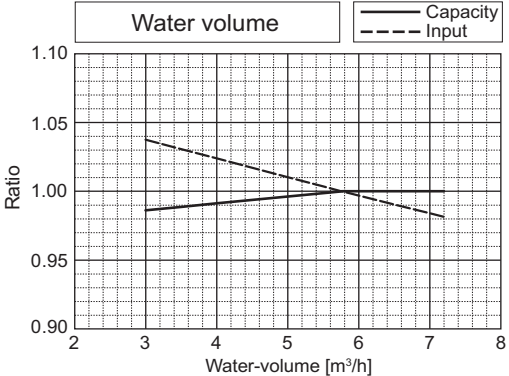
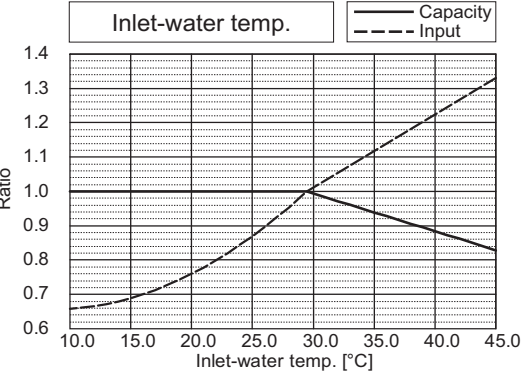
• Combination of cooling/heating operation (Cooling main or Heating main)

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)

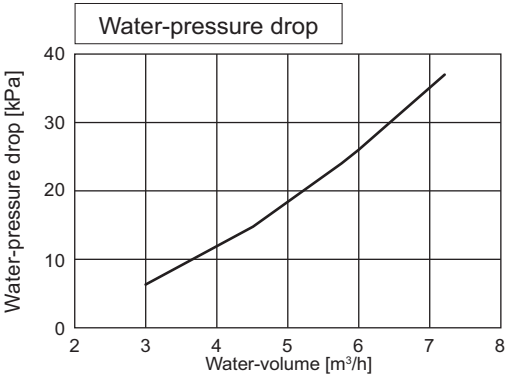
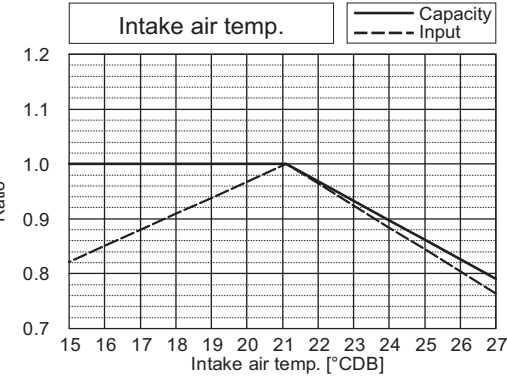
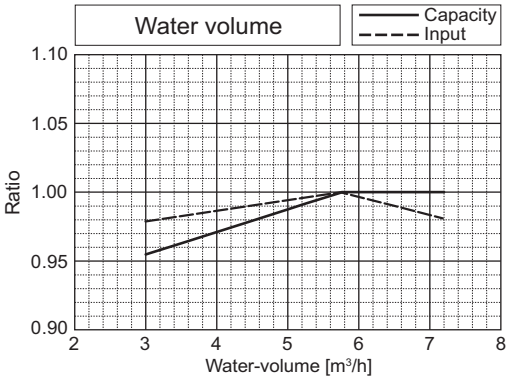
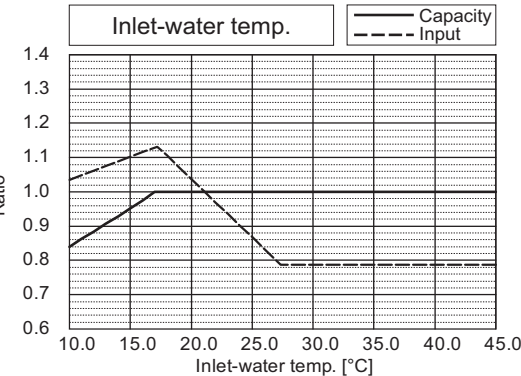
8-1. Correction by temperature

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

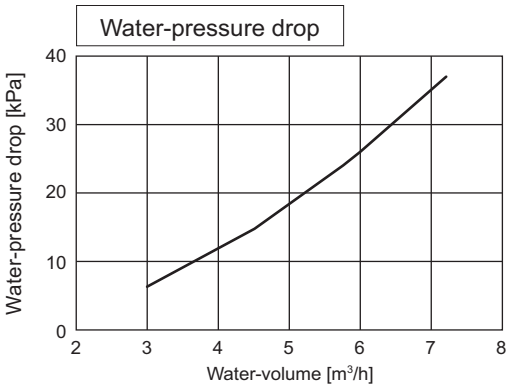
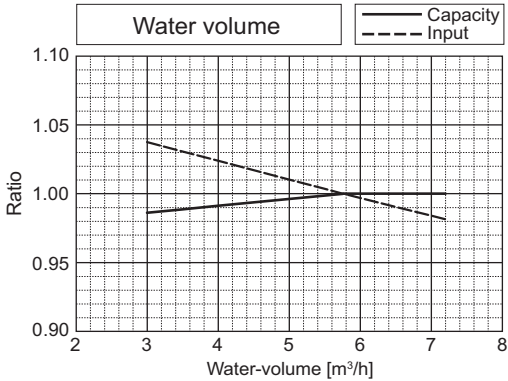
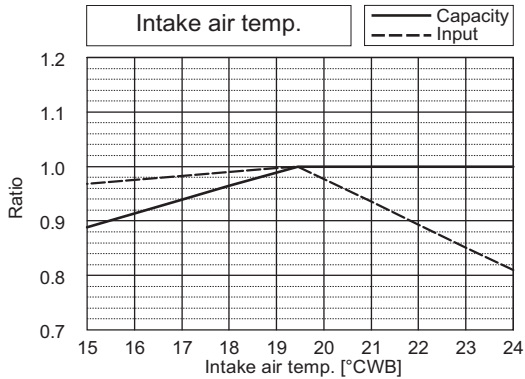
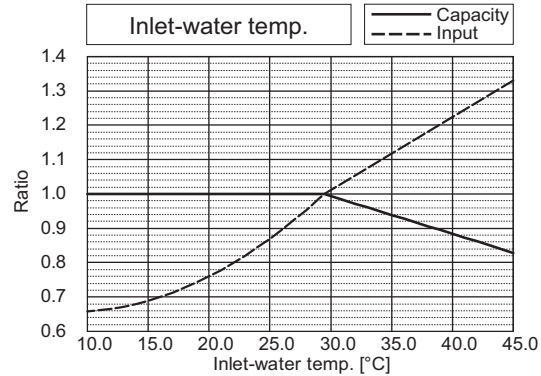
PQRY-			P72TLMU/YLMU		
Nominal Cooling Capacity	kW	21.1	Rated Cooling Capacity	kW	20.2
	BTU/h	72,000		BTU/h	69,000
Input	kW	3.23	Input	kW	(Non-Ducted) 2.96 (Ducted) 3.12



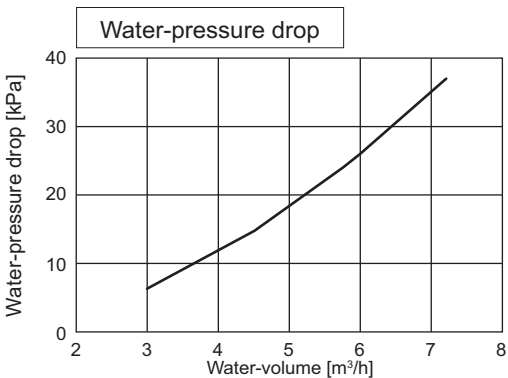
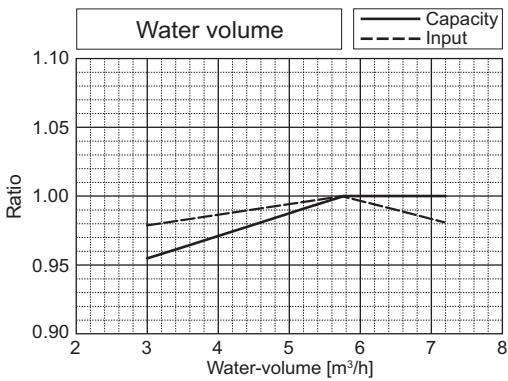
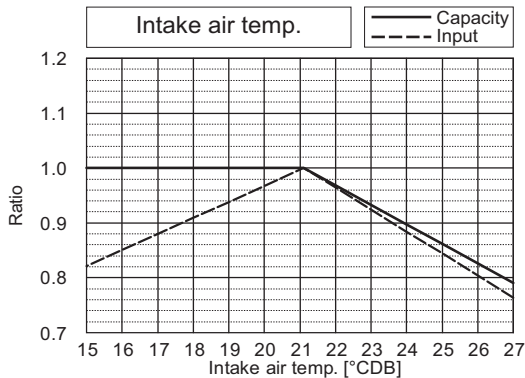
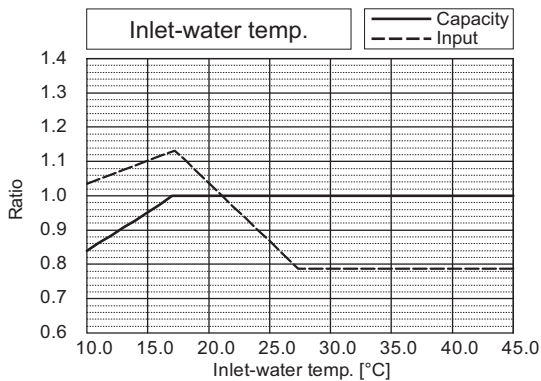
PQRY-			P72TLMU/YLMU		
Nominal Heating Capacity	kW	23.4	Rated Heating Capacity	kW	22.3
	BTU/h	80,000		BTU/h	76,000
Input	kW	3.63	Input	kW	(Non-Ducted) 3.34 (Ducted) 3.36



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

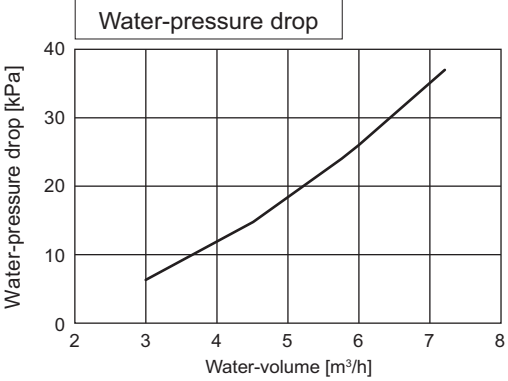
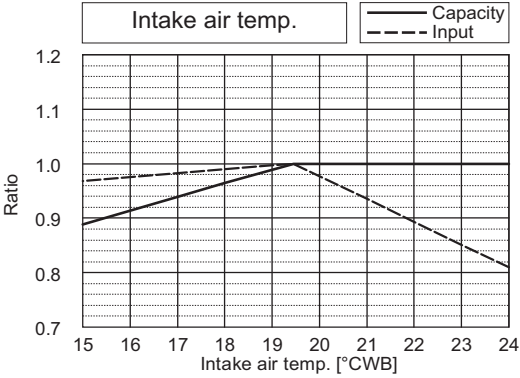
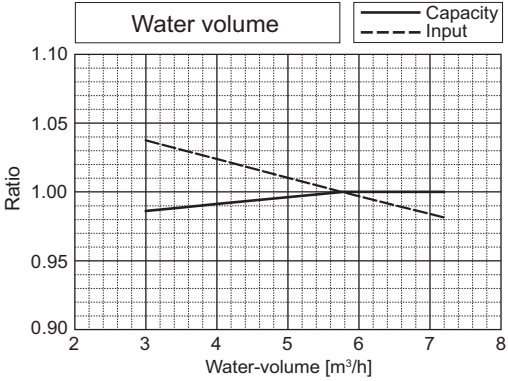
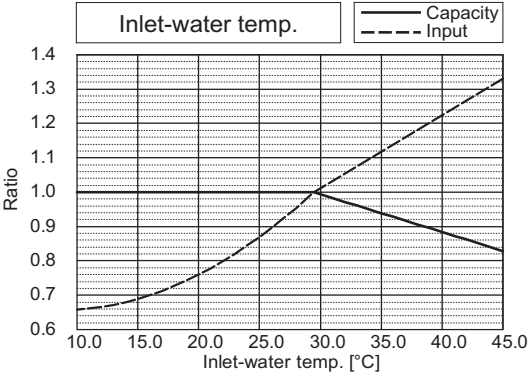


PQRY-			P96TLMU/YLMU		
Nominal Heating Capacity	kW	31.7	Rated Heating Capacity	kW	30.2
	BTU/h	108,000		BTU/h	103,000
Input	kW	5.05	Input	kW	(Non-Ducted) 4.65 (Ducted) 4.48

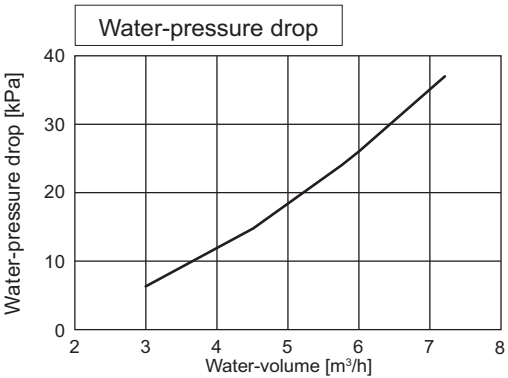
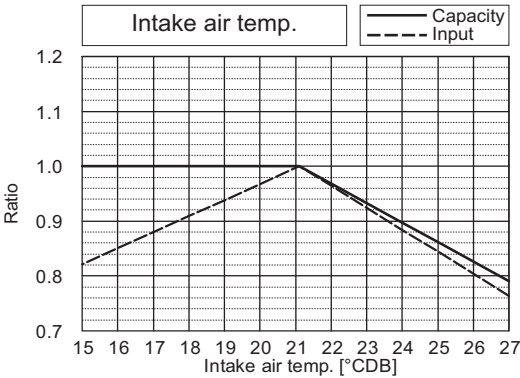
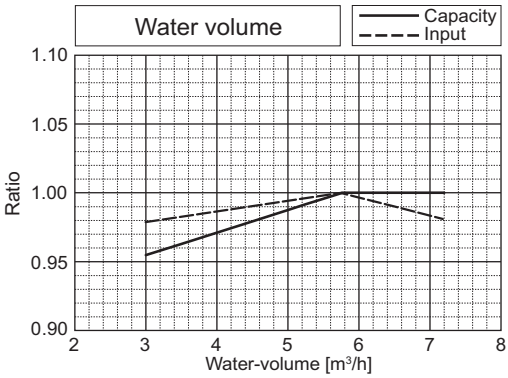
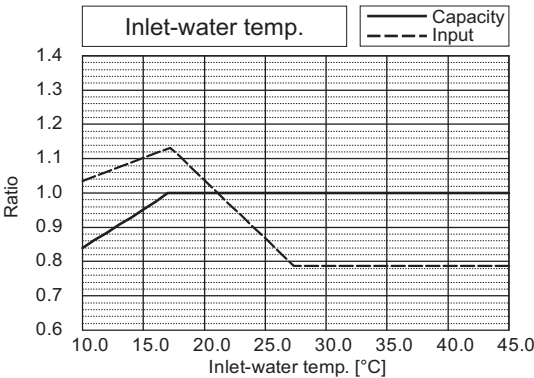


WR2

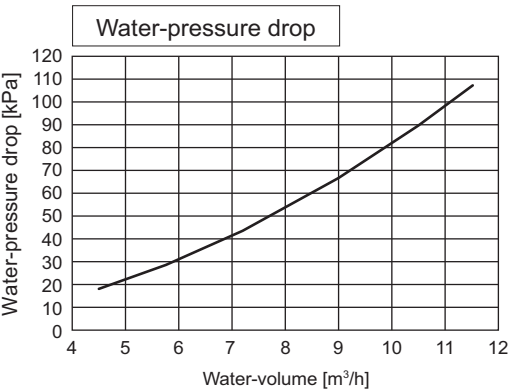
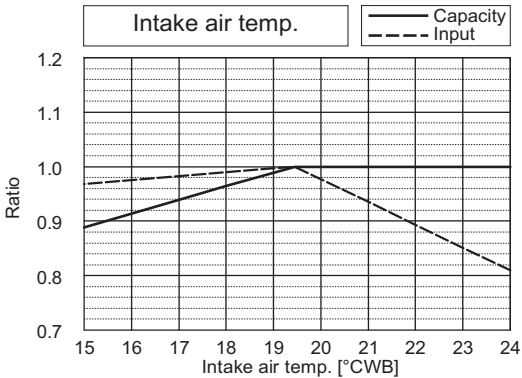
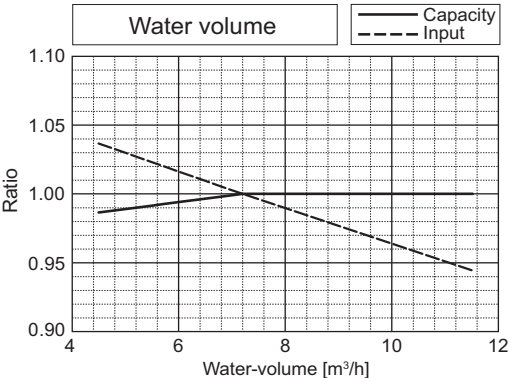
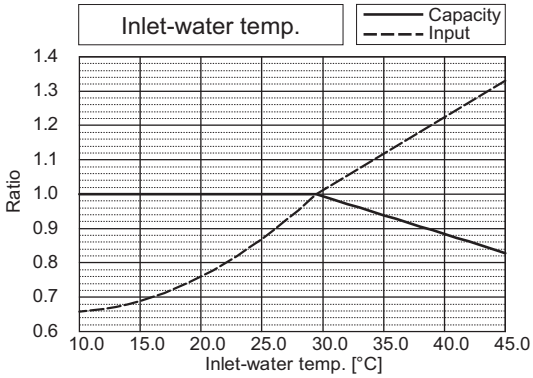
PQRY-			P120TLMU/YLMU		
Nominal Cooling Capacity	kW	35.2	Rated Cooling Capacity	kW	33.4
	BTU/h	120,000		BTU/h	114,000
Input	kW	7.24	Input	kW	(Non-Ducted) 6.66 (Ducted) 7.35



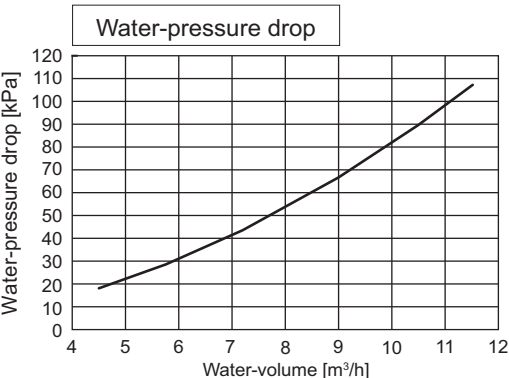
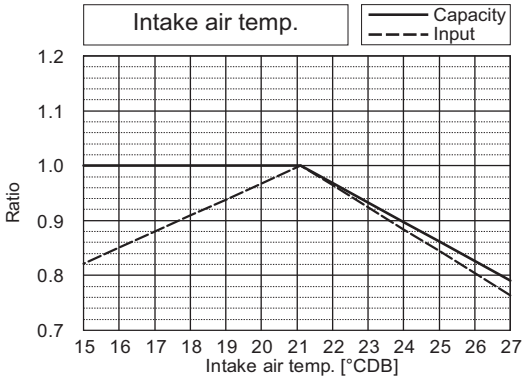
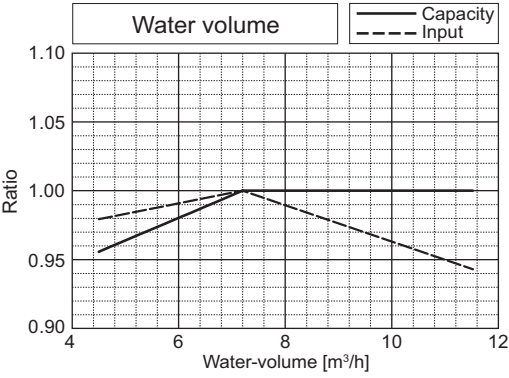
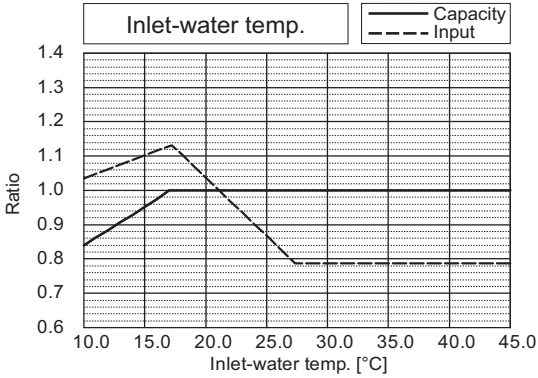
PQRY-			P120TLMU/YLMU		
Nominal Heating Capacity	kW	39.6	Rated Heating Capacity	kW	37.8
	BTU/h	135,000		BTU/h	129,000
Input	kW	6.83	Input	kW	(Non-Ducted) 6.29 (Ducted) 5.92



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

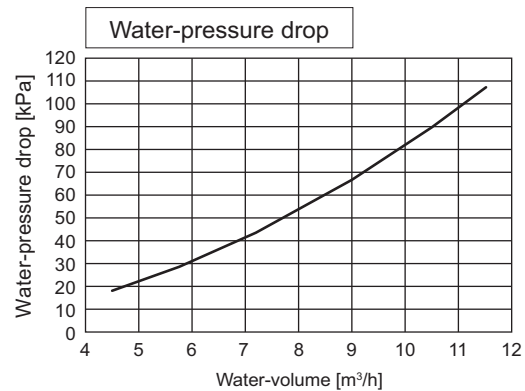
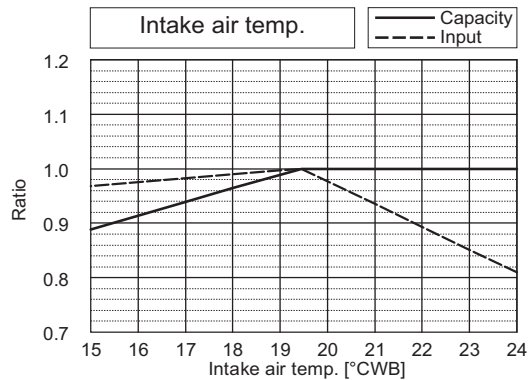
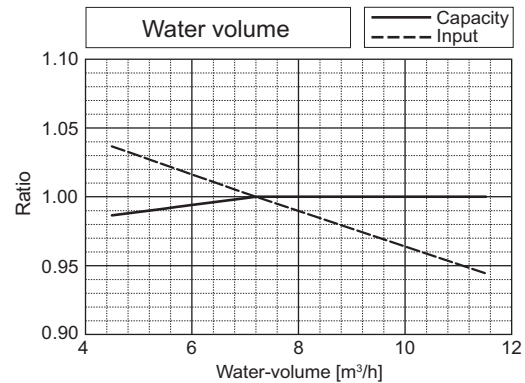
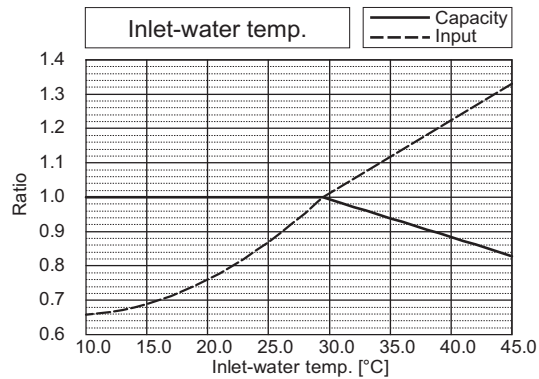


PQRY-			P144TLMU/YLMU		
Nominal Heating Capacity	kW	46.9	Rated Heating Capacity	kW	44.5
	BTU/h	160,000		BTU/h	152,000
Input	kW	8.11	Input	kW	(Non-Ducted) 7.47 (Ducted) 7.90

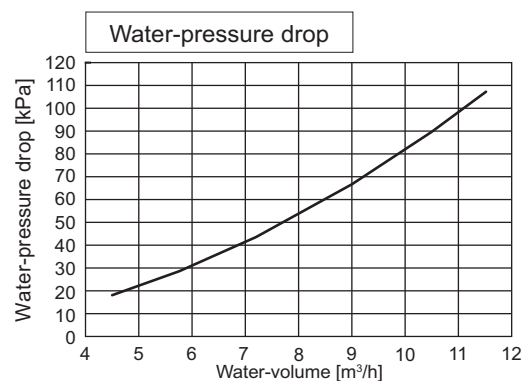
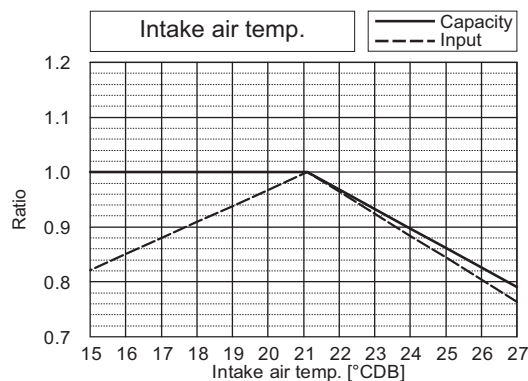
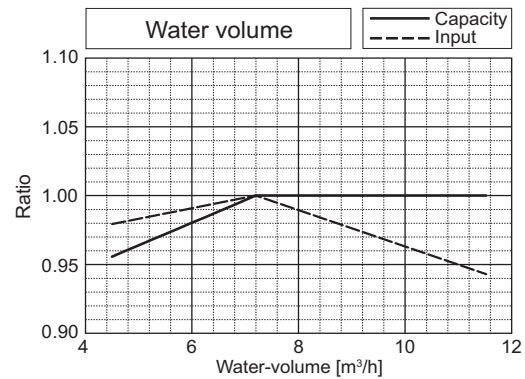
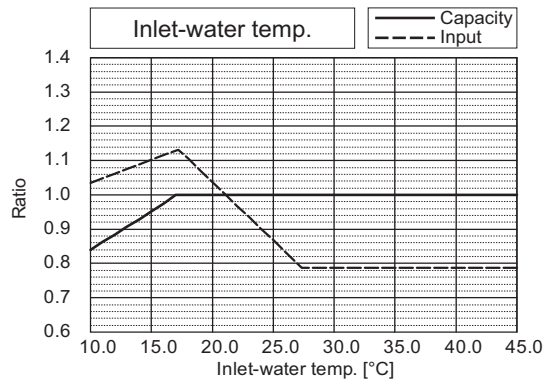


WR2

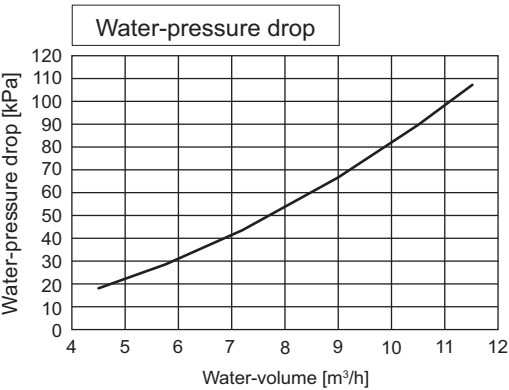
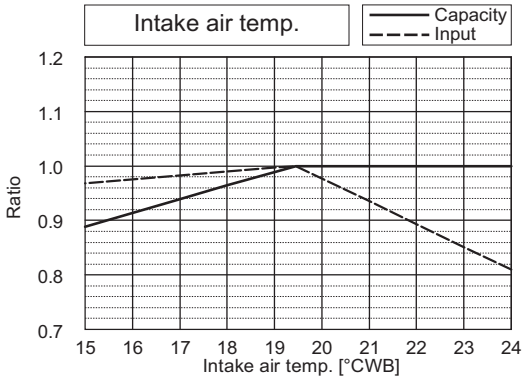
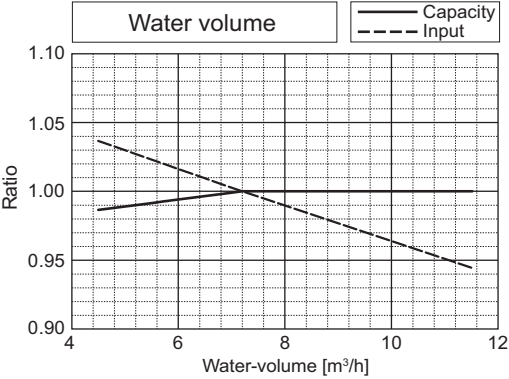
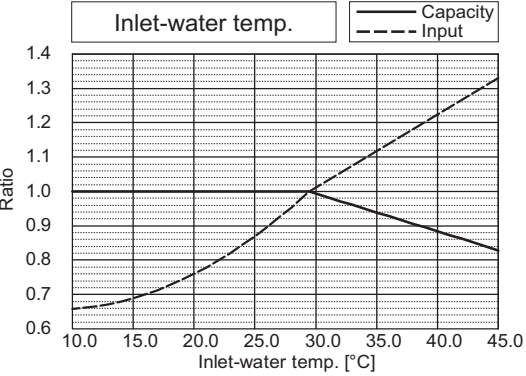
PQRY-		P168TLMU/YLMU			
Nominal Cooling Capacity	kW	49.2	Rated Cooling Capacity	kW	47.2
	BTU/h	168,000		BTU/h	161,000
Input	kW	12.05	Input	kW	(Non-Ducted) 11.10 (Ducted) 11.88



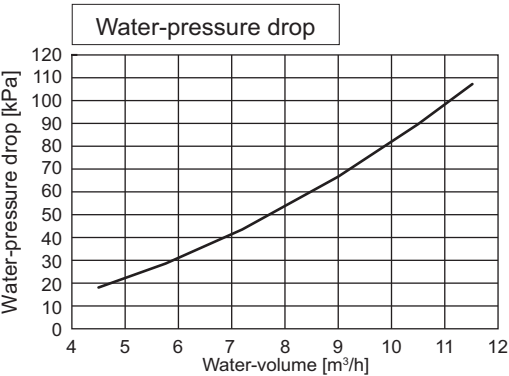
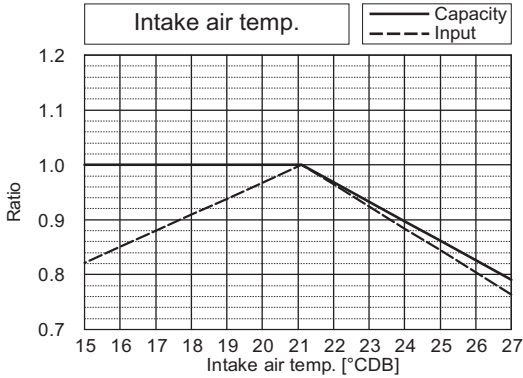
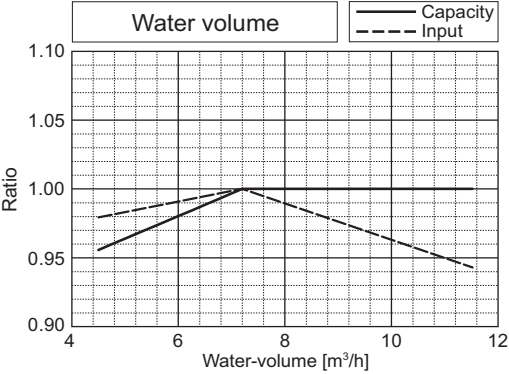
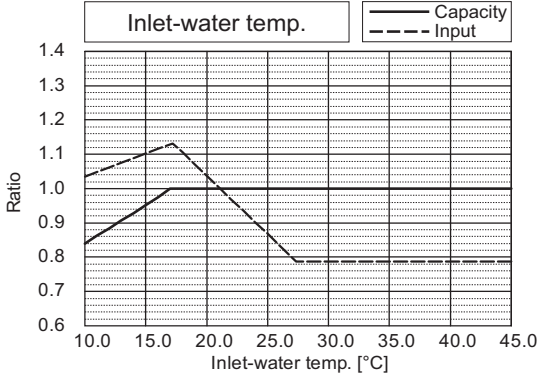
PQRY-		P168TLMU/YLMU			
Nominal Heating Capacity	kW	55.1	Rated Heating Capacity	kW	52.5
	BTU/h	188,000		BTU/h	179,000
Input	kW	9.86	Input	kW	(Non-Ducted) 9.09 (Ducted) 9.72



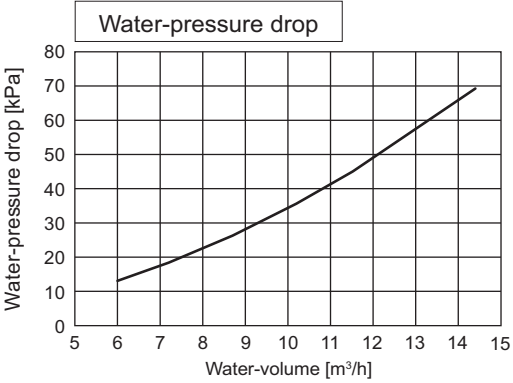
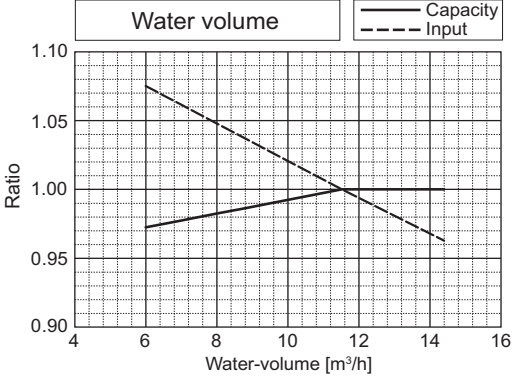
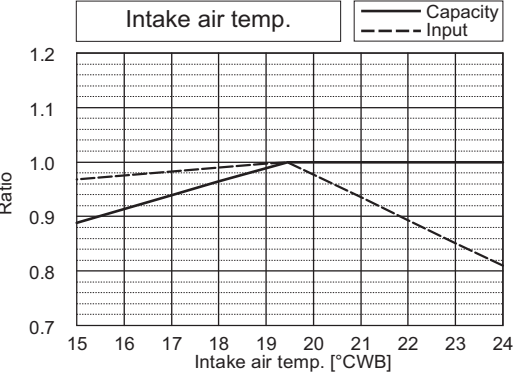
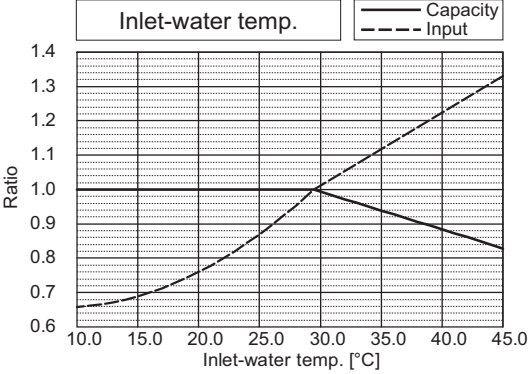
PQRY-			P192TLMU/YLMU		
Nominal Cooling Capacity	kW	56.3	Rated Cooling Capacity	kW	53.6
	BTU/h	192,000		BTU/h	183,000
Input	kW	15.05	Input	kW	(Non-Ducted) 13.87 (Ducted) 14.19



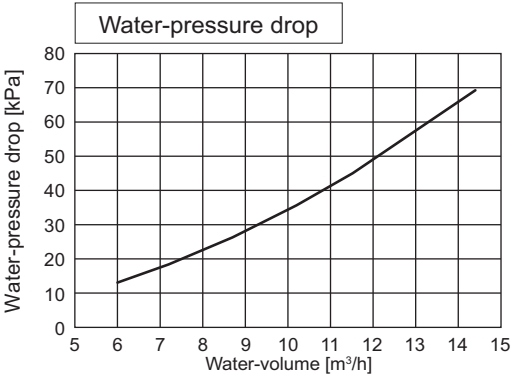
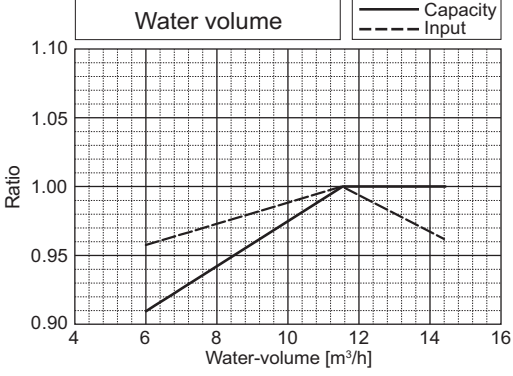
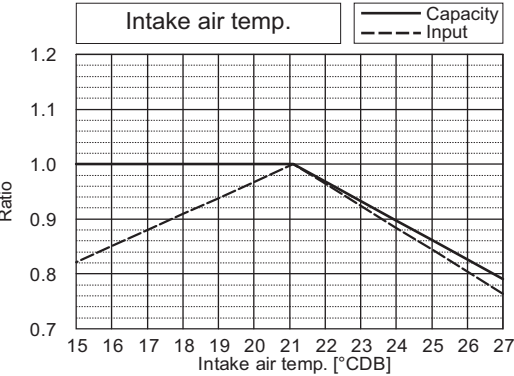
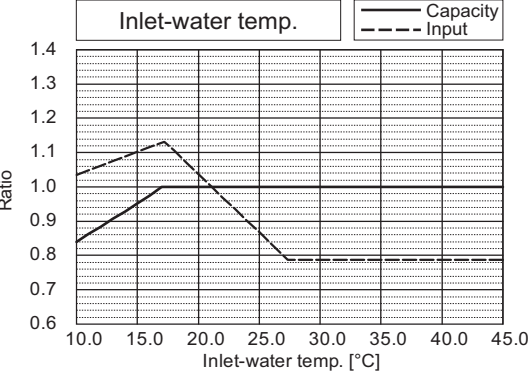
PQRY-			P192TLMU/YLMU		
Nominal Heating Capacity	kW	63.0	Rated Heating Capacity	kW	60.1
	BTU/h	215,000		BTU/h	205,000
Input	kW	11.90	Input	kW	(Non-Ducted) 10.97 (Ducted) 11.56



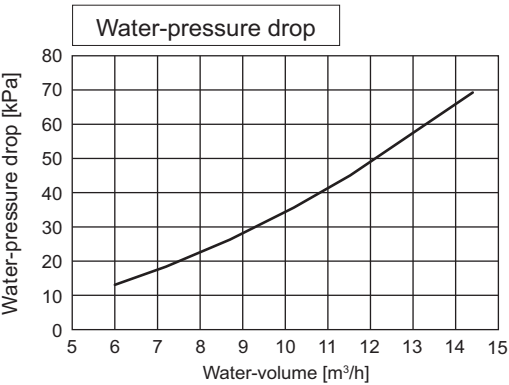
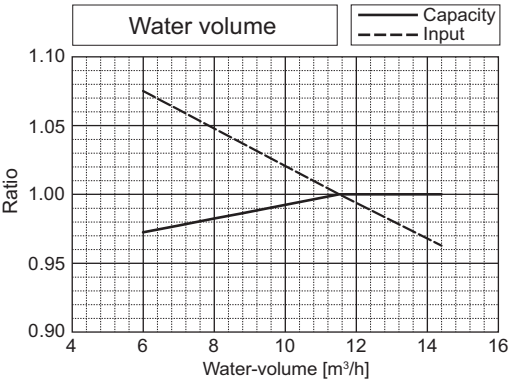
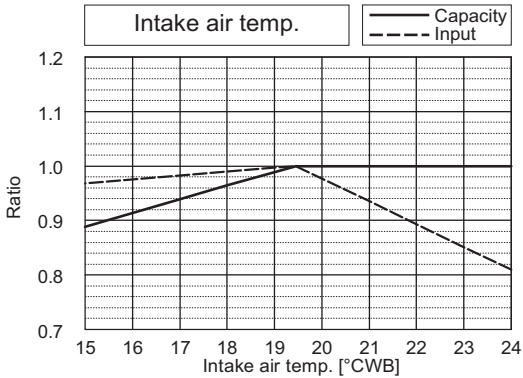
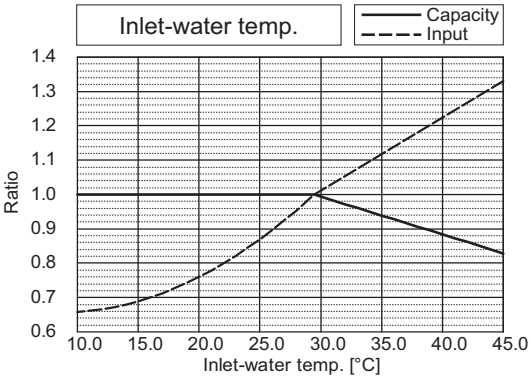
PQRY-			P216TLMU/YLMU		
Nominal Cooling Capacity	kW	63.3	Rated Cooling Capacity	kW	60.4
	BTU/h	216,000		BTU/h	206,000
Input	kW	19.23	Input	kW	(Non-Ducted) 17.72 (Ducted) 16.10



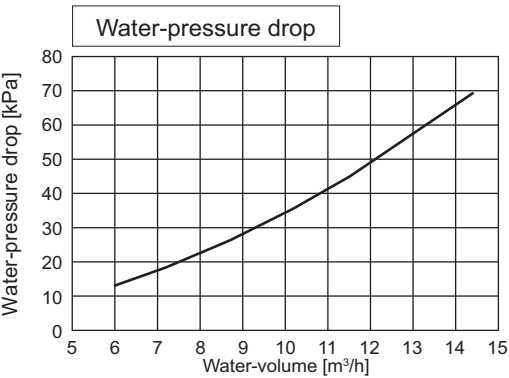
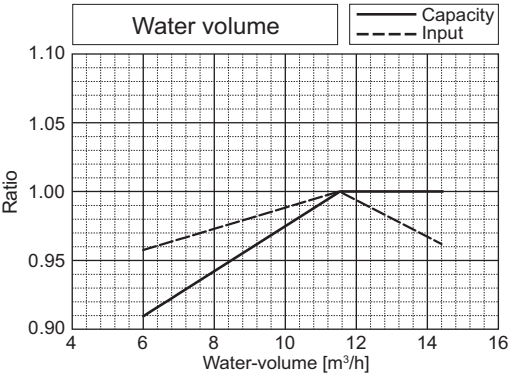
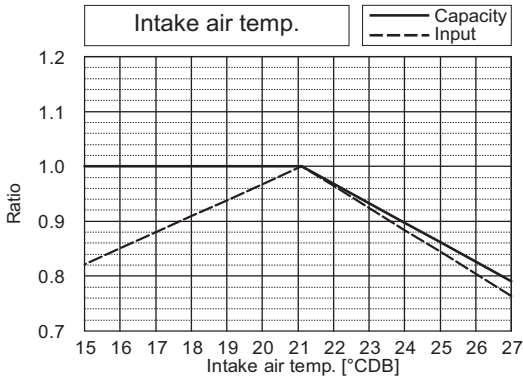
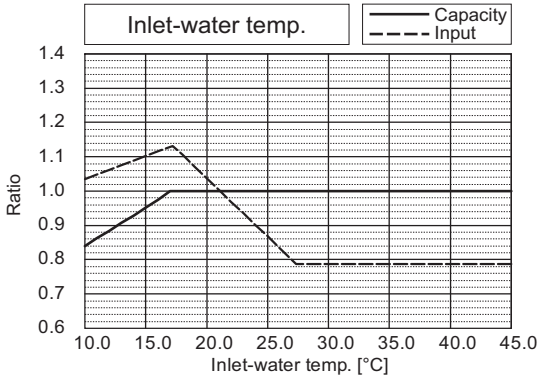
PQRY-			P216TLMU/YLMU		
Nominal Heating Capacity	kW	71.2	Rated Heating Capacity	kW	68.0
	BTU/h	243,000		BTU/h	232,000
Input	kW	13.04	Input	kW	(Non-Ducted) 12.01 (Ducted) 12.34



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

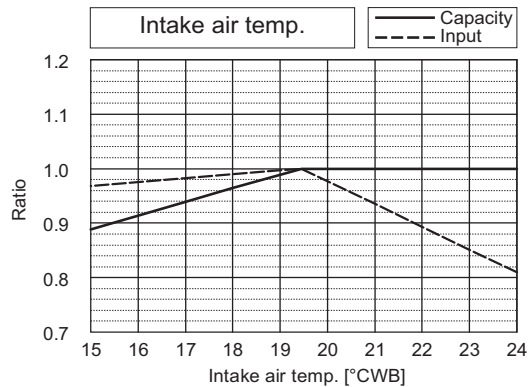
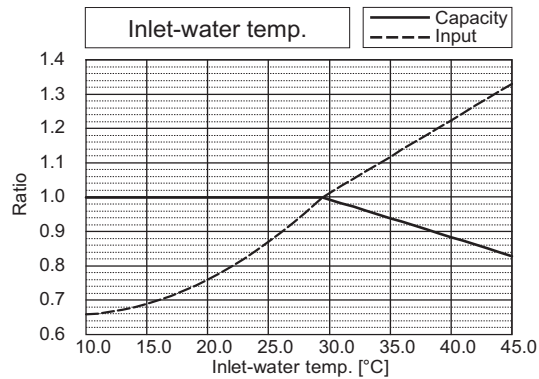


PQRY-			P240TLMU/YLMU		
Nominal Heating Capacity	kW	79.1	Rated Heating Capacity	kW	75.6
	BTU/h	270,000		BTU/h	258,000
Input	kW	15.12	Input	kW	(Non-Ducted) 13.93 (Ducted) 14.62

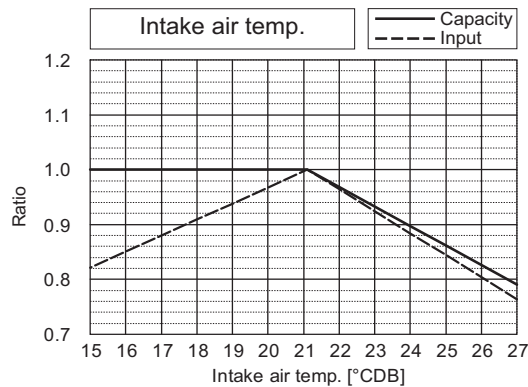
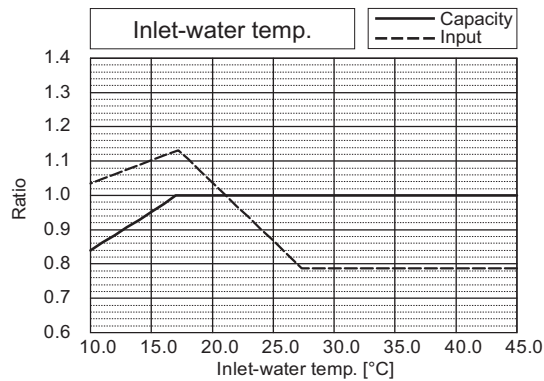


WR2

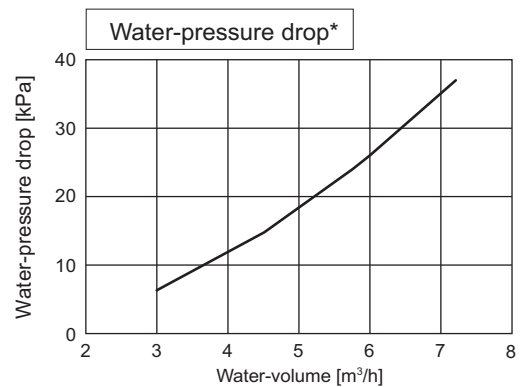
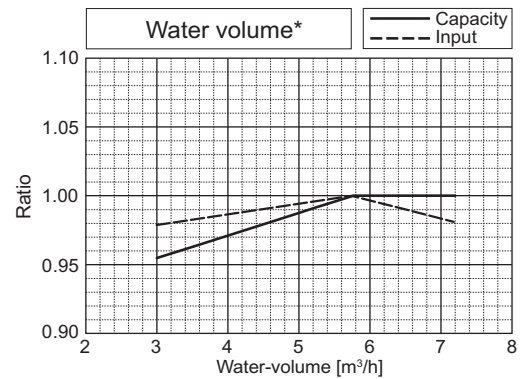
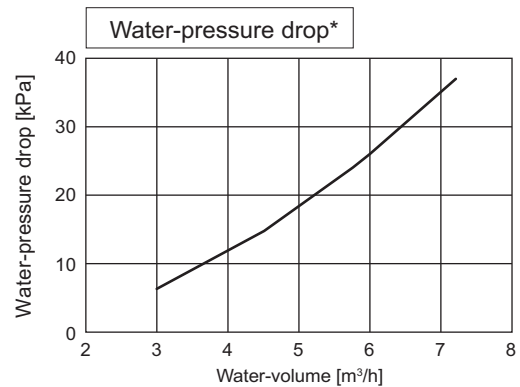
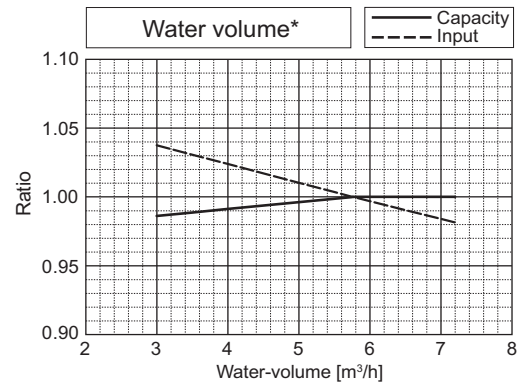
PQRY-			P144TSLMU/YSLMU		
Nominal Cooling Capacity	kW	42.2	Rated Cooling Capacity	kW	40.2
	BTU/h	144,000		BTU/h	137,000
Input	kW	7.11	Input	kW	(Non-Ducted) 6.53 (Ducted) 7.72



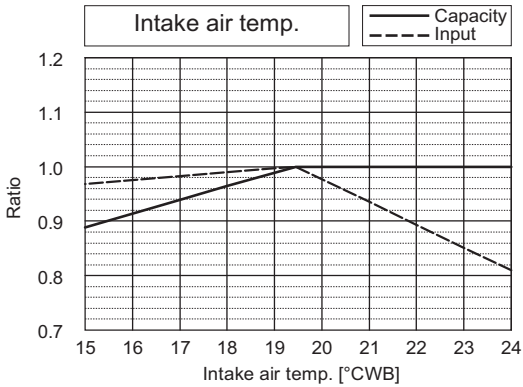
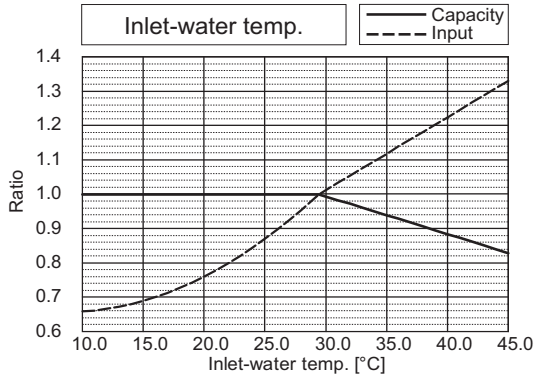
PQRY-			P144TSLMU/YSLMU		
Nominal Heating Capacity	kW	46.9	Rated Heating Capacity	kW	44.5
	BTU/h	160,000		BTU/h	152,000
Input	kW	7.45	Input	kW	(Non-Ducted) 6.86 (Ducted) 7.22



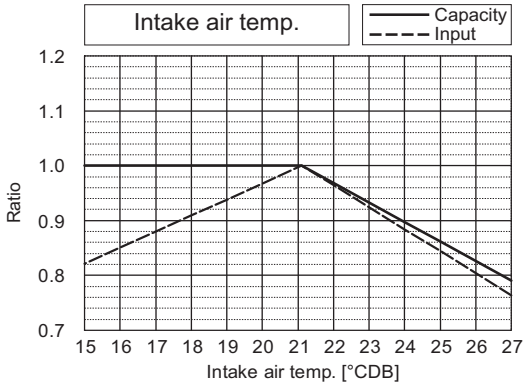
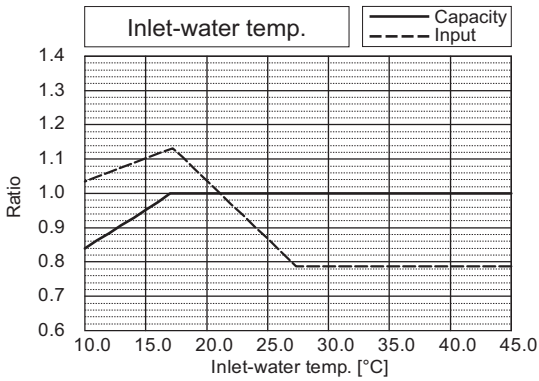
*The drawing indicates characteristic per unit.



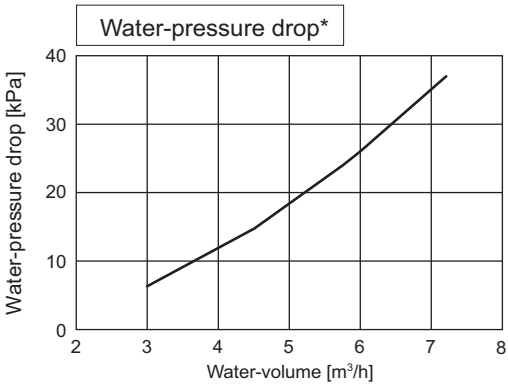
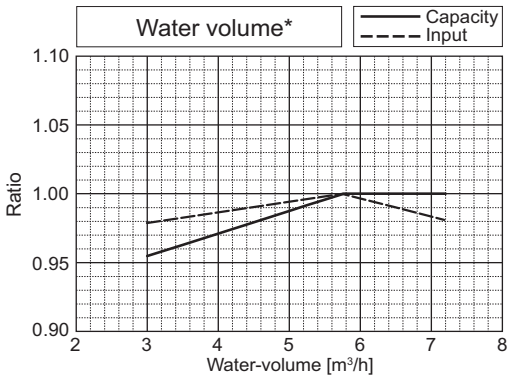
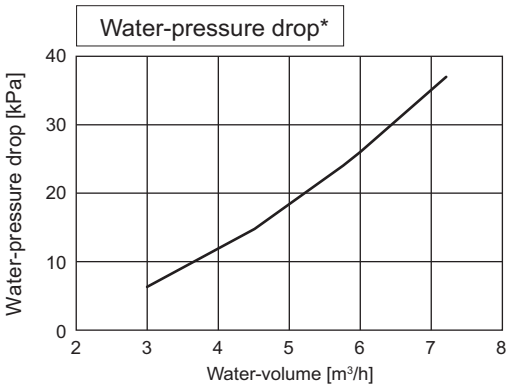
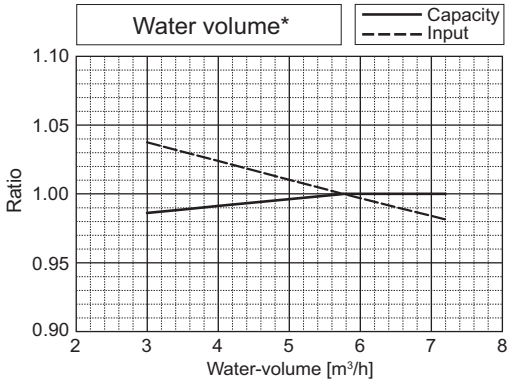
PQRY-			P168TSLMU/YSLMU		
Nominal Cooling Capacity	kW	49.2	Rated Cooling Capacity	kW	47.2
	BTU/h	168,000		BTU/h	161,000
Input	kW	9.33	Input	kW	(Non-Ducted) 8.58 (Ducted) 9.22



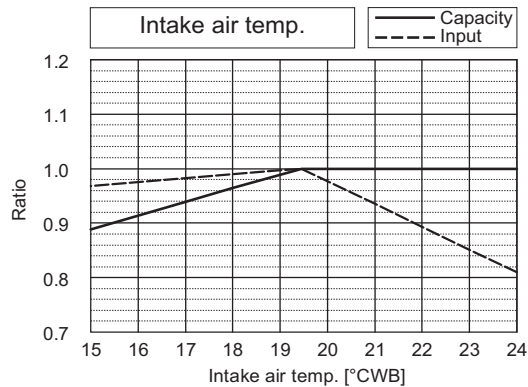
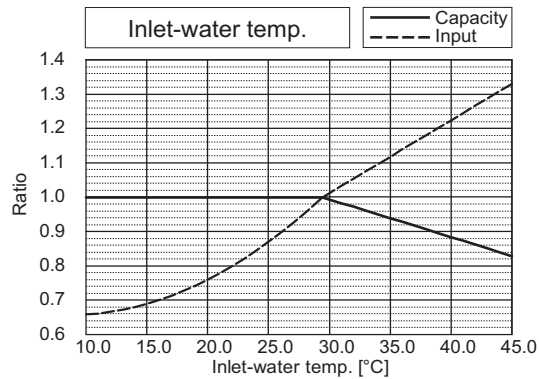
PQRY-			P168TSLMU/YSLMU		
Nominal Heating Capacity	kW	55.1	Rated Heating Capacity	kW	52.5
	BTU/h	188,000		BTU/h	179,000
Input	kW	9.34	Input	kW	(Non-Ducted) 8.60 (Ducted) 8.03



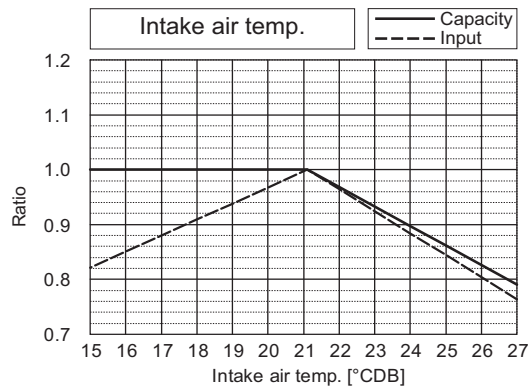
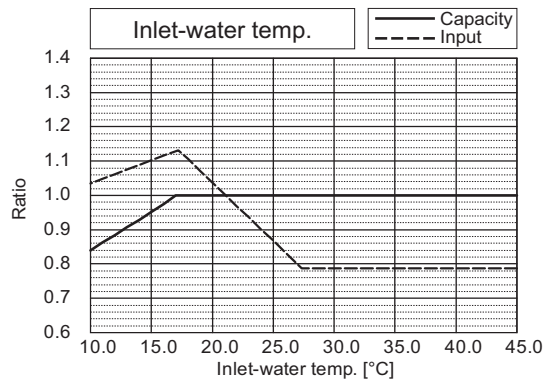
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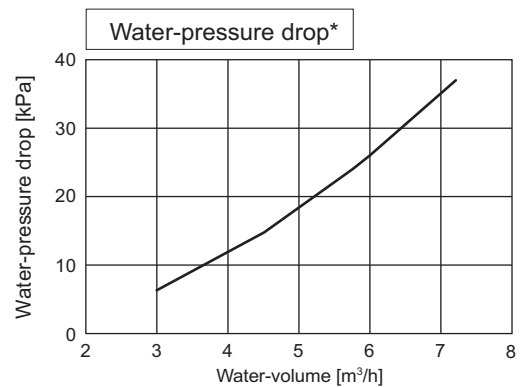
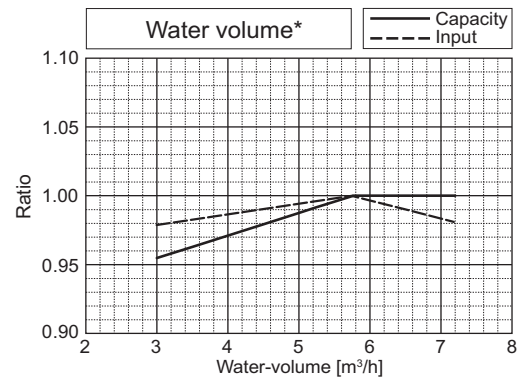
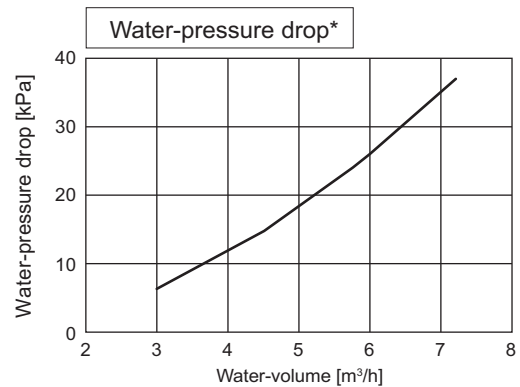
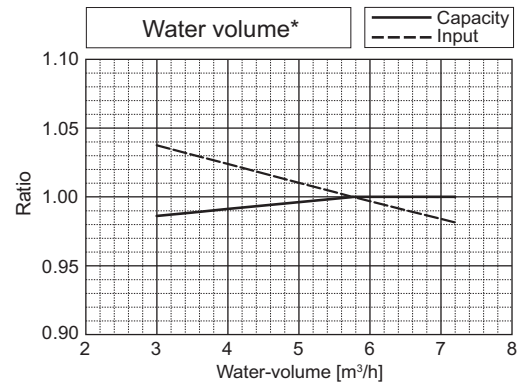
PQRY-			P192TSLMU/YSLMU		
Nominal Cooling Capacity	kW	56.3	Rated Cooling Capacity	kW	53.6
	BTU/h	192,000		BTU/h	183,000
Input	kW	11.30	Input	kW	(Non-Ducted) 10.40 (Ducted) 10.98



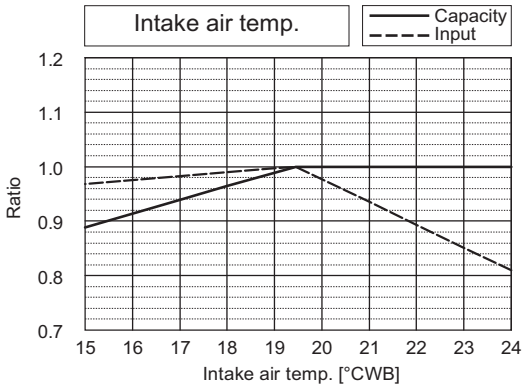
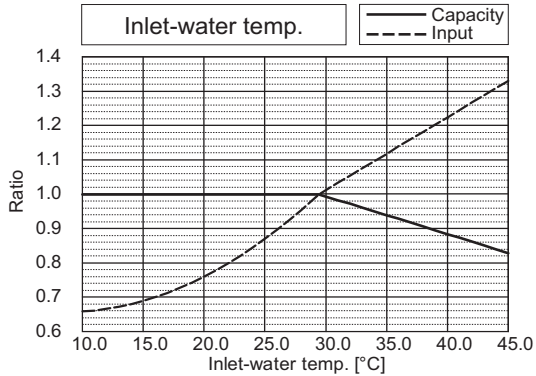
PQRY-			P192TSLMU/YSLMU		
Nominal Heating Capacity	kW	63.0	Rated Heating Capacity	kW	60.1
	BTU/h	215,000		BTU/h	205,000
Input	kW	11.02	Input	kW	(Non-Ducted) 10.16 (Ducted) 8.90



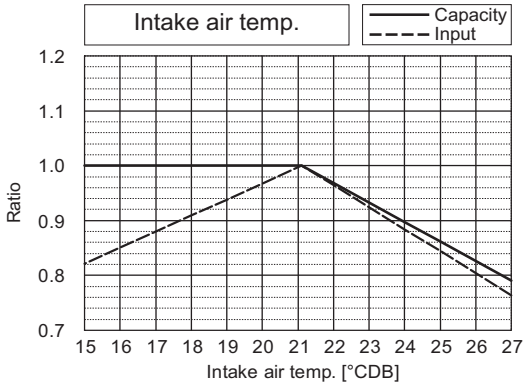
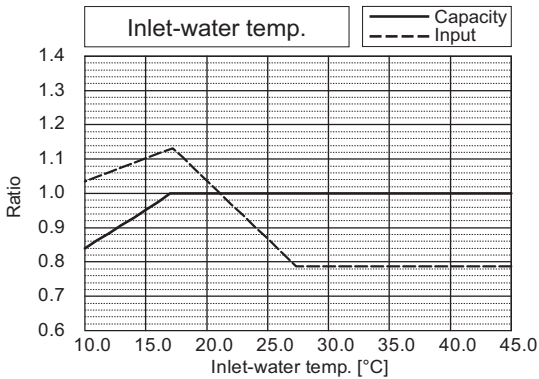
*The drawing indicates characteristic per unit.



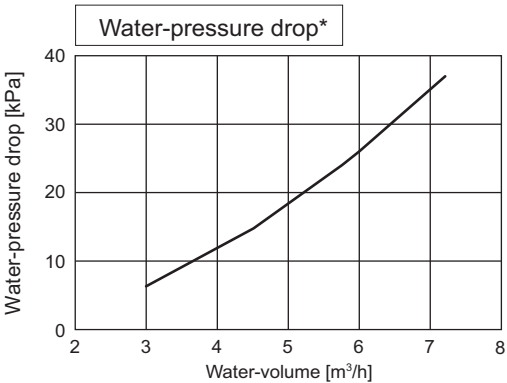
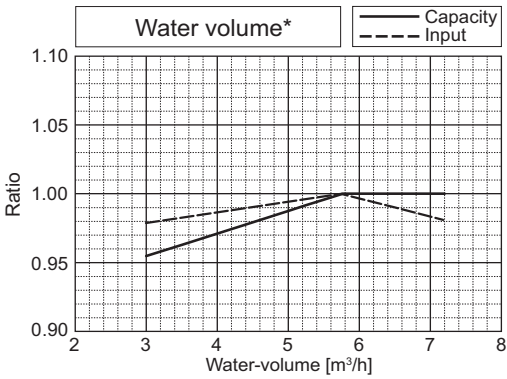
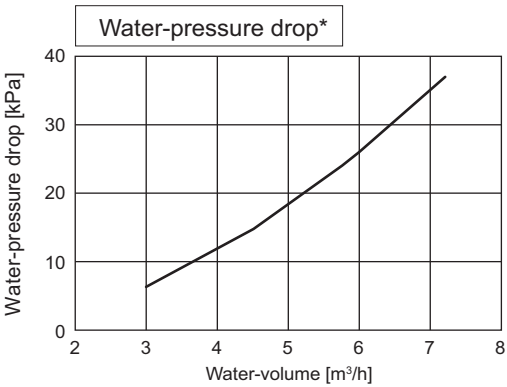
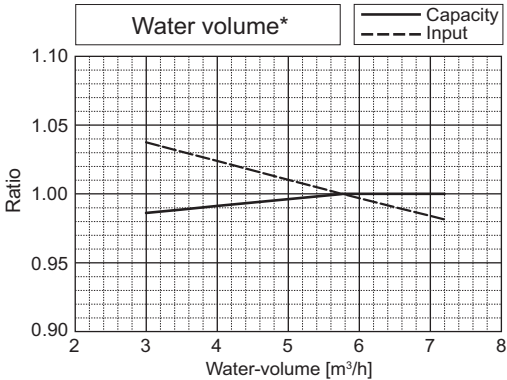
PQRY-			P216TSLMU/YSLMU		
Nominal Cooling Capacity	kW	63.3	Rated Cooling Capacity	kW	60.4
	BTU/h	216,000		BTU/h	206,000
Input	kW	14.03	Input	kW	(Non-Ducted) 12.93 (Ducted) 13.24



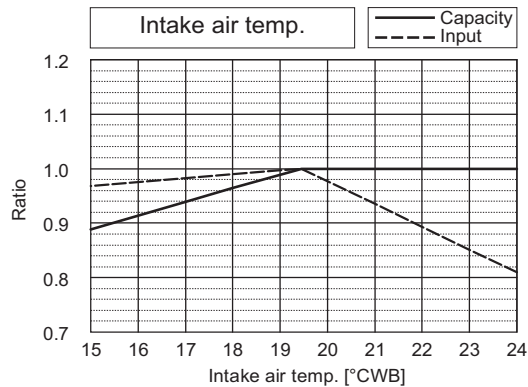
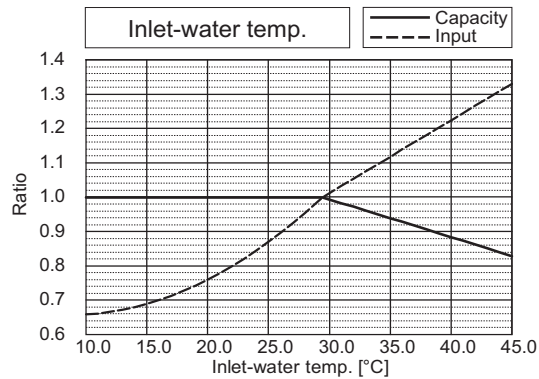
PQRY-			P216TSLMU/YSLMU		
Nominal Heating Capacity	kW	71.2	Rated Heating Capacity	kW	68.0
	BTU/h	243,000		BTU/h	232,000
Input	kW	12.88	Input	kW	(Non-Ducted) 11.88 (Ducted) 10.35



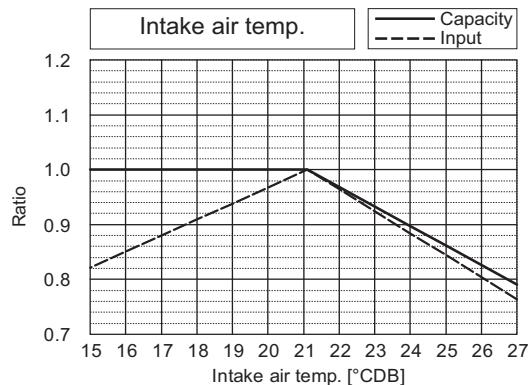
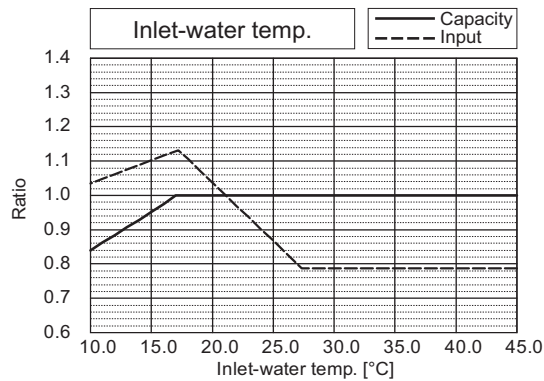
*The drawing indicates characteristic per unit.



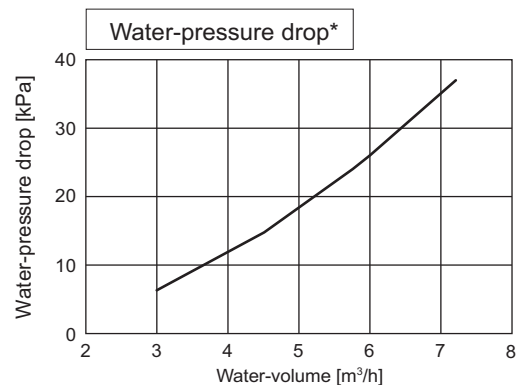
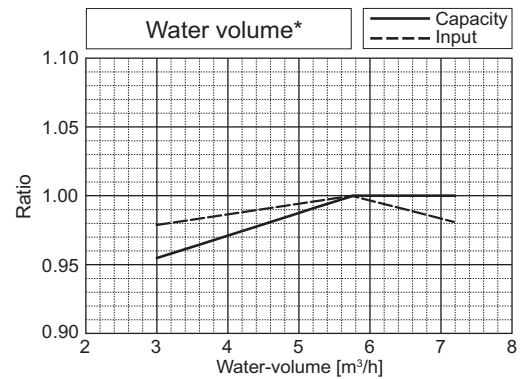
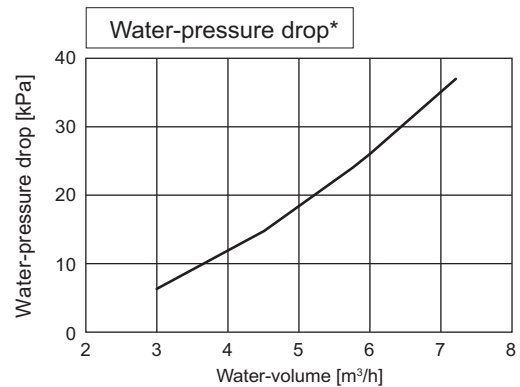
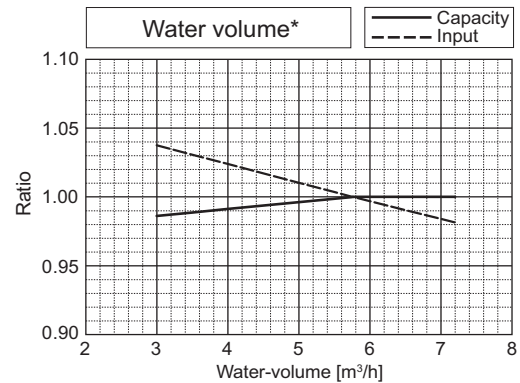
PQRY-		P240TSLMU/YSLMU			
Nominal Cooling Capacity	kW	70.3	Rated Cooling Capacity	kW	66.8
	BTU/h	240,000		BTU/h	228,000
Input	kW	16.89	Input	kW	(Non-Ducted) 15.57 (Ducted) 16.15



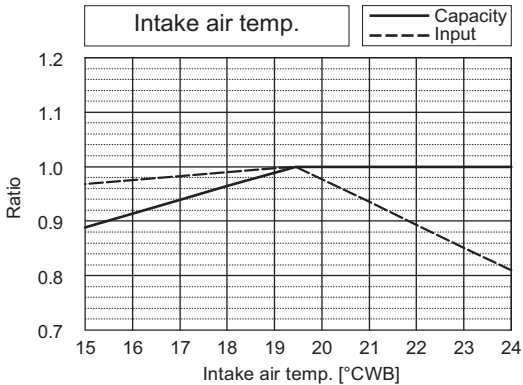
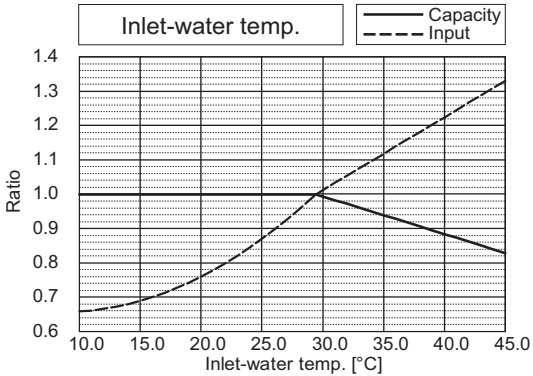
PQRY-		P240TSLMU/YSLMU			
Nominal Heating Capacity	kW	79.1	Rated Heating Capacity	kW	75.6
	BTU/h	270,000		BTU/h	258,000
Input	kW	14.58	Input	kW	(Non-Ducted) 13.45 (Ducted) 12.02



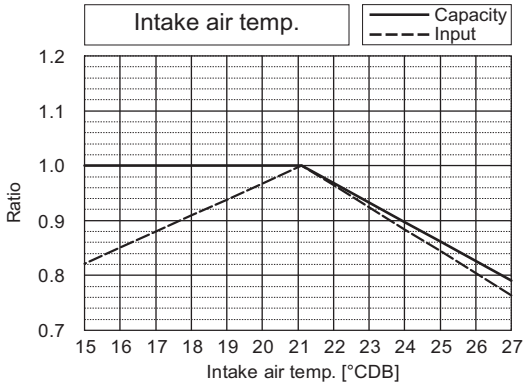
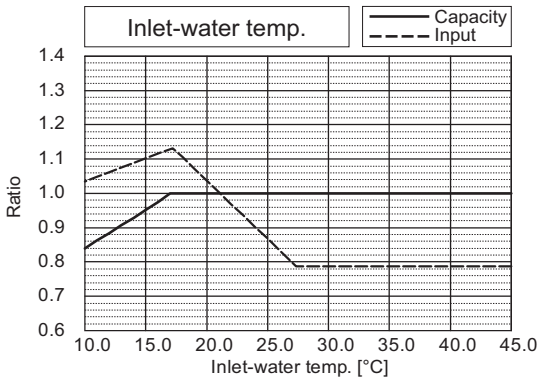
*The drawing indicates characteristic per unit.



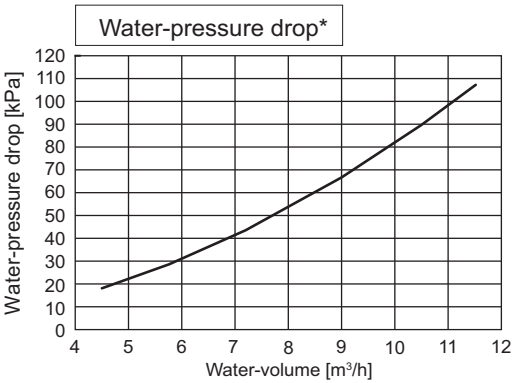
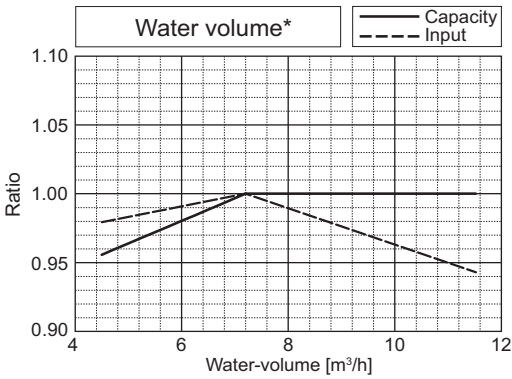
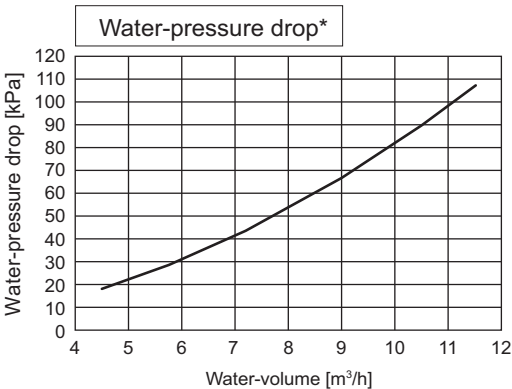
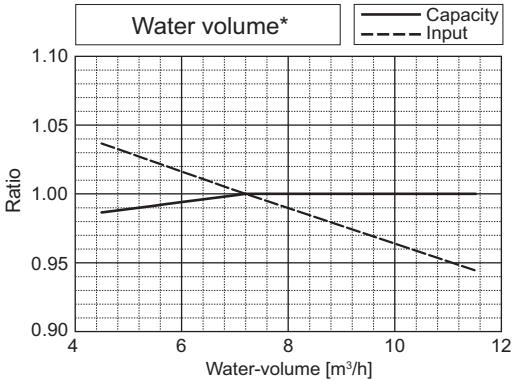
PQRY-			P288TSLMU/YSLMU		
Nominal Cooling Capacity	kW	84.4	Rated Cooling Capacity	kW	80.6
	BTU/h	288,000		BTU/h	275,000
Input	kW	20.42	Input	kW	(Non-Ducted) 18.82 (Ducted) 21.43



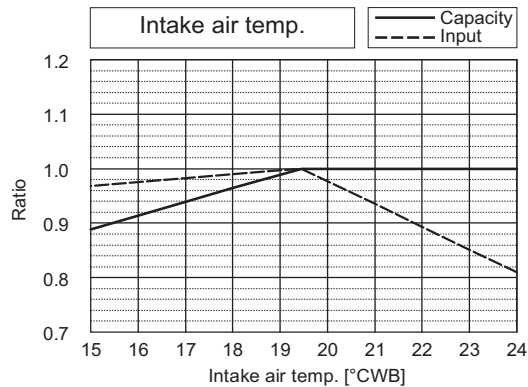
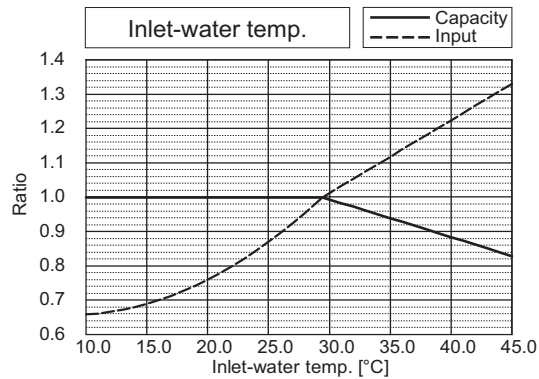
PQRY-			P288TSLMU/YSLMU		
Nominal Heating Capacity	kW	94.7	Rated Heating Capacity	kW	90.3
	BTU/h	323,000		BTU/h	308,000
Input	kW	17.50	Input	kW	(Non-Ducted) 16.13 (Ducted) 16.05



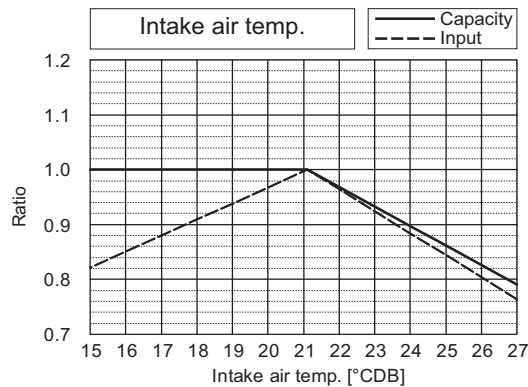
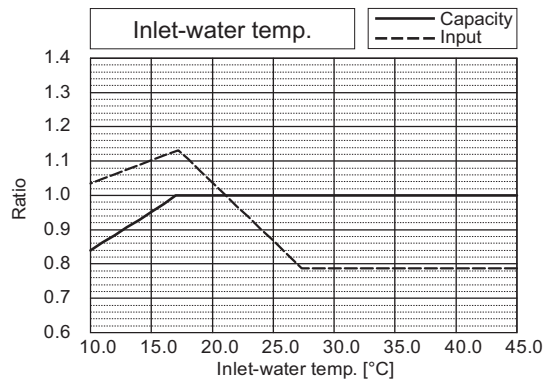
*The drawing indicates characteristic per unit.



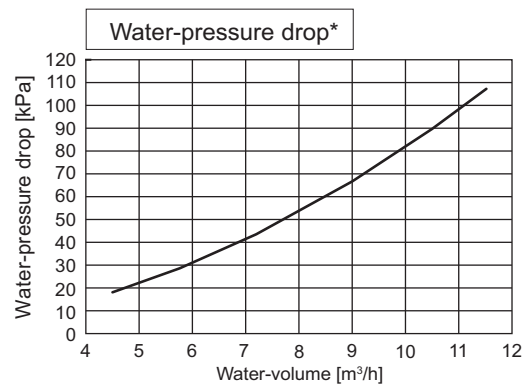
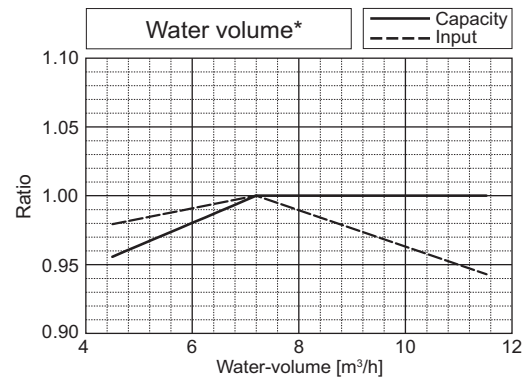
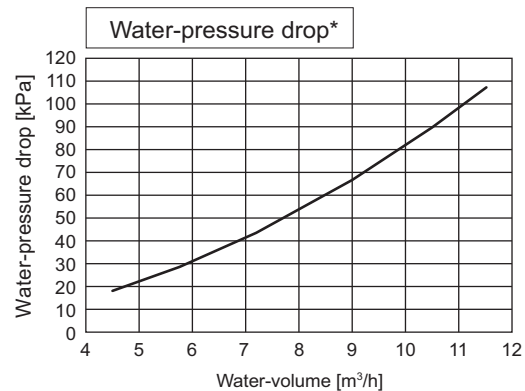
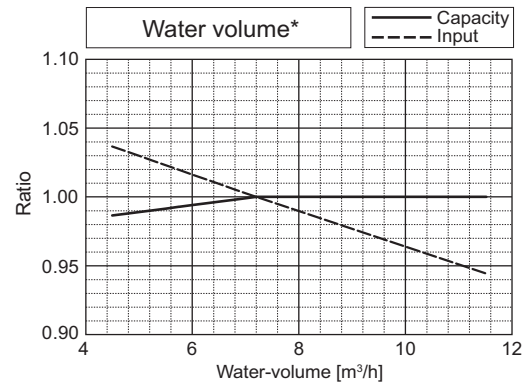
PQRY-		P312TSLMU/YSLMU			
Nominal Cooling Capacity	kW	91.4	Rated Cooling Capacity	kW	87.0
	BTU/h	312,000		BTU/h	297,000
Input	kW	23.41	Input	kW	(Non-Ducted) 21.59 (Ducted) 23.67



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

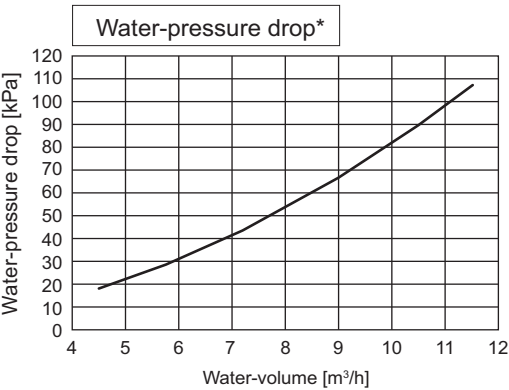
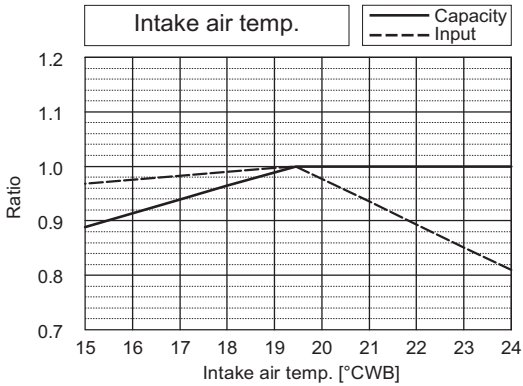
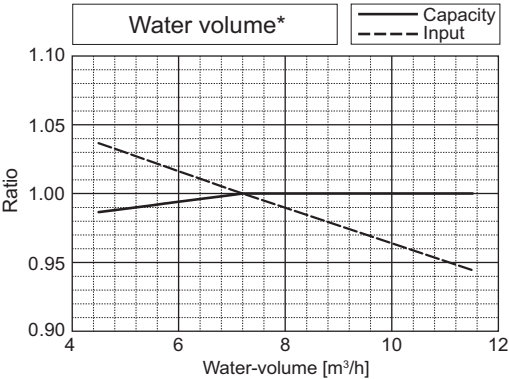
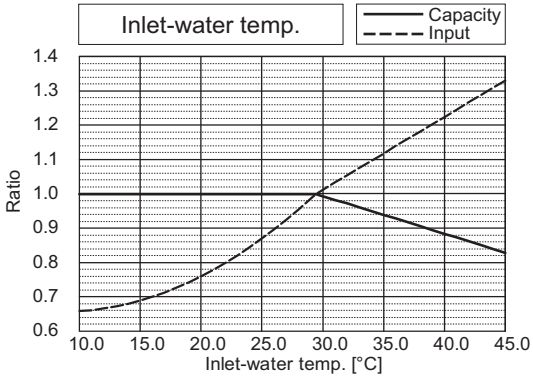


*The drawing indicates characteristic per unit.

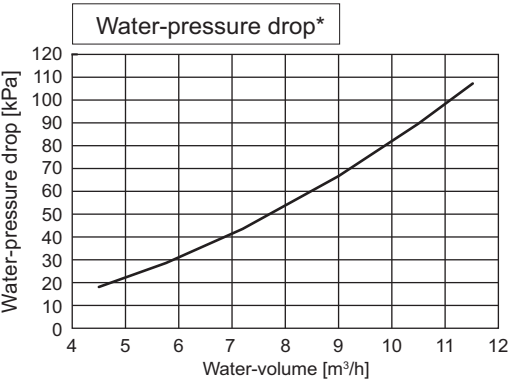
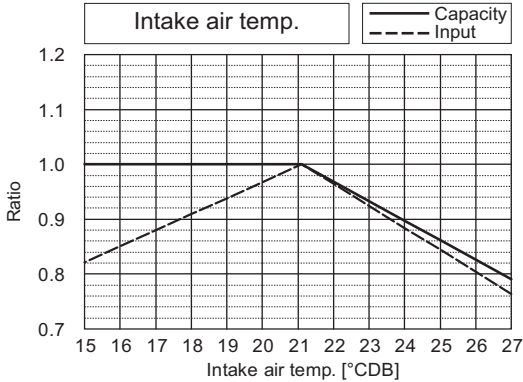
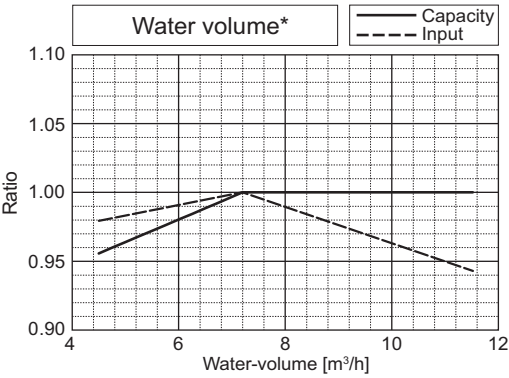
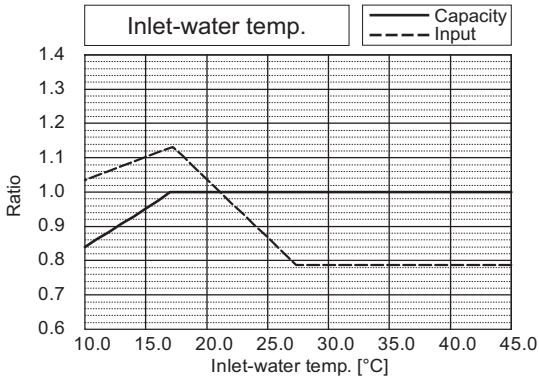


*The drawing indicates characteristic per unit.

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

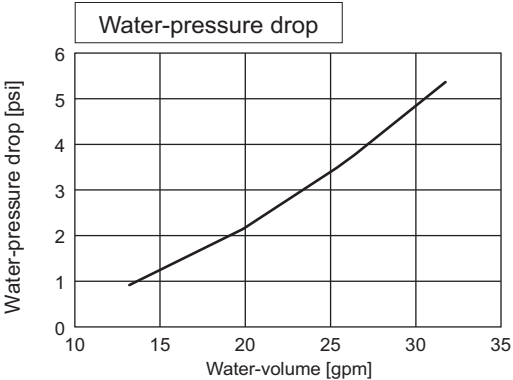
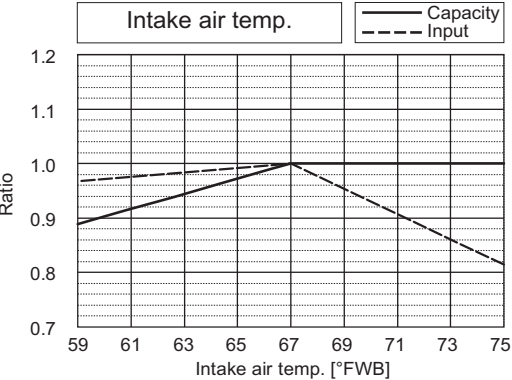
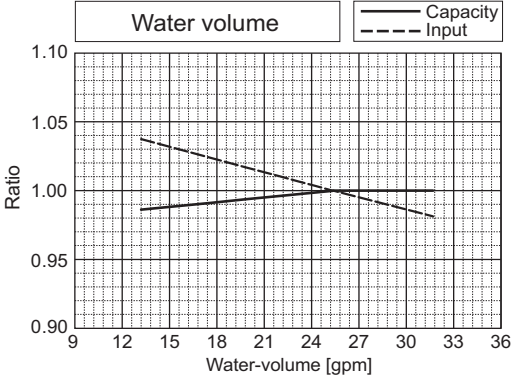
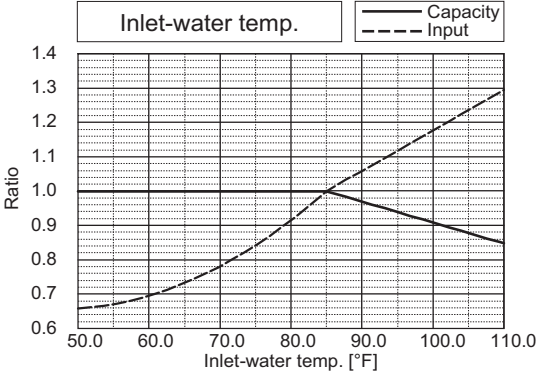


PQRY-			P336TSLMU/YSLMU		
Nominal Heating Capacity	kW	110.8	Rated Heating Capacity	kW	105.8
	BTU/h	378,000		BTU/h	361,000
Input	kW	20.77	Input	kW	(Non-Ducted) 19.16 (Ducted) 20.05

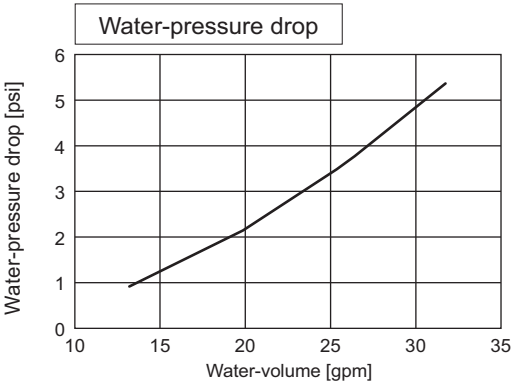
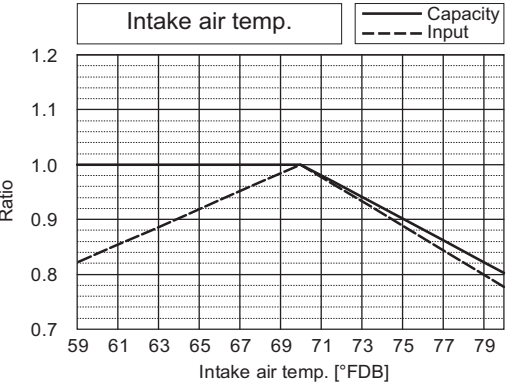
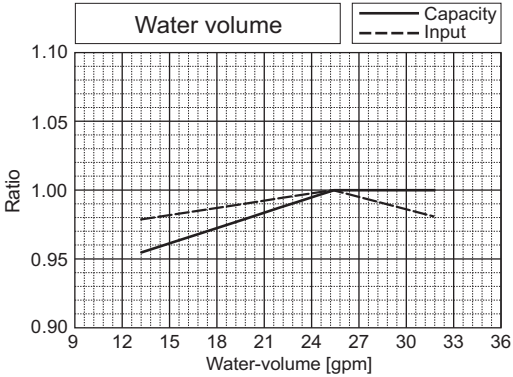
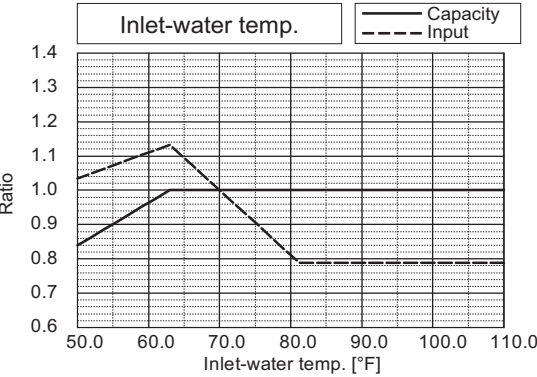


WR2

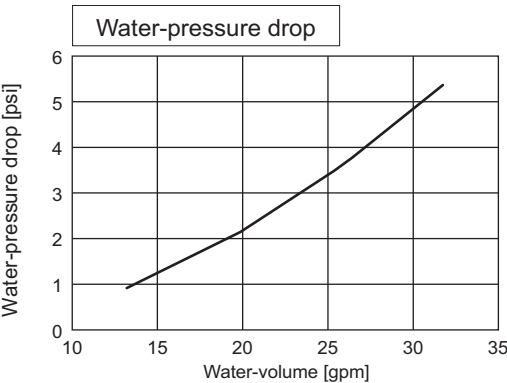
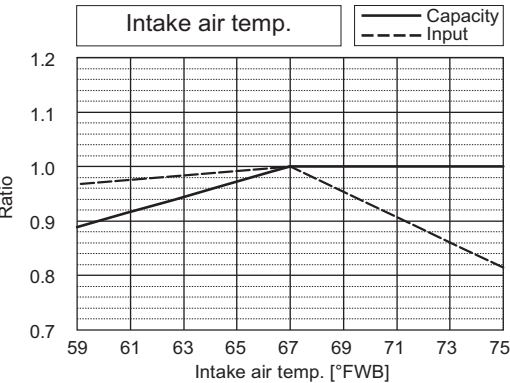
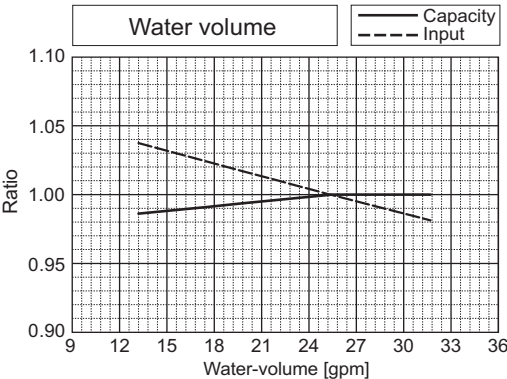
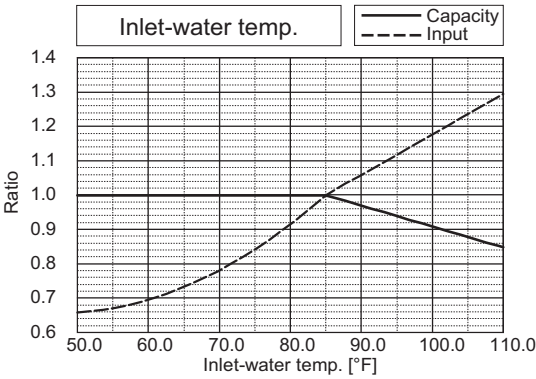
PQRY-			P72TLMU/YLMU		
Nominal Cooling Capacity	kW	21.1	Rated Cooling Capacity	kW	20.2
	BTU/h	72,000		BTU/h	69,000
Input	kW	3.23	Input	kW	(Non-Ducted) 2.96 (Ducted) 3.12



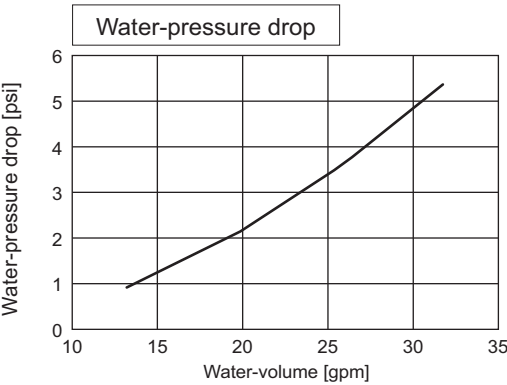
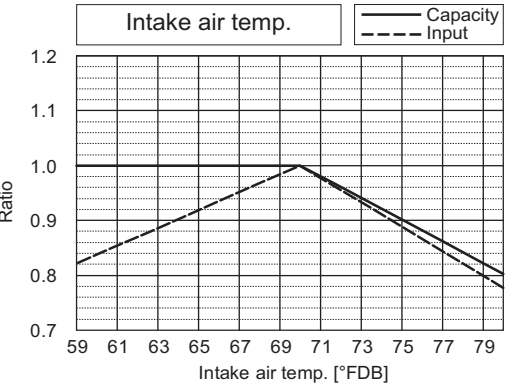
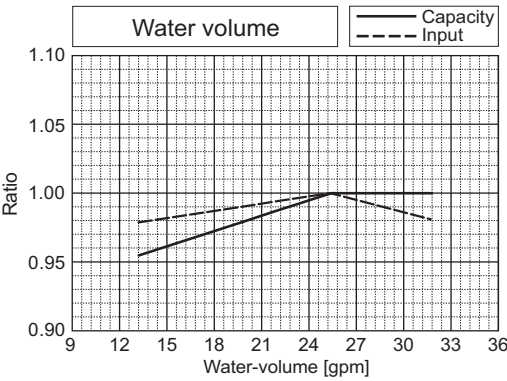
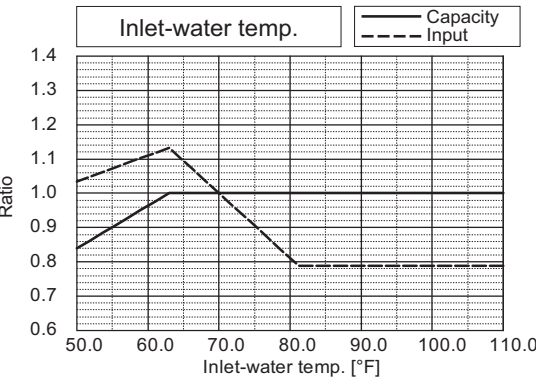
PQRY-			P72TLMU/YLMU		
Nominal Heating Capacity	kW	23.4	Rated Heating Capacity	kW	22.3
	BTU/h	80,000		BTU/h	76,000
Input	kW	3.63	Input	kW	(Non-Ducted) 3.34 (Ducted) 3.36



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

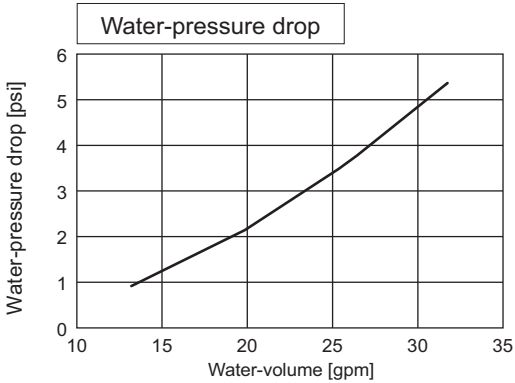
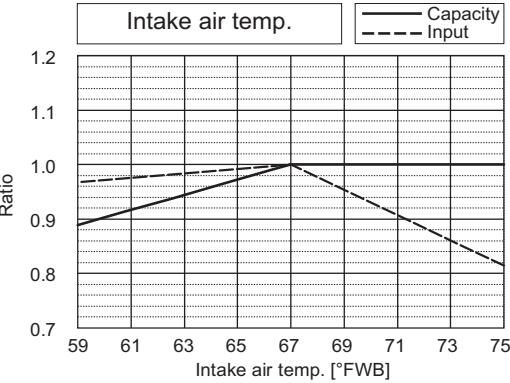
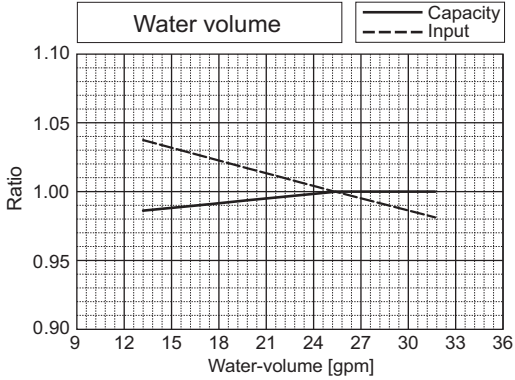
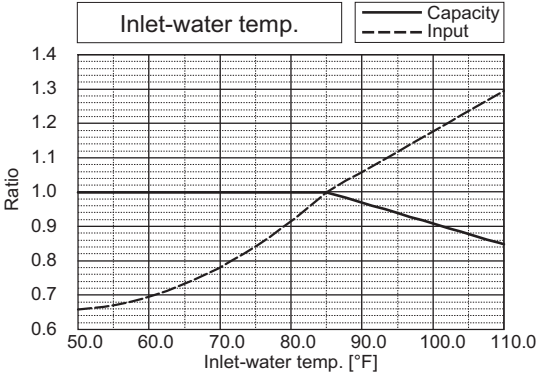


PQRY-			P96TLMU/YLMU		
Nominal Heating Capacity	kW	31.7	Rated Heating Capacity	kW	30.2
	BTU/h	108,000		BTU/h	103,000
Input	kW	5.05	Input	kW	(Non-Ducted) 4.65 (Ducted) 4.48

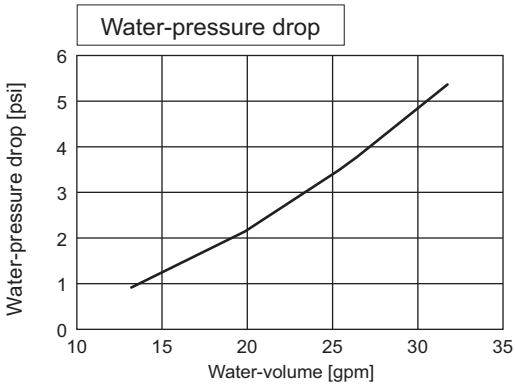
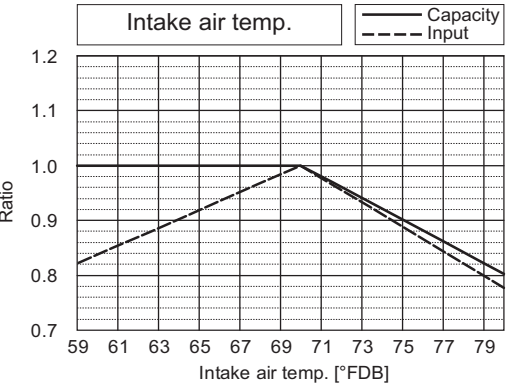
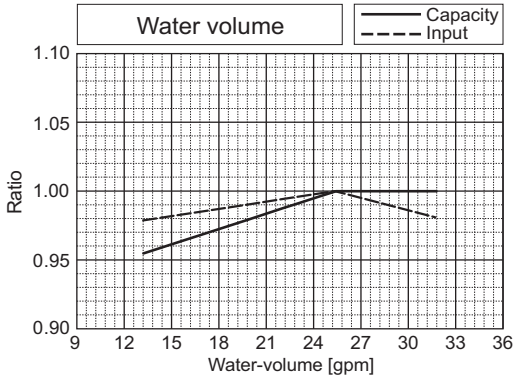
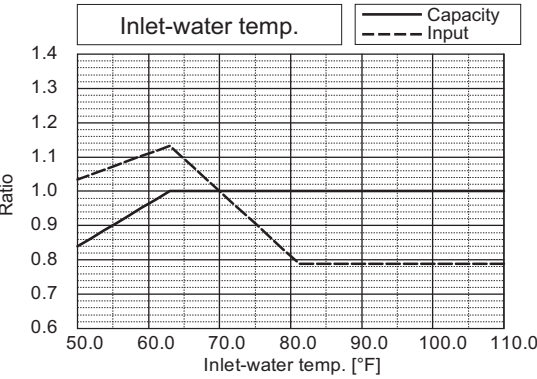


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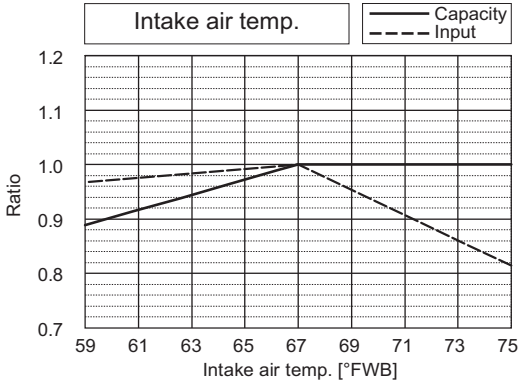
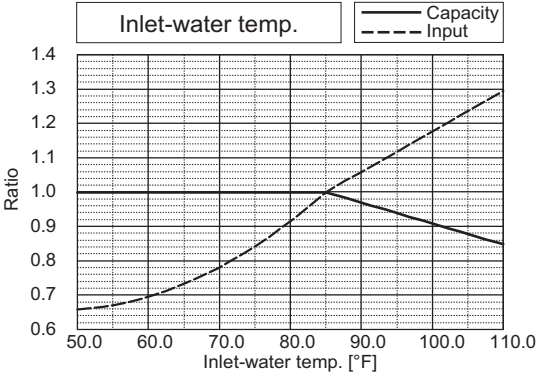
PQRY-		P120TLMU/YLMU			
Nominal Cooling Capacity	kW	35.2	Rated Cooling Capacity	kW	33.4
	BTU/h	120,000		BTU/h	114,000
Input	kW	7.24	Input	kW	(Non-Ducted) 6.66 (Ducted) 7.35



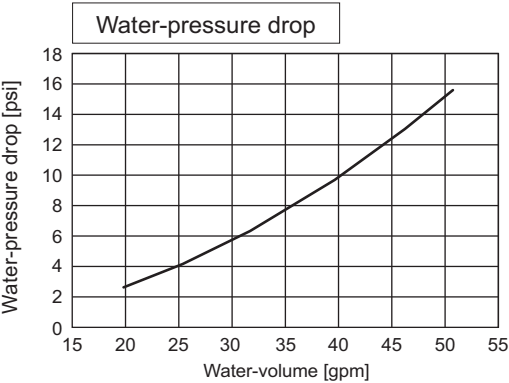
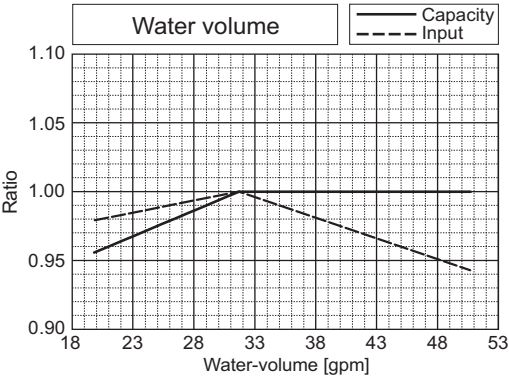
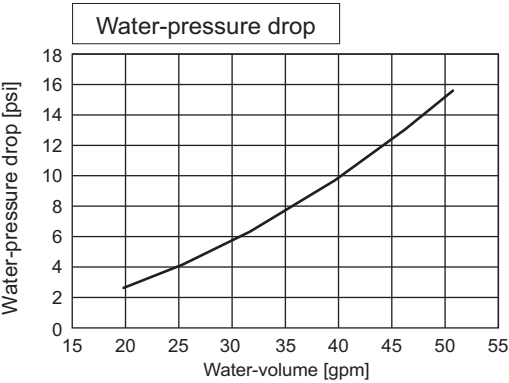
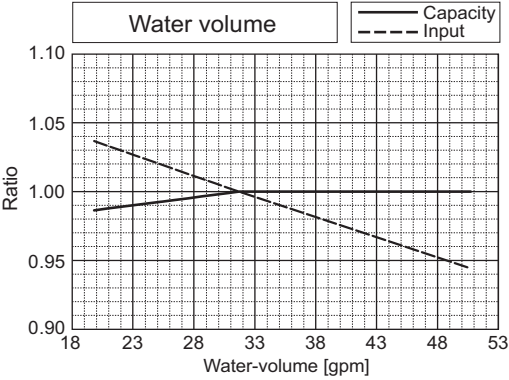
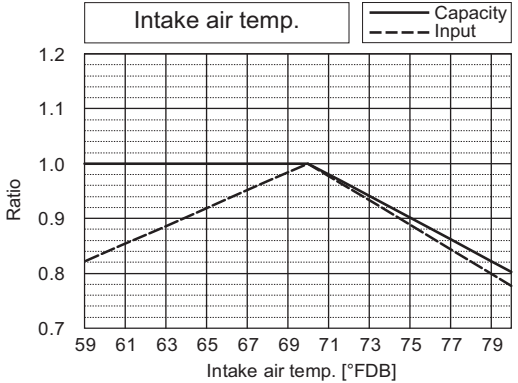
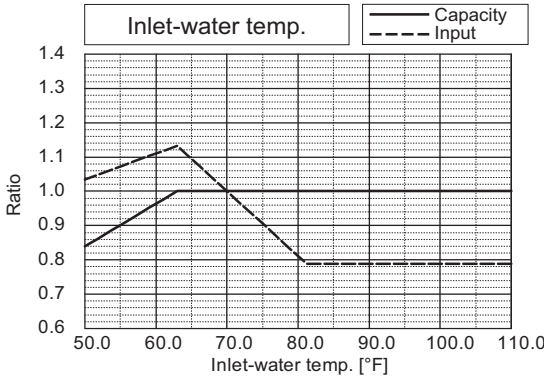
PQRY-		P120TLMU/YLMU			
Nominal Heating Capacity	kW	39.6	Rated Heating Capacity	kW	37.8
	BTU/h	135,000		BTU/h	129,000
Input	kW	6.83	Input	kW	(Non-Ducted) 6.29 (Ducted) 5.92



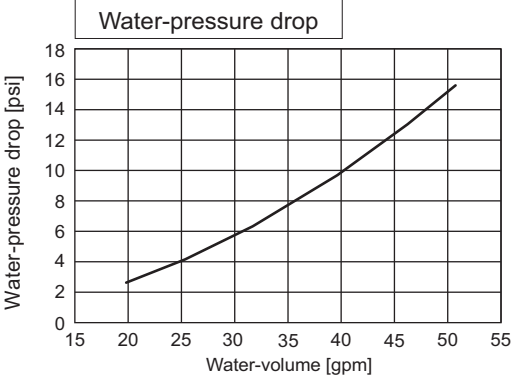
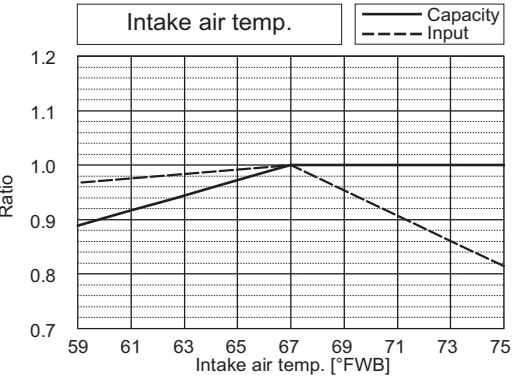
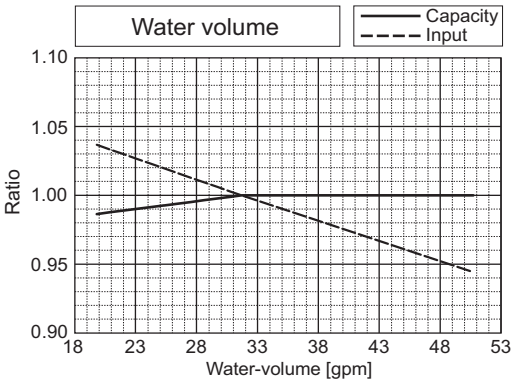
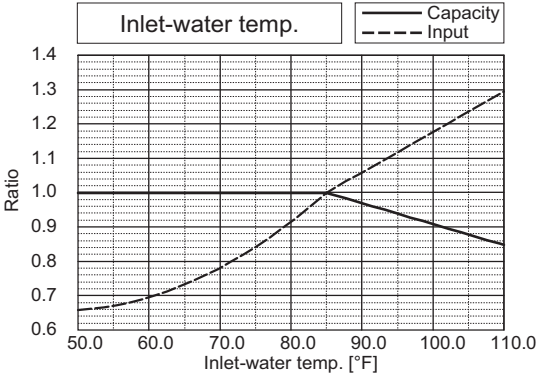
PQRY-			P144TLMU/YLMU		
Nominal Cooling Capacity	kW	42.2	Rated Cooling Capacity	kW	40.2
	BTU/h	144,000		BTU/h	137,000
Input	kW	8.78	Input	kW	(Non-Ducted) 8.07 (Ducted) 9.98



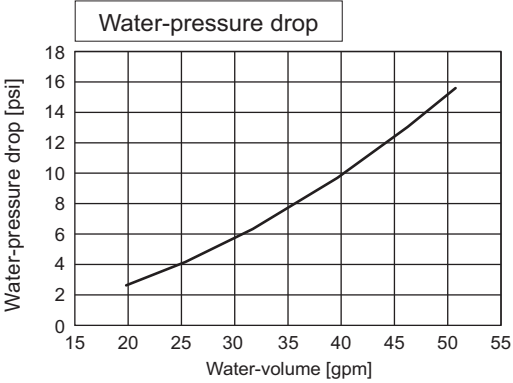
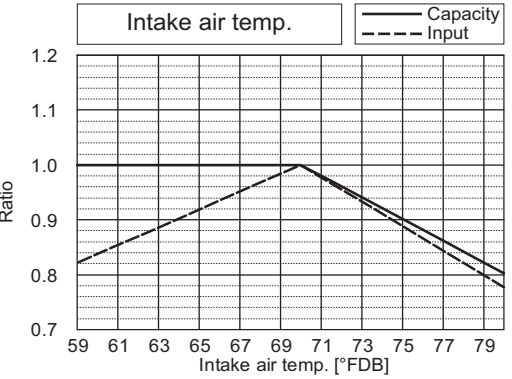
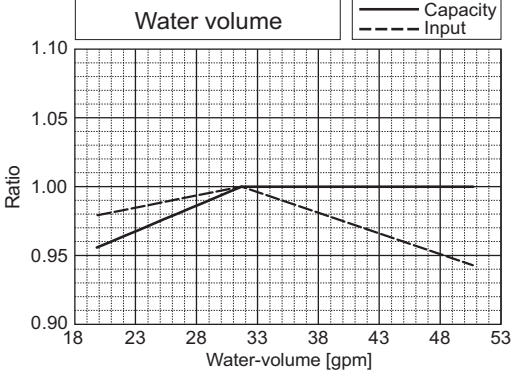
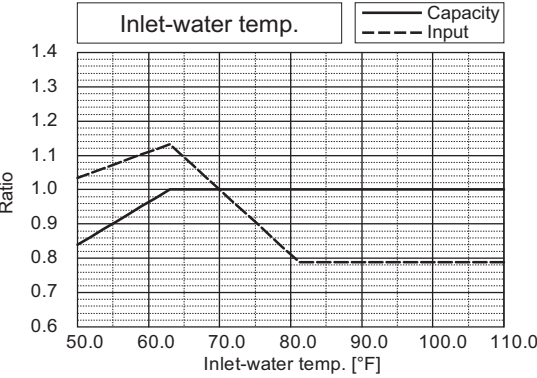
PQRY-			P144TLMU/YLMU		
Nominal Heating Capacity	kW	46.9	Rated Heating Capacity	kW	44.5
	BTU/h	160,000		BTU/h	152,000
Input	kW	8.11	Input	kW	(Non-Ducted) 7.47 (Ducted) 7.90



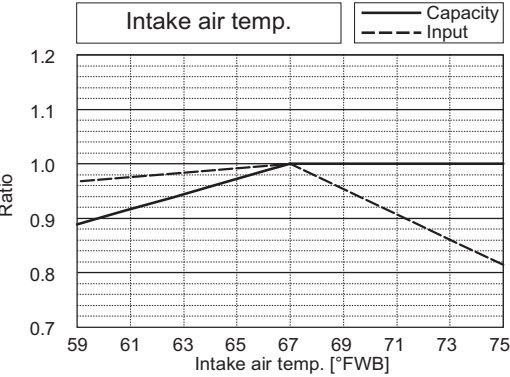
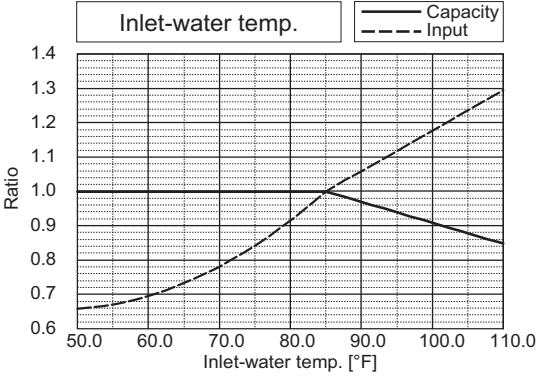
PQRY-			P168TLMU/YLMU		
Nominal Cooling Capacity	kW	49.2	Rated Cooling Capacity	kW	47.2
	BTU/h	168,000		BTU/h	161,000
Input	kW	12.05	Input	kW	(Non-Ducted) 11.10 (Ducted) 11.88



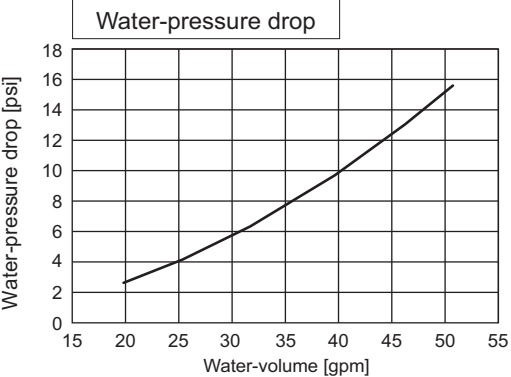
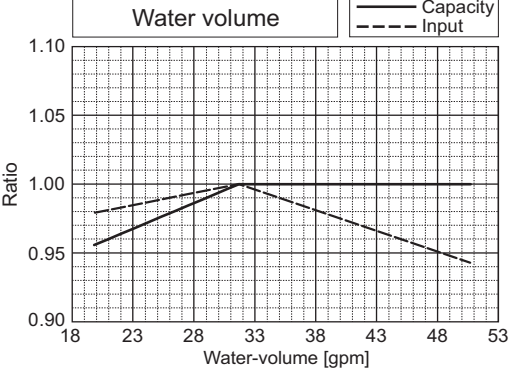
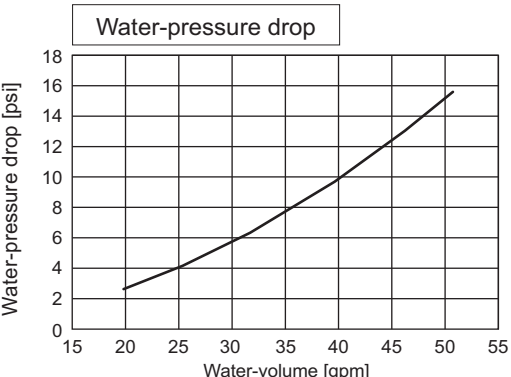
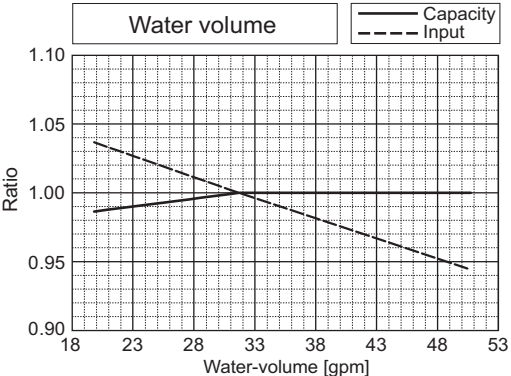
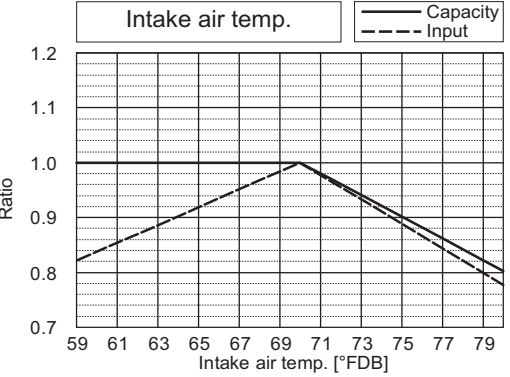
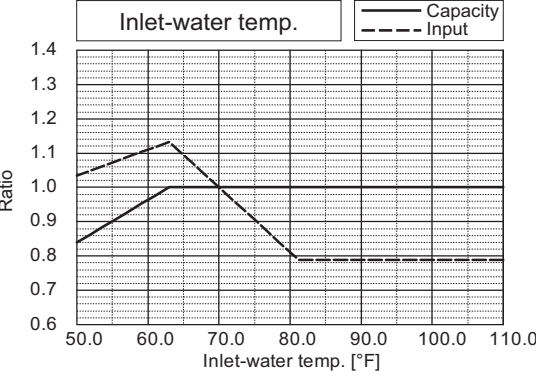
PQRY-			P168TLMU/YLMU		
Nominal Heating Capacity	kW	55.1	Rated Heating Capacity	kW	52.5
	BTU/h	188,000		BTU/h	179,000
Input	kW	9.86	Input	kW	(Non-Ducted) 9.09 (Ducted) 9.72



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

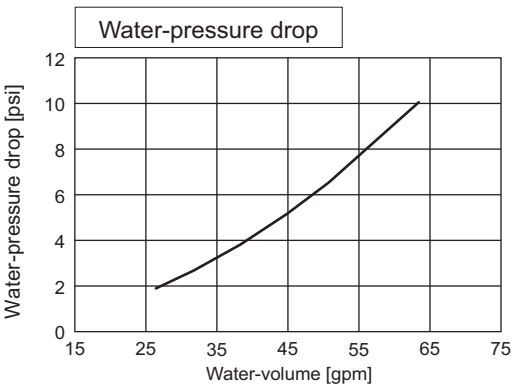
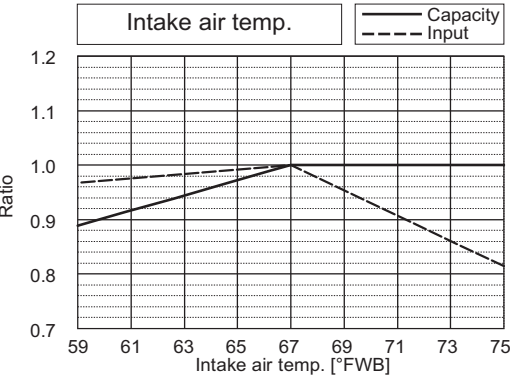
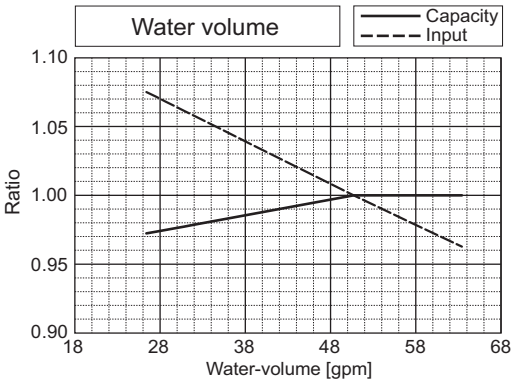
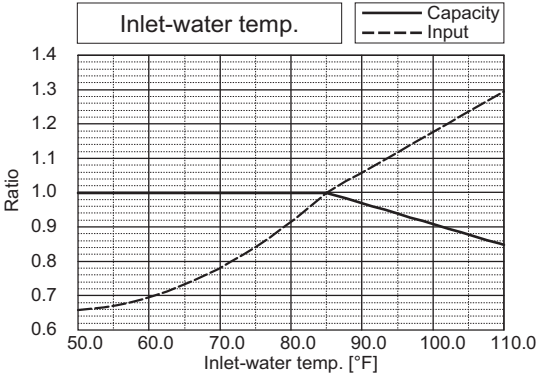


PQRY-			P192TLMU/YLMU		
Nominal Heating Capacity	kW	63.0	Rated Heating Capacity	kW	60.1
	BTU/h	215,000		BTU/h	205,000
Input	kW	11.90	Input	kW	(Non-Ducted) 10.97 (Ducted) 11.56

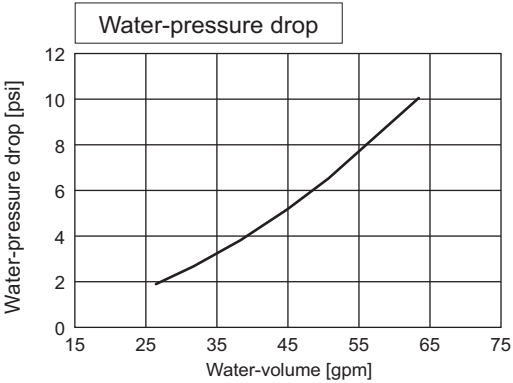
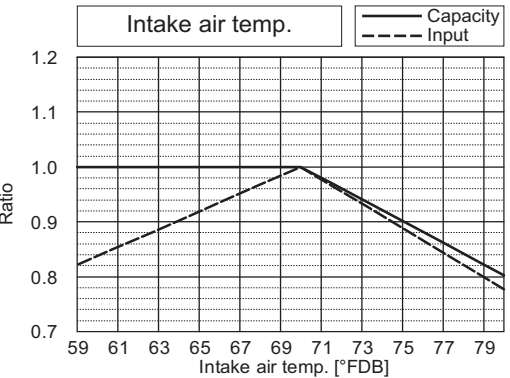
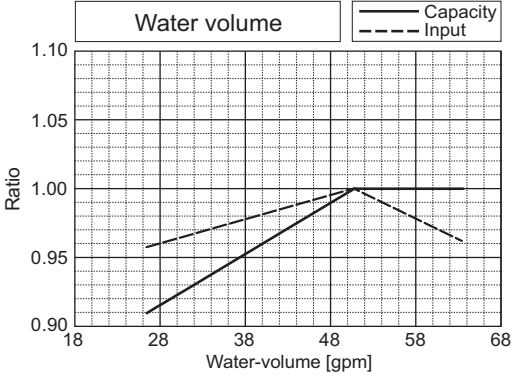
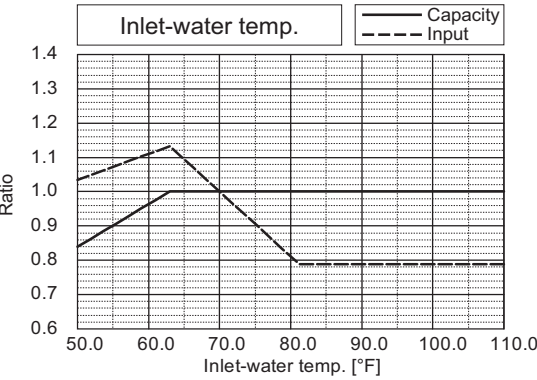


WR2

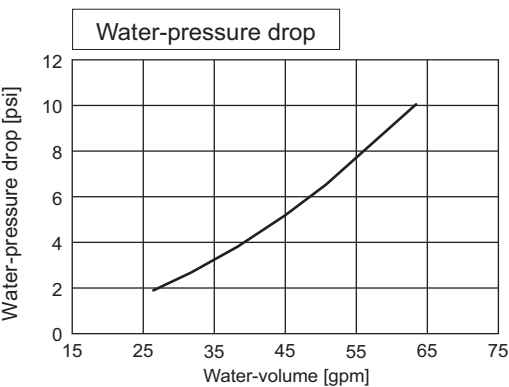
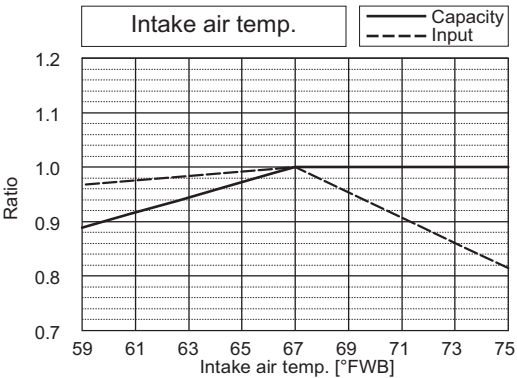
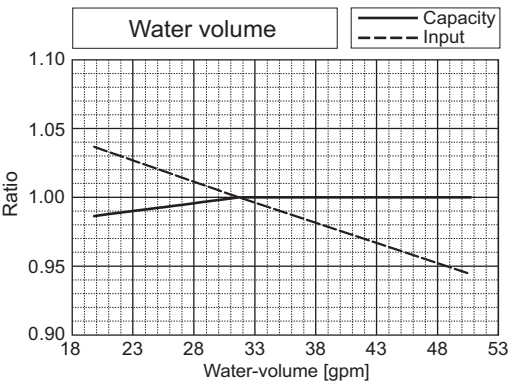
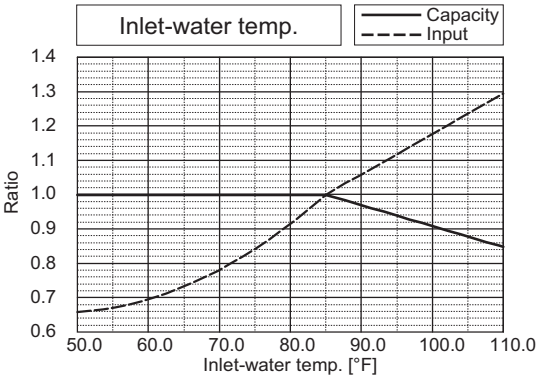
PQRY-			P216TLMU/YLMU		
Nominal Cooling Capacity	kW	63.3	Rated Cooling Capacity	kW	60.4
	BTU/h	216,000		BTU/h	206,000
Input	kW	19.23	Input	kW	(Non-Ducted) 17.72 (Ducted) 16.10



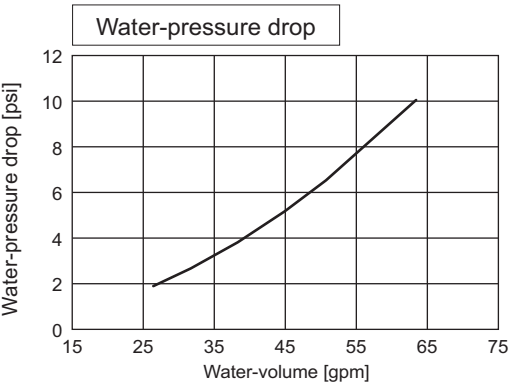
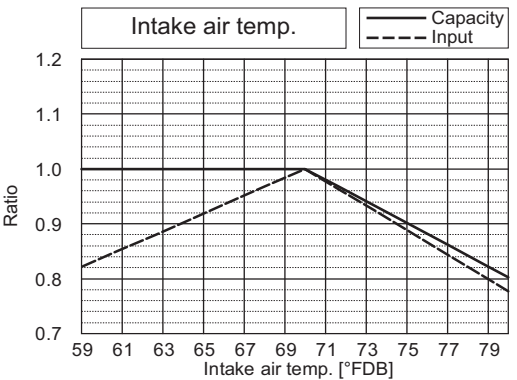
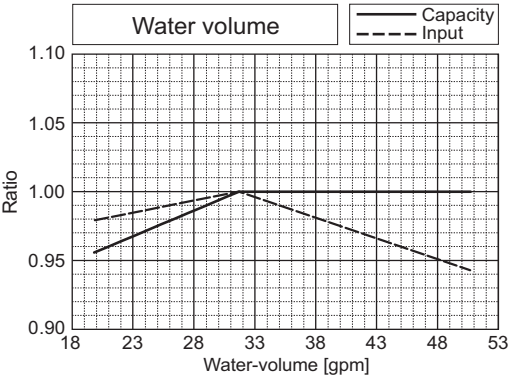
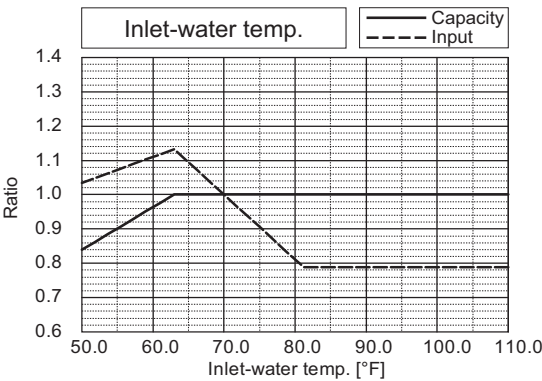
PQRY-			P216TLMU/YLMU		
Nominal Heating Capacity	kW	71.2	Rated Heating Capacity	kW	68.0
	BTU/h	243,000		BTU/h	232,000
Input	kW	13.04	Input	kW	(Non-Ducted) 12.01 (Ducted) 12.34



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



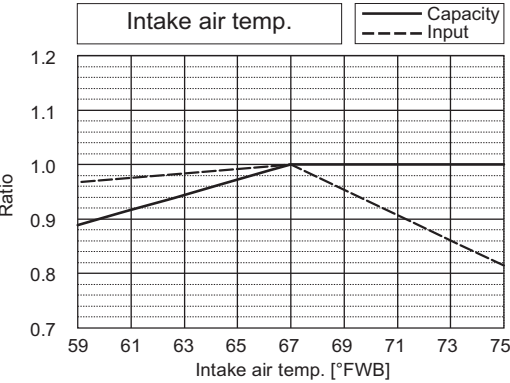
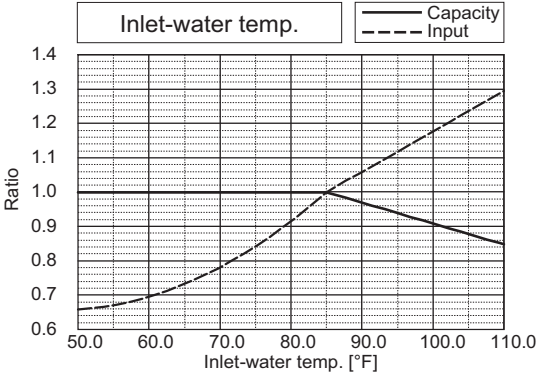
PQRY-			P240TLMU/YLMU		
Nominal Heating Capacity	kW	79.1	Rated Heating Capacity	kW	75.6
	BTU/h	270,000		BTU/h	258,000
Input	kW	15.12	Input	kW	(Non-Ducted) 13.93 (Ducted) 14.62



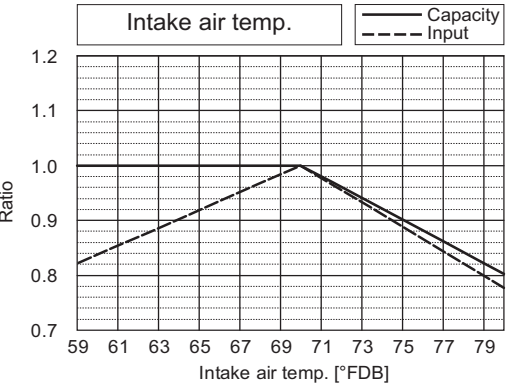
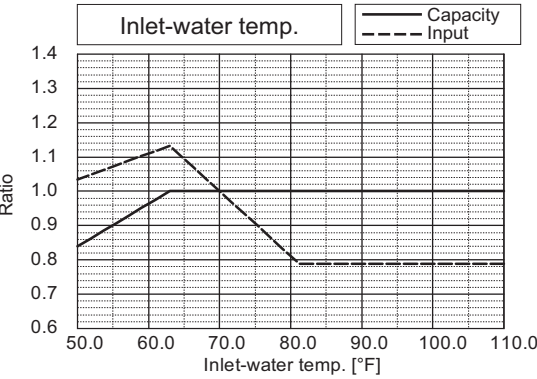
8. CAPACITY TABLES

U11 2nd

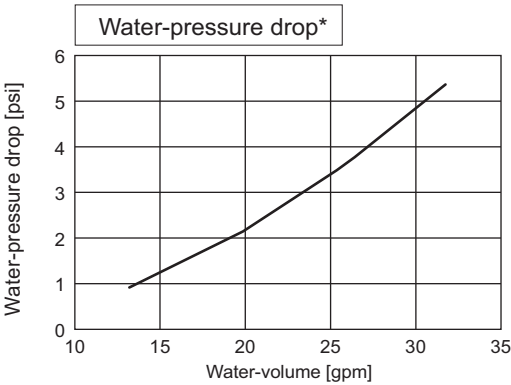
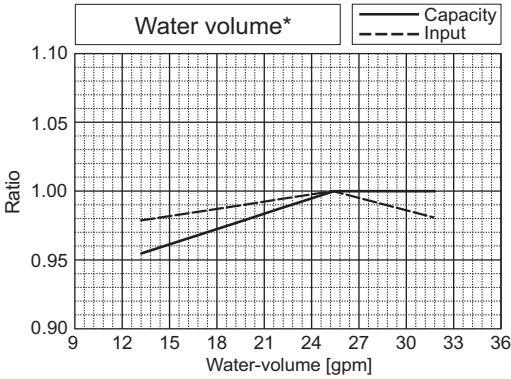
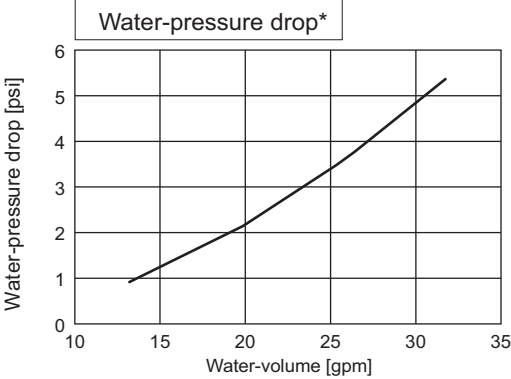
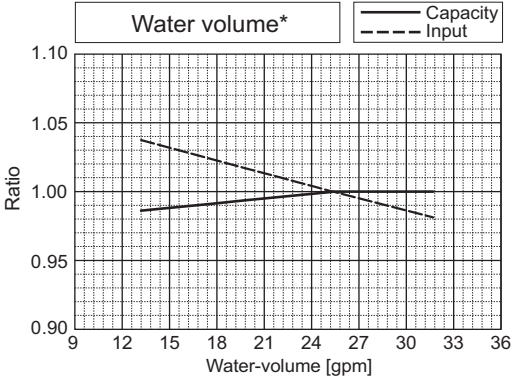
PQRY-			P144TSLMU/YSLMU		
Nominal Cooling Capacity	kW	42.2	Rated Cooling Capacity	kW	40.2
	BTU/h	144,000		BTU/h	137,000
Input	kW	7.11	Input	kW	(Non-Ducted) 6.53 (Ducted) 7.72



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



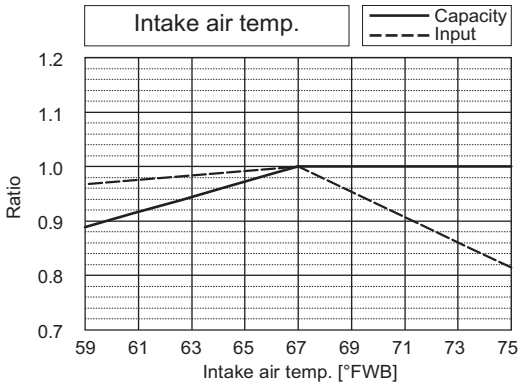
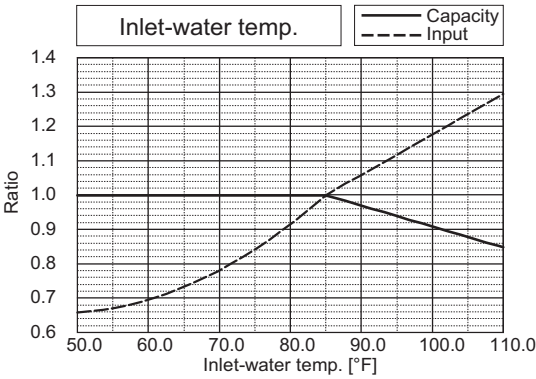
*The drawing indicates characteristic per unit.



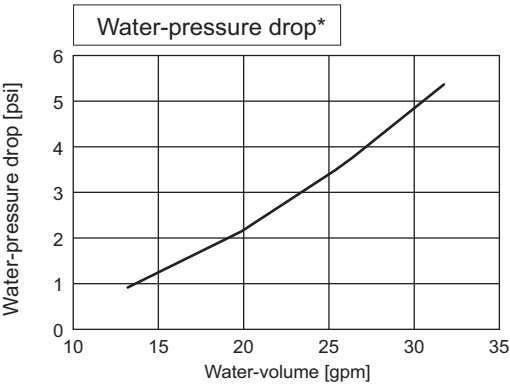
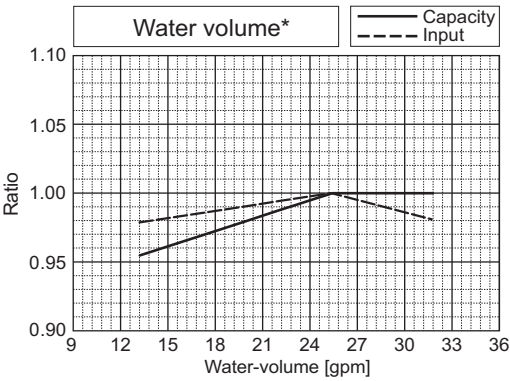
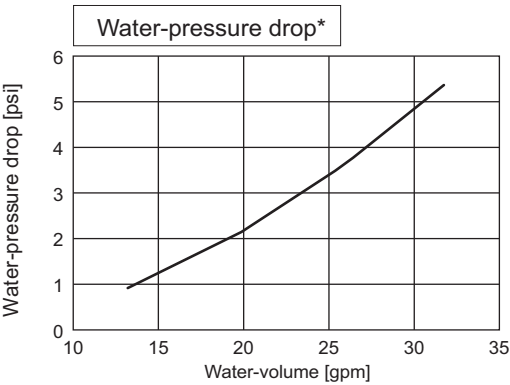
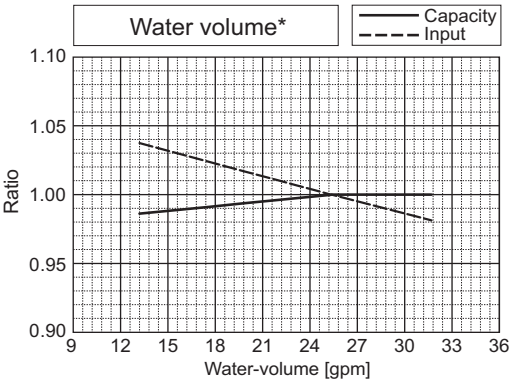
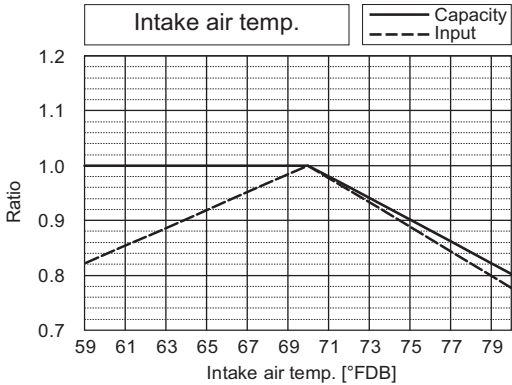
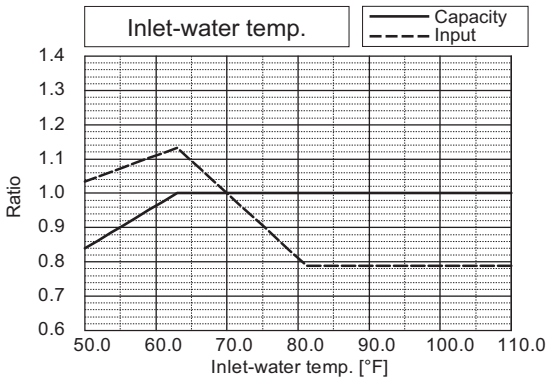
WR2

*The drawing indicates characteristic per unit.

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

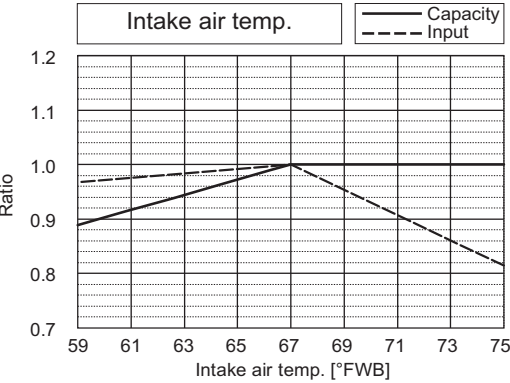
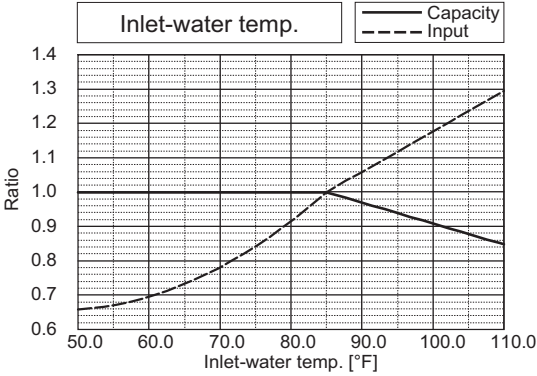


PQRY-		P168TSLMU/YSLMU			
Nominal Heating Capacity	kW	55.1	Rated Heating Capacity	kW	52.5
	BTU/h	188,000		BTU/h	179,000
Input	kW	9.34	Input	kW	(Non-Ducted) 8.60 (Ducted) 8.03

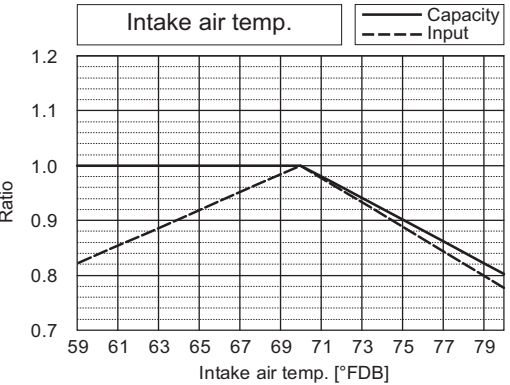
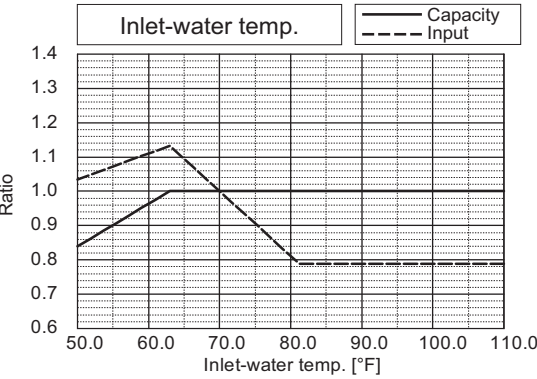


WR2

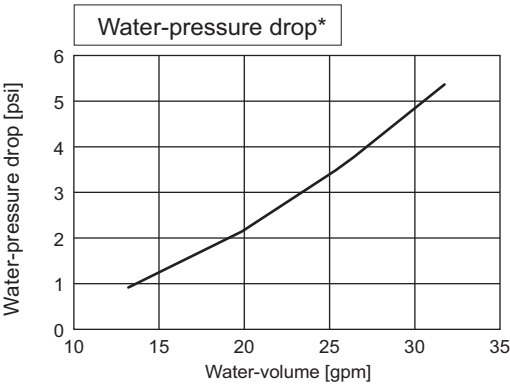
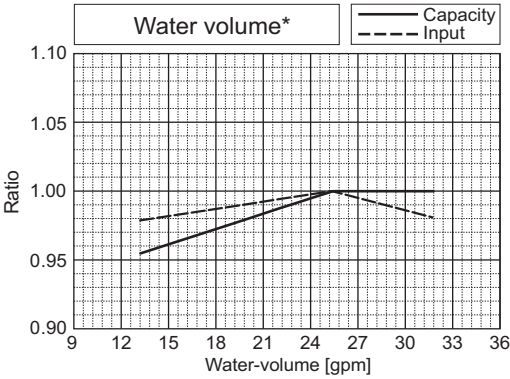
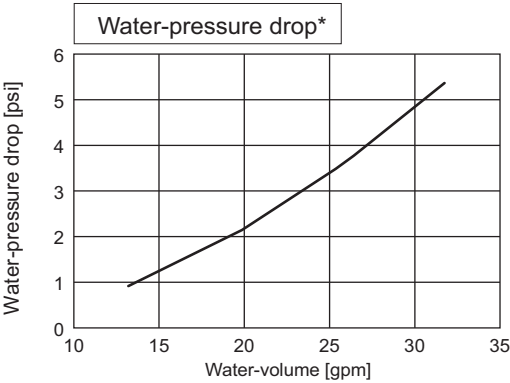
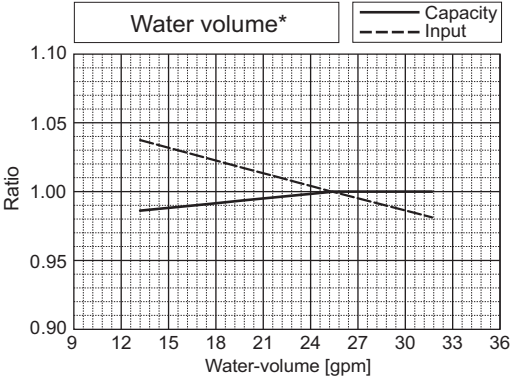
PQRY-			P192TSLMU/YSLMU		
Nominal Cooling Capacity	kW	56.3	Rated Cooling Capacity	kW	53.6
	BTU/h	192,000		BTU/h	183,000
Input	kW	11.30	Input	kW	(Non-Ducted) 10.40 (Ducted) 10.98



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

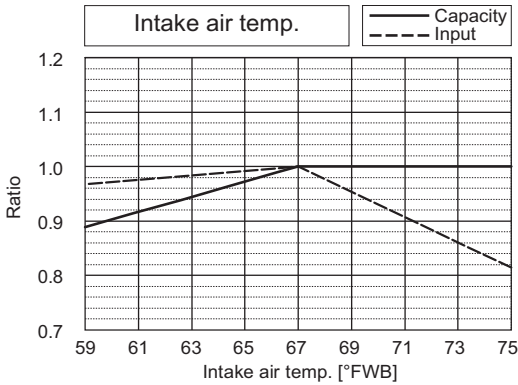
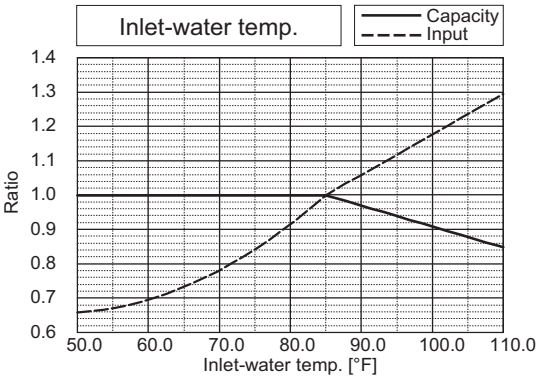


*The drawing indicates characteristic per unit.

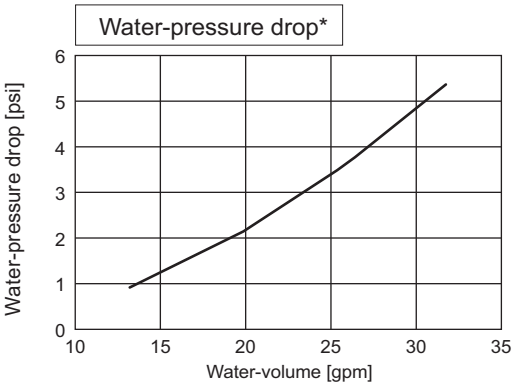
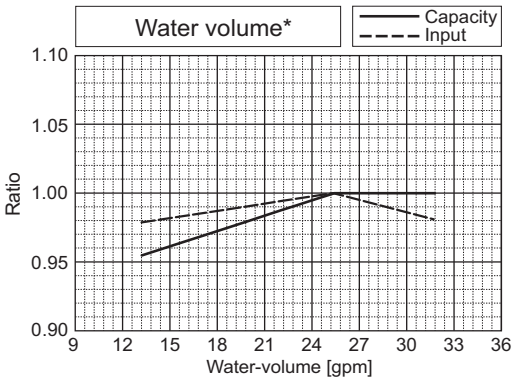
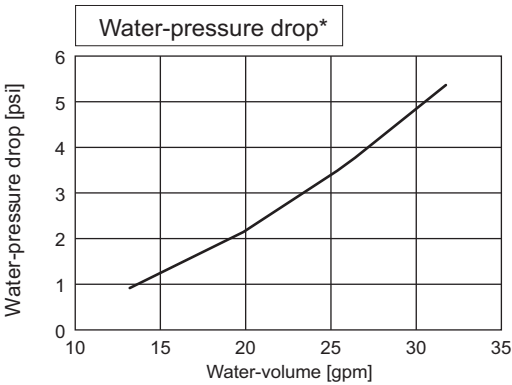
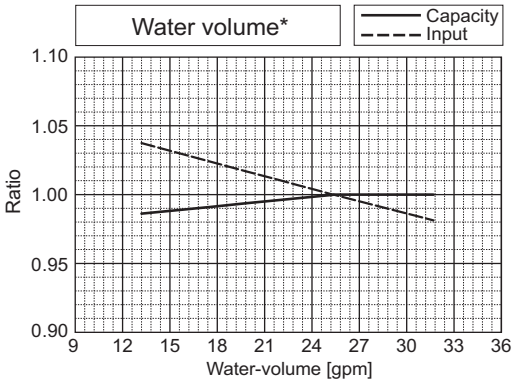
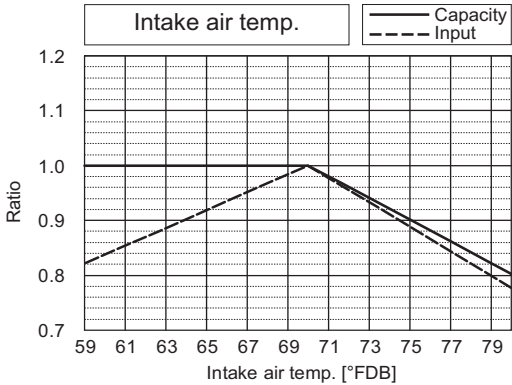
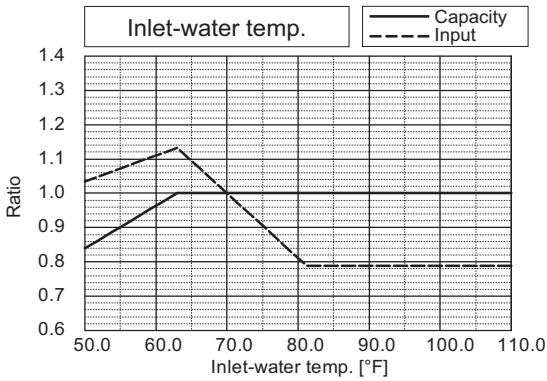


*The drawing indicates characteristic per unit.

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



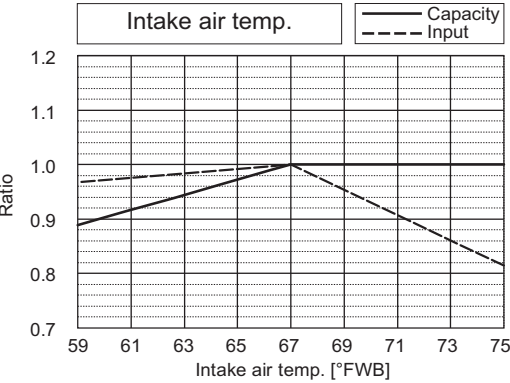
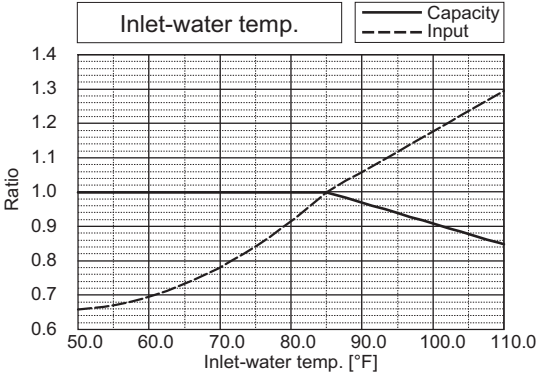
PQRY-			P216TSLMU/YSLMU		
Nominal Heating Capacity	kW	71.2	Rated Heating Capacity	kW	68.0
	BTU/h	243,000		BTU/h	232,000
Input	kW	12.88	Input	kW	(Non-Ducted) 11.88 (Ducted) 10.35



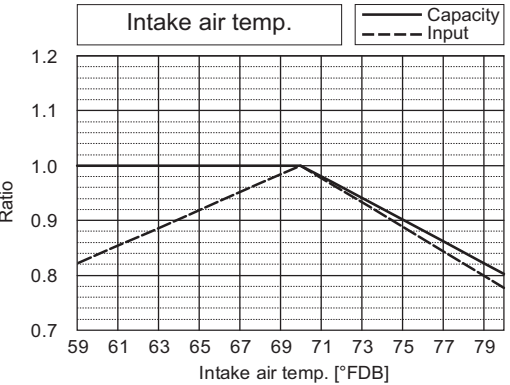
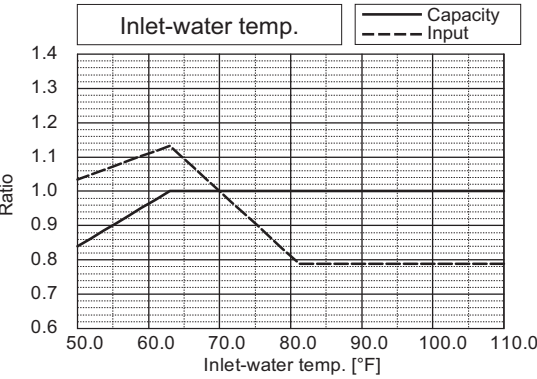
8. CAPACITY TABLES

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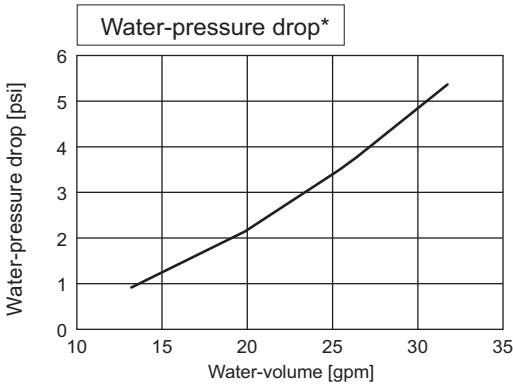
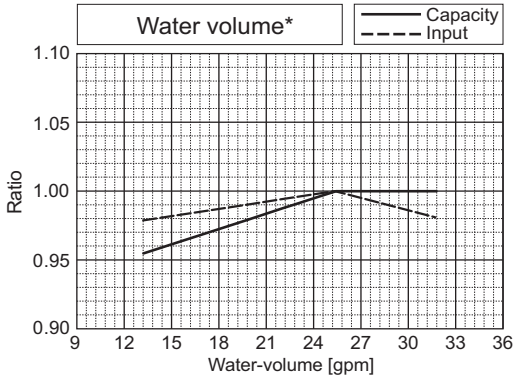
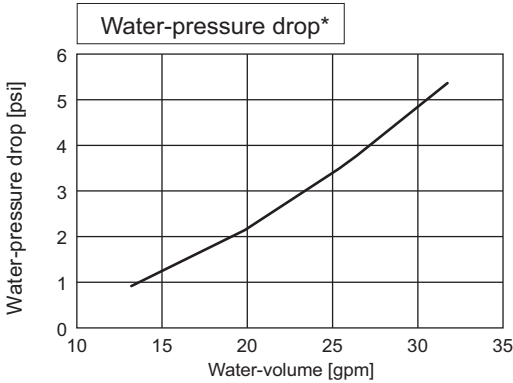
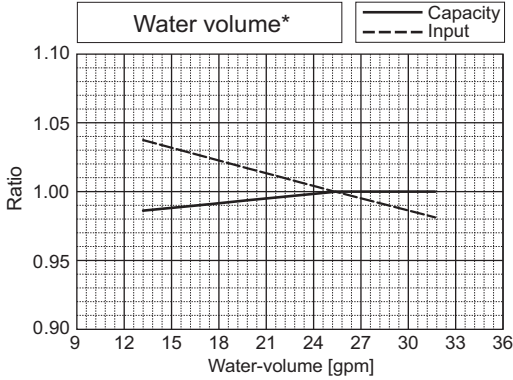
PQRY-		P240TSLMU/YSLMU			
Nominal Cooling Capacity	kW	70.3	Rated Cooling Capacity	kW	66.8
	BTU/h	240,000		BTU/h	228,000
Input	kW	16.89	Input	kW	(Non-Ducted) 15.57 (Ducted) 16.15



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



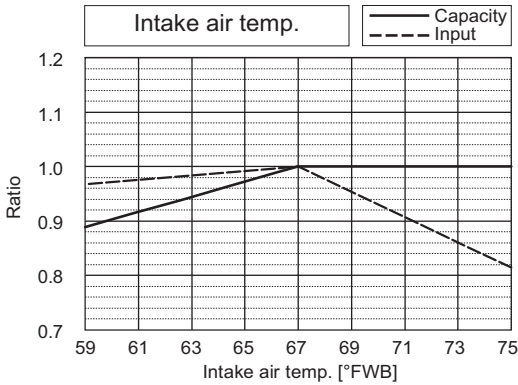
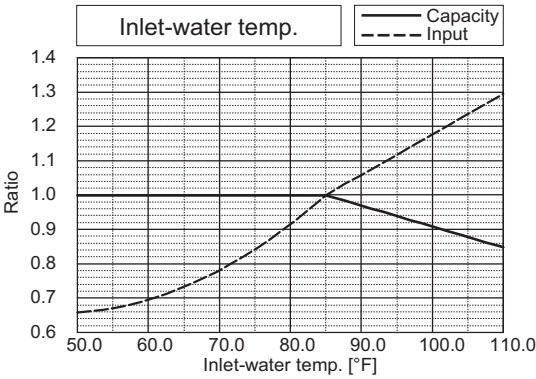
*The drawing indicates characteristic per unit.



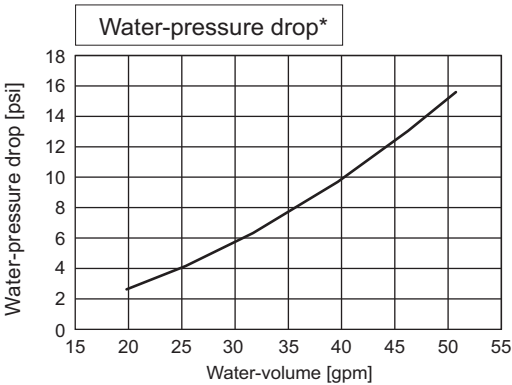
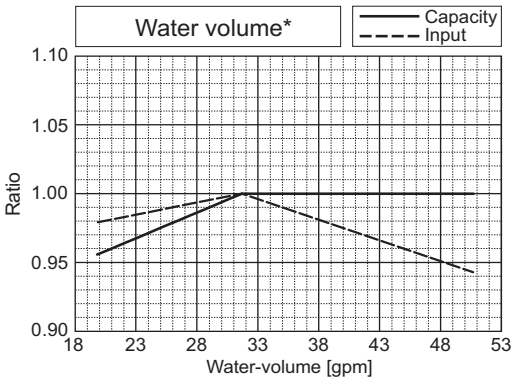
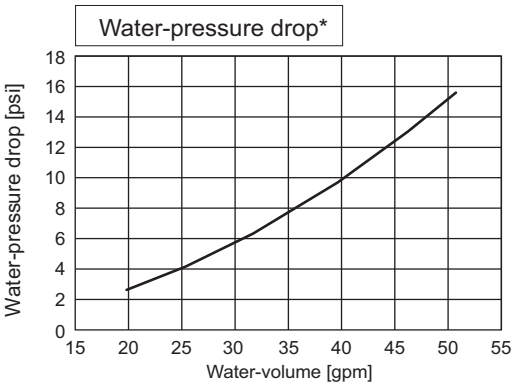
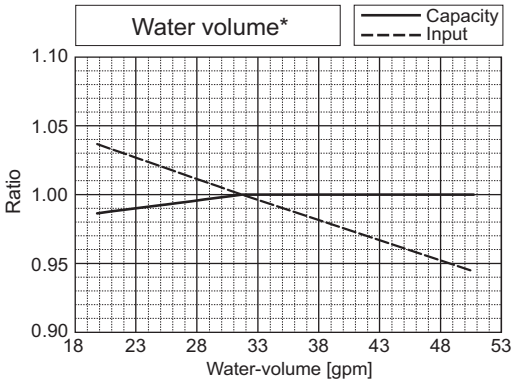
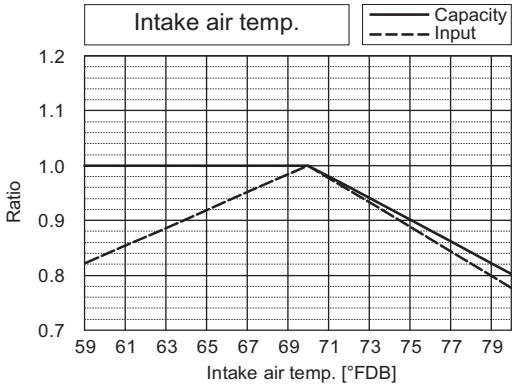
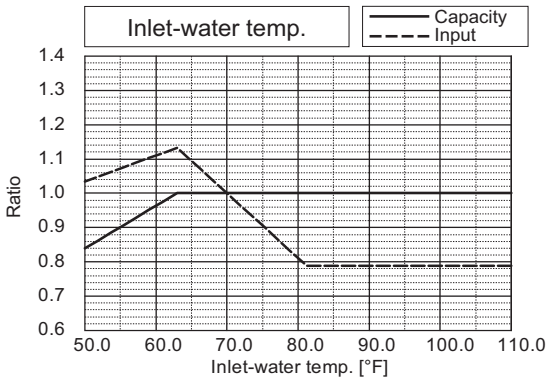
WR2

*The drawing indicates characteristic per unit.

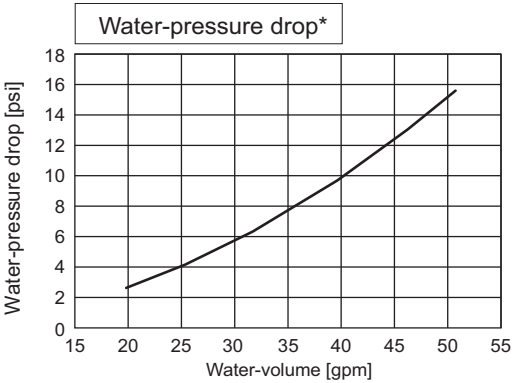
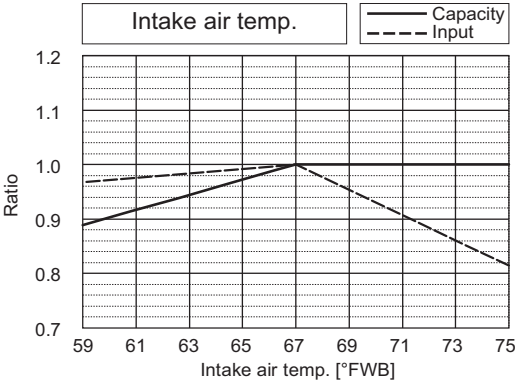
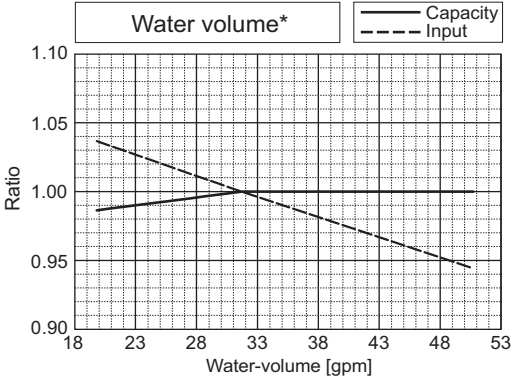
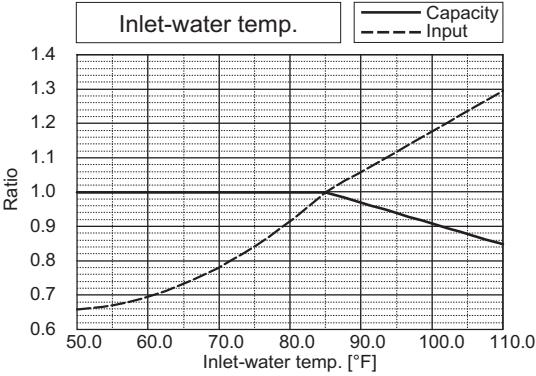
PQRY-			P288TSLMU/YSLMU		
Nominal Cooling Capacity	kW	84.4	Rated Cooling Capacity	kW	80.6
	BTU/h	288,000		BTU/h	275,000
Input	kW	20.42	Input	kW	(Non-Ducted) 18.82 (Ducted) 21.43



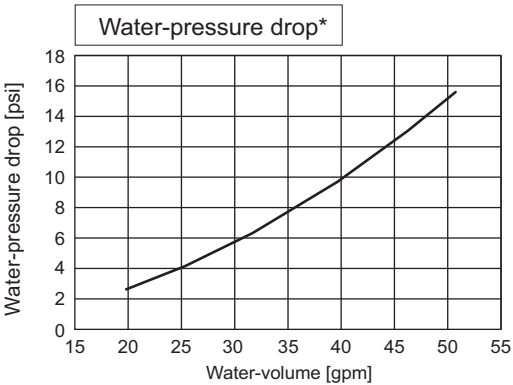
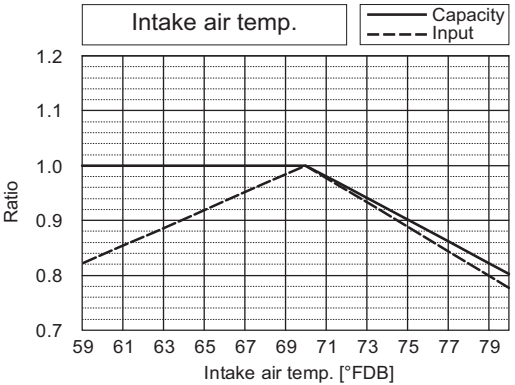
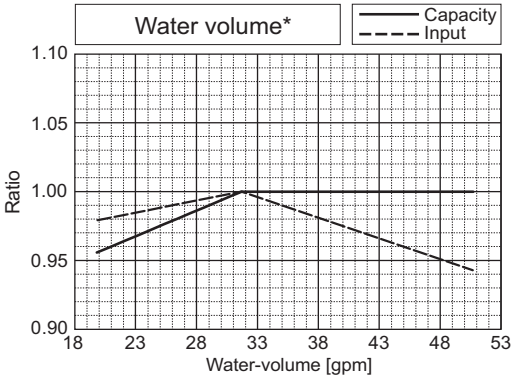
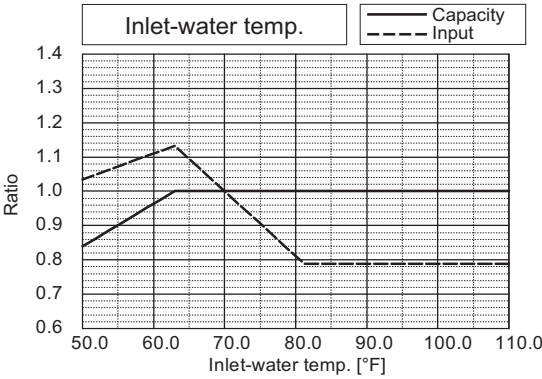
PQRY-			P288TSLMU/YSLMU		
Nominal Heating Capacity	kW	94.7	Rated Heating Capacity	kW	90.3
	BTU/h	323,000		BTU/h	308,000
Input	kW	17.50	Input	kW	(Non-Ducted) 16.13 (Ducted) 16.05



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

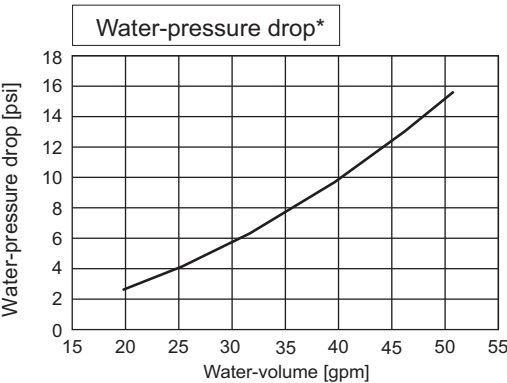
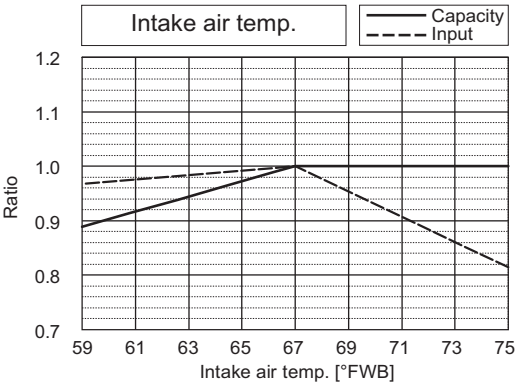
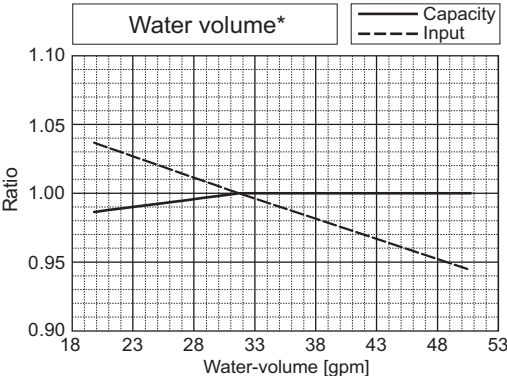
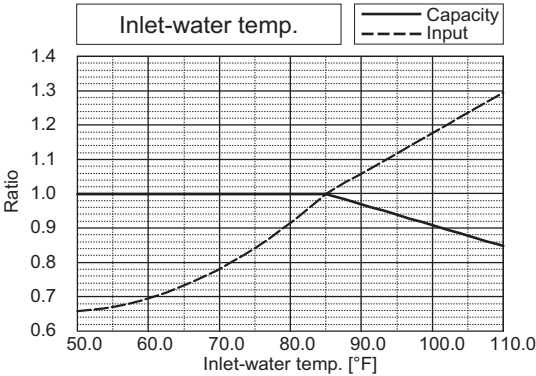


PQRY-			P312TSLMU/YSLMU		
Nominal Heating Capacity	kW	102.6	Rated Heating Capacity	kW	97.9
	BTU/h	350,000		BTU/h	334,000
Input	kW	19.11	Input	kW	(Non-Ducted) 17.62 (Ducted) 17.96

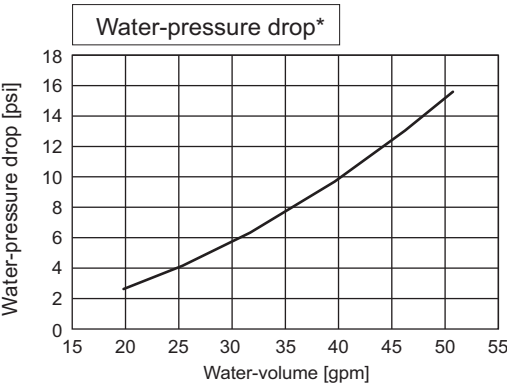
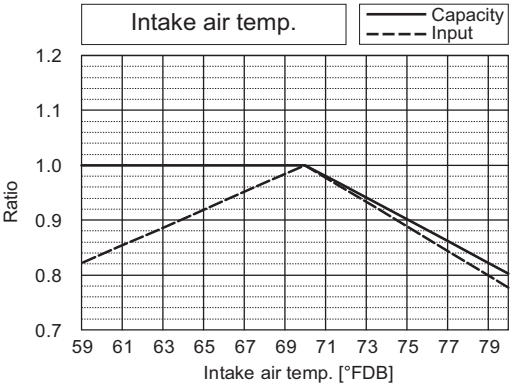
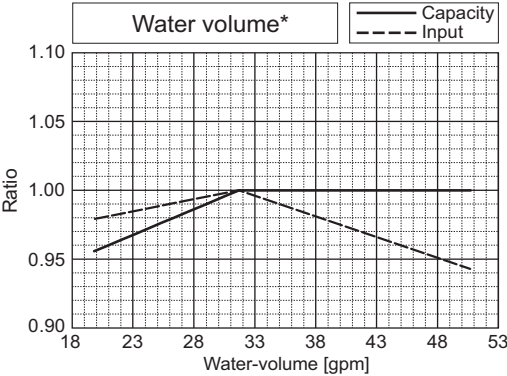
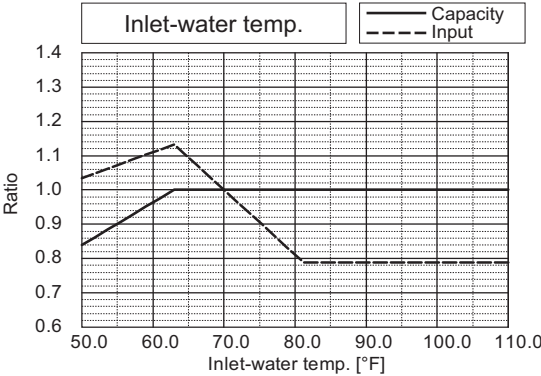


*The drawing indicates characteristic per unit.

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



WR2

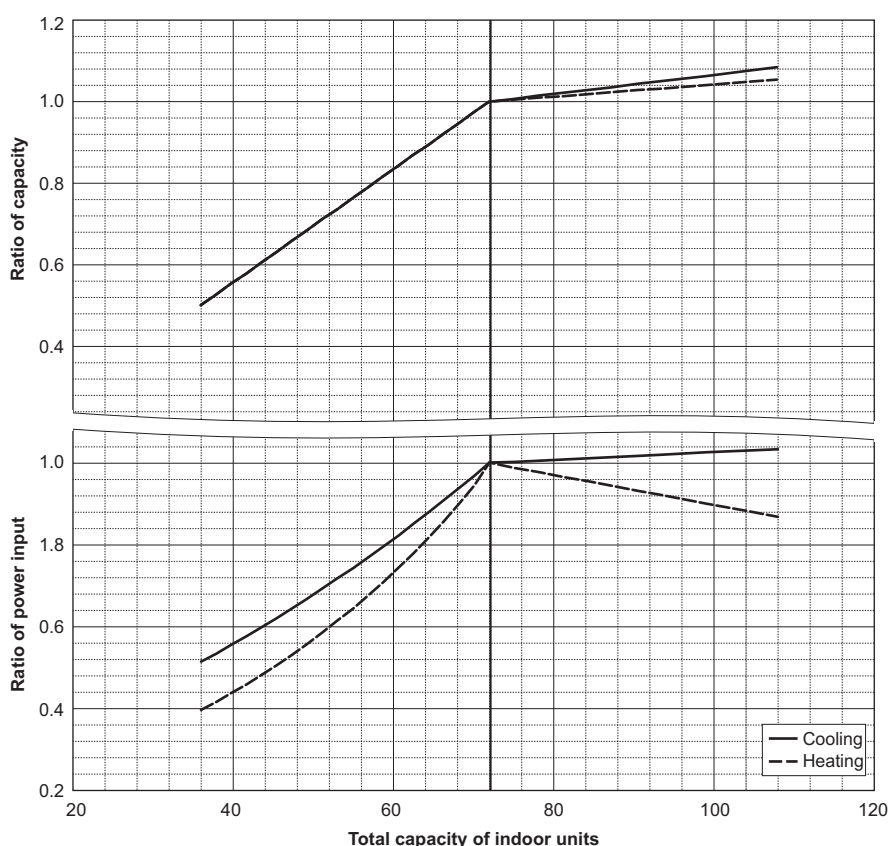
8-2. Correction by total indoor

CITY MULTI system have different capacities and inputs when many combinations of indoor units with different total capacities are connected. Using 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

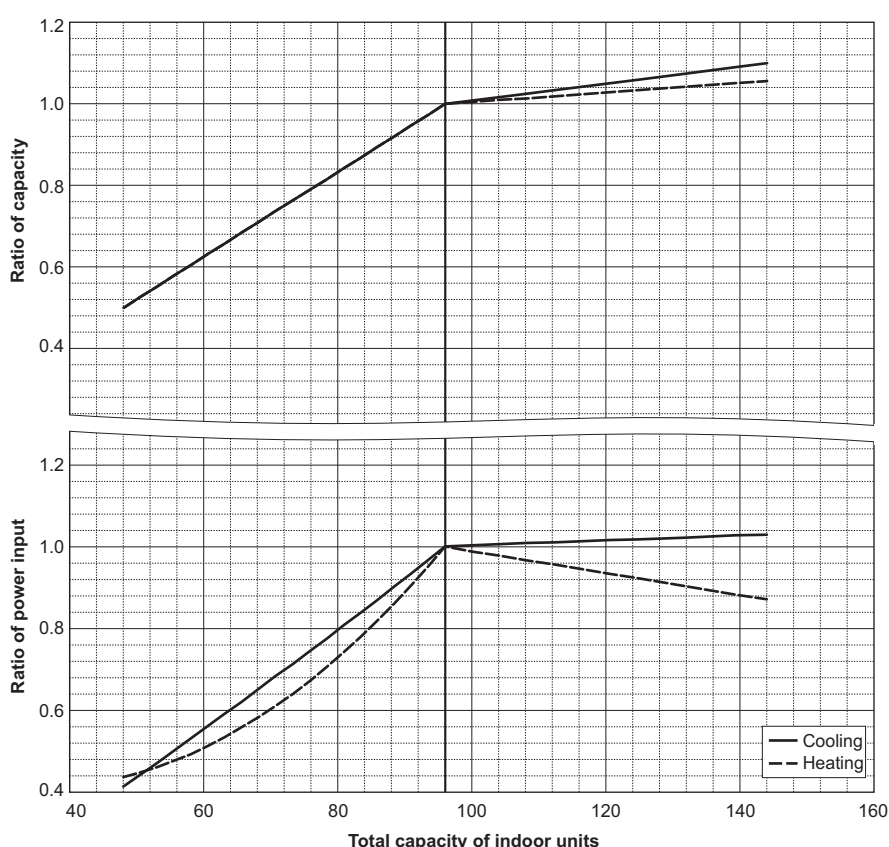
PQRY-P72TLMU/YLMU-A



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



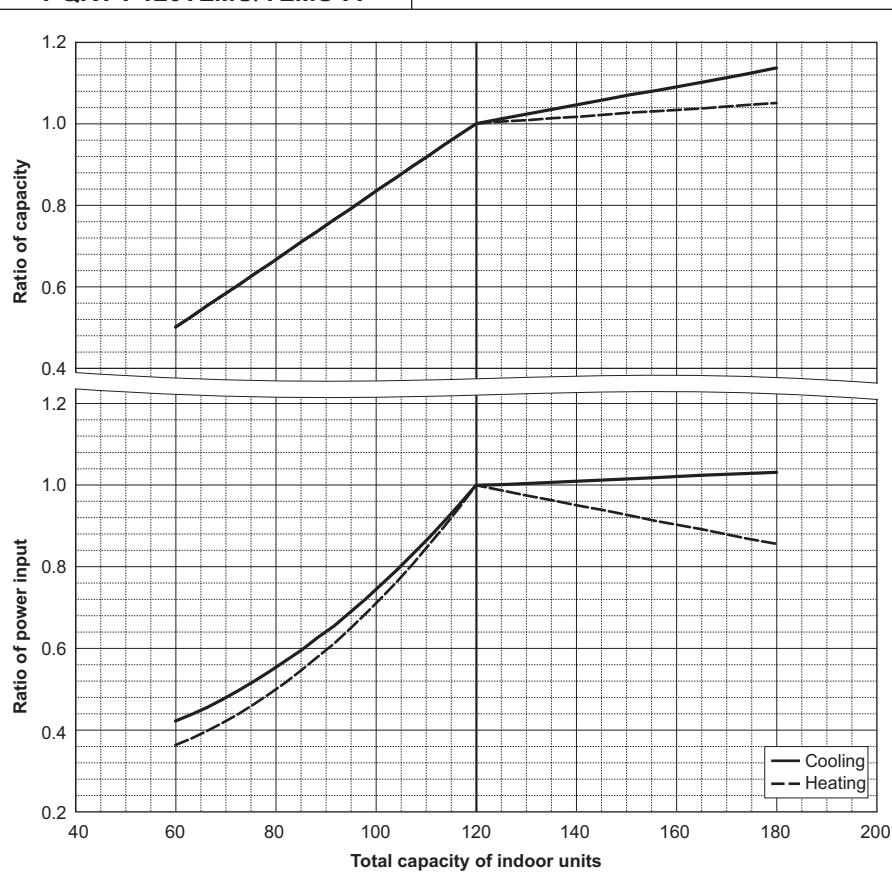
8. CAPACITY TABLES

U11 2nd

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

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

PQRY-P120TLMU/YLMU-A



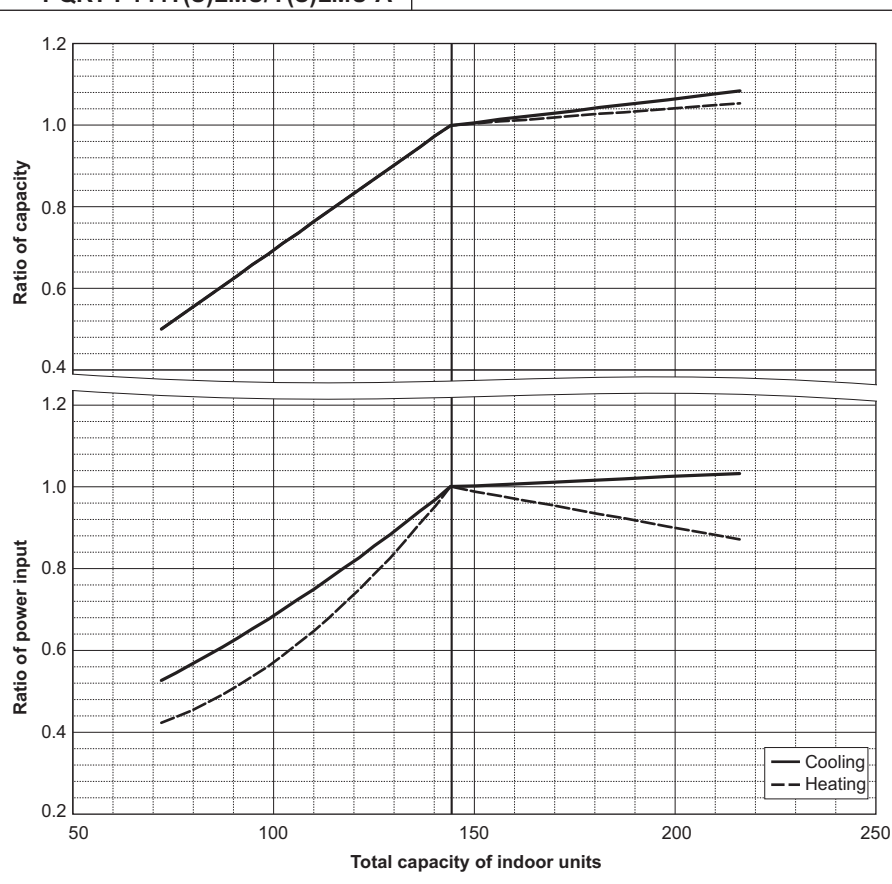
PQRY-		P144TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	144,000	
	kW	42.2	
	Input	8.78	
Rated cooling capacity	BTU/h	137,000	
	kW	40.2	
	Input	8.07	9.98

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

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

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

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



WR2

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

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

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

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

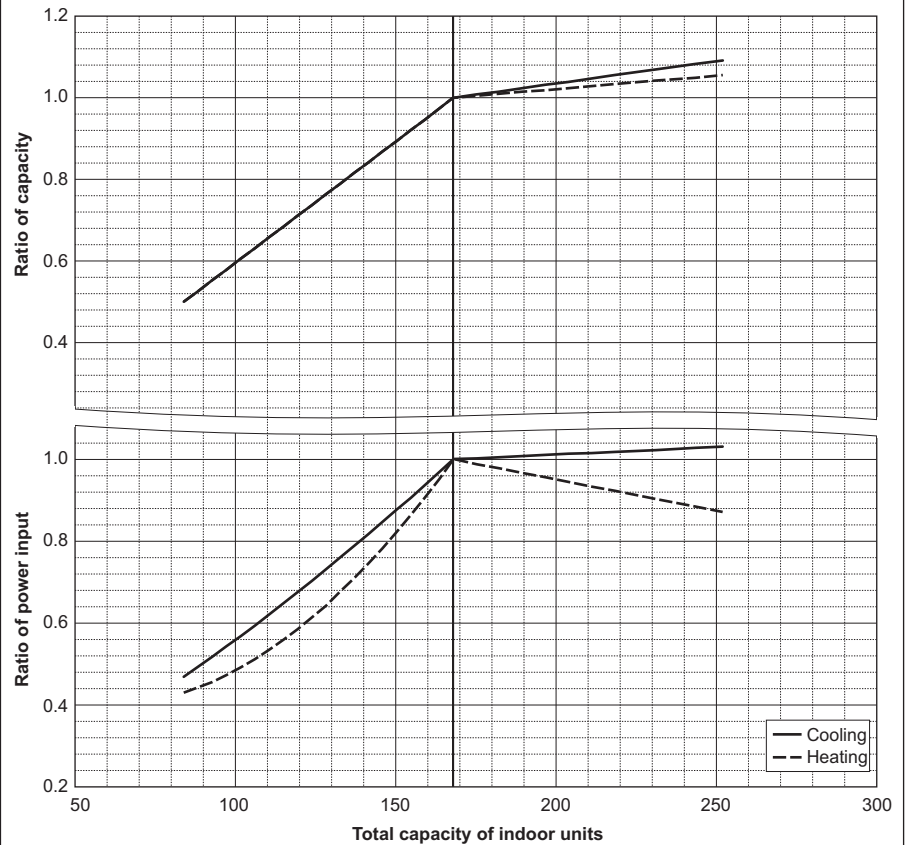
PQRY-		P192TLMU/YLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	192,000	
	kW	56.3	
	Input	15.05	
Rated cooling capacity	BTU/h	183,000	
	kW	53.6	
	Input	13.87	14.19

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

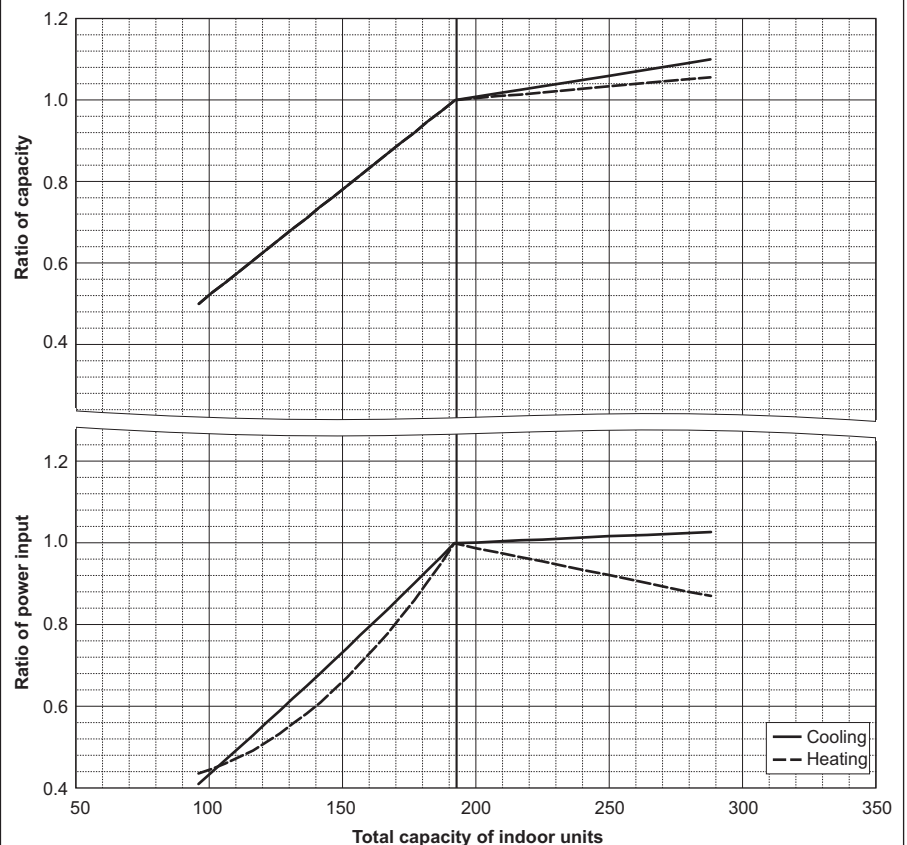
PQRY-		P192TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal cooling capacity	BTU/h	192,000	
	kW	56.3	
	Input	11.30	
Rated cooling capacity	BTU/h	183,000	
	kW	53.6	
	Input	10.40	10.98

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

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



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



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

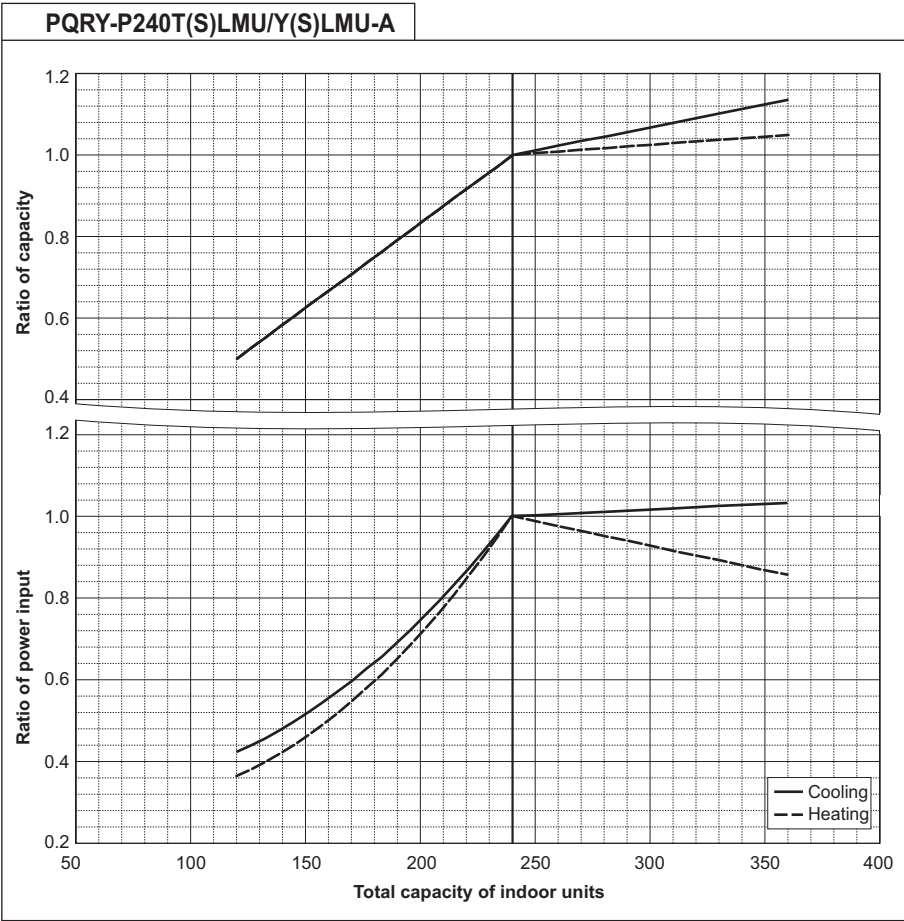
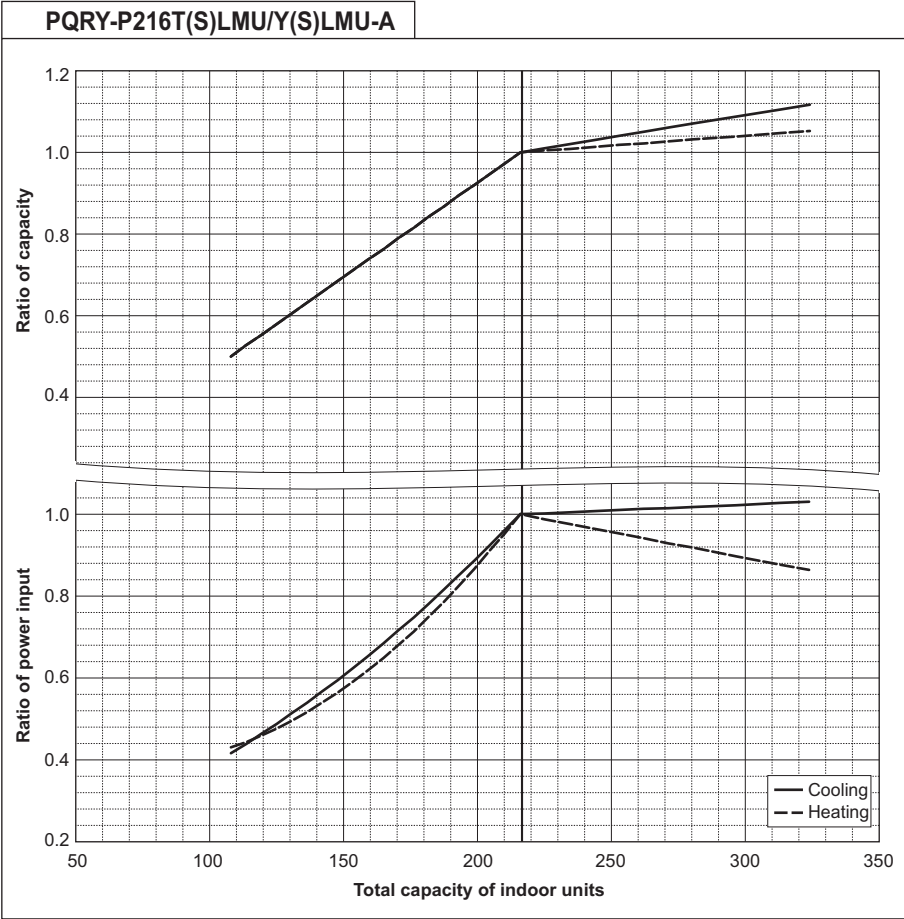
PQRY-		P216TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	243,000	
	kW	71.2	
	Input kW	12.88	
Rated Heating capacity	BTU/h	232,000	
	kW	68.0	
	Input kW	11.88	10.35

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

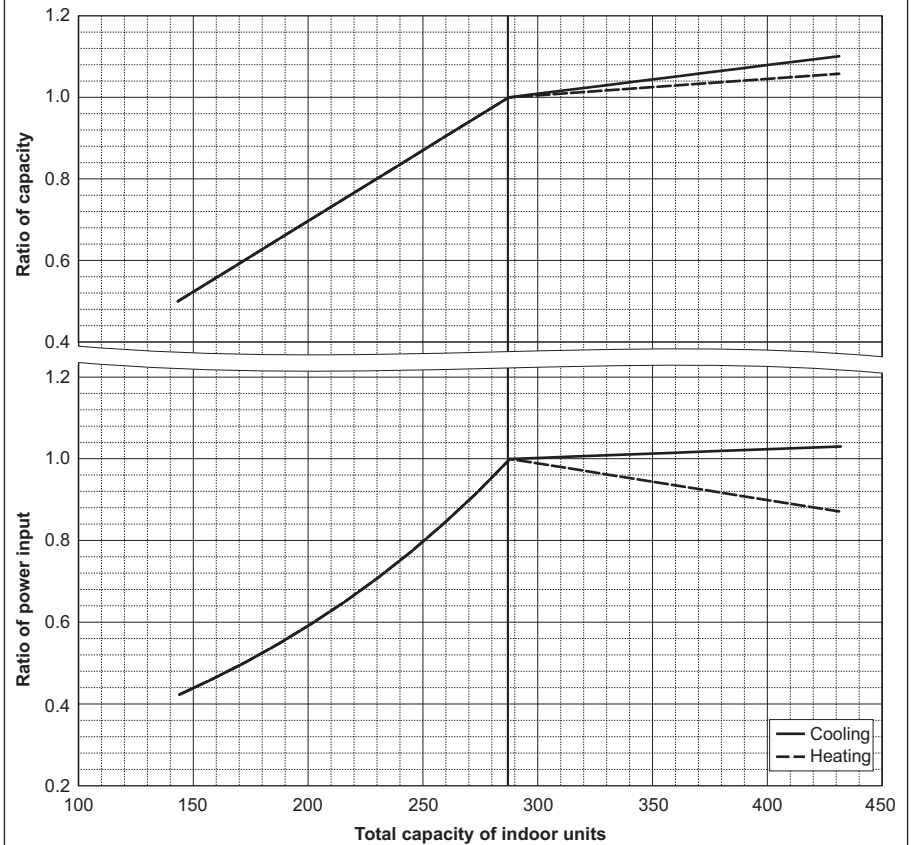
PQRY-		P240TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	270,000	
	kW	79.1	
	Input kW	14.58	
Rated Heating capacity	BTU/h	258,000	
	kW	75.6	
	Input kW	13.45	12.02



PQRY-		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

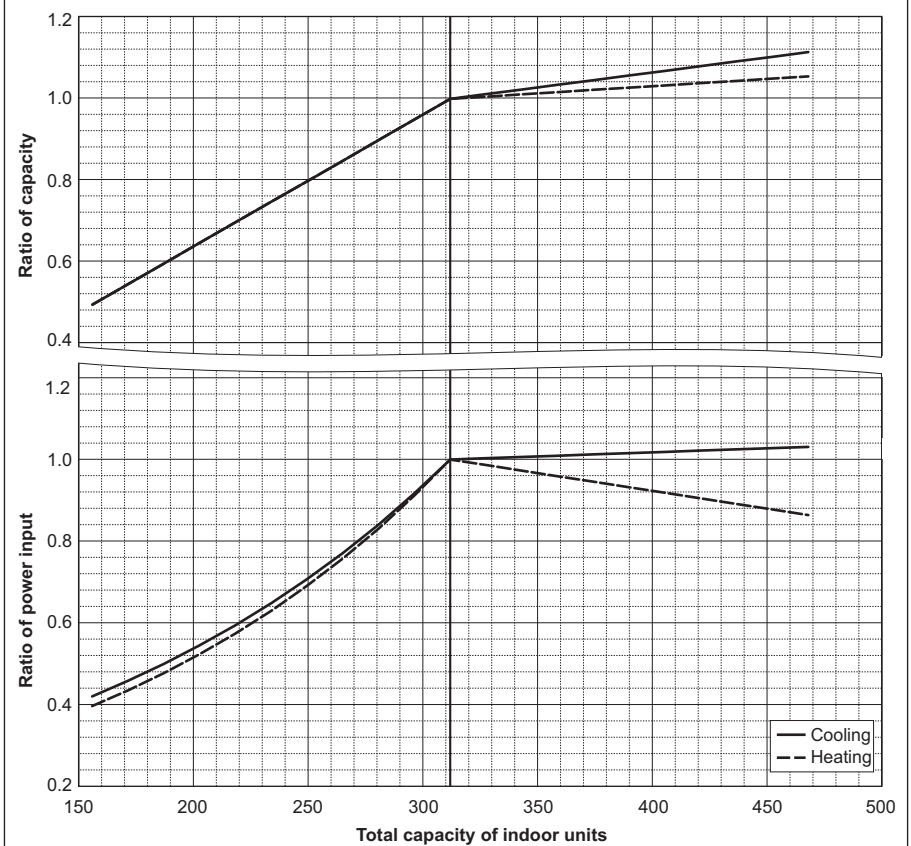
PQRY-P288TSLMU/YSLMU-A



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

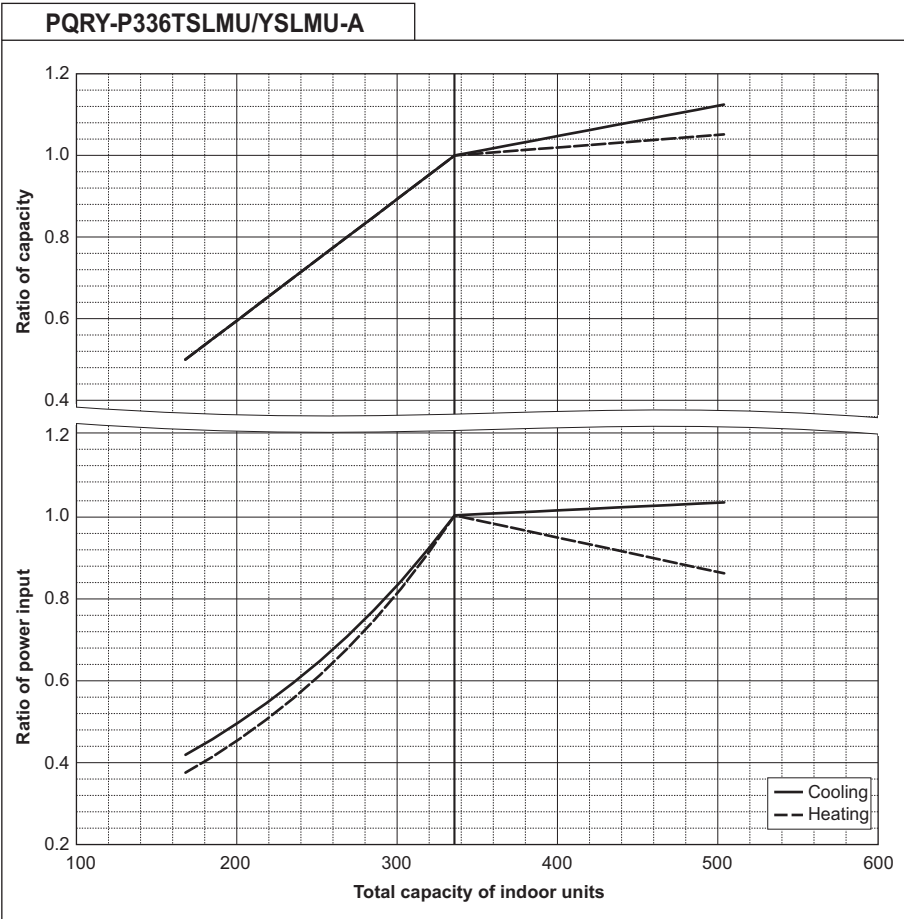
PQRY-		P312TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	350,000	
	kW	102.6	
	Input kW	19.11	
Rated Heating capacity	BTU/h	334,000	
	kW	97.9	
	Input kW	17.62	17.96

PQRY-P312TSLMU/YSLMU-A



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

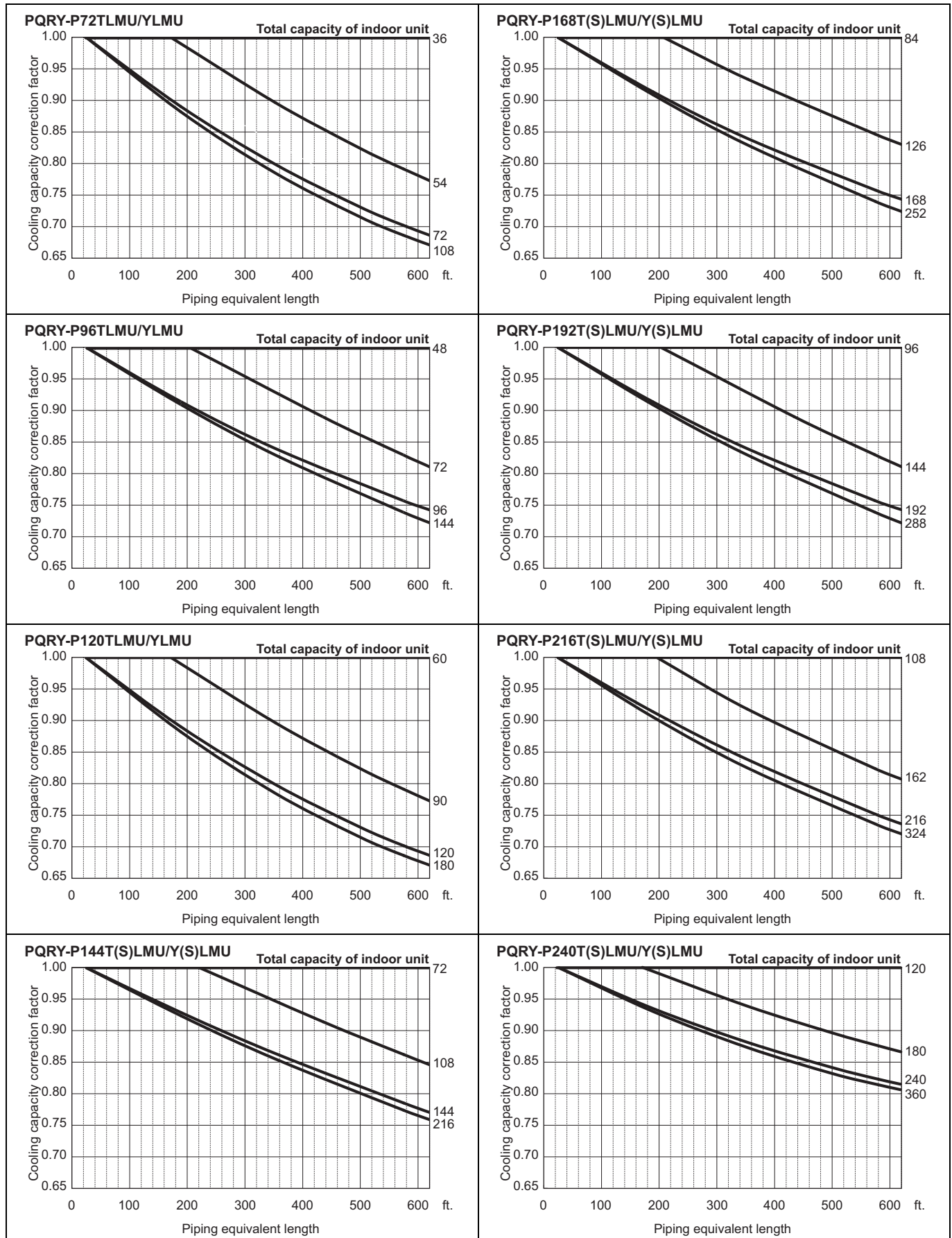
PQRY-		P336TSLMU/YSLMU	
		Non-Ducted	Ducted
Nominal Heating capacity	BTU/h	378,000	
	kW	110.8	
	Input kW	20.77	
Rated Heating capacity	BTU/h	361,000	
	kW	105.8	
	Input kW	19.16	20.05

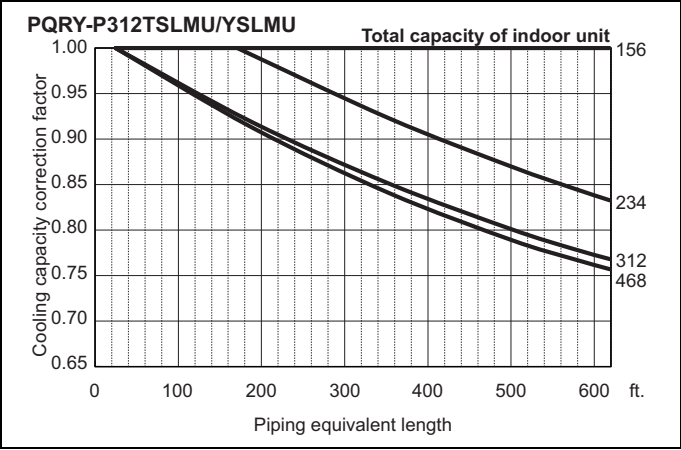
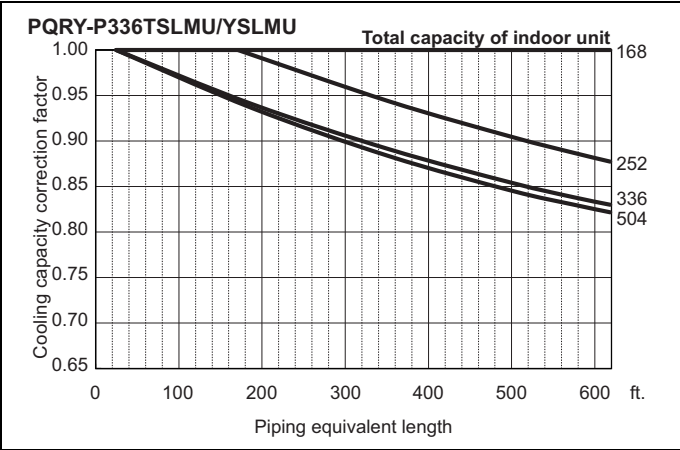
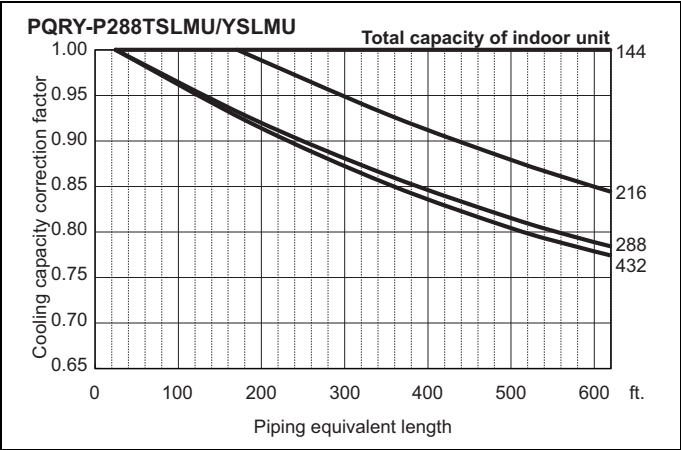


8-3. Correction by refrigerant piping length

CITY MULTI system can extend the piping flexibly within its limitation for the actual situation. However, a decrease of cooling/heating capacity could happen correspondently. Using following correction factor according to the equivalent length of the piping shown at 8-3-1 and 8-3-2, the capacity can be observed. 8-3-3 shows how to obtain the equivalent length of piping.

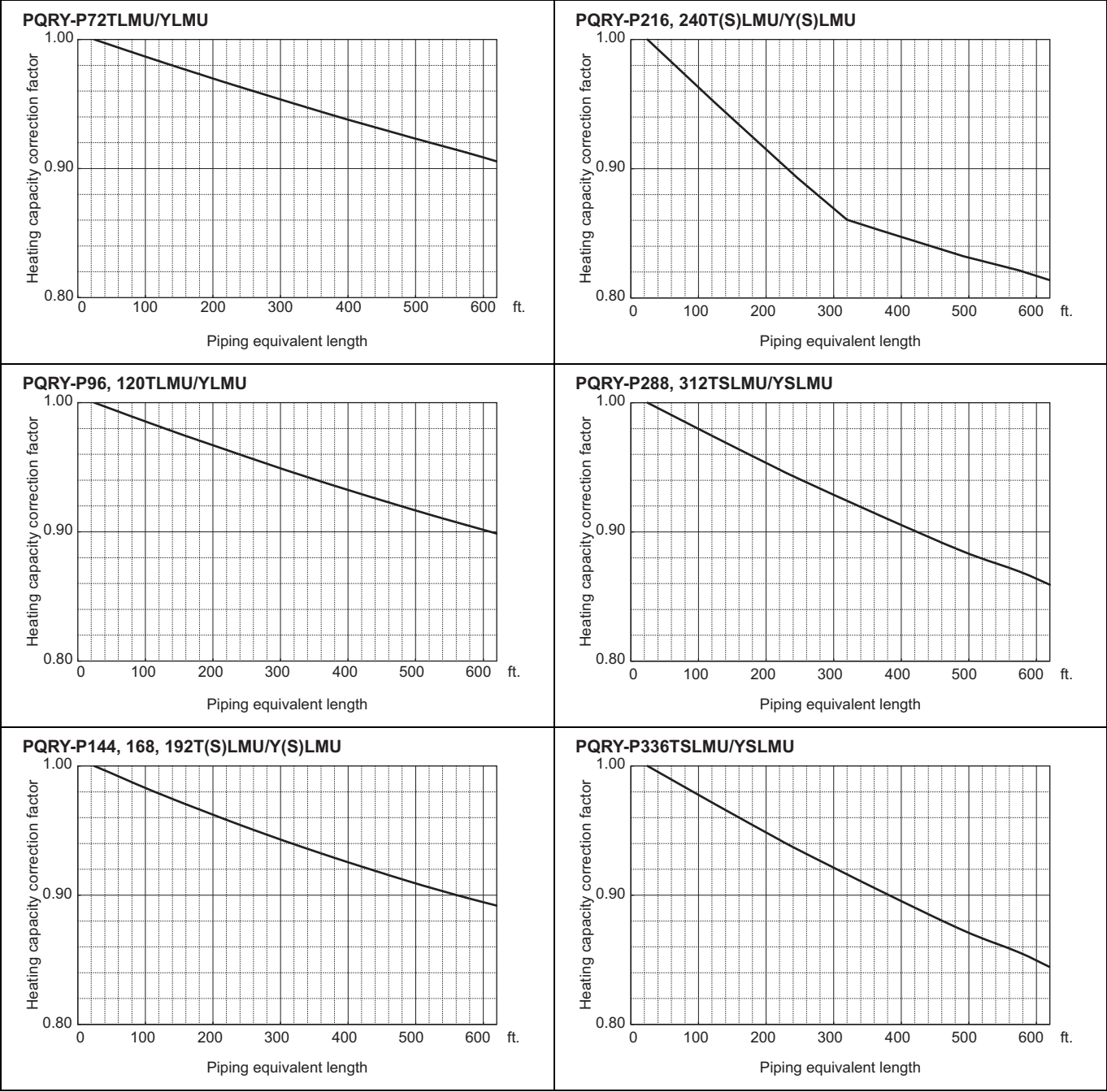
8-3-1. Cooling capacity correction





WR2

8-3-2. Heating capacity correction



8-3-3. How to obtain the equivalent piping length**1. PQR-Y-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]

2. PQR-Y-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]

3. PQR-Y-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]

4. PQR-Y-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]

5. PQR-Y-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]

6. PQR-Y-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]

9-1. Designing of water circuit system

1) Example of basic water circuit

The water circuit of the water heat source CITY MULTI connects the heat source unit with the cooling tower/auxiliary heat source/heat storage tank/circulation pump with a single system water piping as shown in the figure below. The selector valve automatically controls to circulate water toward the cooling tower in the cooling season, while toward the heat storage tank in the heating season. If the circulation water temperature is kept in a range of 10~45°C [50~113°F]* regardless of the building load, the water heat source CITY MULTI can be operated for either cooling or heating. Therefore in the summer when only cooling load exists, the temperature rise of circulation water will be suppressed by operating the cooling tower. While in the winter when heating load increases, the temperature of circulation water may be dropped below 10°C [50°F]. Under such situation, the circulation water will be heated with the auxiliary heat source if it drops below a certain temperature.

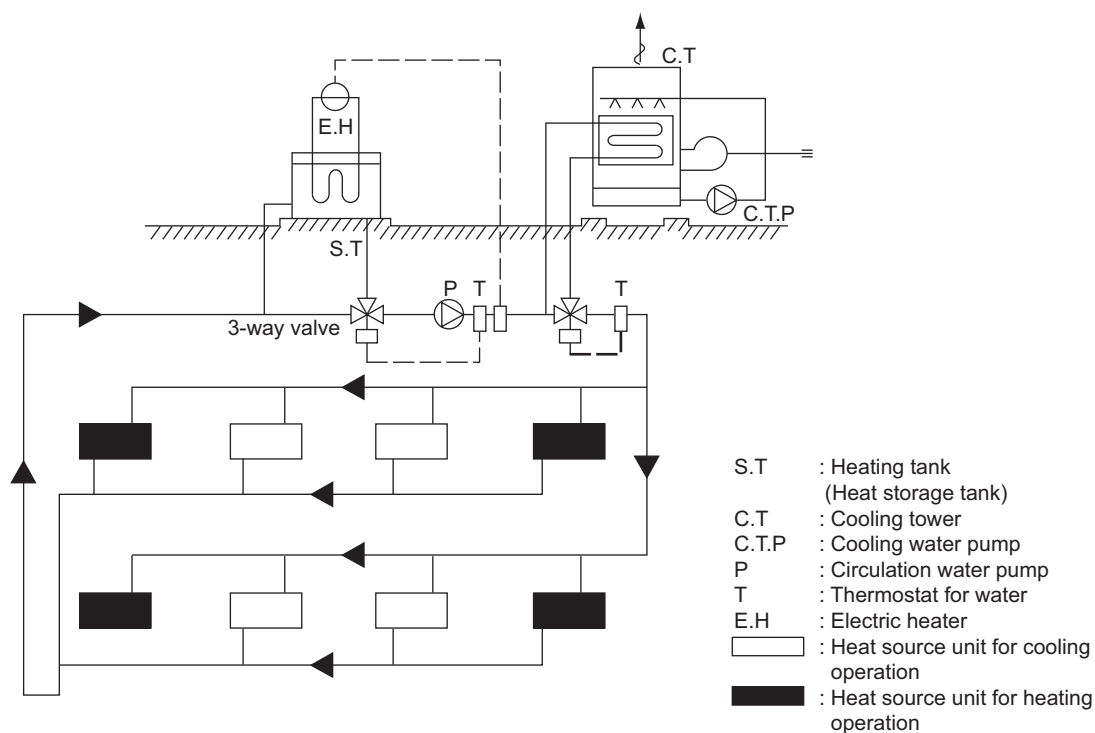
When the thermal balance between cooling and heating operation is in a correct proportion, the operation of the auxiliary heat source and cooling tower is not required.

In order to control the above thermal balance properly and use thermal energy effectively, utilizing of heat storage tanks, and night-time discounted electric power as a auxiliary heat source will be economical.

Meantime as this system uses plural sets of heat source unit equipped with water heat exchangers, water quality control is important. Therefore it is recommended to use closed type cooling towers as much as possible to prevent the circulation water from being contaminated.

When open type cooling towers are used, it is essential to provide proper maintenance control such as that to install water treatment system to prevent troubles caused by contaminated circulation water.

Example of basic water circuit for water heat source CITY MULTI



The indoor unit and refrigerant piping system are excluded in this figure.

2) Cooling tower

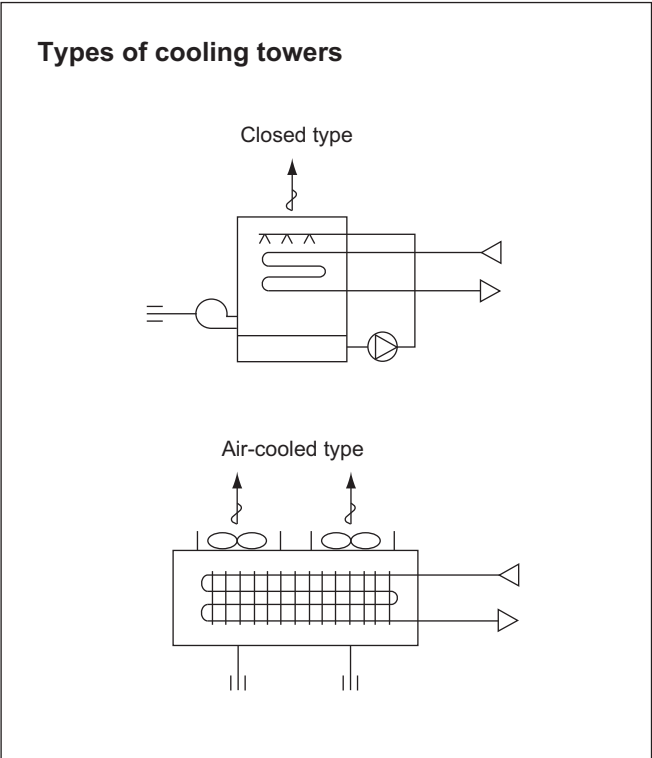
a) Types of cooling tower

The cooling towers presently used include the open type cooling tower, open type cooling tower + heat exchanger, closed type cooling tower, and air-cooled type cooling tower. However, as the quality control of circulation water is essential when units are installed in decentralized state inside a building, the closed type cooling tower is generally employed in such case.

Although the circulation water will not be contaminated by atmospheric air, it is recommended to periodically blow water inside the system and replenish fresh water instead.

In a district where the coil may be frozen in the winter, it is necessary to apply antifreeze solution to the circulation water, or take freeze protection measures such as to automatically discharge water inside the cooling coil at the stopping of the pump.

When the open type cooling tower is used, be sure to install a water quality control device in addition to the freeze protection measures, as the water may be deteriorated by atmospheric contaminants entered into the cooling tower and dissolved into the circulation water.



b) Calculation method of cooling tower capacity

All units of the water heat source CITY MULTI may possibly be in cooling operation temporarily (at pulling down) in the summer, however, it is not necessary to determine the capacity according to the total cooling capacity of all CITY MULTI units as this system has a wide operating water temperature range.

It is determined in accordance with the value obtained by adding the maximum cooling load of an actual building, the input heat equivalent value of all CITY MULTI units, and the cooling load of the circulating pumps. Please check for the values of the cooling water volume and circulation water volume.

Cooling tower capacity = $\frac{Q_c + 860 \times (\Sigma Q_w + P_w)}{3,900}$ (Refrigeration ton)

- Q_c : Maximum cooling load under actual state

(kcal/h)
- Q_w : Total input of water heat source CITY MULTI at simultaneous operation

under maximum state

(kW)
- P_w : Shaft power of circulation pumps

(kW)

Cooling tower capacity = $\frac{Q_c + 3,412 \times (\Sigma Q_w + P_w)}{15,500}$ (Refrigeration ton)

- Q_c : Maximum cooling load under actual state

(BTU/h)
- Q_w : Total input of water heat source CITY MULTI at simultaneous operation

under maximum state

(kW)
- P_w : Shaft power of circulation pumps

(kW)

* 1 Refrigerant ton of cooling tower capacity ≈ US refrigerant ton × (1 + 0.3)
= 3,900 kcal/h = 15,500 BTU/h

3) Auxiliary heat source and heat storage tank

When the heating load is larger than the cooling load, the circulation water temperature lowers in accordance with the heat balance of the system. It should be heated by the auxiliary heat source in order to keep the inlet water temperature within the operating range of the water heat source CITY MULTI.

Further in order to operate the water heat source CITY MULTI effectively, it is recommended to utilize the heat storage tank to cover the warming up load in the morning and the insufficient heat amount.

Effective heat utilization can be expected to cover insufficient heat at the warming up in the next morning or peak load time by storing heat by installing a heat storage tank or operating a low load auxiliary heat source at the stopping of the water heat source CITY MULTI. As it can also be possible to reduce the running cost through the heat storage by using the discounted night-time electric power, using both auxiliary heat source and heat storage tank together is recommended. The effective temperature difference of an ordinary heat storage tank shows about 5°C [41°F] even with the storing temperature at 45°C [113°F].

However with the water heat source CITY MULTI, it can be utilized as heating heat source up to 15°C [59°F] with an effective temperature of a high 30°C [54°F] approximately, thus the capacity of the heat storage tank can be minimized.

a) Auxiliary heat source

The following can be used as the auxiliary heat source.

- Boiler (Heavy oil, kerosine, gas, electricity)
- Electric heat (Insertion of electric heater into heat storage tank)
- Outdoor air (Air-heat source heat pump chiller)
- Warm discharge water (Exhaust water heat from machines inside building and hot water supply)
- Utilization of night-time lighting
- Solar heat

Please note that the auxiliary heat source should be selected after studying your operating environment and economical feasibility.

Determining the auxiliary heat source capacity

For the CITY MULTI water heat source system, a heat storage tank is recommended to use. When employment of the heat storage tank is difficult, the warming up operation should be arranged to cover the starting up heating load. Since the holding water inside the piping circuit owns heat capacity and the warming up operation can be assumed for about one hour except that in a cold region, the heat storage tank capacity is required to be that at the maximum daily heating load including the warming up load at the next morning of the holiday. However the auxiliary heat source capacity should be determined by the daily heating load including warming up load on the week day. For the load at the next morning of the holiday, heat storage is required by operating the auxiliary heat source even outside of the ordinary working hour.

When heat storage tank is not used

$$QH = HCT \left(1 - \frac{1}{COP_h} \right) - 1000 \times V_w \times \Delta T - 860 \times P_w$$

QH	: Auxiliary heat source capacity	(kcal/h)
HCT	: Total heating capacity of each water heat source CITY MULTI	(kcal/h)
COP _H	: COP of water heat source CITY MULTI at heating	
V _w	: Holding water volume inside piping	(m ³)
ΔT	: Allowable water temperature drop = T _{WH} - T _{WL}	(°C)
T _{WH}	: Heat source water temperature at high temperature side	(°C)
T _{WL}	: Heat source water temperature at low temperature side	(°C)
P _w	: Heat source water pump shaft power	(kW)

$$QH = HCT \left(1 - \frac{1}{COP_h} \right) - 8.343 \times V_w \times \Delta T - 3412 \times P_w$$

QH	: Auxiliary heat source capacity	(BTU/h)
HCT	: Total heating capacity of each water heat source CITY MULTI	(BTU/h)
COP _H	: COP of water heat source CITY MULTI at heating	
V _w	: Holding water volume inside piping	(G)
ΔT	: Allowable water temperature drop = T _{WH} - T _{WL}	(°F)
T _{WH}	: Heat source water temperature at high temperature side	(°F)
T _{WL}	: Heat source water temperature at low temperature side	(°F)
P _w	: Heat source water pump shaft power	(kW)

When heat storage tank is not used

$$QH = \frac{HQ_{1T} \cdot \left(1 - \frac{1}{COP_h}\right) - 860 \times P_w \times T_2}{T_1} \times K \quad (\text{kcal})$$

QH_{1T}	: Total of heating load on weekday including warming up	(kcal/day)
T_1	: Operating hour of auxiliary heat source	(h)
T_2	: Operating hour of heat source water pump	(h)
K	: Allowance factor (Heat storage tank, piping loss, etc.)	1.05~1.10

HQ_{1T} is calculated from the result of steady state load calculation similarly by using the equation below.

$$HQ_{1T} = 1.15 \times (\Sigma Q'a + \Sigma Q'b + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f) T_2 - \psi (\Sigma Qe_1 + \Sigma Qe_2 + \Sigma Qe_3) (T_2 - 1)$$

$Q'a$	: Thermal load from external wall/roof in each zone	(kcal/h)
$Q'b$	: Thermal load from glass window in each zone	(kcal/h)
$Q'c$	: Thermal load from partition/ceiling/floor in each zone	(kcal/h)
$Q'd$	: Thermal load by infiltration in each zone	(kcal/h)
$Q'f$	: Fresh outdoor air load in each zone	(kcal/h)
$Q'e_1$	: Thermal load from human body in each zone	(kcal/h)
$Q'e_2$	: Thermal load from lighting fixture in each zone	(kcal/h)
$Q'e_3$	: Thermal load from equipment in each zone	(kcal/h)
ψ	: Radiation load rate	0.6~0.8
T_2	: Air conditioning hour	

$$QH = \frac{HQ_{1T} \cdot \left(1 - \frac{1}{COP_h}\right) - 3,412 \times P_w \times T_2}{T_1} \times K \quad (\text{BTU})$$

QH_{1T}	: Total of heating load on weekday including warming up	(BTU/day)
T_1	: Operating hour of auxiliary heat source	(h)
T_2	: Operating hour of heat source water pump	(h)
K	: Allowance factor (Heat storage tank, piping loss, etc.)	1.05~1.10

HQ_{1T} is calculated from the result of steady state load calculation similarly by using the equation below.

$$HQ_{1T} = 1.15 \times (\Sigma Q'a + \Sigma Q'b + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f) T_2 - \psi (\Sigma Qe_1 + \Sigma Qe_2 + \Sigma Qe_3) (T_2 - 1)$$

$Q'a$	: Thermal load from external wall/roof in each zone	(BTU/h)
$Q'b$	: Thermal load from glass window in each zone	(BTU/h)
$Q'c$	: Thermal load from partition/ceiling/floor in each zone	(BTU/h)
$Q'd$	: Thermal load by infiltration in each zone	(BTU/h)
$Q'f$	: Fresh outdoor air load in each zone	(BTU/h)
$Q'e_1$	: Thermal load from human body in each zone	(BTU/h)
$Q'e_2$	: Thermal load from lighting fixture in each zone	(BTU/h)
$Q'e_3$	: Thermal load from equipment in each zone	(BTU/h)
ψ	: Radiation load rate	0.6~0.8
T_2	: Air conditioning hour	

b) Heat storage tank

Heat storage tank can be classified by types into the open type heat storage tank exposed to atmosphere, and the closed type heat storage tank with structure separated from atmosphere. Although the size of the tank and its installation place should be taken into account, the closed type tank is being usually employed by considering corrosion problems.

The capacity of heat storage tanks is determined in accordance with the daily maximum heating load that includes warming up load to be applied for the day after the holiday.

When auxiliary heat source is operated during operation and even after stopping of water heat source CITY MULTI unit

$$V = \frac{HQ_{2T} \left(1 - \frac{1}{COP_h} \right) - 860 \times P_w \times T_2 - Q_H \times T_2}{\Delta T \times 1,000 \times \eta V} \quad (\text{ton})$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (kcal/day)
 ΔT : Temperature difference utilized by heat storage tank (°C)
 ηV : Heat storage tank efficiency

$$HQ_{2T} : 1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f) T_2 - \psi (\Sigma Qe2 + \Sigma Qe3) (T_2 - 1)$$

$$V = \frac{HQ_{2T} \left(1 - \frac{1}{COP_h} \right) - 3,412 \times P_w \times T_2 - Q_H \times T_2}{\Delta T \times \eta V} \quad (\text{lbs})$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (BTU/day)
 ΔT : Temperature difference utilized by heat storage tank (°F)
 ηV : Heat storage tank efficiency

$$HQ_{2T} : 1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f) T_2 - \psi (\Sigma Qe2 + \Sigma Qe3) (T_2 - 1)$$

When auxiliary heat source is operated after stopping of water heat source CITY MULTI unit

$$V = \frac{HQ_{2T} \left(1 - \frac{1}{COP_h} \right) - 860 \times P_w \times T_2}{\Delta T \times 1,000 \times \eta V} \quad (\text{ton})$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (kcal/day)
 ΔT : Temperature difference utilized by heat storage tank (°C)
 ηV : Heat storage tank efficiency

$$HQ_{2T} : 1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f) T_2 - \psi (\Sigma Qe2 + \Sigma Qe3) (T_2 - 1)$$

$$V = \frac{HQ_{2T} \left(1 - \frac{1}{COP_h} \right) - 3,412 \times P_w \times T_2}{\Delta T \times \eta V} \quad (\text{lbs})$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (BTU/day)
 ΔT : Temperature difference utilized by heat storage tank (°F)
 ηV : Heat storage tank efficiency

$$HQ_{2T} : 1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f) T_2 - \psi (\Sigma Qe2 + \Sigma Qe3) (T_2 - 1)$$

4) Piping system

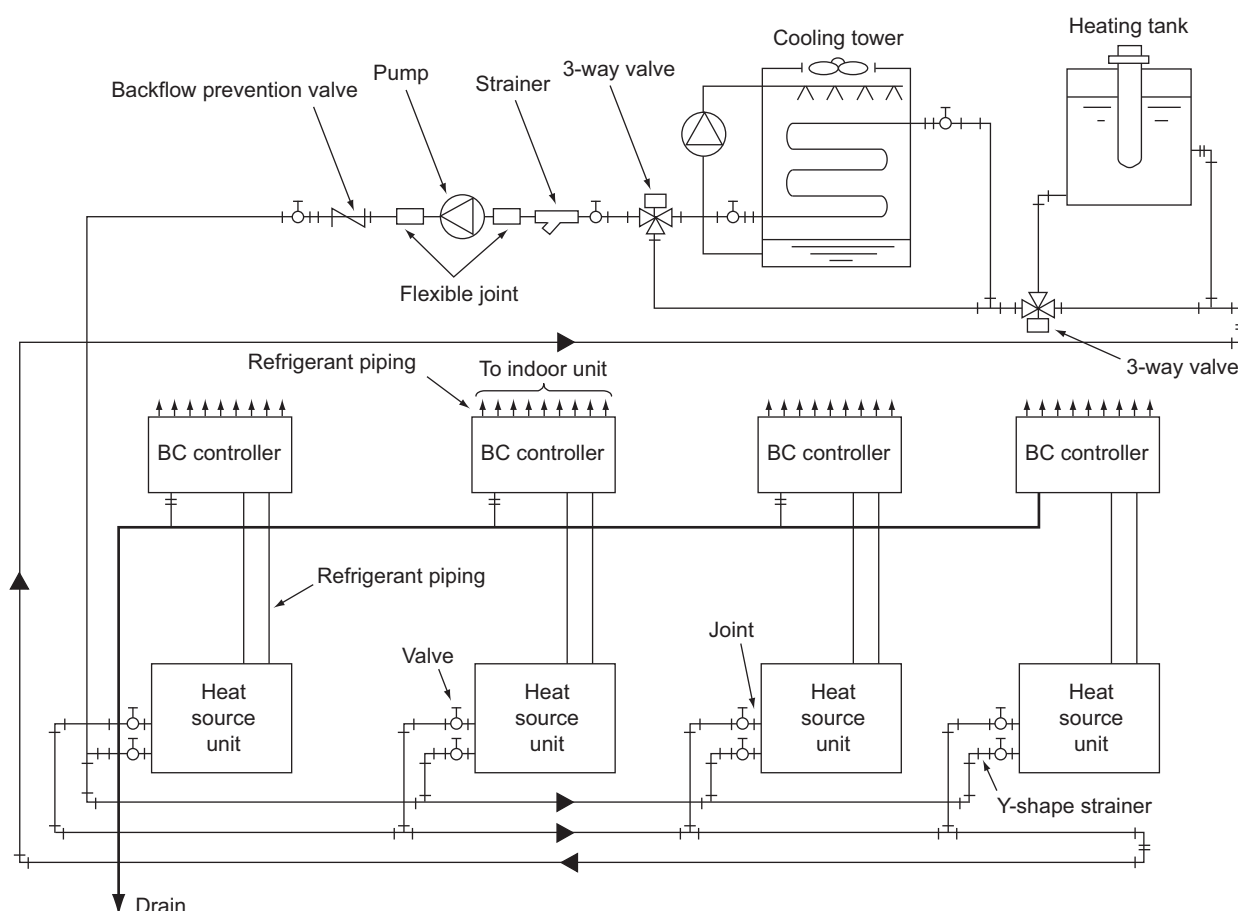
The following items should be kept in your mind in planning / designing water circuits.

- a) All units should be constituted in a single circuit in principle.
- b) When plural numbers of the water heat source CITY MULTI unit are installed, the rated circulating water flow rate should be kept by making the piping resistance to each unit almost same value. As an example, the reverse return system as shown below may be employed.
- c) Depending on the structure of a building, the water circuit may be prefabricated by making the layout uniform.
- d) When a closed type piping circuit is constructed, install an expansion tank usable commonly for a make-up water tank to absorb the expansion/contraction of water caused by temperature fluctuation.
- e) If the operating temperature range of circulation water stays within the temperature near the normal temperature (summer :29.4°C [85°F], winter :21.1°C [70°F]), thermal insulation or anti-sweating work is not required for the piping inside buildings.

In case of the conditions below, however, thermal insulation is required.

- When well water is used for heat source water.
- When piped to outdoor or a place where freezing may be caused.
- When vapor condensation may be generated on piping due to an increase in dry bulb temperature caused by the entry of fresh outdoor air.

System example of water circuit



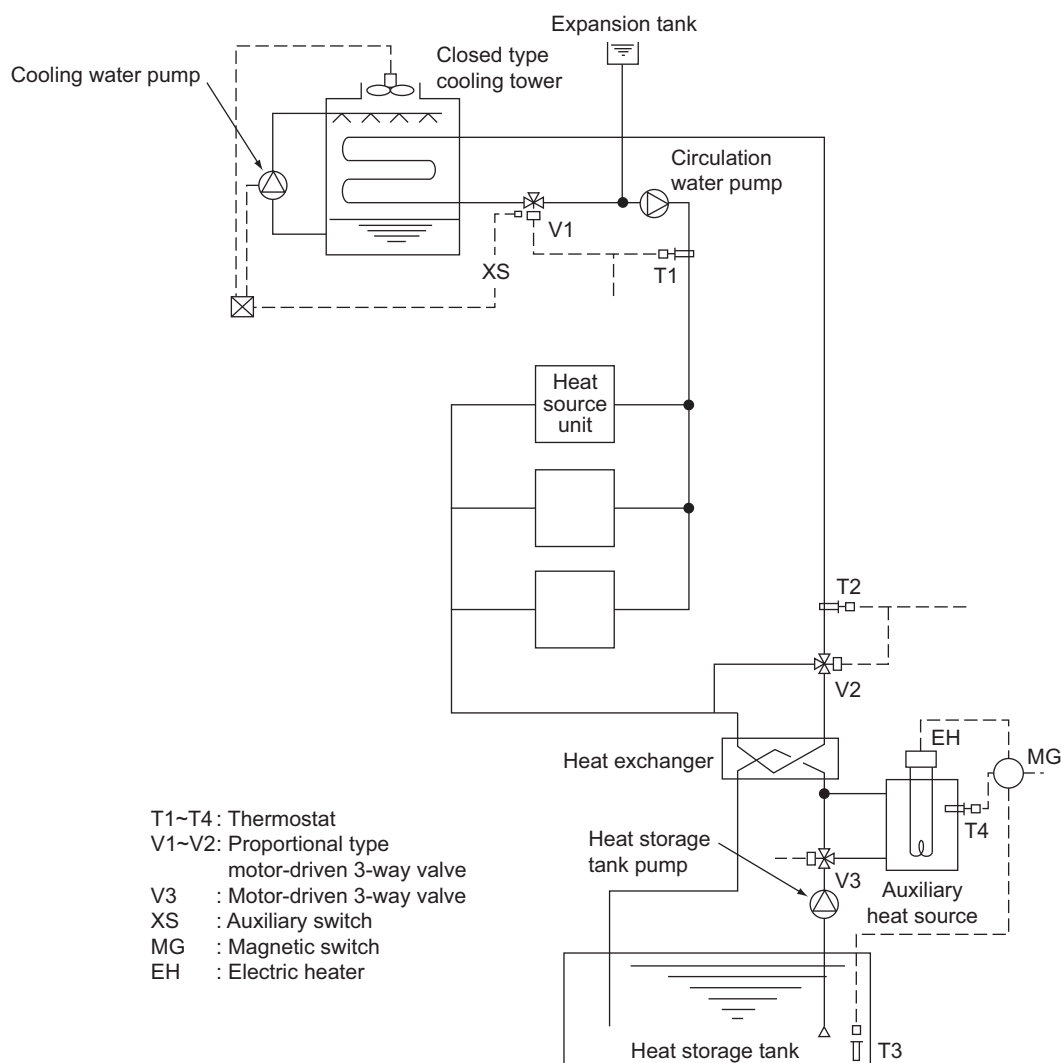
5) Practical System Examples and Circulation Water Control

Since the water heat source CITY MULTI is of water heat source system, versatile systems can be constituted by combining it with various heat sources.

The practical system examples are given below.

Either cooling or heating operation can be performed if the circulation water temperature of the water heat source CITY MULTI stays within a range of 15~45°C [59~113°F]. However, the circulation water temperature near 32°C [90°F] for cooling and 20°C [68°F] for heating is recommended by taking the life, power consumption and capacity of the air conditioning units into consideration. The detail of the control is also shown below.

Example-1 Combination of closed type cooling tower and hot water heat storage tank (using underground hollow slab)



By detecting the circulation water temperature of the water heat source CITY MULTI system with T1 (around 32°C [90°F]) and T2 (around 20°C [68°F]), the temperature will be controlled by opening/closing V1 in the summer and V2 in the winter.

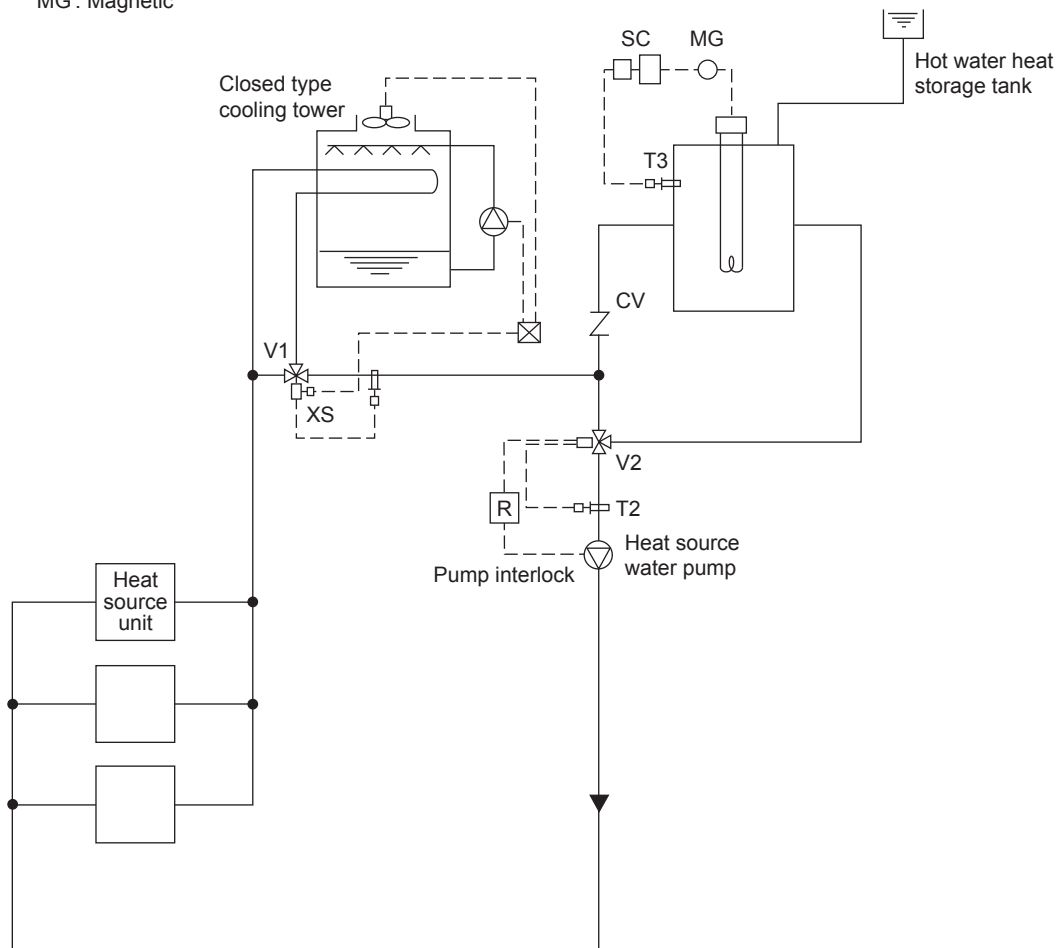
In the summer, as the circulation water temperature rises exceeding the set temperature of T1, the bypass port of V1 will open to lower the circulation water temperature. While in the winter, as the circulation water temperature drops, V2 will open following the command of T2 to rise the circulation water temperature.

The water inside the heat storage tank will be heated by the auxiliary heat source by V3 being opened with timer operation in the night-time. The electric heater of the auxiliary heat source will be controlled by T3 and the timer.

The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control of the fan and pump following the command of the auxiliary switch XS of V1, that operates only the fan at the light load while the fan and pump at the maximum load thus controlling water temperature and saving motor power.

Example-2 Combination of closed type cooling tower and hot water heat storage tank

T1 : Proportional type, insertion system thermostat
 T2 : Proportional type, insertion system thermostat
 T3 : Proportional type, insertion system thermostat
 V1 : Proportional type, motor-driven 3-way valve
 V2 : Proportional type, motor-driven 3-way valve
 XS : Auxiliary switch (Duplex switch type)
 SC : Step controller
 R : Relay
 MG : Magnetic



In the summer, as the circulation water temperature rises exceeding the set temperature of T1, the bypass port of V1 will open to lower the circulation water temperature. In the winter, if the circulation water temperature stays below 25°C [77°F], V2 will open/close by the command of T2 to keep the circulation water temperature constant.

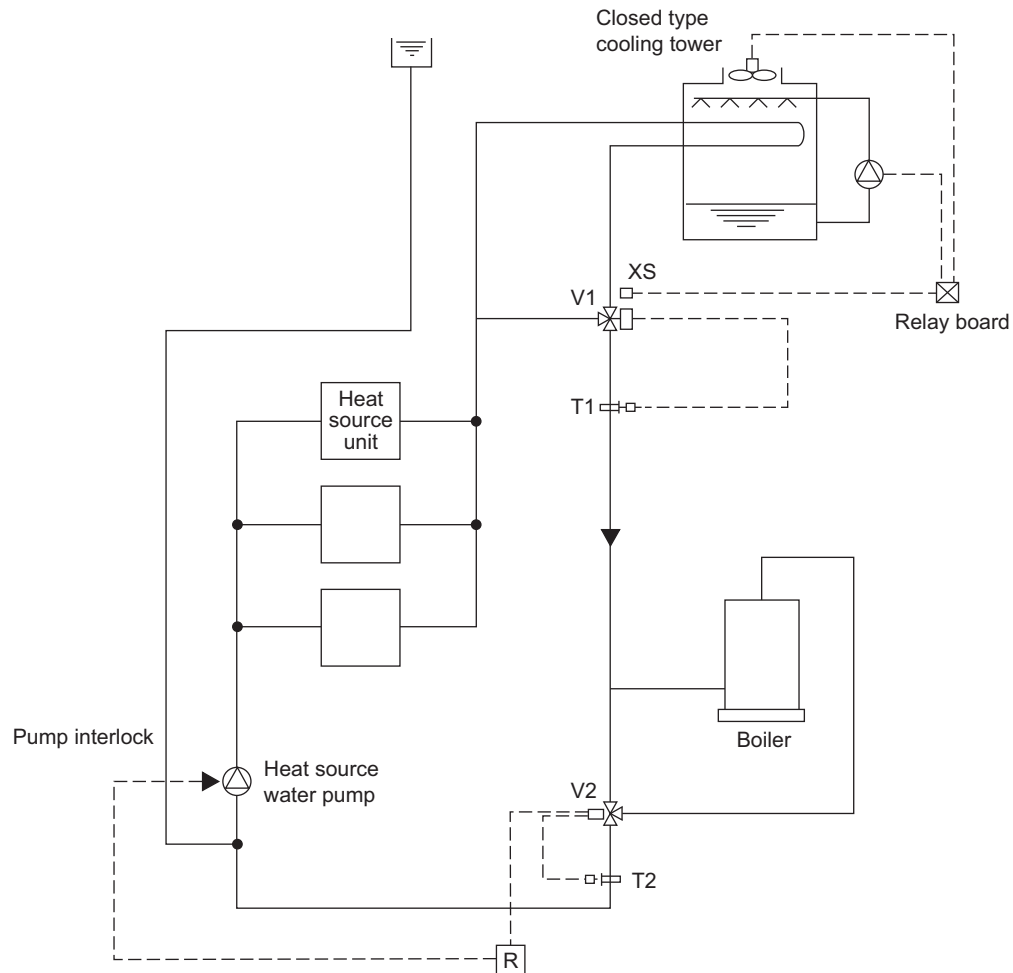
The temperature of the hot water inside the heat storage tank will be controlled through the step control of the electric heater by step controller operation following the command of T3.

During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking thus preventing the high temperature water from entering into the system at the starting of the pump.

The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control of the fan and pump following the command of the auxiliary switch XS of V1, that operates only the fan at the light load while the fan and pump at the maximum load thus controlling water temperature and saving motor power.

Example-3 Combination of closed type cooling tower and boiler

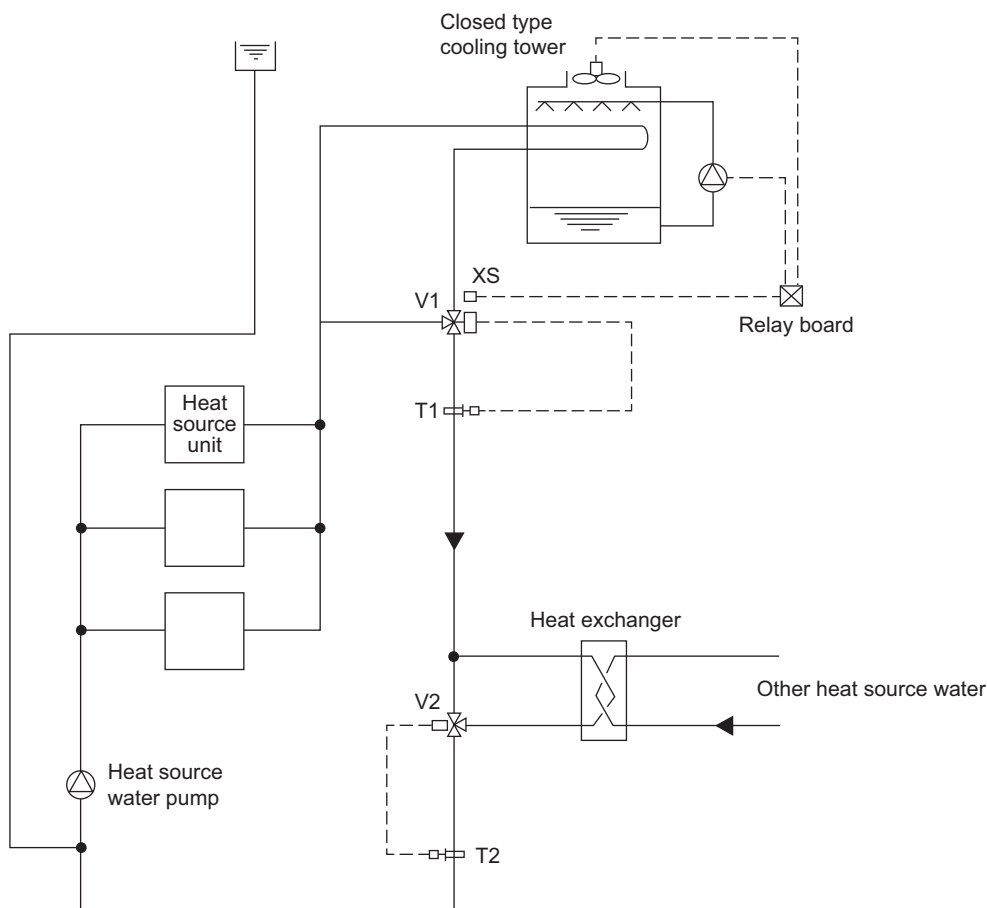
- T1 : Proportional type, insertion system thermostat
 T2 : Proportional type, insertion system thermostat
 T3 : Proportional type, insertion system thermostat
 V1 : Proportional type, motor-driven 3-way valve
 S : Selector switch
 R : Relay
 XS : Auxiliary switch (Duplex switch type)



In the summer, as the circulation water temperature rises exceeding the set temperature of T1, the bypass port of V1 will close to lower the circulation water temperature. In the winter, if the circulation water temperature drops below 25°C [77°F], V2 will conduct water temperature control to keep the circulation water temperature constant. During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking. The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control following the command of the auxiliary switch XS of V1, thus controlling water temperature and saving motor power.

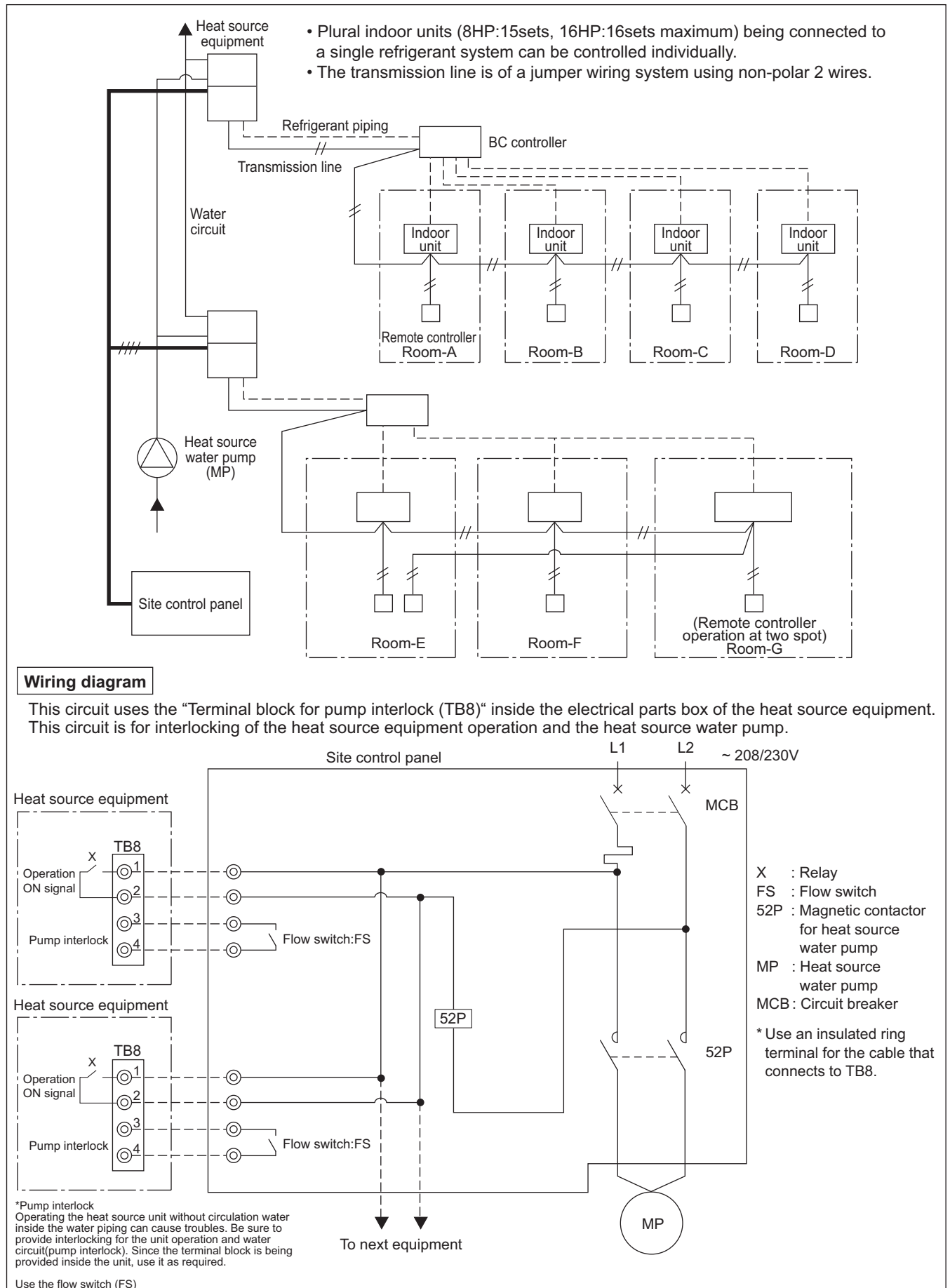
Example-4 Combination of closed type cooling tower and heat exchanger (of other heat source)

- T1 : Proportional type, insertion system thermostat
 T2 : Proportional type, insertion system thermostat
 V1 : Proportional type, motor-driven 3-way valve
 V2 : Proportional type, motor-driven 3-way valve
 S : Selector switch
 R : Relay
 XS : Auxiliary switch (Duplex switch type)



In the summer, as the circulation water temperature rises exceeding the set temperature of T1, the bypass port of V1 will close to lower the circulation water temperature. In the winter, if the circulation water temperature drops below 26°C [79°F], V2 will conduct water temperature control to keep the circulation water temperature constant. During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking. The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control following the command of the auxiliary switch XS of V1, thus controlling water temperature and saving motor power.

6) Pump interlock circuit



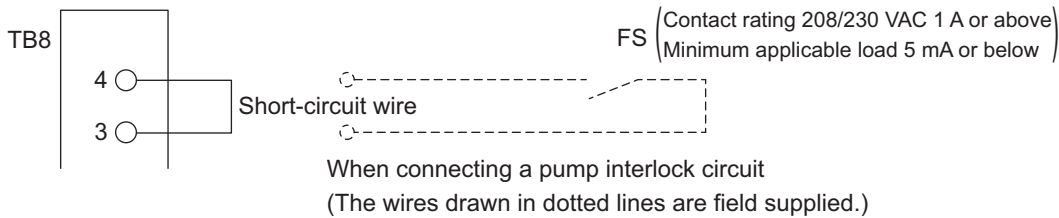
Operation ON signal

Terminal No.	TB8-1, 2																																							
Output	Relay contacts output					Rated voltage: 3~: 208/230V Rated load: 1 A																																		
Operation	• When setting No.917 for Dip switch 4 (Dip switch 6-10 is ON) is OFF. The relay closes during compressor operation.																																							
	<table><tr><td colspan="10">SW4 0: OFF, 1: ON</td></tr><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr></table>										SW4 0: OFF, 1: ON										1	2	3	4	5	6	7	8	9	10	1	0	1	0	1	0	0	1	1	1
	SW4 0: OFF, 1: ON																																							
1	2	3	4	5	6	7	8	9	10																															
1	0	1	0	1	0	0	1	1	1																															
	• When setting No.917 for Dip switch 4 (Dip switch 6-10 is ON) is ON. The relay closes during reception of cooling or the heating operation signal from the controller. (Note: It is output even if the thermostat is OFF (when the compressor is stopped).)																																							

Pump Interlock

Terminal No.	TB8-3, 4	
Input	Level signal	
Operation	If the circuit between TB8-3 and TB8-4 is open, compressor operation is prohibited.	

*Remove the short circuit wire between 3 and 4 when wiring to TB8.
To prevent a false detection of error resulting from contact failure, use a flow switch with a minimum guaranteed current of 5 mA or below for FS.



9-2. Water piping work

Although the water piping for the CITY MULTI WR2 system does not differ from that for ordinary air conditioning systems, pay special attention to the items below in conducting the piping work.

1) Items to be observed on installation work

- The water pressure resistance of the water pipes in the heat source unit is 2.0MPa [290psi].
 - In order to equalize piping resistance for each unit, adapt the reverse return system.
 - Mount a joint and a valve onto the water outlet/inlet of the unit to allow for maintenance, inspection and replacement work. Be sure to mount a strainer at the water inlet piping of the unit. (The strainer is required at the circulation water inlet to protect the heat source unit.)
 - * The installation example of the heat source unit is shown right.
 - Be sure to provide an air relief opening on the water piping properly, and purge air after feeding water to the piping system.
 - Condensate will generate at the low temperature part inside the heat source equipment. Connect drain piping to the drain piping connection located at the bottom of the heat source equipment to discharge it outside the equipment.
 - Mount a backflow prevention valve and a flexible joint for vibration control onto the pump.
 - Provide a sleeve to the penetrating parts of the wall to prevent the piping.
 - Fasten the piping with metal fitting, arrange the piping not to expose to cutting or bending force, and pay sufficient care for possible vibration.
 - Be careful not to erroneously judge the position of the inlet and outlet of water.
(Lower position : Inlet, Upper position : Outlet)
 - When connecting heat source unit water piping and water piping on site, apply liquid sealing material for water piping over the sealing tape before connection.
 - This unit doesn't include a heater to prevent freezing within tubes. If the water flow is stopped on low ambient, drain the water out.
 - The unused knockout holes should be closed and the refrigerant pipes, water pipes, power source and transmission wires access holes should be filled with putty.
 - The drain plug is installed on the back of the unit at factory for field-connection of the drain pipes on the front of the unit. Move the plug to the front to connect the drain pipes on the back. Verify that there are no leaks from pipe connections.
 - For installing two units, install water pipes in parallel to each other so that the water flow rate through both units will be equal.
 - Wrap the sealing tape as follows.
- Wrap the joint with sealing tape in the direction of the threads (clockwise), and do not let the tape run over the edge.
 - Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is pressed firmly against each thread.
 - Leave the 1.5th through 2nd farthest threads away from the pipe end unwrapped.
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 150N·m.

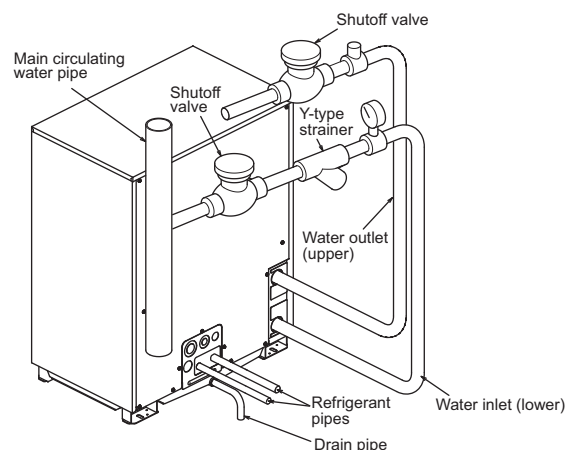
2) Thermal insulation work

Thermal insulation or anti sweating work is not required for the piping inside buildings in the case of the CITY MULTI WR2 system if the operating temperature range of circulation water stays within the temperature near the normal (summer : 30°C[86°F], winter : 20°C[68°F]).

In case of the conditions below, however, thermal insulation is required.

- Use of well water for heat source water
- Outdoor piping portions
- Indoor piping portions where freezing may be caused in winter
- A place where vapor condensation may be generated on piping due to an increase in dry bulb temperature inside the ceiling caused by the entry of fresh outdoor air
- Drain piping portions

Installation example of heat source unit



3) Water treatment and water quality control

For the circulation water cooling tower of the CITY MULTI WR2 system, employment of the closed type is recommended to keep water quality. However, in the case that an open type cooling tower is employed or the circulating water quality is inferior, scale will adhere onto the water heat exchanger leading to the decreased heat exchange capacity or the corrosion of the heat exchanger. Be sufficiently careful for water quality control and water treatment at the installation of the circulation water system

• Removal of impurities inside piping

Be careful not to allow impurities such as welding fragment, remaining sealing material and rust from mixing into the piping during installation work.

• Water treatment

The water quality standards have been established by the industry (Japan Refrigeration, Air Conditioning Industry Association, in case of Japan) for water treatment to be applied.

	Items	Lower mid-range temperature water system		Tendency	
		Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	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		○
Reference items	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)

In order to keep the water quality within such standards, you are kindly requested to conduct bleeding-off by overflow and periodical water quality tests, and use inhibitors to suppress condensation or corrosion. Since piping may be corroded by some kinds of inhibitor, consult an appropriate water treatment expert for proper water treatment.

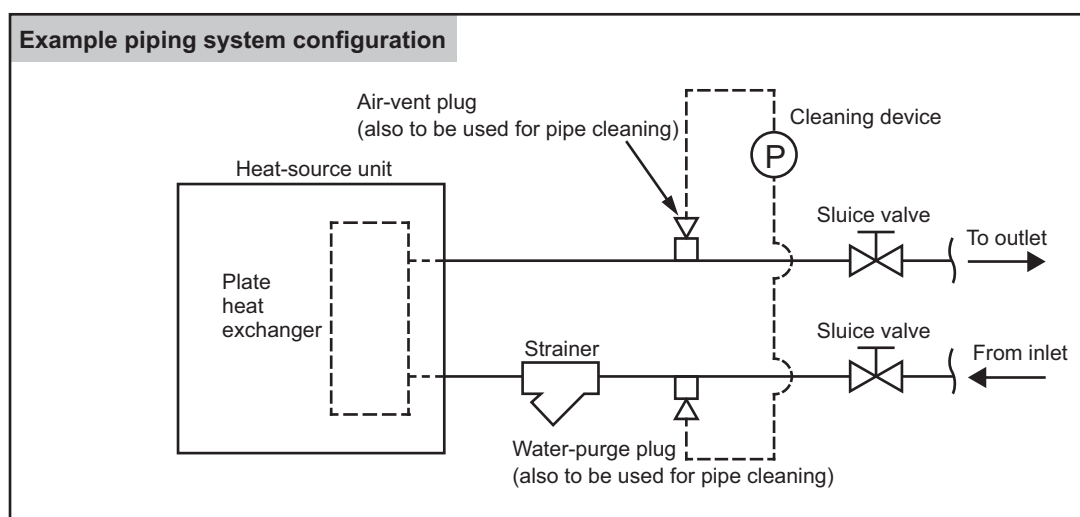
4) Pump interlock

Operating the heat source unit without circulation water inside the water piping can cause a trouble. Be sure to provide interlocking for the unit operation and water circuit. Since the terminal block is being provided inside the unit, use it as required.

5) Handling plate heat exchangers for heat-source units

<Designing the piping system>

- Install a strainer (50 mesh or finer recommended) near the heat-source unit on the inlet side of the hot/cold water pipe and cooling-water pipe (hereafter referred to as water pipes) to prevent an infiltration of foreign materials of solid nature, such as dirt and sand, into the plate heat exchanger.
- Depending on the water quality, scale may form inside plate heat exchangers. Plate heat exchangers must be chemically cleaned regularly to remove scale formation. Install sluice valves on the water pipes, and provide ports for connecting a pipe between the sluice valves and the heat-source unit for chemical cleaning.
- On both the inlet and outlet sides of water pipes, provide a plug to remove trapped air and water (also to be used for cleaning heat-source units and for purging water before a period of nonuse in winter or at the end of an air conditioning season). Also, provide automatic air-vent valves where air is likely to be trapped (such as a pipe that runs vertically).
- In addition to installing the above-mentioned strainers, install a cleanable strainer near the pump pipe inlet.
- Keep the pipes properly insulated and take an appropriate measure against humidity to minimize heat loss and prevent freeze damage in severe cold climate.
- If the system is stopped during winter or at night in subfreezing temperatures, take appropriate measures to protect pipes from freezing (i.e., pipe purging and use of water-circulation pump or heater) and prevent resultant damage to the plate heat exchanger.



<Test run>

- Before performing a test run, check that the piping system is properly installed, especially the strainers, air-vents, automatic water-supply valves, expansion tanks, and systems.
- After the pipe system is filled with water, first, operate the pump alone to check the system for trapped air and adjust the water flow rate to prevent the plate heat exchanger from freezing. Take into consideration the water pressure loss before and after each heat-source unit, and make sure the water flow rate falls within the design water flow rate range. Stop the test run and correct any problems found, if any.
- At the completion of a test run, check the strainer at the inlet pipe of the heat-source unit and clean it as necessary.

<Daily maintenance>

- Controlling the water quality
Plate heat exchangers cannot be disassembled for cleaning and have no replaceable parts. Watch the water quality to prevent corrosion and scale formation. The quality of the water to be used for plate heat exchangers must meet the water quality guidelines JRA GL-02-1994 specified by Japan Refrigeration and Air conditioning Industry Association (JRAIA). (Refer to 3) Water treatment and water quality control.)
- Controlling the circulation water flow rate
Insufficient water rate will cause freeze damage to plate heat exchangers. Check for insufficient water flow caused by clogged strainer, trapped air in the system, or malfunction of the circulation water pump. Flow rate can also be checked by measuring the temperature or pressure difference between the inlet and outlet of plate heat exchangers. If the temperature or pressure difference goes outside of the specified range, stop the operation, remove the cause of the problem, and resume operation.
- What to do when the freeze protection trips
If the freeze protection trips during operation, be sure to remove its cause before resuming operation. Tripped freeze protection indicates that the system is partially frozen, and resuming operation without removing the cause of the problem will result in freeze damage to plate heat exchangers and/or pipes as well as resultant refrigerant leaks and infiltration of water into the refrigerant circuit.

<Maintaining plate heat exchangers>

Plate heat exchangers must be maintained in a planned and periodical manner to prevent scale formation, which may cause performance loss or decrease water flow rate that result in freeze damage to the plate heat exchanger.

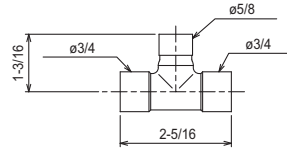
- Check the following items before the operating season.
 1. Check that the water quality meets the specified water quality.
 2. Clean the strainers.
 3. Check that the water flow rate is adequate.
 4. Check for proper operation (e.g., pressure, flow rate, inlet/outlet temperatures).
- Plate heat exchangers cannot be disassembled for cleaning. Clean them in the following way.
 1. Make sure that there is a pipe connection port on the water inlet pipe.
Use formic acid, citric acid, oxalic acid, acetic acid, or phosphoric acid diluted to 5% to clean plate heat exchangers.
Do not use highly corrosive acids, such as hydrochloric acid, sulfuric acid, or nitric acid.
 2. Make sure that valves are installed before the inlet connection port and after the outlet connection port.
 3. Connect a pipe for circulating cleaning solution to the inlet/outlet pipes of the plate heat exchanger, fill the plate heat exchanger with cleaning solution at a temperature between 50 and 60°C, and circulate the cleaning solution with a pump for 2 to 5 hours. The cleaning time will depend on the temperature of the cleaning solution and the degree of scale formation. Use the color of the cleaning solution as a guide to determine how long the system needs to be cleaned.
 4. When done, discharge the cleaning solution out of the plate heat exchanger, fill it with sodium hydrate (NaOH) or sodium bicarbonate (NaHCO₃) diluted with water to 1 to 2%, and let the solution be circulated for 15 to 20 minutes until the cleaning solution is neutralized.
 5. After neutralizing the cleaning solution, thoroughly rinse the plate heat exchanger with clean water.
 6. When using a commercially available cleaning solution, make sure to use a solution not corrosive to stainless steel or copper.
 7. Consult the cleaning solution manufacture for details.
- At the completion of cleaning, check the system for proper operation.

10-1. JOINT

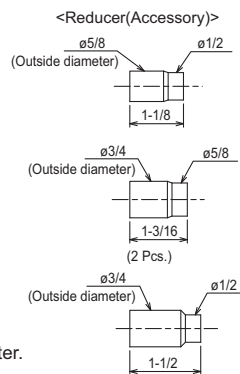
CITY MULTI units can be easily connected by using Joint sets and Header sets provided by Mitsubishi Electric. Four kinds of Joint sets are available for use. Refer to section 3 in "System Design" or the Installation Manual that comes with the Joint set for how to install the Joint set.

CMY-Y102SS-G2

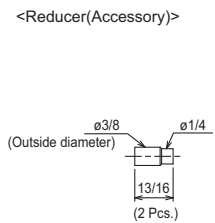
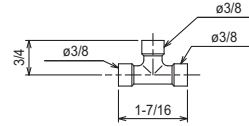
For Gas pipe:



*Pipe diameter is indicated by inside diameter.



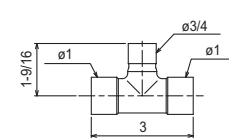
For Liquid pipe:



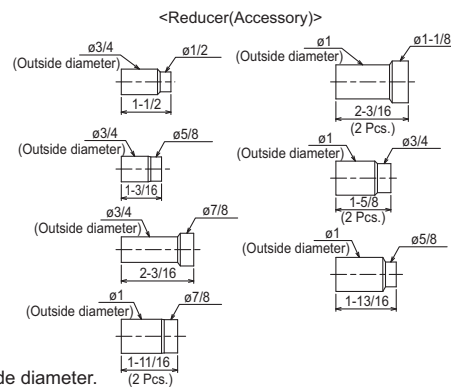
in.

CMY-Y102LS-G2

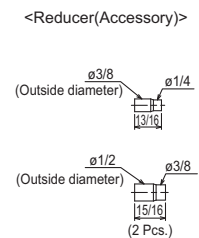
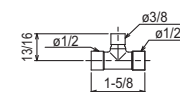
For Gas pipe:



*Pipe diameter is indicated by inside diameter.



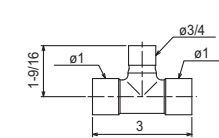
For Liquid pipe:



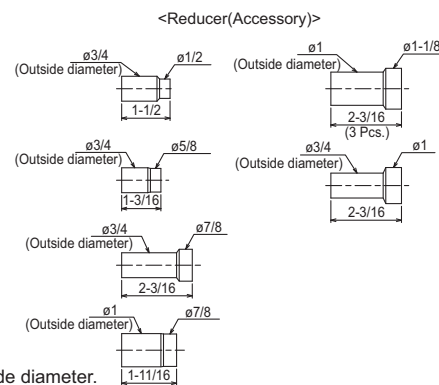
in.

CMY-Y202S-G2

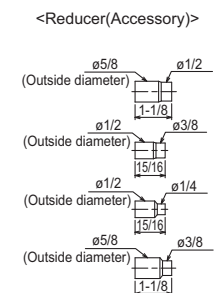
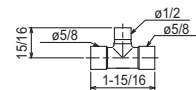
For Gas pipe:



*Pipe diameter is indicated by inside diameter.



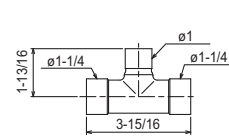
For Liquid pipe:



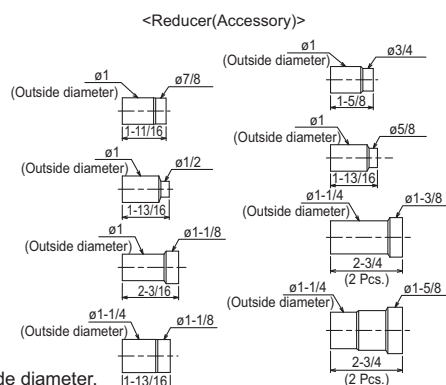
in.

CMY-Y302S-G2

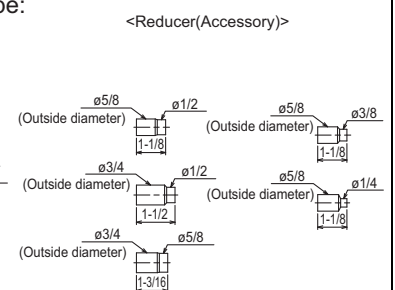
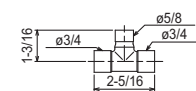
For Gas pipe:



*Pipe diameter is indicated by inside diameter.



For Liquid pipe:



in.

WR2

10-2. OUTDOOR TWINNING KIT

The following optional Outdoor Twinning Kit is needed to use to combine multiple refrigerant pipes. Refer to the chapter entitled System Design Section for the details of selecting a proper twinning kit.

CMY-Q100CBK2

Low-pressure pipe twinning kit

$\phi 28.58(\phi 1-1/8)$
 (Outside diameter)
 $\phi 22.2(\phi 7/8)$
 (Outside diameter)

<Elbow pipe(Accessory)>

$\phi 28.58(\phi 1-1/8)$
 $\phi 22.2(\phi 7/8)$

<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(3-1/8) Length)	...	2
Cable tie	...	2
Water stopper	...	1
Sealing material (Small)	...	1
Sealing material (Large)	...	1

<Pipe for routing through the front (Accessory)>

$\phi 28.58(\phi 1-1/8)$
 (Outside diameter)
 $\phi 34.93(\phi 1-3/8)$

High-pressure twinning pipe

$\phi 22.2(\phi 7/8)$
 $\phi 19.05(\phi 3/4)$

<Pipe for routing through the front (Accessory)>

$\phi 19.05(\phi 3/4)$
 $\phi 19.05(\phi 3/4)$

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

High-pressure twinning pipe
On-site pipes

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

$\phi 31.75(\phi 1-1/4)$
 (Outside diameter)
 $\phi 28.58(\phi 1-1/8)$
 (Outside diameter)

<Elbow pipe(Accessory)>

$\phi 28.58(\phi 1-1/8)$
 $\phi 31.75(\phi 1-1/4)$

<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)>

$\phi 31.75(\phi 1-1/4)$
 (Outside diameter)
 $\phi 34.93(\phi 1-3/8)$
 $\phi 41.28(\phi 1-5/8)$

High-pressure twinning pipe

$\phi 28.58(\phi 1-1/8)$
 $\phi 19.05(\phi 3/4)$

<Deformed pipe(Accessory)>

$\phi 19.05(\phi 3/4)$
 $\phi 22.2(\phi 7/8)$

<Pipe for routing through the front (Accessory)>

$\phi 19.05(\phi 3/4)$
 $\phi 25.4(\phi 1)$

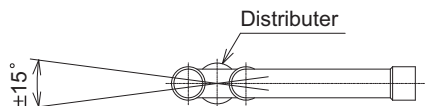
Note 1. Refer to the figure below for the installation position of the high-pressure twinning pipe.

High-pressure twinning pipe
On-site pipes

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.



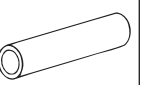
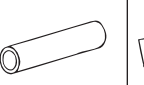
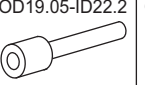
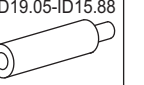
The angle of the branch pipe for high pressure is within $\pm 15^\circ$ against the horizontal plane.

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

10-3. JOINT KIT "CMY-R160-J1" FOR BC CONTROLLER

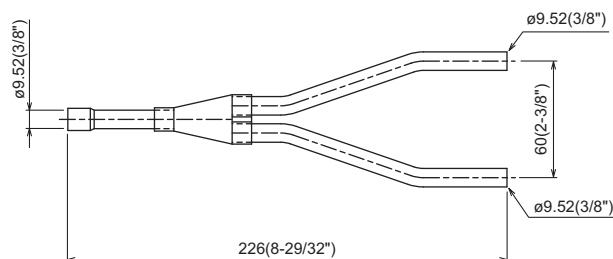
Joint kit "CMY-R160-J1" for BC controller is used to combine 2 ports of the BC controller at a PURY/PQRY system so as to enable down-stream Indoor capacity above P54 as shown in Fig. 1.

The Joint kit include following items:

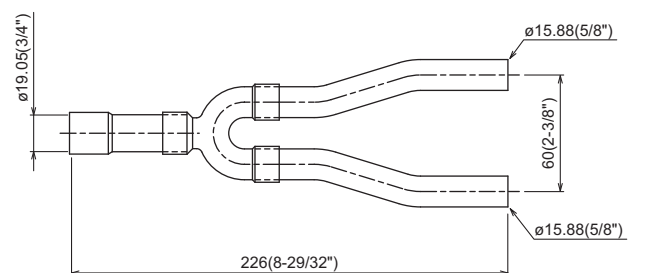
① Instruction	② Joint pipe (Small)	③ Joint pipe (Large)	④ Cover 1	⑤ Cover 2	⑥ Cover 3	⑦ Band	⑧ Reducer 1	⑨ Reducer 2
								
This sheet 1pc	1pc	1pc	2pcs	1pc for gas side	1pc for liquid side	8pcs	1pc	1pc

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.

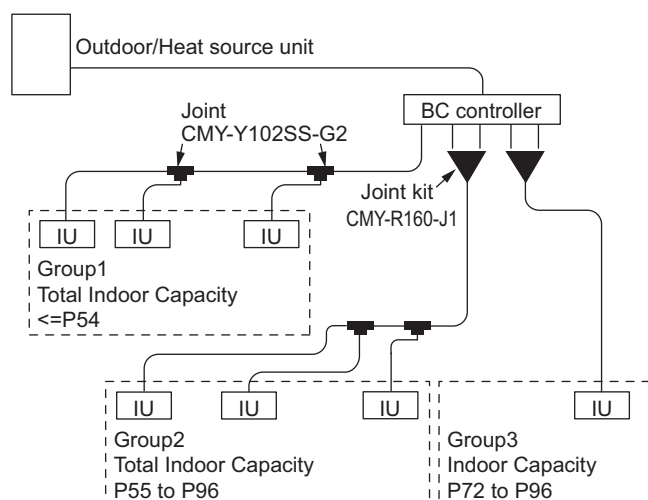


Fig.1. CMY-R160-J1 applying scheme

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.

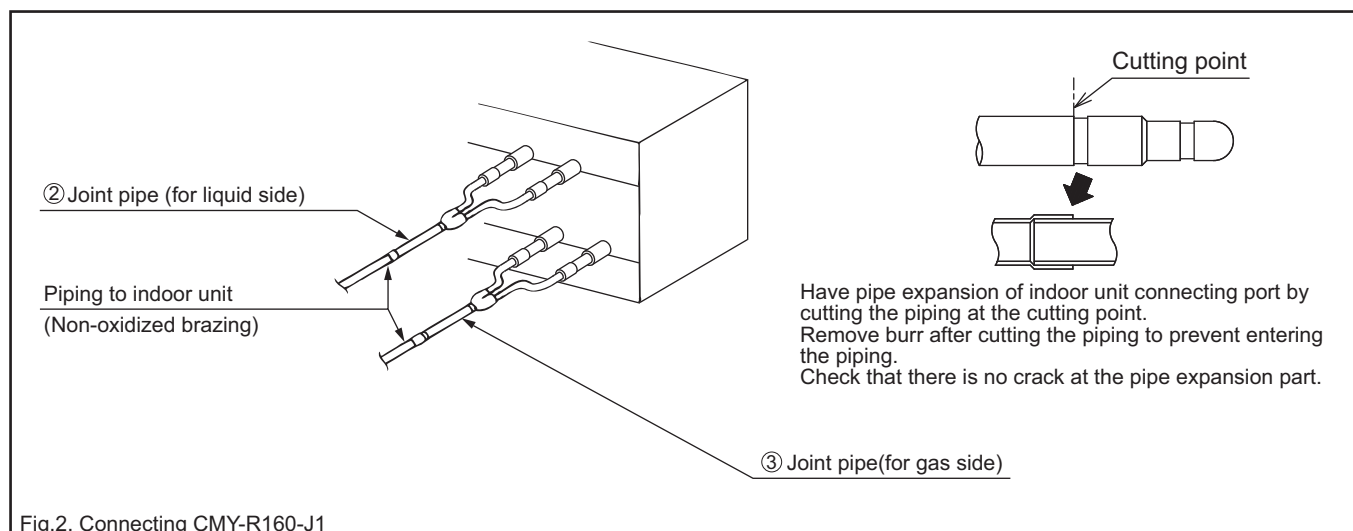


Fig.2. Connecting CMY-R160-J1