





AIR CONDITIONING SYSTEMS

CITY MULTI

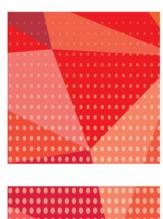


DATA BOOK

MODEL

PQRY-P72-336Z(S)LMU-A1





Water Cooled WR2 Series - 575V



	Type(BTU/h)	72K	96K	120K
[Model Name	PQRY-P72ZLMU-A1	PQRY-P96ZLMU-A1	PQRY-P120ZLMU-A1



Type(BTU/h)	144K	168K	192K
Model Name	PQRY-P144ZSLMU-A1	PQRY-P168ZSLMU-A1	PQRY-P192ZSLMU-A1
Type(BTU/h)	216K	240K	
Model Name	PQRY-P216ZSLMU-A1	PQRY-P240ZSLMU-A1	





Type(BTU/h)	288K	312K	336K
Model Name	PQRY-P288ZSLMU-A1	PQRY-P312ZSLMU-A1	PQRY-P336ZSLMU-A1

Type(BTU/h)	144K	168K	192K
Model Name	PQRY-P144ZLMU-A1	PQRY-P168ZLMU-A1	PQRY-P192ZLMU-A1

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*Above specification data is subject to rounding variation.

Heat Come	a da l				71 MIL A4	
Heat Source Mo Indoor Model	odel			PQRY-P72		inted
Power source				Non-Ducted 3-phase 3-wire 57		icted
Cooling capacity	/	*1	BTU/h	3-phase 3-wire 37		
(Nominal)		1	kW	21.		
(Norminal)	ſ	Power input	kW	3.6		
	(575)	Current input	A	4.0		
(Rat			BTU/h	69,0		
(,		kW	20.		
		Power input	kW	3.34	3	.12
	(575)	Current input	А	3.7	:	3.4
Temp. range of		Indoor	W.B.	59~75°F (1	5~24°C)	
cooling		Circulating water	°F	50~113°F (10~45°C)	
Heating capacity	/	*2		80,0		
(Nominal)	,		kW	23.		
	()	Power input	kW	4.0		
		Current input	A	4.5		
(Rat	ated)		BTU/h	76,0		
	1	Power input	kW kW	22.		20
	(575)	Current input	A	3.74 4.1		.36 3.7
Temp. range of	(373)	Indoor	D.B.			5.1
neating		Circulating water	⁰F	50~113°F (
ndoor unit		Total capacity		50~113 F (
connectable	ŀ	Model/Quantity		P06~P96		
	level (mea	asured in anechoic room)	dB <a>	46.		
Refrigerant		High pressure	in. (mm)	5/8 (15.88		
piping diameter		Low pressure	in. (mm)	3/4 (19.05		
Minimum Circuit	Ampacity		A	5		
Maximum Overcu			A	15		
Circulating water		Water flow rate	G/h	1,52		
			G/min (gpm)	. 25.		
			m ³ /h	5.7	6	
			L/min	. 96		
			cfm	3.4		
		Pressure drop	psi	3.4		
		0	kPa	24		
		Operating volume	G/h	793 ~ 1		
		range	G/min (gpm)	13.2 ~		
Compressor		Type x Quantity	m ³ /h	3.0 ~ Inverter scroll herme		
Compressor		Manufacture		AC&R Works, MITSUBISHI E		
		Starting method		Inver		
		Motor output	kW	4.3		
		Case heater	kW		,	
		Lubricant		MEL	32	
External finish				Galvanized s	teel sheets	
External dimensi	ion H x W	хD	in.	43-5/16 x 34-11/	/16 x 21-11/16	
			mm	1,100 x 88	30 x 550	
Protection device	es	High pressure protection	า	High pressure sensor, High press		osi)
		Inverter circuit		Over-heat protection, O		
		Compressor		Over-heat p		
Refrigerant		Type x original charge		R410A x 11 lbs -	· · · · · ·	
		Control	L	Indoor LEV and	Be controller	
Net weight			lbs (kg)	411 (1		
Heat exchanger	Ţ	Water volume in plate		plate t		
		Water volume in plate	G	. 1.3 5.0		
		Water pressure Max.	psi	5.0		
		Trater pressure Max.	MPa	29		
HIC circuit (HIC:	Heat Inte	r-Changer)	, wir d		, ,	
Drawing		External		KL94C	243	
9		Wiring		KE940		
Standard		Document		Installation		
attachment		Accessory		Details refer to		
Optional parts				joint: CMY-Y102SS-G2, CMY-	-Y102LS-G2, CMY-R160-J1	
				BC controller: CMB-P104, 105, 10		
				Main BC controller: CMB-P108, 1010, 1013		
				Sub BC controller: CMB-P104, 10		
Remarks				Details on foundation work, duct work, insulation work, electric	al wiring, power source switc	h, and other items shall be re
				ferred to the Installation Manual. Due to continuing improvement, above specifications may be s	subject to change without not	ice.
				The ambient temperature of the Heat Source Unit needs to be		
				The ambient relative humidity of the Heat Source Unit needs to		,
				The Heat Source Unit should not be installed at outdoor.	an indah mining a shift in	
				Be sure to mount a strainer (more than 50 meshes) at the wate Be sure to provide interlocking for the unit operation and water		
				Install the supplied insulation material to the unused drain-sock		
				When installing insulation material around both water and refri		Ilation manual.
				· · · · · · · · · · · · · · · · · · ·		
lotes:						Unit converter
1.Nominal coolin	ng conditic	ons (Test conditions are b	ased on AHRI	1230)		BTU/h =kW x 3,412
Indoor: 81°FD.E	B./66°FW.	.B. (27°CD.B./19°CW.B.)	, Water temperation	ature: 86°F (30°C)		cfm =m ³ /min x 35.31
		ons (Test conditions are I		1230)		lbs =kg/0.4536
1110001: 68°FD.E	□. (20°CD)	.B.), Water temperature:	00°F (20°C)			103 -Ky/0.4030

Owner source 3-phase 3-wire 5FV 410(90 Hz Nominal N Nominal N Nominal N Preser incur N/V (Filt) Constant number (Filt) Sch 147 (Filt) Sch 147 (Filt) Sch 147 (Filt) N/V (Filt) N/V (Filt) N/V (Filt) N/V (Filt) N/V (Filt) Sch 147 (Filt) Sch 147 (Filt) Sch 147 (Filt) Sch 147 (Filt) Sch 1	Heat Source Model			PQRY-P96	
Comp greater 1 1 1000 0000 Minimized 400 3.1	Indoor Model Power source			Non-Ducted 3-phase 3-wire 57	Ducted
Name No Alt MOS 0.1 0.1 MOS 0.1 <td0.1< td=""> <</td0.1<>		*1	BTU/h		
	0 1 5				
		Power input	kW		
With the second secon	(575)	Current input		5.	3
Intro Intro <th< td=""><td>(Rated)</td><td></td><td></td><td></td><td></td></th<>	(Rated)				
idea Constrained A 5.3 idea 6.7 integrating of constrained constrained constrained integrating water VA 0.0 <td< td=""><td></td><td></td><td></td><td>1</td><td></td></td<>				1	
Imput prog ID Note UNIT	(575)			i i	
Open International Park P 00.117F (10.427C) Nominal 10.4 10.4 Nominal 10.4 10.4 String opening 10.4 10.4 String openigr		· · ·			
Testing paper/s ? 2 DDA 100.000 New iso 0.000 0.000 0.000 0.000 Status 0.000 0.000 0.000 0.000 0.000 MW 0.01 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 <td></td> <td></td> <td></td> <td></td> <td></td>					
Nome 31.7 LDD Event man A					
LSD Content hand A 6.2 Presenting MW 93.20 44.8 Presenting A 5.21 4.23 Presenting Contenting 4.4 5.21 Presenting Contenting 4.4 5.21 Presenting Contenting 4.4 5.21 Presenting Contenting 4.4 5.21 Presenting Contenting 5.21 5.21 5.21 Presenting Contenting 5.21 5.21 5.21 5.21 Presenting State presenting State presenting 5.21<	0 1 2				
Result B10.h 100.00 100 Production() MV 5.21 4.6 100 Production() MV 5.21 4.6 100 B10 5.8 0.9.157 (10.450) 4.0 100 Value Seale/1 5.9 1.9.157 (10.450) 4.0 1.0 100 Value Seale/1 1.0 1.0 1.0 1.0 1.0 100 Value Seale/1 1.0	,	Power input	kW	5.6	4
With S2 Au LSTS Carter in pad. A. S.8 4.9 Construct with in pad. A. S.8 9.9.1137 (1):2700. -4.9 Construct with in pad. S.8 9.9.1137 (1):2700. -4.9 Occurrent in pad. S.8 9.9.1137 (1):2700. -4.9 Mean Obscient Theorem Provide Internet I	(575)	Current input	А	6.1	2
Image: Second state in the second state in	(Rated)				
(0/3) Current input A 5.8 4.9 central repr. range of Carturing water D.B. 50-157 (10-40°C) 50-157 (10-40°C) control of the Carturing water D.B. 50-157 (10-40°C) 50-157 (10-40°C) control of the Carturing water D.B. 50-157 (10-40°C) 50-157 (10-40°C) control of the carturing water D.B. 50-157 (10-40°C) 50-157 (10-40°C) control of the carturing water D.B. 50-157 (10-40°C) 50-157 (10-40°C) control of the carturing water D.B. 70-157 (10-40°C) 50-157 (10-40°C) control of the carturing water D.B. 70-157 (10-40°C) 50-157 (10-40°C) control of the carturing water D.B. 70-157 (10-40°C) 50-157 (10-40°C) control of the carturing water D.B. 70-157 (10-40°C) 50-157 (10-40°C) control of the carturing water D.D. Tope water 70-157 (10-40°C) control of the carturing water D.D. D.D. 50-157 (10-40°C) control of the carturing water D.D. D.D. D.D. D.D. D.D. D.D.		- .			
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Balance Fr 65:137 (10-65°C) Order UND 50:105% of hest account accounty		1			
Option Total capabity 00-1976 different out capabity Sound instance with instance in marketic cool 60 AA 40.0 Sound instance with instance in marketic cool 60 AA 40.0 Sound instance with instance in marketic cool 60 AA 40.0 Sound instance in marketic cool 60 AA 40.0 Sound instance instance 60 AA 60.0 Sound instance instance 60.0 10.0 50.0 Sound instance instance A 0.0 10.0 Sound instance Column instance 0.0 10.0 Sound instance Column instance 0.0 10.0 10.0 Sound instance Column instance 0.0 10.0 10.0 10.0 Sound instance Column instance 0.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0					
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Dood pressure treat intergiones from intergion from intergion i					
open density Low genue In (mm) 7 dealmum Ciscal Argumation A 15 familiant Ciscal Argumation A 15 including obscurpted Potention A 34 including obscurpted Potention A 35 34 including obscurpted Potention A A A including obscurpted Potention A A A including obscurpted Potention A A A including obscurpted Potention <td></td> <td></td> <td>dB <a></td> <td></td> <td></td>			dB <a>		
Informa Circult Angeoch A 7 Maintum Overgramme Protection A 15 inclaining wetter Water flow rate Grim (gen) 2.5.4 Inclusing wetter Grim (gen) 3.4 Pressure drop Jeil 3.4 Operating volume Grim (gen) 3.4 Operating volume Grim (gen) 3.4 Operating volume Grim (gen) 3.2 Compressor Tops 2 Quantity Inventor secol function (gen) Matrix of the secol function (gen) A.2 1.1 Address and the secol function (gen) A.2 1.1 Care the base of the secol function (gen) A.2 1.1 Care the base of the secol function (gen) Internet (gen) 1.1 Care the base of the secol function (gen) Internet (gen) 1.1 Care the base of the secol function (gen) Internet (gen) 1.1	0		in. (mm)	3/4 (19.05) Brazed
Maximum Devicurated Poisection A 15 iticaleling water Water flow rate Ghm. (gen) 					
Including water Water flow rate On 1.522 Conting water Conting water 1.522 Minh Conting water 25.4 Pressure drop 28 Conting water 28 Conting water <td></td> <td></td> <td></td> <td></td> <td></td>					
Image: set of the set					
mining 5,76 dm 3.4 Pressure drop 26 Comparing volume 0.6 Apple 1, 0.02 1.0.2 Compressor 1.0.2 Apple 2, 0.00111//m.m. 0.0 Starting reference 0.0 Starting reference 0.0 Compressor Mondracute Case heater WW Case heater Mondracute Case heater MM Case	irculating water	vvater flow rate		· · · · · · · · · · · · · · · · · · ·	
Imm 98 Imm 3.4 Pressure drop J.Bl Operating volume Ciff. Compressor Type x Quantity Immediation ACGR Weins, MITSUBGELE LEXTIC COMPORATION Data and the second particle of the second partic					
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Pressure drop psi 3.48 Operating volume Ch 733 - 1302 ange Chin (gen) 132 - 31.7 3.0 - 7.2 Invite (gen) 3.2 - 31.7 Stating method Invite (gen) 3.0 - 7.2 Case headed KW 6.0 Case header Case header Control KW					
Operating volume range Grin (m ² /h) 780 - 1.0.2 (3.2 - 31.7) Compressor Type 2. Quantity Invester accoll hermetic compressors 1 Manufacture ACR Works, MTSUBSH LECTRIC CORPORATION Starting method Invester accoll hermetic compressors 1 Manufacture ACR Works, MTSUBSH LECTRIC CORPORATION Starting method Invester Madro autput KW Case here KW N Case here KW N Case here KW N Case here KW N Protection devices Industriant action High pressure protection High pressure structure st		Pressure drop			
ange Grini (gpm) 13.2 - 31.7 Compression Type & Quantity Inventer scoll hermels compression x.1 Mandacture ACAR Works, MTSUBSH ELECTRIC CORPORATION Stating method Inventer Matrix actual ACAR Works, MTSUBSH ELECTRIC CORPORATION Stating method Inventer Motor output KW Case heater KW Stating method Inventer Lubricant Genvaloated set heates Statemal dimension H.X W x D Inventer Protection devices High pressure protection High pressure protection High pressure protection Unreter circuit Over-heat protection Compressor Over-heat protection Control Instation Vipo a criticul charge R4100, x110 s.1 Control Instation Vipo a criticul charge Instation Viao and the pressore sensore Over-heat protection Corpressor Over-heat protection Corpressore Over-heat protection Corentrescol Over-heat protection			kPa	24	ł
ImPle 3.0 - 7.2 Compressor Type x Quantity Inverter Manufacture ACAR Works, MTSUBSH LEUTRIC CORPORATION Starting method Inverter Marca output KW 6.0 Case heater KM 6.0 Care heater Mark pressure protection 10.0 x 80.0 26.0 KM Protection devices Mark pressure protection 0.0 Ver-heat protection Control Control Care of the pressore witch at 4.15 MP (601 ps) Control Control Care of the pressore witch at 4.15 MP (601 ps) Control Mark pressure protection 0.0 Ver-heat protection Control Mark pressure protection 0.0 Ver-heat protecotion Control <		Operating volume	G/h	793 ~ 1	1,902
Compressor Type x Quantity Inverter Inverter Manufacture ACBR Works, MTSUBISHI ELECTIC CORPORATION Starting method Inverter Molecr august W Case heater W Starting method Method Lubrigant Case heater Starting function Metics Starting function Metics Topic column (Starting Column) Metics Starting function Metics Profection devices High pressure protection Profection devices Metics (Starting Column) Very k value (Metics (Starting Column) Metics (Starting Column) Very k value (Metics) Metics (Starting Column) Very k value (Metics) Metics (Starting Column) Very k value (Metics) Metics (Starting Column) <t< td=""><td></td><td>range</td><td></td><td></td><td></td></t<>		range			
Marufacture ACAR Works, MTSUBSH LECTRIC CORPORATION Starting method Invester Motor output IN Case heater IN Case heater IN Case heater IN External finish In Case heater IN Protection devices In Compressor Overheater protection Control Investor circuit Use upth Ios (dg) Vater pressure Max Ed Dia 1.32 Vater pressure Max Ed Dia 1.32 Vater pressure Max Ed Dia 2.0 IIIC circuit (HIC, Heat Inter, Changer) In IIIC circuit (HIC, Heat Inter, Changer) In	•	-	m ³ /h		
Starting method WW 0.0 Motor output WW 6.0 Lubricant MW 0.0 Starting method MW 0.0 Starting method Mice as heater W Starting method Mice as heater Mice as heater Protection devices High pressure switch at 4.15 Mice 102 (50 kg) Compresor Oracheat protection Mice as heater Control Des fkg Mice and the size as heater Control External Mice and the size as heater Vis weight Bs fkg Mice and the size as heater Heat exchanger Mice and the size as heater Mice and the size as heater Mice and the size as heater Size and the size as heater Size and the size as heater Mice and the size as heater Size fkad at heater Size figure <	Compressor				
Motor output KW 6.0 Gase header KW					
Case heater NM			F/W		
Lubricant MEL32 External finish Galvanized steel sheets External dimension H x W x D in 43-6716 x 34-11/16 x 21-11/16 mm 11:00 x 05:50 0 Protection devices High pressure protection High pressure sensor, High pressure sensor, High consumer sensor, High Controller 0 Compressor Over heat protection 0 0 Compressor Over heat protection 0 0 Compressor 0 0 0 0 Compressor 0 0 0 0 0 Control 0 0 0 0 0 0 Very extraption Ibs (kg) 0 0 0 0 Very extraption gal 0 0 0 0 0 Very extraption gal 0					5
External dimension H x W x D In. Galavaized steel sheets External dimension H x W x D In. 43/6/18.24.11/16 x2.11/16 Protection devices High pressure protection 0.047/16.24.21.11/6 x2.11.11/6 Invester circuit Over-heat protection 0.047/16.24.21.11/6 x2.11.11/6 x2.11/6 x2.11/			NVV	MEL	32
Imm 1.00 x 880 x 550 Protection devices High pressure sensor. High presseresensor. High pressend pressor sensor. High pressores	External finish				
Protection devices High pressure answitch at 4.15 MPa (601 pg) Invester a criticat Compressor a most of the pressure answitch at 4.15 MPa (601 pg) Invester a criticat Compressor a most of the protection Compressor a most of the pressure and the protection Compressor a most of the pressor a most of the protection Compressor a most of the protection Comp	External dimension H x W	/ x D	in.	43-5/16 x 34-11	/16 x 21-11/16
Inverter circuit Over-heat protection, Over-ourrent protection Compressor Over-heat protection, Over-ourrent protection Refrigerant Type x original charge R410A x11 lbs +1 0z (50 kg) Control Ibs (kg) 4110 k11 lbs (b) Vet weight Ibs (kg) 4111 (186) Heat exchanger plate type Water volume in plate G In 5.0 Water pressure Max. psi Design 200 HC circuit (HIC: Heat Inter-Changer) - Standard KL94C243 Wring KL94C243 Wring KL94C243 Wring Comment Jatachment Accessory Optional parts Joint: CMV-Y102SS-G2, CMV-Y102, TG2, CMV-Y10, TG1, TG1, TG1, TG1, TG1, TG1, TG1, TG1		1			
Compressor Over-heat protection Refrigerant Type x original charge R410A x11 lbs + 1 oz (5.0 kg) Control Indoor LEV and BC controller Vet weight 411 (186) Heat exchanger 0 plate type Water volume in plate G Water volume in plate G Water ressure Max. psi Mater pressure Max. psi Detaits on foundati	Protection devices		1		
Refrigerant Type x original charge R410A X11 lbs + 1 or (5.0 kg) Vet weight Ibs (kg) 100or LEV and BC controller Vet weight 011 (166) 011 (166) Feat exchanger 012 (160) 011 (166) Water volume in plate G 1.32 Water pressure Max. psi 290 HC circuit (HIC: Heat Inter-Changer) - Orawing External KL9462243 Wring KL946241 00 Standard Document Installation Manual Accessory Details refer to External Drw 0101, 0161 (NU-G1) BC controller: CMB-P104, 105, 106, 103, 1010, 103, 1010NU-G1 BC controller: CMB-P104, 105, 106, 103, 1010NU-G1 BC controller: CMB-P104, 105, 106, 103, 1010NU-G1, 103, 1010NU-G1 Built BC controller: CMB-P104, 103, 1010, 1013, 1010NU-G1 BC controller: CMB-P104, 103, 1010, 1013, 1010NU-G1 Built BC controller: CMB-P104, 103, 1010, 1013, 1010NU-HA1 Sub BC controller: CMB-P104, 103NU-G31, CMB-P104, 103, 1010, 1013, 1010NU-G1 Built BC controller: CMB-P104, 103NU-G31, CMB-P104, 103, 1010, 1013, 1010NU-G1 Remarks Details on foundation work, ueuk ork, insulation work, ueut orkin, subation work, ueut orkin, subation work, ueut					
Control Indoor LEV and BC controller Net weight (bs (kg) 411 (186) Heat exchanger plate type - Water volume in plate G 1.32 Water pressure Max. psi 290 HIC circuit (HIC: Heat Inter-Changer) - Orawing External KL94C243 Wing KE94G421 - Standard Document Installation Manual Accessory Details refer to External Low 0.60, 0.00, 0.00, 0.00, 0.00, 0.00, 0.01, 0	Pofrigorant	1			
Net weight bs (kg) 411 (186) Heat exchanger plate type Heat exchanger plate type Water volume in plate G 1 5.0 Water pressure Max. psi psi 200 HC circuit (HIC: Heat Inter-Changer) - Jordwing External Wring KL94C243 Standard Document Italiation Manual Details refer to External Drw Standard Document Optional parts BC controller: CMP-104, 105, 106, 100, 1013, 1016NU-61 (Main BC controller: CMP-104, 105, 106, 100, 1010, 1016NU-41 Sub BC controller: CMP-104, 105, 1016, 1016, 1016, 1016NU-HA1 Sub BC controller: CMP-104, 105, 1016, 1016NU-HA1 Sub BC controller: CMP-104, 105, 1016, 1016NU-HA1 Sub BC controller: CMP-104, 108, 1016, 1016NU-HA1 Sub BC controller: CMP-104, 108, 1016, 1016NU-HA1 Sub BC controller: CMP-104, 108, 1016, 1016NU-HA1 Sub BC controller: CMP-104, 108, 1016, 1016NU-HA1 Sub BC controller: CMP-104, 108, 1016, 1016NU-HB1 Remarks Details on foundation work, duct work, instaltion work, electrical wring, power source switch, and other items shall be n Remarks Details on foundatin duct be installet Source Unit heads to be kept below	Reingerant				
Image: space	Net weight	Control	lbs (ka)		
Image: Second	Heat exchanger				
Water pressure Max. psi 200 HIC circuit (HIC: Heat Inter-Changer)	-	Water volume in plate	G		
Image 2.0 HIC circuit (HIC: Heat Inter-Changer) KL94C243 Drawing External KL94C243 Standard Document Installation Manual attachment Accessory joint: CMY-Y102SS-G2, CMY-R160-J1 Details refer to External Drw joint: CMY-Y102SS-G2, CMY-R160-J1 BC controller: CMB-P104, 105, 106, 106, 106, 106, 106, 106, 106, 106			1		
HIC circuit (HIC: Heat Inter-Changer)		Water pressure Max.			
External KL94C243 Wrinng KE94G241 Standard Document Accessory Details refer to External Drw Optional parts joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-R160-J1 BC controller: CMB-P104, 105, 106, 106, 1010, 1013, 1016NU-G1 Main BC controller: CMB-P104, 105, 106, 106, 1010, 1013, 1016NU-G1 Main BC controller: CMB-P104, 105, 106, 1010, 1013, 1016NU-G1 Main BC controller: CMB-P104, 108NU-G1, 108NU-G1 Remarks Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be rafered 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*FD.B. (40*CD.B.) The Heat Source Unit should not be installed at outdoor. Be sure to provide interlocking for the unit should noto. Be sure to provide interlocking for the unit operation and water circuit. Indoer: 81*FD.B. (20*CD.B.), Water temperature: 68*F (30*C) 2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoer: 61*FD.B. (20*CD.B.), Water temperature: 68*F (20*C)			MPa		
Wiring KE94G421 Standard 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, 1016, 1013, 1016NU-G1 Main BC controller: CMB-P104, 1016NU-G1, 1016NU-HA1 Sub BC controller: CMB-P104, 1016NU-GB1, CMB-P1016NU-HB1 Sub BC controller: CMB-P104, 1016NU-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 reperture of the Heat Source Unit needs to be kept below 104°FD.B. (40°CD.B.) The ambient memory as trainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. Inders: Unit converter I.Nominal cooling conditions (Test conditions are based on AHRI 1230) Inders 66°F (30°C) Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) Main 230°C Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) *Above specification data i					
Standard Document Installation Manual Accessory Details refer to External Drw Joptional parts joint: CMV-Y102S-G2, CMV-R160-J1 BC controller: CMB-P104, 105, 106, 108, 1010, 1013, 1016NU-G1 Main BC controller: CMB-P104, 105, 106, 108, 1010, 1013, 1016NU-HA1 Sub BC controller: CMB-P108, 1010, 1013, 1016NU-G1 Bub 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 remperature of the Heat Source Unit needs to be kept below 104°FD. B. (40°CD.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 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. Indocr: 68°FD.B. (20°CD.B.), Water temperature: 86°F (30°C) 2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indocr: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) 1 Indocr: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C)	Diawing				
Accessory Details refer to External Drw Optional parts joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-R160-J1 BC Controller: CMB-P104, 105, 106, 100, 1013, 1016NU-G1 BC Controller: CMB-P104, 105, 106, 100, 1013, 1016NU-HA1 Sub BC controller: CMB-P104, 105, 106, 108, 100, 1013, 1016NU-HA1 Sub BC controller: CMB-P104, 108NU-GA1, 108, 1010, 1016NU-HA1 Remarks Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be refered to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit needs to be kept below 80%. The Heat Source Unit needs to be kept below 80%. The Heat Source Unit needs to be kept below 80%. The Heat Source Unit needs to the unit. 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 around both water and refrigerant piping, follow the installation manual. Indeor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Water temperature: 86°F (30°C) Unit converter Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) #Above specification data in which as a strain (more chars)	Standard	1			
Diptional 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-P104, 105, 106, 108, 1010, 1013, 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 reparture of the Heat Source Unit needs to be kept below 104*FD.B. (40°CD.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 incut. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. Indoor: 81*FD.B./66*FW.B. (27*CD.B.), Water temperature: 68*F (30*C) 2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68*FD.B. (20*CD.B.), Water temperature: 68*F (20*C) *Above specification data is *Above specification data is	attachment				
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 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 provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unit operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. Unit converter Indoor: 81°FD.B. (20°CD.B.), Water temperature: 68°F (30°C) BTU/h = kW x 3,412 cfm = m ³ /min x 35.31 lbs = kg/0.4536 *Above specification data is	Optional parts			joint: CMY-Y102SS-G2, CMY	-Y102LS-G2, CMY-R160-J1
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The Heat Source Unit should not be installed at outdoor. 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. Intoer: 81°FD.B./68°FW.B. (27°CD.B./19°CW.B.), Water temperature: 86°F (30°C) 2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) *Above specification data i				The ambient temperature of the Heat Source Unit needs to be	kept below 104°FD.B. (40°CD.B.)
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When installing insulation material around both water and refrigerant piping, follow the installation manual. Notes: 1.Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Water temperature: 86°F (30°C) 2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) *Above specification data i				Be sure to provide interlocking for the unit operation and water	r circuit.
Index: Unit converter I.Nominal cooling conditions (Test conditions are based on AHRI 1230) BTU/h =kW x 3,412 Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Water temperature: 86°F (30°C) Cfm =m ³ /min x 35.31 Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) Ibs =kg/0.4536 *Above specification data i					
1. Nominal cooling conditions (Test conditions are based on AHRI 1230) BTU/h =kW × 3,412 Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Water temperature: 86°F (30°C) cfm =m³/min × 35.31 2. Nominal heating conditions (Test conditions are based on AHRI 1230) lbs =kg/0.4536 Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) *Above specification data in				vvnen installing insulation material around both water and refri	gerant piping, tollow the installation manual.
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Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Water temperature: 86°F (30°C) 2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) *Above specification data i		ana (Taat aas -littaraa t	and as AUD!	1220)	
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Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C) // lbs =kg/0.4536 *Above specification data is					
					lbs =kg/0.4536
					*Above specification data in
subject to rounding variation					
	-				Subject to rounding Variation

*Above specification data is subject to rounding variation.

Heat Source Model			PQRY-P12	DZLMU-A1
Indoor Model			Non-Ducted	Ducted
Power source		i	3-phase 3-wire 57	
Cooling capacity	*1		120,	
(Nominal)	Deventionent	kW	35	
(53	Power input	kW	7.5	
(57	75) Current input	A	8.	
(Rated)		BTU/h kW	33	
	Power input	kW	6.95	7.35
(57	75) Current input	A	7.7	8.2
Temp. range of	Indoor	W.B.	7.7 59~75°F (
cooling	Circulating water	°F	50~113°F	
Heating capacity	*2	BTU/h	135,	
Nominal)	2	kW	39	
	Power input	kW	7.0	
(57	75) Current input	A	7.	
(Rated)		BTU/h	129,	
(kW	37	
	Power input	kW	6.55	5.92
(57	75) Current input	A	7.3	6.6
Femp. range of	Indoor	D.B.	59~81°F (15~27°C)
neating	Circulating water	°F	50~113°F	10~45°C)
ndoor unit	Total capacity		50~150% of heat s	•
connectable	Model/Quantity		P06~P9	
Sound pressure level (r	measured in anechoic room)	dB <a>	54	0
Refrigerant	High pressure	in. (mm)	3/4 (19.05) Brazed
piping diameter	Low pressure	in. (mm)	7/8 (22.2	Brazed
Minimum Circuit Ampa		А	1	
Maximum Overcurrent		A	1	
Circulating water	Water flow rate	G/h	1,5	
		G/min (gpm)	25	
		m ³ /h	5.7	
		L/min	90	3
		cfm	3.	
	Pressure drop	psi	. 3.4	
		kPa	24	
	Operating volume	G/h	. 793 ~	
	range	G/min (gpm)	13.2~	
2		m ³ /h	3.0 ~	
Compressor	Type x Quantity		Inverter scroll herme	
	Manufacture		AC&R Works, MITSUBISHI E	
	Starting method		Inve	
	Motor output	kW kW	7.	1
	Case heater	KVV	MEL	22
External finish	Lubricant		Galvanized s	
External dimension H x	x W x D	in.	43-5/16 x 34-11	
		mm	1,100 x 8	
Protection devices	High pressure protection	•	High pressure sensor, High press	
	Inverter circuit		Over-heat protection, C	
	Compressor		Over-heat	
Refrigerant	Type x original charge		R410A x 11 lbs	+ 1 oz (5.0 kg)
5	Control		Indoor LEV and	
Net weight	<u>.</u>	lbs (kg)	411 (186)
Heat exchanger			plate	
÷	Water volume in plate	G	1.3	
		1	5.	0
	Water pressure Max.	psi	29	
		MPa	2.	0
HIC circuit (HIC: Heat I			-	
Drawing	External		KL94	
	Wiring		KE94	
Standard	Document		Installation	
attachment	Accessory		Details refer to	
Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS	-G2, CMY-Y202S-G2, CMY-R160-J1
			BC controller: CMB-P104, 105, 10	6, 108, 1010, 1013, 1016NU-G1
			Main BC controller: CMB-P108, 1010, 1013	3, 1016NU-GA1, 108, 1010, 1016NU-HA1
			Sub BC controller: CMB-P104, 10	8NU-GB1_CMB-P1016NU-HB1
Remarks			Details on foundation work, duct work, insulation work, electric	
Comarka			ferred to the Installation Manual.	an winny, power source switch, and Utilet items shall be fe
			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°FD.B. (40°CD.B.)
			The ambient relative humidity of the Heat Source Unit needs t	o be kept below 80%.
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			Be sure to mount a strainer (more than 50 meshes) at the wat Be sure to provide interlocking for the unit operation and wate	
			Install the supplied insulation material to the unused drain-soc	
			When installing insulation material around both water and refr	
lotes:				Unit converter
	ditions (Test conditions are b	ased on AHRI	1230)	BTU/h =kW x 3,412
	FW.B. (27°CD.B./19°CW.B.)			
2.Nominal heating cond	ditions (Test conditions are I	based on AHRI		$cfm = m^3/min \times 35.31$
	CD.B.), Water temperature:			lbs =kg/0.4536

Indoor Model Power source			PQRY-P14 Non-Ducted	Ducted
			3-phase 3-wire 57	
Cooling capacity	*1	BTU/h	144,	
(Nominal)		kW	42	2
	Power input	kW	8.7	
(575	5) Current input	А	9.	
(Rated)		BTU/h	137,	
		kW	40	
(Power input	kW	8.07	9.98
	5) Current input	A	9.0	11.1
Temp. range of cooling	Indoor Circulating water	W.B. ⁰F	59~75°F (50~113°F	
Heating capacity	*2	BTU/h	160,	
(Nominal)	2	kW	46	
(Norminal)	Power input	kW	8.7	
(57!	5) Current input	A	9.	
(Rated)	of fourient input	BTU/h	152,	
(kW	44	
	Power input	kW	7.47	7.90
(575	5) Current input	A	8.3	8.8
Temp. range of	Indoor	D.B.	59~81°F (
heating	Circulating water	٩F	50~113°F	
Indoor unit	Total capacity		50~150% of heat s	purce unit capacity
connectable	Model/Quantity		P06~P9	6/1~36
Sound pressure level (m	easured in anechoic room)	dB <a>	54	
Refrigerant	High pressure	in. (mm)	7/8 (22.2	
piping diameter	Low pressure	in. (mm)	1-1/8 (28.5	
Minimum Circuit Ampac		А	1:	
Maximum Overcurrent F		А	2	
Circulating water	Water flow rate	G/h	1,9	
		G/min (gpm)	31	
		m ³ /h	7.2	
		L/min	12	
	-	cfm	4.	
	Pressure drop	psi	6.3	
	Onenetics	kPa C/b	4	
	Operating volume	G/h	1,189 ~	
	range	G/min (gpm)	19.8 ~	
0	Turne a Oracetita	m ³ /h	4.5 ~	
Compressor	Type x Quantity			
	Manufacture Starting method		AC&R Works, MITSUBISHI I	
	Motor output	kW	Inve 9.	
	Case heater	kW	9.	5
	Lubricant	KVV	MEL	32
External finish	Edonodin		Galvanized	
External dimension H x	WxD	in.	57-1/8 x 34-11	
		mm	1.450 x 8	
	High pressure protection		High pressure sensor, High press	ure switch at 4.15 MPa (601 psi)
Protection devices				
Protection devices	Inverter circuit			Ver-current protection
Protection devices	Inverter circuit Compressor		Over-heat	
				protection
	Compressor		Over-heat	+ 4 oz (6.0 kg)
Refrigerant	Compressor Type x original charge	lbs (kg)	Over-heat R410A x 13 lbs	protection + 4 oz (6.0 kg) I BC controller
Refrigerant Net weight	Compressor Type x original charge	lbs (kg)	Over-heat R410A x 13 lbs Indoor LEV and	protection + 4 oz (6.0 kg) I BC controller 232)
Refrigerant Net weight	Compressor Type x original charge	lbs (kg) G	Over-heat R410A x 13 lbs Indoor LEV and 512 (protection + 4 oz (6.0 kg) I BC controller 232) type
Refrigerant Net weight	Compressor Type x original charge Control	-	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate	brotection + 4 oz (6.0 kg) I BC controller 232) Vppe 2
Refrigerant Net weight	Compressor Type x original charge Control	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5.2 29	orotection + 4 oz (6.0 kg) IBC controller 232) type 2 2 0 0
Refrigerant <u>Net weight</u> Heat exchanger	Compressor Type x original charge Control Water volume in plate Water pressure Max.	G I	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5 29 2.	orotection + 4 oz (6.0 kg) IBC controller 232) type 2 2 0 0 0
Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Ir	Compressor Type x original charge Control Water volume in plate Water pressure Max. hter-Changer)	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5. 29 2.	brotection + 4 oz. (6.0 kg) I BC controller 232) Vppe
Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Ir	Compressor Type x original charge Control Water volume in plate Water pressure Max. hter-Changer) External	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5.5 2.2 2.2 	brotection + 4 oz (6.0 kg) I BC controller 232) type
Refrigerant <u>Net weight</u> Heat exchanger <u>HIC circuit (HIC: Heat In</u> Drawing	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5. 22 22 22 24 1.1 5.1 1.2 1.3 5.4 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.6 2.7 2.7 2.8 2.9 2.1 2.1 2.1 2.1 2.1 2.1 2.1 3.1 3.1 3.1 3.1 3.1 3.2 3.3 3.4 3.5 3.5 3.6 3.7 3.8	brotection + 4 oz (6.0 kg) IBC controller 232) type 2 0 0 0 0 0 0 0 0 0 0 0 0 0
Refrigerant <u>Net weight</u> Heat exchanger <u>HIC circuit (HIC: Heat Ir</u> Drawing Standard	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring Document	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5.5 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 294 KL94 KE94 Installatio	brotection + 4 oz (6.0 kg) IBC controller 232) type 2 0 0 0 0 0 0 0 0 0 0 0 0 0
Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Ir Drawing Standard attachment	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5. 29 21 22 23 24 1.3 1.4 1.5 2.5 2.6 2.7 1.8 <	brotection + 4 oz (6.0 kg) IBC controller 232) type 2 0 0 0 0 0 0 0 0 0 0 0 0 0
Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Ir Drawing Standard attachment	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring Document	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5. 289 2. 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.8 1.1	brotection + 4 oz. (6.0 kg) I BC controller 232) type -2 -2 -2 -2 -2 -2 -2 -2 -2 -2
Refrigerant <u>Net weight</u> Heat exchanger <u>HIC circuit (HIC: Heat Ir</u> Drawing Standard attachment	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring Document	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5. 2 3 3 3 4 1 1 1 1 1 1 2 2 2 2<	brotection + 4 oz (6.0 kg) I BC controller 232) type 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0
Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat In Drawing Standard attachment Dptional parts	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring Document	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5. 22 22 22 23 24 1.1 5.12 22 23 24 1.1 5.1 25 26 27 28 29 11.1 11.1 11.2 11.3 12.3 13.4 14.4 14.5 14.5 14.5 14.5 14.5 14.6 14.7 15.8 15.8 16.8 17.9 17.9 18.0 19.0 10.0 10.0 10.0 10.0 10.0	brotection + 4 oz (6.0 kg) IBC controller 232) type 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0
Protection devices Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Ir Drawing Standard attachment Optional parts Remarks	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring Document	G I psi	Over-heat R410A x 13 lbs Indoor LEV and R410A x 13 lbs Indoor LEV and S12(Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor. Be sure to provide insulation material to the unused drain-soor Be sure to provide insulation material to the unused drain-soor	brotection + 4 oz (6.0 kg) IBC controller 232) type :2 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :2 :0 :0
Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat In Drawing Standard attachment Dptional parts	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring Document	G I psi	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5.3 2.3 2.3 2.4 2.5 2.5 2.6 2.7 2.8 2.9 2.1 2.1 2.2 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 2.1 2.1 2.2 2.1 2.2 2.1 2.2 2.1 2.2 2.1 2.2 2.1 2.2 2.1 2.2 2.1 2.2 2.2 2.2 2.2 2.2 2.2 2.2	brotection + 4 oz (6.0 kg) IBC controller 232) type :2 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :0 :2 :0 :0
Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat In Drawing Standard Attachment Optional parts Remarks	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring Document	G I psi	Over-heat R410A x 13 lbs Indoor LEV and R410A x 13 lbs Indoor LEV and S12(Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor. Be sure to provide insulation material to the unused drain-soor Be sure to provide insulation material to the unused drain-soor	brotection + 4 oz (6.0 kg) BC controller 232) type 2 2 0 0 0 2244 3421 1 1 Manual External Drw -G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 88NU-GB1, CMB-P1016NU-HB1 al wiring, power source switch, and other items shall b subject to change without notice. kept below 104°FD.B. (40°CD.B.) o b kept below 80%. er inlet piping of the unit. r circuit. ket. gerant piping, follow the installation manual.
Refrigerant <u>Net weight</u> Heat exchanger <u>HIC circuit (HIC: Heat Ir</u> Drawing Standard attachment Optional parts	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring Document	G I psi	Over-heat R410A x 13 lbs Indoor LEV and R410A x 13 lbs Indoor LEV and S12(Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor. Be sure to provide insulation material to the unused drain-soor Be sure to provide insulation material to the unused drain-soor	brotection + 4 oz. (6.0 kg) I BC controller 232) type :2 :0 :2244 :3421 :1 :1 :10:1:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0
Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Ir Drawing Standard attachment Optional parts Remarks Inversion of the second sec	Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) External Wiring Document	G I psi MPa ased on AHRI	Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1 5 2 2 2 2 2 2	brotection + 4 oz (6.0 kg) BC controller 232) type 2 2 0 0 0 2244 3421 1 Manual External Drw -G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 88NU-GB1, CMB-P1016NU-HB1 al wiring, power source switch, and other items shall b subject to change without notice. kept below 104°FD.B. (40°CD.B.) o b kept below 80%. er inlet piping of the unit. r circuit. ket. gerant piping, follow the installation manual.

2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C)

*Above specification data is subject to rounding variation.

*Above specification data is subject to rounding variation.

				BZLMU-A1
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 57	
Cooling capacity	*1	=	168,	
(Nominal)		kW	49.	
	Power input	kW	12.0	
	Current input	А	13.	
(Rated)		BTU/h	161,	
		kW	47.	
	Power input	kW	11.10	11.88
	Current input	A	12.3	13.2
emp. range of	Indoor	W.B.	59~75°F (*	
ooling	Circulating water	°F	50~113°F ((10~45°C)
leating capacity	*2		188,	000
Nominal)		kW	55.	.1
	Power input	kW	9.8	36
(57	Current input	А	11.	.0
(Rated)		BTU/h	179,	000
		kW	52	.5
	Power input	kW	9.09	9.72
(57	(5) Current input	A	10.1	10.8
emp. range of	Indoor	D.B.	59~81°F (15~27°C)
eating	Circulating water	٩F	50~113°F (
ndoor unit	Total capacity		50~150% of heat so	
onnectable	Model/Quantity		P06~P9	
	neasured in anechoic room)	dB <a>	56.	
efrigerant	High pressure	in. (mm)	7/8 (22.2)	
iping diameter	Low pressure	in. (mm)	1-1/8 (28.5	
linimum Circuit Ampa		A (1111)	1-1/6 (20.5	
laximum Overcurrent		A	25	
irculating water	Water flow rate	G/h	1,9	
woulduring water	Water now late	G/min (gpm)	31.	
			1	
		m ³ /h	7.2	
		L/min		
	-	cfm	4.:	
	Pressure drop	psi	6.3	
		kPa	44	
	Operating volume	G/h	1,189 ~	•
	range	G/min (gpm)	19.8 ~	50.9
		m ³ /h	4.5 ~	11.6
Compressor	Type x Quantity		Inverter scroll herme	etic compressor x 1
	Manufacture		AC&R Works, MITSUBISHI E	ELECTRIC CORPORATION
	Starting method		Inve	rter
		1.5.67		
	Motor output	kW	11.	.0
	Case heater	kW	11. 	.0
			11. - MEL	
External finish	Case heater		-	.32
	Case heater Lubricant		- MEL	.32 steel sheets
External finish External dimension H >	Case heater Lubricant	kW	- MEL Galvanized s	_32 steel sheets /16 x 21-11/16
External dimension H >	Case heater Lubricant	kW in. mm		_32 steel sheets /16 x 21-11/16 80 x 550
	Case heater Lubricant	kW in. mm	- MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press	.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi)
External dimension H >	Case heater Lubricant (W x D High pressure protection Inverter circuit	kW in. mm	MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C	32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) over-current protection
External dimension H >	Case heater Lubricant (W x D High pressure protection	kW in. mm	MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat	.32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) byer-current protection protection
External dimension H >	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor	kW in. mm	MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat R410A x 13 lbs	.32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) byer-current protection protection + 4 oz (6.0 kg)
external dimension H and the second sec	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge	kW in. mm	MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat R410A x 13 lbs Indoor LEV and	.32 steel sheets 16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) byer-current protection protection + 4 oz (6.0 kg) d BC controller
External dimension H > Protection devices Refrigerant Net weight	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge	kW in. mm	MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat rotection, C Over-haat 1 R410A x 13 lbs Indoor LEV and 512 (;	.32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232)
External dimension H > Protection devices Refrigerant Jet weight	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control	kW in. mm	MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat protection, C Over-heat R410A x 13 lbs Indoor LEV and 512 (plate	32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) Over-current protection protection + 4 oz (6.0 kg) d BC controller 232) type
ixternal dimension H > Protection devices Refrigerant let weight	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge	kW in. mm	MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat protection, C Over-heat I R410A x 13 lbs Indoor LEV and 512 (plate 1.3	.32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) Over-current protection protection + 4 oz (6.0 kg) 4 BC controller 232) type 32
ixternal dimension H > Protection devices Refrigerant let weight	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate	kW in. mm 0 lbs (kg) G I		32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) Over-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0
ixternal dimension H > Protection devices Refrigerant let weight	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control	kW in. mm lbs (kg) G I psi	- MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat R410A x 13 lbs Indoor LEV and 512 (plate 1.3 5.1	.32 .34 .35 .35 .36 .37 .38 .39 .31 .32 .32 .32 .32 .32 .32 .32 .33 .34 .35 .35 .36 .37 .38 .39 .39 .39 .32 .33 .33 .33 .33 .34 .35 .35 .36 .37 .38 .39 .32 .32 .32 .33 .34 .35 .36 .37 .38 .39 .39 .39 .39 .39 .39 .
ixternal dimension H > Protection devices Refrigerant let weight leat exchanger	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max.	kW in. mm 0 lbs (kg) G I		.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 0
ixternal dimension H > rrotection devices tefrigerant let weight leat exchanger	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer)	kW in. mm lbs (kg) G I psi		.32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) Over-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0
External dimension H > Protection devices Refrigerant Let weight Heat exchanger	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External	kW in. mm lbs (kg) G I psi	MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat protection, C Indoor LEV and 512 (c plate 1,3 5,1 4,2 29 21 KL940 KL940	32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) Over-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 0 0 0 0 0 0 0 0 0 0
External dimension H > Protection devices Refrigerant Let weight Heat exchanger HIC circuit (HIC: Heat Prawing	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring	kW in. mm lbs (kg) G I psi		.32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) Over-current protection protection + 4 oz (6.0 kg) d BC controller 232) type 32 0 0 C244 G421
External dimension H > Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat Drawing Standard	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi		.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 1 </td
External dimension H > Protection devices Refrigerant Let weight Leat exchanger LIC circuit (HIC: Heat I Drawing Standard Litachment	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring	kW in. mm lbs (kg) G I psi		.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 C244 G421 n Manual External Drw
External dimension H > Protection devices Refrigerant Let weight Leat exchanger UIC circuit (HIC: Heat I Drawing Standard ttachment	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi		.32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) Over-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 0 C244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1
xternal dimension H > rotection devices efrigerant let weight leat exchanger IIC circuit (HIC: Heat I rawing tandard ttachment	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi		.32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) Over-current protection protection + 4 oz (6.0 kg) 4 BC controller 232) type 32 0 0 0 C244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1
External dimension H > Protection devices Refrigerant Let weight Heat exchanger HIC circuit (HIC: Heat Prawing Standard ttachment Dptional parts	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi		.32 .32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 2244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1
External dimension H > Protection devices Refrigerant Let weight Heat exchanger HIC circuit (HIC: Heat Drawing Standard Lttachment Dptional parts	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi		.32 .32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 2244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1
External dimension H > Protection devices Refrigerant Let weight Heat exchanger HIC circuit (HIC: Heat Drawing Standard Lttachment Dptional parts	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanized s 57-1/8 x 34-11/ 1,450 x 8: High pressure sensor, High press Over-heat protection, C Over-heat protection, C Over-heat rR410A x 13 lbs Indoor LEV and 512 (2 plate 1,3 5. 29 22. C KL944 KE944 KE944 Installation Details refer to joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 1013 Sub BC controller: CMB-P104, 10 Details on foundation Manual.	.32 steel sheets (16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) Over-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 C244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 38NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be
External dimension H >	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanized s Galvanized s S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Sub BC controller: CMB-P104, 10 Sub BC controller: CMB-P104, 10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be b	.32 .32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 2244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 28NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be subject to change without notice.
External dimension H > Protection devices Refrigerant Let weight Heat exchanger HIC circuit (HIC: Heat Drawing Standard Lttachment Dptional parts	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanizeds Galvanizeds S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat protection, C Over-heat I R410A x 13 lbs Indoor LEV and S12 (2 plate 1.3 5.1 COMPARE SOURCE SOURCE S2 COMPARE SOURCE S2 COMPARE SOURCE S2 COMPARE SOURCE S2 COMPARE SOURCE SOURCE S2 S	.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 10 10
External dimension H > Protection devices Refrigerant Let weight Heat exchanger HIC circuit (HIC: Heat Prawing Standard ttachment Dptional parts	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanized s Galvanized s S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Sub BC controller: CMB-P104, 10 Sub BC controller: CMB-P104, 10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be b	.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 10 10
External dimension H > Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat Drawing Standard Httachment Dptional parts	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanized 3 S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat protection, C Over-heat results Indoor LEV and S12 (2 plate 1,3 5, 29 2,2 C KL944 KE944 KE944 KE944 Installation Details refer to joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 1013 Sub BC controller: CMB-P104, 101 Details on foundation Manual. Due to continuing improvement, above specifications may be 2 The ambient relative humidity of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to be	.32 .32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 22244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 28NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be subject to change without notice. k kept below 104°FD.B. (40°CD.B.) o be kept below 80%.
External dimension H > Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat Drawing Standard Httachment Dptional parts	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanized 3 S7-1/8 x 34-11/ 1.450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat protection, C Over-heat protection, C Over-heat sensor, High press Over-heat sensor, High press Over-heat r R410A x 13 lbs Indoor LEV and S12 (2 plate 1.3 5. 29 2.2 C C S12 (2 plate 1.3 S. S2 S2	.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 10 11
IIC circuit (HIC: Heat raving IIC circuit (HIC: Heat raving IIC circuit (Dic: Heat raving Itandard Itachment Dptional parts	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanized s Galvanized s Galvanized s S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C State provide protection, C State provide protection, C State provide provide protection, C State provide provide protection, C Sub BC controller: CMB-P104, 10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be protection protection protection, above specifications may be protection protection protection, above specifications may be protection protection protection protection protection, above specifications may be protection protection protection protection protection, above specifications may be protection protection, above specifications may be protectintendex be supplied onteroboxing for the uninsed prain-soc Be s	.32 .32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 2244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 28NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be subject to change without notice. k kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit. r circuit. ket.
External dimension H > Protection devices Refrigerant Let weight Heat exchanger HIC circuit (HIC: Heat Prawing Standard ttachment Dptional parts	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanized 3 S7-1/8 x 34-11/ 1.450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat protection, C Over-heat protection, C Over-heat sensor, High press Over-heat sensor, High press Over-heat r R410A x 13 lbs Indoor LEV and S12 (2 plate 1.3 5. 29 2.2 C C S12 (2 plate 1.3 S. S2 S2	.32 .32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 2244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 28NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be subject to change without notice. k kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit. r circuit. ket.
External dimension H > Protection devices Refrigerant Let weight Leat exchanger IIC circuit (HIC: Heat I Drawing Standard Lttachment Optional parts Remarks Remarks	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanized Galvanized Galvanized S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C State provide protection, C State provide protection, C State provide provide protection, C State provide provide protection, C Sub BC controller: CMB-P104, 10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be p The ambient relative humidity of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor. Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material to the unused drain-soc	.32 .32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 2244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 28NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be subject to change without notice. k kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit. r circuit. ket.
External dimension H > Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat I Drawing Standard Httachment Dptional parts Remarks Remarks	Case heater Lubricant (W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document	kW in. mm lbs (kg) G I psi	MEL Galvanized Galvanized Galvanized S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C State provide protection, C State provide protection, C State provide provide protection, C State provide provide protection, C Sub BC controller: CMB-P104, 10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be p The ambient relative humidity of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor. Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material to the unused drain-soc	.32 .32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 0 0 2244 G421 n Manual External Drw Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 28NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be subject to change without notice. k kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit. r circuit. ket.
External dimension H > Protection devices Refrigerant Let weight Let weight Let exchanger IIC circuit (HIC: Heat I prawing Standard ttachment Sptional parts Remarks Remarks	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document Accessory	kW in. mm Ibs (kg) G I psi MPa	MEL Galvanizeds S7-1/8 x 34-11/ 1.450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat protection, C Over-heat protection, C Over-heat I R410A x 13 lbs Indoor LEV and S12 (2 plate 1.3 S. Determine the sensor of the sensor o	.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 13 1016NU-GA1, 108, 1010, 1016NU-HA1 28NU-GB1, CMB-P1016NU-HB1 21 wiring, power source switch, and other items shall be subject to change without notice. kept below 104*FD.B. (40°CD.B.) o be kept below 80%.
External dimension H > Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat I Drawing Standard tttachment Dptional parts Remarks INTERNAL Cooling conc	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document Accessory	kW in. mm mm b G I psi MPa wased on AHRI	MEL Galvanized S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Over-heat protection, C Over-heat protection, C Over-heat results Indoor LEV and S12 (2 plate 1,3 1,5 1,450 x 8 Indoor LEV and S12 (2 plate 1,3 S1 C C S2 S2	.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 13 1016NU-GA1, 108, 1010, 1016NU-HA1 28H velow 104°FD.B. (40°CD.B.) 14 wiring, power source switch, and other items shall be subject to change without notice. 14 ket below 80%. er inlet piping of the unit.
External dimension H > Protection devices Refrigerant Let weight Heat exchanger HIC circuit (HIC: Heat Prawing Standard Lttachment Dptional parts Remarks Cotes: .Nominal cooling conc Indoor: 81°FD.B./66°F	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document Accessory	kW in. mm bs (kg) G I psi MPa MPa based on AHRI , Water tempera	MEL Galvanizeds Galvanizeds S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Status Indoor LEV and Status St	.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 232 0 13 1016NU-GA1, 108, 1010, 1016NU-HA1 28.4 below 104°FD.B. (40°CD.B.) 0 be kept below 80%. er inlet piping of the unit. r circuit. ket. igerant piping, follow the installation manual. </td
External dimension H > Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat I Drawing Standard tttachment Dptional parts Remarks Remarks Indoor: 81°FD.B./66°f Nominal cooling cond Indoor: 81°FD.B./66°f	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Inter-Changer) External Wiring Document Accessory	kW in. mm m bs (kg) G I psi MPa MPa mased on AHRI , Water temperations	MEL Galvanizeds Galvanizeds S7-1/8 x 34-11/ 1,450 x 8 High pressure sensor, High press Over-heat protection, C Status Indoor LEV and Status St	.32 steel sheets /16 x 21-11/16 80 x 550 ure switch at 4.15 MPa (601 psi) >ver-current protection protection + 4 oz (6.0 kg) 1 BC controller 232) type 32 0 13 1016NU-GA1, 108, 1010, 1016NU-HA1 28H velow 104°FD.B. (40°CD.B.) 14 wiring, power source switch, and other items shall be subject to change without notice. 14 ket below 80%. er inlet piping of the unit.

Heat Source Model			PQRY-P192	
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 57	
Cooling capacity	*1		192,	
(Nominal)	r	kW	56	
	Power input	kW	15.	
(575)	Current input	А	16	
(Rated)		BTU/h	183,	
	r	kW	53	
	Power input	kW	13.87	14.19
	Current input	A	15.4	15.8
Temp. range of	Indoor	W.B.	59~75°F (/
cooling	Circulating water	٩F	50~113°F	10~45°C)
leating capacity	*2	BTU/h	215,	000
(Nominal)		kW	63	0
	Power input	kW	11.	90
(575)	Current input	А	13	2
(Rated)		BTU/h	205,	000
· ,		kW	60	1
	Power input	kW	10.97	11.56
(575)	Current input	A	12.2	12.8
Temp. range of	Indoor	D.B.	59~81°F (
eating	Circulating water	°F	50~113°F	
ndoor unit	Total capacity		50~150% of heat so	•
connectable	Model/Quantity		P06~P9	
	asured in anechoic room)	dB <a>	58	
Refrigerant	High pressure	ub <a>	7/8 (22.2)	
•	Low pressure	in. (mm) in. (mm)	1/8 (22.2 1-1/8 (28.5	
piping diameter				
Minimum Circuit Ampacity		A	20	
Maximum Overcurrent Pr		A	30	
irculating water	Water flow rate	G/h	1,9	
		G/min (gpm)	31	
		m ³ /h	7.2	
		L/min	. 12	
		cfm	4.	2
	Pressure drop	psi	6.3	8
		kPa	44	ł
	Operating volume	G/h	1,189 ~	3,054
	range	G/min (gpm)	19.8 ~	50.9
	0	m ³ /h	4.5 ~	11.6
Compressor	Type x Quantity		Inverter scroll herme	
	Manufacture		AC&R Works, MITSUBISHI	
	Starting method		Inve	
	Motor output	kW	12	
	Case heater	kW	12	-
	Lubricant		MEL	32
External finish	Lubricant		Galvanized	
External dimension H x W		in.	57-1/8 x 34-11/	
		mm	1.450 x 8	
Drotootion devices	High pressure protection		1,450 X 8 High pressure sensor, High press	
Protection devices		1		
	Inverter circuit		Over-heat protection, C	
	Compressor		Over-heat	
Refrigerant	Type x original charge		R410A x 13 lbs	
	Control	<u>г</u>	Indoor LEV and	
Net weight		lbs (kg)	512 (
Heat exchanger	r		plate	type
	Water volume in plate	G	1.3	2
		1	5.	0
	Water pressure Max.	psi	29	0
		MPa	2.	0
HIC circuit (HIC: Heat Inte	er-Changer)		-	
Drawing	External		KL940	2244
3	Wiring		KE94	
	Document		Installation	
Standard				External Drw
attachment	Accessory			Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-11
attachment			joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101:	3, 1016NU-GA1, 108, 1010, 1016NU-HA1
Standard attachment Optional parts Remarks			joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM	3, 1016NU-GA1, 108, 1010, 1016NU-HA1 <u>I8NU-GB1, CMB-P1016NU-HB1</u> al wiring, power source switch, and other items shall be subject to change without notice. kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit. r circuit. ket.
ttachment Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 1013 Sub BC controller: CMB-P104, 10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wat Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material to the unused drain-soc	3, 1016NU-GA1, 108, 1010, 1016NU-HA1 <u>I8NU-GB1, CMB-P1016NU-HB1</u> al wiring, power source switch, and other items shall be subject to change without notice. kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit. r circuit. ket.
attachment Dptional parts Remarks			joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 1013 Sub BC controller: CMB-P104, 10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wat Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material to the unused drain-soc	3, 1016NU-GA1, 108, 1010, 1016NU-HA1 <u>I8NU-GB1, CMB-P1016NU-HB1</u> al wiring, power source switch, and other items shall be subject to change without notice. kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit. r circuit. ket.
Attachment Optional parts Remarks Notes:	Accessory	ased on AHDI	joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 1013 Sub BC controller: CMB-P104, 10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wat Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material to the unused drain-soor. When installing insulation material around both water and refr	3, 1016NU-GA1, 108, 1010, 1016NU-HA1 <u>I8NU-GB1, CMB-P1016NU-HB1 al wiring, power source switch, and other items shall be subject to change without notice. kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit. circuit. ket. gerant piping, follow the installation manual. Unit converter </u>
attachment Optional parts Remarks Jotes: 1.Nominal cooling conditi			joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 1013 Sub BC controller: CMB-P104, 10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wat Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material to the unused drain-soc When installing insulation material around both water and refr	A, 1016NU-GA1, 108, 1010, 1016NU-HA1 <u>I8NU-GB1, CMB-P1016NU-HB1 al wiring, power source switch, and other items shall be subject to change without notice. kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit. circuit. ket. gerant piping, follow the installation manual. </u>

Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Water temperature: 8 2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°FD.B. (20°CD.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.

Heat Source Model ndoor Model Power source			POPY-P14	ZSLMU-A1
ower source			Non-Ducted	Ducted
			3-phase 3-wire 5	
Cooling capacity	*1		144.	
Nominal)		kW	42	
(575)	Power input Current input	kW A	7.	
(Rated)		BTU/h	137	
(Italed)		kW		.2
	Power input	kW	6.53	7.72
(575)) Current input	A	7.2	8.6
Temp. range of	Indoor	W.B.	59~75°F (15~24°C)
cooling	Circulating water	°F	50~113°F	(10~45°C)
leating capacity	*2		160	
Nominal)		kW	46	
	Power input	kW	7.	
) Current input	A	8	
(Rated)		BTU/h kW	152	
	Power input	kW	6.86	7.22
(575)		A	7.6	8.0
emp. range of	Indoor	D.B.	7.0 59~81°F (
eating	Circulating water	0.B. ⁰F	50~113°F	
ndoor unit	Total capacity	1 1	50~150% of heat s	
onnectable	Model/Quantity		P06~P9	
	easured in anechoic room)	dB <a>	49	
Refrigerant	High pressure	in. (mm)	7/8 (22.2	
iping diameter	Low pressure	in. (mm)	1-1/8 (28.5	
Set Model	-			
lodel			PQRY-P72ZLMU-A1	PQRY-P72ZLMU-A1
Iinimum Circuit Ampacit		А	5	5
Aaximum Overcurrent Pi		A	15	15
Circulating water	Water flow rate	G/h	1,522 -	
		G/min (gpm)	25.4 -	
		m ³ /h L/min	5.76 - 96 -	
		cfm	3.4 -	
	Pressure drop	psi	3.44	3.48
	Flessule ulop	kPa	24	24
	Operating volume	G/h	793 + 793 ~ 1	
	range	G/min (gpm)	13.2 + 13.2 -	
		m ³ /h	3.0 + 3.0 -	
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 CORPORATIO
	Starting method		Inverter	Inverter
		1.3.67	4.3	
	Motor output	kW	4.3	4.3
	Motor output Case heater	kW		4.3
			4.3 - MEL32	- MEL32
External finish	Case heater Lubricant		- MEL32 Galvanized steel sheets	- MEL32 Galvanized steel sheets
External finish External dimension H x V	Case heater Lubricant	kW in.	- MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16
	Case heater Lubricant	kW	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550
	Case heater Lubricant	kW in. mm	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601	
External dimension H x V	Case heater Lubricant W x D High pressure protection	kW in. mm	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi)
External dimension H x V	Case heater Lubricant W x D High pressure protection Inverter circuit	kW in. mm	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection
External dimension H x V Protection devices	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor	kW in. mm	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Over-heat protection	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Over-heat protection
External dimension H x V Protection devices	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge	kW in. mm	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg)	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection. Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg)
External dimension H x V Protection devices Refrigerant	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor	kW in. mm n	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller
External dimension H x V Protection devices Refrigerant Jet weight	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge	kW in. mm	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186)
External dimension H x V Protection devices Refrigerant Jet weight	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control	kW in. mm n	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type
External dimension H x V Protection devices Refrigerant Vet weight	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge	kW in. mm n	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (rpsi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32
External dimension H x V Protection devices Refrigerant Vet weight	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate	kW in. mm n	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type
External dimension H x V Protection devices Refrigerant Vet weight	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control	kW in. mm n Ibs (kg) G I	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (rpsi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0
External dimension H x V Protection devices Refrigerant <u>let weight</u> leat exchanger	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max.	kW in. mm n Ibs (kg) G I psi	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection 0ver-heat protection, Over-current protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290
External dimension H x V Protection devices Refrigerant <u>let weight</u> leat exchanger	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max.	kW in. mm n Ibs (kg) G I psi	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Over-heat protection, Over-current protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 5.0 290 2.0	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290
ixternal dimension H x V Protection devices Refrigerant let weight leat exchanger <u>HC circuit (HIC: Heat Int</u> Pipe between unit and	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer)	kW in. mm n Ibs (kg) G I psi MPa	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection 0ver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 5/8 (15.88) Brazed	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed
ixternal dimension H x V Protection devices Refrigerant let weight leat exchanger IIC circuit (HIC: Heat Int ipe between unit and istributor	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Qver-heat protection, Over-current protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 5/8 (15.88) Brazed - KL94	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection. Over-current protection Over-heat protection. R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251
ixternal dimension H x V Protection devices Refrigerant <u>let weight</u> leat exchanger <u>IIC circuit (HIC: Heat Int</u> ipe between unit and istributor prawing	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring	kW in. mm n lbs (kg) G I psi MPa in. (mm)		MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (npsi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251
External dimension H x V Protection devices Refrigerant let weight leat exchanger HIC circuit (HIC: Heat Int Pipe between unit and listributor Drawing Standard	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (rpsi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual
External dimension H x V Protection devices Refrigerant <u>Net weight</u> Heat exchanger <u>HC circuit (HIC: Heat Int</u> Pipe between unit and <u>Histributor</u> Drawing Standard tttachment	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatio	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (rpsi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual D External Drw
External dimension H x V Protection devices Refrigerant <u>let weight</u> leat exchanger <u>lIC circuit (HIC: Heat Int</u> Pipe between unit and <u>listributor</u> Drawing Standard Ittachment	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 5.0 290 2.0 5/8 (15.88) Brazed KE94G421 Installatio Details refer to Heat Source Twinning	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Over-heat protection, Over-current protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual 0 External Drw y kit: CMY-Q100CBK2
External dimension H x V Protection devices Refrigerant <u>let weight</u> leat exchanger <u>lIC circuit (HIC: Heat Int</u> Pipe between unit and <u>listributor</u> Drawing Standard Ittachment	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatic Details refer ty Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (npsi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual b External Drw kit: CMY-Q100CBK2 S-62, CMY-Y202S-G2, CMY-R160-J1
xternal dimension H x V rotection devices efrigerant let weight leat exchanger IIC circuit (HIC: Heat Int ipe between unit and istributor rawing tandard ttachment	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P108, 1010, 101	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection. Over-current protection 0ver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual pt:: CMY-Q100CBK2 -G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1
xternal dimension H x V rotection devices efrigerant let weight leat exchanger IIC circuit (HIC: Heat Int ipe between unit and istributor rawing tandard ttachment ptional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual p External Drw kit: CMY-q100CBK2 S-G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1
External dimension H x V Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat Int Pipe between unit and listributor Drawing Standard Htachment Optional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection, Over-current protection Qver-heat protection, Over-current protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatio Details refer tr Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P104, 100, 101 Sub BC controller: CMB-P104, 1	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual p External Drw kit: CMY-q100CBK2 S-G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1
External dimension H x V Protection devices Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Int Pipe between unit and distributor Drawing Standard attachment Dptional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (rpsi) Over-heat protection. Over-current protection 0ver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual 0 External Drw 1 kit: CMY-Q100CBK2 -G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be item
External dimension H x V Protection devices Refrigerant <u>Vet weight</u> <u>Vet weight</u>	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Qver-heat protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection 0ver-heat protection, Over-current protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual 9 External Drw 1 kit: CMY-Q100CBK2 -G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be is subject to change without notice. > kept below 104°FD.B. (40°CD.B.)
External dimension H x V Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat Int Pipe between unit and listributor Drawing Standard Htachment Optional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 6 5/8 (15.88) Brazed 6 KE94G421 Installatio Details refer to Sub Controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electrifered to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to b	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Qver-heat protection, Over-current protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual 9 External Drw 1 kit: CMY-Q100CBK2 -G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 28NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be is subject to change without notice. > kept below 104°FD.B. (40°CD.B.)
External dimension H x V Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat Int Pipe between unit and listributor Drawing Standard Htachment Optional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electriferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The Heat Source Unit should not be installed at outdoor.	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual o External Drw kit: CMY-Q100CBK2 S-62, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 028NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. kept below 104°FD.B. (40°CD.B.) to be kept below 80%.
External dimension H x V Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat Int Pipe between unit and listributor Drawing Standard Htachment Optional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Qver-heat protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatic Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electrif ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient relative humidity of the Heat Source Unit needs to br The ambient relative humidity of the Heat Source Unit needs to br Be sure to mount a strainer (more than 50 meshes) at the wa	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual D External Drw y kit: CMY-Q100CBK2 -G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 D8NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be is subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit.
External dimension H x V Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat Int Pipe between unit and listributor Drawing Standard Htachment Optional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 5/8 (15.88) Brazed Statils refer to Meta Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electrif ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to be the abient relative humidity of the Heat Source Unit needs to be the abient relative humidity of the Heat Source Unit needs to be the abient relative humidity of the Heat Source Unit needs to be the abient relative humidity of the Heat Source Unit needs to be the abient relative humidity of the Heat Source Unit needs to be the abient relative humidity of the Heat Source Unit needs to be the abient relative humidity of the Heat Source Unit needs to be th	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection 0ver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual 0 External Drw 1 kit: CMY-Q100CBK2 -G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 DBNU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be I subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r circuit.
External dimension H x V Protection devices Refrigerant Het weight Heat exchanger HIC circuit (HIC: Heat Int Pipe between unit and listributor Drawing Standard Htachment Optional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P104, 10, 101 Sub BC controller: CMB-P104, 01, 01 Sub BC controller: CMB-P104, 10, 101 Details o	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Qver-heat protection Quer-heat protection Quer-heat protection Quer-heat protection Quer-heat protection Quer-heat protection Quer-heat protection 1.32 5.0 2.0 2.0 2.0 2.0 2.0
xternal dimension H x V rotection devices efrigerant et weight eat exchanger IC circuit (HIC: Heat Int ipe between unit and stributor rawing tandard tachment ptional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102L5 Main BC controller: CMB-P104, 1010, 101 Sub BC controller: CMB-P104, 1010, 101 Sub BC controller: CMB-P104, 1010, 101 Sub BC controller: CMB-P104, 101, 101 Sub BC controller: CMB-P104, 10 Sub BC controller: CMB-P104, 10 Sucre Unit needs to bor The Heat Source Unit	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection. Over-current protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual D External Drw kit: CMY-Q100CBK2 S-G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 D8NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. xet.
ixternal dimension H x V Protection devices Refrigerant let weight leat exchanger <u>IIC circuit (HIC: Heat Int</u> Pipe between unit and istributor Drawing Standard ttachment Pptional parts	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P104, 10, 101 Sub BC controller: CMB-P104, 01, 01 Sub BC controller: CMB-P104, 10, 101 Details o	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual D External Drw kit: CMY-Q100CBK2 S-G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 D8NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be i subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. xet.
ixternal dimension H x V irotection devices itefrigerant let weight leat exchanger IIC circuit (HIC: Heat Int ipe between unit and istributor istributor istrabutor istradard ttachment Dptional parts itemarks	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document	kW in. mm n lbs (kg) G I psi MPa in. (mm)	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Qver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102L5 Main BC controller: CMB-P104, 1010, 101 Sub BC controller: CMB-P104, 1010, 101 Sub BC controller: CMB-P104, 1010, 101 Sub BC controller: CMB-P104, 101, 101 Sub BC controller: CMB-P104, 10 Sub BC controller: CMB-P104, 10 Sucre Unit needs to bor The Heat Source Unit	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C251 KE94G421 n Manual D External Drw kit: CMY-Q100CBK2 S-G2, CMY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 D8NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be i subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. xet.
ixternal dimension H x V Protection devices Refrigerant let weight leat exchanger IIC circuit (HIC: Heat Int ipe between unit and istributor prawing Standard ttachment Dptional parts Remarks	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wring Document Accessory	kW in. mm ibs (kg) G I psi MPa in. (mm) in. (mm)	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 6 5/8 (15.88) Brazed 6 KE94G421 Installatio Details refer to Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electrifered to the Installation Manual. Due to continuing improvement, above specifications may be The ambient treative humidity of the Heat Source Unit needs to be The Heat Source Unit should not be installed at outdoor. Be sure to provide interlocking for the unit operation and wate The Heat Source Unit should not be installed at outdoor. Be sure to provide interlocking for the unit operation and wate <	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0
External dimension H x V Protection devices Refrigerant <u>Vet weight</u> <u>Heat exchanger</u> <u>HIC circuit (HIC: Heat Int</u> <u>Protection devices</u> <u>Protection devices</u> <u>Protection devices</u> <u>Protection devices</u> <u>Protection devices</u> <u>Protection devices</u> <u>Remarks</u> <u>Protection devices</u> <u>Nominal cooling conditi</u> Indoor: 81°FD.B./66°FV	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure External Wiring Document Accessory	kW in. mm n ibs (kg) G I psi MPa in. (mm) in. (mm) 	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection 0ver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - 5/8 (15.88) Brazed - Cheat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P104, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 101, 101 Sub BC controller: CMB-P104, 101, 101 Sub BC controller: CMB-P104, 101 Sub BC controller: CMB-P104, 101, 101 Sub BC controller: CMB-P104, 101 Sub BC controller: CMB-P104, 101 Sub BC controller: CMB-P104, 101	MEL32 Galvarized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (psi) Over-heat protection, Over-current protection Qver-heat protection Quer-heat protection Quer-heat protection Quer-heat protection Quer-heat protection Quer-heat protection 1.32 5.0 200 2.0 - 5/8 (15.88) Brazed 3/4 (19.05) Brazed C
External dimension H x V Protection devices Refrigerant Net weight HIC circuit (HIC: Heat Int Pipe between unit and distributor Drawing Standard attachment Dptional parts Remarks Nominal cooling condit Indoor: 81°FD.B./66°FW Nominal heating condit	Case heater Lubricant W x D High pressure protection Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. ter-Changer) High pressure Low pressure External Wiring Document Accessory	kW in. mm bs (kg) G I psi MPa in. (mm) in. (mm) in. (mm) assed on AHRI , Water temperations	MEL32 Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550 High pressure sensor, High pressure switch at 4.15 MPa (601 psi) Over-heat protection 0ver-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 5/8 (15.88) Brazed - 5/8 (15.88) Brazed - Cheat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Main BC controller: CMB-P104, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 101, 101 Sub BC controller: CMB-P104, 101, 101 Sub BC controller: CMB-P104, 101 Sub BC controller: CMB-P104, 101, 101 Sub BC controller: CMB-P104, 101 Sub BC controller: CMB-P104, 101 Sub BC controller: CMB-P104, 101	

*Above specification data is

Heat Source Model			PQRY-P168	ZSLMU-A1
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 5	
Cooling capacity	*1	BTU/h	168.	
(Nominal)		kW	49	.2
	Power input	kW	9.1	33
(575	5) Current input	А	10	.4
(Rated)		BTU/h	161,	000
		kW	47	.2
	Power input	kW	8.58	9.22
(575	5) Current input	А	9.5	10.2
Temp. range of	Indoor	W.B.	59~75°F (15~24°C)
cooling	Circulating water	٥F	50~113°F	(10~45°C)
Heating capacity	*2	BTU/h	188,	000
(Nominal)		kW	55	i.1
	Power input	kW	9.1	34
(575	5) Current input	А	10).4
(Rated)		BTU/h	179	000
		kW	52	.5
	Power input	kW	8.60	8.03
(575	5) Current input	А	9.5	8.9
Temp. range of	Indoor	D.B.	59~81°F (15~27°C)
heating	Circulating water	٩F	50~113°F	(10~45°C)
Indoor unit	Total capacity		50~150% of heat s	ource unit capacity
connectable	Model/Quantity		P06~P9	96/1~42
Sound pressure level (m	easured in anechoic room)	dB <a>	50	.0
Refrigerant	High pressure	in. (mm)	7/8 (22.2) Brazed
piping diameter	Low pressure	in. (mm)	1-1/8 (28.5	58) Brazed
Set Model				
Model			PQRY-P96ZLMU-A1	PQRY-P72ZLMU-A1
Minimum Circuit Ampac	ity	А	7	5
Maximum Overcurrent F		А	15	15
Circulating water	Water flow rate	G/h	1,522 -	+ 1,522
0		G/min (gpm)	25.4 -	+ 25.4
		m ³ /h	5.76 -	+ 5.76
		L/min		+ 96
		cfm	3.4 -	
	Pressure drop	psi	3.48	3.48
		kPa	24	24
	Operating volume G/h range G/min (gpm)		793 + 793 ~ 1	
			13.2 + 13.2 ~ 31.7 + 31.7	
	lango	m ³ /h	3.0 + 3.0 -	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
Compresser	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	KVV	MEL32	MEL32
External finish	Lubrican		Galvanized steel sheets	Galvanized steel sheets
External dimension H x	WxD	in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
	WXD	mm	1,100 x 880 x 550	1.100 x 880 x 550
		1 11111	High pressure sensor, High pressure switch at 4.15 MPa (601	High pressure sensor, High pressure switch at 4.15 MPa (6
Protection devices	High pressure protectio	n	psi)	psi)
	1 1 1 1		. ,	
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
Defrigerent	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)
Naturaisht	Control	lhe (ltr)	Indoor LEV an	d BC controller 411 (186)
Net weight		lbs (kg)	411 (186)	
Heat exchanger	Matan 1	0	plate type	plate type
	Water volume in plate	G	1.32	1.32
	10/	1	5.0	5.0
	Water pressure Max.	psi	290	290
		MPa	2.0	2.0
			-	-
Pipe between unit and	High pressure	in. (mm)	3/4 (19.05) Brazed	3/4 (19.05) Brazed
Pipe between unit and distributor	High pressure Low pressure	in. (mm) in. (mm)	-	7/8 (22.2) Brazed
Pipe between unit and distributor	High pressure Low pressure External	1	KL94	7/8 (22.2) Brazed
Pipe between unit and distributor Drawing	High pressure Low pressure External Wiring	1	- KL94 KE94G421	7/8 (22.2) Brazed C251 KE94G421
Pipe between unit and distributor Drawing Standard	High pressure Low pressure External Wiring Document	1	- KL94 KE94G421 Installatio	7/8 (22.2) Brazed C251 KE94G421 n Manual
Pipe between unit and distributor Drawing Standard attachment	High pressure Low pressure External Wiring	1	- KL94 KE94G421 Installatio Details refer to	7/8 (22.2) Brazed C251 KE94G421 n Manual D External Drw
Pipe between unit and distributor Drawing Standard attachment	High pressure Low pressure External Wiring Document	1	- KL94 KE94G421 Installatio Details refer to Heat Source Twinning	7/8 (22.2) Brazed C251 KE94G421 n Manual 5 External Drw 9 kit: CMY-Q100CBK2
Pipe between unit and distributor Drawing Standard attachment	High pressure Low pressure External Wiring Document	1	- KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM	7/8 (22.2) Brazed C251 KE94G421 n Manual b External Drw kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1
Pipe between unit and distributor Drawing Standard attachment	High pressure Low pressure External Wiring Document	1	- KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101	7/8 (22.2) Brazed C251 KE94G421 n Manual b External Drw b kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	- KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 10	7/8 (22.2) Brazed C251 KE94G421 n Manual b External Drw j kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electri	7/8 (22.2) Brazed C251 KE94G421 n Manual b External Drw j kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1
HIC circuit (HIC: Heat In Pipe between unit and distributor Drawing Standard attachment Optional parts Remarks	High pressure Low pressure External Wiring Document	1	- KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 11 Sub BC controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual.	7/8 (22.2) Brazed C251 KE94G421 n Manual 0 p Kit: CMY-Q100CBK2 1 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 028NU-GB1, CMB-P1016NU-HB1 1 cal wiring, power source switch, and other items shall be referred. 1
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KE94G421 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be	7/8 (22.2) Brazed C251 KE94G421 n Manual b External Drw kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be re subject to change without notice.
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Other Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be	7/8 (22.2) Brazed C251 KE94G421 n Manual External Drw g kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be n subject to change without notice. s kept below 104°FD.B. (40°CD.B.)
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KE94G421 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs	7/8 (22.2) Brazed C251 KE94G421 n Manual External Drw g kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be resubject to change without notice. s kept below 104°FD.B. (40°CD.B.)
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KE94G421 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 11 Details on foundation work, diectri ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs The Heat Source Unit should not be installed at outdoor.	7/8 (22.2) Brazed C251 KE94G421 n Manual b External Drw kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be re subject to change without notice. kept below 104°FD.B. (40°CD.B.) to be kept below 80%.
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KL94 KE94G421 Installatio Details refer tt Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wa	7/8 (22.2) Brazed C251 KE94G421 n Manual External Drw g kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit.
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wa Be sure to provide interlocking for the unit operation and wate	7/8 (22.2) Brazed C251 KE94G421 n Manual 5 External Drw 9 kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. s kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r circuit.
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KE94G421 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P104, 1010, 101 Sub BC controller: CMB-P104, 1010 Sub BC controller: CMB-P104, 1010 S	7/8 (22.2) Brazed C251 KE94G421 n Manual D External Drw j kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 080H2-P1016NU-HB1 cal wiring, power source switch, and other items shall be result of the below 104°FD.B. (40°CD.B.) subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. er circuit. cted to the low pressure side of the heat source unit.
Pipe between unit and distributor Drawing Standard <u>attachment</u> Optional parts	High pressure Low pressure External Wiring Document	1	KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wa Be sure to provide interlocking for the unit operation and wate	7/8 (22.2) Brazed C251 In Manual D External Drw J Kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 D8NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be resubject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. cket.
Pipe between unit and distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-62, CMY-Y102LS-62, CM Main BC controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Bue to controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Bue to controller: CMB-P104, 11 Details on foundation work duct work, insulation work electri ferred to the Installation material to the unused drain-soot The Heat Source Unit needs to be The Heat Source twinning kit (low pressure) should be conne Install the supplied insulation material to the unused drain-soot	7/8 (22.2) Brazed C251 In Manual D External Drw J Kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 D8NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be resubject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. cket.
distributor Drawing Standard attachment Optional parts	High pressure Low pressure External Wiring Document	1	KL94 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-62, CMY-Y102LS-62, CM Main BC controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Bue to controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Bue to controller: CMB-P104, 11 Details on foundation work duct work, insulation work electri ferred to the Installation material to the unused drain-soot The Heat Source Unit needs to be The Heat Source twinning kit (low pressure) should be conne Install the supplied insulation material to the unused drain-soot	7/8 (22.2) Brazed C251 KE94G421 n Manual External Drw j kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 D8NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be resubject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. cket.
Pipe between unit and distributor Drawing Standard <u>attachment</u> Optional parts Remarks	High pressure Low pressure External Wiring Document	in. (mm)	KE94G421 KE94G421 Installatio Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wa Be sure to provide interlocking for the unit operation and wate The Heat Source twinning kit (low pressure) should be conne Install the supplied insulation material around both water and refer	7/8 (22.2) Brazed C251 KE94G421 n Manual D External Drw g kit: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 D8NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. s kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. rr circuit. cted to the low pressure side of the heat source unit. cket. igerant piping, follow the installation manual.

Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B), Water temperature: 86°F (30°C)
 Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C)

PQRY-P-Z(S)LMU-A1

Indoor Model Power source	Heat Source Model			2ZSLMU-A1	
			Non-Ducted	Ducted	
Power source Cooling capacity *1 BTU/h			75 V ±10% 60 Hz .000		
(Nominal)	1	kW			
(Norminal)	Power input	kW		.30	
((575) Current input	А	12	2.6	
(Rated)		BTU/h		,000	
		kW		3.6	
	Power input	kW	10.40	10.98	
	(575) Current input Indoor	A W.B.	11.6 59~75°F	12.2	
Temp. range of cooling	Circulating water	vv.B. ⁰F	59~75°F 50~113°F		
Heating capacity	*2	<u> </u>		,000	
Nominal)	-	kW		3.0	
	Power input	kW		.02	
((575) Current input	А	12	2.2	
(Rated)		BTU/h		,000	
	-	kW).1	
	Power input	kW A	10.16	8.90	
emp. range of	(575) Current input Indoor	D.B.	11.3 59~81°F	9.9 (15, 27°C)	
enting	Circulating water	0.B. ⁰F	50~113°F		
ndoor unit	Total capacity	1.1		ource unit capacity	
connectable	Model/Quantity			96/1~48	
	(measured in anechoic room)	dB <a>		1.0	
Refrigerant	High pressure	in. (mm)	7/8 (22.2		
piping diameter	Low pressure	in. (mm)	1-1/8 (28.5	58) Brazed	
Set Model					
Model	14		PQRY-P96ZLMU-A1	PQRY-P96ZLMU-A1	
Minimum Circuit Am Maximum Overcurre		A	7 15	7 15	
Maximum Overcurre Circulating water	Water flow rate	A G/h		15	
Subalany water	Trator now rate	G/min (gpm)	· · · · ·	+ 1,522 + 25.4	
		m ³ /h		+ 5.76	
		L/min	96 -		
		cfm	3.4 -	+ 3.4	
	Pressure drop	psi	3.48	3.48	
		kPa	24	24	
	Operating volume	G/h	1	1,902 + 1,902	
	range	G/min (gpm)		~ 31.7 + 31.7	
	Type x Quantity	m ³ /h		~ 7.2 + 7.2	
Compressor	Manufacture		Inverter scroll hermetic compressor x 1 AC&R Works, MITSUBISHI ELECTRIC CORPORATION	Inverter scroll hermetic compressor x 1 AC&R Works, MITSUBISHI ELECTRIC CORPORATIO	
	Starting method		Inverter	Inverter	
	Motor output	kW	6.0	6.0	
	Case heater	kW	-	-	
	Lubricant		MEL32	MEL32	
External finish		1	Galvanized steel sheets	Galvanized steel sheets	
External dimension I	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	
		n	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (6	
	High pressure protectio				
				psi)	
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection	
Protection devices	Inverter circuit Compressor				
Protection devices	Inverter circuit		Over-heat protection. Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg)	Over-heat protection, Over-current protection Over-heat protection	
Protection devices	Inverter circuit Compressor Type x original charge	lbs (kg)	Over-heat protection. Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg)	Over-heat protection. Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg)	
Protection devices Refrigerant Net weight	Inverter circuit Compressor Type x original charge Control	lbs (kg)	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an	Over-heat protection. Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller	
Protection devices Refrigerant Net weight	Inverter circuit Compressor Type x original charge	•	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32	
Protection devices Refrigerant Net weight	Inverter circuit Compressor Type x original charge Control	lbs (kg) G	Over-heat protection. Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0	Over-heat protection. Over-current protection Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0	
Protection devices Refrigerant Net weight	Inverter circuit Compressor Type x original charge Control	lbs (kg) G I psi	Over-heat protection. Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290	Over-heat protection. Over-current protection Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 290	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max.	lbs (kg) G	Over-heat protection, Over-current protection Over-heat protection Over-heat protection Indoor LEV an 411 (186) Indoor LEV an 9 plate type 1.32 5.0 290 2.0 2.0	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d d BC controller 411 (186) plate type 1.32 5.0 290 2.0 2.0	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger HIC circuit (HIC: Hea	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer)	lbs (kg) G I psi MPa	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger <u>HIC circuit (HIC: Hea</u> Pipe between unit ar	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer)	lbs (kg) G I psi	Over-heat protection, Over-current protection Over-heat protection Over-heat protection Indoor LEV an 411 (186) Indoor LEV an 9 plate type 1.32 5.0 290 2.0 2.0	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d d BC controller 411 (186) plate type 1.32 5.0 290 2.0 2.0	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger HIC circuit (HIC: Hea Pipe between unit ar distributor	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0	Over-heat protection. Over-current protection Over-heat protection 0 R410A x 11 lbs + 1 oz (5.0 kg) 0 d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed 7/8 (22.2) Brazed	
Protection devices Refrigerant <u>Vet weight</u> Heat exchanger <u>HIC circuit (HIC: Hea</u> Pipe between unit ar distributor	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) d High pressure Low pressure	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection. Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed	Over-heat protection. Over-current protection Over-heat protection 0 R410A x 11 lbs + 1 oz (5.0 kg) 0 d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed 7/8 (22.2) Brazed	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger HIC circuit (HIC: Hea Pipe between unit ar distributor Drawing	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure Low pressure External	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 9late type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KE94G421 Installatic	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed 7/8 (22.2) Brazed C251 KE94G421 n Manual	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger Pipe between unit ar distributor Drawing Standard	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure Low pressure External Wiring	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection Indoor LEV an R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 3/4 (19.05) Brazed KL94 KE94G421 Installatic Details refer tr	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 n Manual b External Drw	
Protection devices Refrigerant <u>Vet weight</u> Heat exchanger Pipe between unit ar <u>distributor</u> Drawing Standard attachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 9 plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KE94G421 Installatic Details refer to Heat Source Twinning	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 n Manual 0 External Drw g kit: CMY-Q100CBK2	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger Pipe between unit ar distributor Drawing Standard attachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 3/4 (19.05) Brazed KL94 KE94G421 Installatic Details refer tt Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed 7/8 (22.2) Brazed C251 KE94G421 n Manual D External Drw bit: CMY-Q100CBK2 YY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1	
Protection devices Refrigerant <u>Vet weight</u> Heat exchanger Pipe between unit ar <u>distributor</u> Drawing Standard attachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection Indoor LEV an 4110 X 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KE94G421 Installatic Details refer tr Gource Twinning joint: CMY-Y102SS-G2, CMV-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed 7/8 (22.2) Brazed C251 KE94G421 on Manual pkit: CMY-Q100CBK2 YV-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1	
Protection devices Refrigerant <u>Vet weight</u> Heat exchanger Pipe between unit ar <u>distributor</u> Drawing Standard <u>attachment</u> Dptional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KL94 KE94G421 Installatic Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed 7/8 (22.2) Brazed C251 KE94G421 on Manual D External Drw jkit: CMY-Q100CBK2 YY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger Pipe between unit ar distributor Drawing Standard attachment Dptional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection Indoor LEV an 4110 X 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KE94G421 Installatic Details refer tr Gource Twinning joint: CMY-Y102SS-G2, CMV-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed 7/8 (22.2) Brazed C251 KE94G421 on Manual D External Drw jkit: CMY-Q100CBK2 YY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger HIC circuit (HIC: Heat Pipe between unit ar distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 3/4 (19.05) Brazed Statistic Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electriferred to the Installation Manual. Due to continuing improvement, above specifications may be	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger HIC circuit (HIC: Heat Pipe between unit ar distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 411 (186) 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - Details refer tt Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electriferred to the Installalion Manual. Due to continuing improvement, above specifications may be	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 In Manual D External Drw g kit: CMY-Q100CBK2 YV-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104*FD.B. (40°CD.B.)	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger HIC circuit (HIC: Heat Pipe between unit ar distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 3/4 (19.05) Brazed Installatic Details refer tt Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 101 Details on foundation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to b The Ambient relative humidity of the Heat Source Unit needs	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 In Manual D External Drw g kit: CMY-Q100CBK2 YV-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104*FD.B. (40°CD.B.)	
Protection devices Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Pipe between unit ar distributor Drawing Standard attachment Optional parts Remarks	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 3/4 (19.05) Brazed Installatic Details refer to KE94G421 Installatic Details refer to joint: CMY-Y102SS-G2, CMV-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 10, 101 Sub BC controller: CMB-P104, 10, 101 Details on foundation work, duct work, insulation work, electrif ferred to the Installation Manual. Due to continuing improvement, above specifications may be Due to continuing improvement, above specifications may be The ambient relative humidity of the Heat Source Unit needs to b The Heat Source Unit should not be installed at outdoor. The Heat Source Unit needs to b	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed 7/8 (22.2) Brazed C251 KE94G421 on Manual pkit: CMY-Q100CBK2 Yt-Y202S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%.	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger HIC circuit (HIC: Heat Pipe between unit ar distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection, Over-current protection Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 3/4 (19.05) Brazed Installatic Details refer tt Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 101 Details on foundation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to b The Ambient relative humidity of the Heat Source Unit needs	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 In Manual D External Drw g kit: CMY-Q100CBK2 YV-Y02S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. a kept below 104*FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit.	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger Pipe between unit ar distributor Drawing Standard attachment Dptional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - State of the	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 on Manual pkit: CMY-Q100CBK2 YV-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. ar circuit. cted to the low pressure side of the heat source unit.	
Protection devices Refrigerant <u>Vet weight</u> Heat exchanger Pipe between unit ar <u>distributor</u> Drawing Standard <u>attachment</u> Dptional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - State - <td>Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 In Manual D External Drw g kit: CMY-Q100CBK2 YV-Y02S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. a kept below 104*FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. cket.</td>	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 In Manual D External Drw g kit: CMY-Q100CBK2 YV-Y02S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. a kept below 104*FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. cket.	
Protection devices Refrigerant <u>Het weight</u> Heat exchanger Pipe between unit ar listributor Drawing Standard uttachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - State of the	Over-heat protection, Over-current protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 In Manual D External Drw g kit: CMY-Q100CBK2 YV-Y02S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. a kept below 104*FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. cket.	
Protection devices Refrigerant Let weight Leat exchanger Pipe between unit ar Pipe between unit ar Drawing Standard Lttachment Dptional parts Remarks	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document	Ibs (kg) G I psi MPa in. (mm)	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electrif ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient relative humidity of the Heat Source Unit needs to b The ambient relative humidity of the Heat Source Unit needs to be The Heat Source Unit needs to be the ambient relative humidity of the Heat Source Unit needs to be The Heat Source Unit needs to be the ambient relative humidity of the Heat Source Unit needs to be The Heat Source Unit needs to be the ambient relative humidity of the Heat Source Unit needs to be The Heat Source Unit secoles tob installed at outdoor. Be s	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed 7/8 (22.2) Brazed C251 KE94G421 n Manual D External Drw jkit: CMY-Q100CBK2 YY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. er circuit. cted to the low pressure side of the heat source unit. cket. igerant piping, follow the installation manual.	
Protection devices Refrigerant <u>Net weight</u> Heat exchanger HIC circuit (HIC: Heat Pipe between unit ar distributor Drawing Standard attachment Dptional parts Remarks Hotes:	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document Accessory	Ibs (kg) G I psi MPa in. (mm) in. (mm)	Over-heat protection Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - 3/4 (19.05) Brazed - Statis refer tt Details refer tt Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 11 Details on foundation work, duct work, insulation work, electrif ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to the The assource twinning kit (low pressure) should be conne Be sure to provide interlocking for the unit operation and wate	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 in Manual D External Drw g kit: CMY-Q100CBK2 YY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r circuit. cted to the low pressure side of the heat source unit. cket. igerant piping, follow the installation manual.	
Protection devices Refrigerant Het weight Heat exchanger HC circuit (HIC: Heat Pipe between unit ar distributor Drawing Standard attachment Dptional parts Remarks Hotes: LNominal cooling cc	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) Ind High pressure External Wiring Document Accessory	Ibs (kg) G I psi MPa in. (mm) in. (mm) based on AHRI	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - State Goint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electriferred to the Installation Manual. Due to controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electriferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient relative humidity of the Heat Source Unit needs to be the source Unit needs for the unit operation and wate be sure to provide interlocking for the unit operation and wate be source to provide insulation material around both water and refination insulation material aro	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 in Manual D External Drw g kit: CMY-Q100CBK2 YY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. cket. igerant piping, follow the installation manual.	
Protection devices Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Pipe between unit ar distributor Drawing Standard attachment Optional parts Remarks Notes: 1.Nominal cooling cc Indoor: 81°FD.B./6/	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. at Inter-Changer) High pressure External Wiring Document Accessory	Ibs (kg) G I MPa in. (mm) in. (mm) based on AHRI , Water temper	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - State Government State	Over-heat protection Over-heat protection Quer-heat protection R410A x 11 lbs + 1 oz (5.0 kg) d BC controller 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed C251 KE94G421 in Manual D External Drw g kit: CMY-Q100CBK2 YY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 3, 1016NU-GA1, 108, 1010, 1016NU-HA1 08NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r circuit. cted to the low pressure side of the heat source unit. cket. igerant piping, follow the installation manual.	

*Above specification data is

Indoor Model Power source			Non-Ducted	SZSLMU-A1	ucted
				75 V ±10% 60 Hz	loted
Cooling capacity	*1	BTU/h		,000	
(Nominal)		kW		3.3	
	Power input	kW	14	.03	
	5) Current input	А		5.6	
(Rated)		BTU/h		,000	
		kW).4	
	Power input	kW	12.93		3.24
	5) Current input	A	14.4		4.7
Femp. range of	Indoor	W.B.	59~75°F		
cooling	Circulating water	°F		(10~45°C)	
Heating capacity	*2	BTU/h kW		,000	
Nominal)	Power input	kW		.2 .88	
(57)	5) Current input	A		.oo I.3	
(Rated)		A BTU/h		.000	
(Raled)		kW		3.0	
	Power input	kW	11.88		0.35
(57)	5) Current input	A	13.2		1.5
emp. range of	Indoor	D.B.	13.2 59~81°F		1.5
eating	Circulating water	0.B. ⁰F	59~61 F		
ndoor unit	Total capacity			ource unit capacity	
onnectable	Model/Quantity		P06~P96/2~50 (Connectable b)
	easured in anechoic room)	dB <a>	P06~P96/2~50 (Connectable b		•1
Refrigerant	High pressure	in. (mm)	7/8 (22.2) Brazed (1-1/8 (28.58) Bra		65 m)
iping diameter	Low pressure	in. (mm)		58) Brazed	00 mj
Set Model	2011 21030010		1-1/6 (20.3	JU, DIULUU	
Nodel			PQRY-P120ZLMU-A1	PORY-PO	96ZLMU-A1
/inimum Circuit Ampac	itv	А	11		7
Aaximum Overcurrent F		A	15		15
Circulating water	Water flow rate	G/h		+ 1.522	-
3		G/min (gpm)	25.4	1-	
		m ³ /h		+ 5.76	
		L/min		+ 96	
		cfm		+ 3.4	
	Pressure drop	psi	3.48		3.48
		kPa	24		24
	Operating volume	G/h		1,902 + 1,902	
	range	G/min (gpm)	13.2 + 13.2 -		
	3.	m ³ /h		~ 7.2 + 7.2	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		netic compressor x 1
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI	
	Starting method		Inverter		verter
	Motor output	kW	7.7		6.0
	Case heater	kW	-	-	
Lubricant			MEL32	ME	EL32
External finish			Galvanized steel sheets		d steel sheets
External dimension H x	WxD	in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-1	11/16 x 21-11/16
		mm	1,100 x 880 x 550	1,100 x	880 x 550
			High pressure sensor, High pressure switch at 4.15 MPa (601	High pressure sensor, High pr	ressure switch at 4.15 MPa (
Protoction dovices	High prossure protection	1	psi)	F	osi)
Protection devices	High pressure protection				Over-current protection
Protection devices	High pressure protection		Over-heat protection, Over-current protection	Over-heat protection,	
Protection devices			Over-heat protection, Over-current protection Over-heat protection		at protection
	Inverter circuit			Over-hea	
	Inverter circuit Compressor		Over-heat protection	Over-hea R410A x 11 lb	at protection
Refrigerant	Inverter circuit Compressor Type x original charge	lbs (kg)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg)	Over-hea R410A x 11 lb d BC controller	at protection
Refrigerant	Inverter circuit Compressor Type x original charge Control		Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type	Over-hea R410A x 11 lb d BC controller 411 plat	at protection ps + 1 oz (5.0 kg) (186) e type
Refrigerant	Inverter circuit Compressor Type x original charge	lbs (kg) G	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186)	Over-hea R410A x 11 lb d BC controller 411 plat	at protection Is + 1 oz (5.0 kg) (186)
Protection devices Refrigerant <u>Vet weight</u> Heat exchanger	Inverter circuit Compressor Type x original charge Control Water volume in plate	G I	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0	Over-hea R410A x 11 lb d BC controller 411 plat 1	at protection is + 1 oz (5.0 kg) (186) e type .32 5.0
Refrigerant	Inverter circuit Compressor Type x original charge Control	G I psi	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290	Over-hea R410A x 11 lb d BC controller 411 plat 1 2 2	at protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290
Refrigerant Net weight Heat exchanger	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max.	G I	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0	Over-hea R410A x 11 lb d BC controller 411 plat 1 2 2	at protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0
Refrigerant Jet weight Heat exchanger HIC circuit (HIC: Heat In	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. iter-Changer)	G I psi MPa	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0	Over-hea R410A x 11 lb d BC controller 411 plat 1	tt protection is + 1 oz (5.0 kg) (186) .32 .5.0 290 2.0 -
Refrigerant let weight leat exchanger IIC circuit (HIC: Heat In Pipe between unit and	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Iter-Changer) High pressure	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed	Over-hea R410A x 11 lb d BC controller 411 plat 2 3/4 (19.0)	tt protection is + 1 oz (5.0 kg) (186) e type .32 5.0 2.0 - 05) Brazed
Refrigerant let weight leat exchanger lIC circuit (HIC: Heat In lipe between unit and listributor	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure	G I psi MPa	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed	Over-hea R410A x 11 lb d BC controller 411 plat 1 3/4 (19.0 7/8 (22.	tt protection is + 1 oz (5.0 kg) (186) .32 .5.0 290 2.0 -
Refrigerant let weight leat exchanger IIC circuit (HIC: Heat In ipe between unit and listributor	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. High pressure Low pressure External	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KL94	Over-hea R410A x 11 lb d BC controller 411 plat 1 3/4 (19.0 7/8 (22. C251	at protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - .5) Brazed 2) Brazed
Refrigerant leat exchanger IIC circuit (HIC: Heat In Pipe between unit and listributor prawing	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Iter-Changer) High pressure Low pressure External Wiring	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed KL94 KL94	Over-hea R410A x 11 lb d BC controller 411 plat 1 2 2 3/4 (19.0 7/8 (22. C251 KE9	tt protection is + 1 oz (5.0 kg) (186) e type .32 5.0 2.0 - 05) Brazed
Refrigerant leat weight leat exchanger lIC circuit (HIC: Heat In Pipe between unit and listributor Drawing Standard	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KE94G421	Over-hea R410A x 11 lb d BC controller 411 plat 1 3/4 (19.0 7/8 (22. C251 KE9 n Manual	at protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - .5) Brazed 2) Brazed
Refrigerant <u>let weight</u> -leat exchanger <u>lIC circuit (HIC: Heat In</u> ² ipe between unit and <u>listributor</u> Jrawing Standard uttachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Iter-Changer) High pressure Low pressure External Wiring	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KE94G421 Installatic Details refer tr	Over-hea R410A x 11 lb d BC controller 411 plat 1 3/4 (19.0 7/8 (22.) C251 KE9 n Manual b External Drw	at protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - .5) Brazed 2) Brazed
Refrigerant <u>let weight</u> -leat exchanger <u>lIC circuit (HIC: Heat In</u> ² ipe between unit and <u>listributor</u> Jrawing Standard uttachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 9late type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KE94G421 Installatic Details refer tr Heat Source Twinning	Over-hea R410A x 11 lb d BC controller 411 plat 1 3/4 (19.0 7/8 (22. C251 KE9 n Manual 0 External Drw g kit: CMY-Q100CBK2	at protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - D5) Brazed 2) Brazed 4G421
Refrigerant let weight leat exchanger ¹ IC circuit (HIC: Heat In ¹ pe between unit and listributor ¹ rawing Standard ttachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 914te type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - 5.0 - 1.32 - 290 2.0 - - 3/4 (19.05) Brazed - - KL94 KE94G421 Installatic Details refer tt Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM -	Over-hea R410A x 11 lb d BC controller 411 1 1 1 1 3/4 (19.0 7/8 (22. C251 KE9 n Manual D External Drw b External Drw b, it: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G3	tt protection is + 1 oz (5.0 kg) (186) e type .32 5.0 .290 2.0 .20 .20 .20 .20 .20 .20 .2
tefrigerant let weight leat exchanger lIC circuit (HIC: Heat In 'ipe between unit and istributor 'rawing standard ttachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KE94G421 Installatic Details refer tr Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101	Over-hea R410A x 11 lb d BC controller 411 plat 1 1 1 1 2 2 3/4 (19.0 2 3/4 (19.0 7/8 (22. C251 KE9 n Manual 0 pkt: cMY-Q100CBK2 1/Y-Y202S-G2, CMY-Y302S-G3, 3, 1016NU-GA1, 108, 1010, 1	tt protection is + 1 oz (5.0 kg) (186) .32 5.0 290 2.0 - - 5) Brazed 2) Brazed 4G421 4G421 2, CMY-R160-J1 016NU-HA1
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tefrigerant let weight leat exchanger lIC circuit (HIC: Heat In ipe between unit and istributor rawing tandard ttachment iptional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 9 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - 0 - 1 - 0 - 1 - 0 - 0 - 1 - 0 - 1 - 0 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - <tr td=""> 1 -<</tr>	Over-hea R410A x 11 lb d BC controller 411 plat 1 1	tt protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - - 25) Brazed 20 2.0 4G421 4G421 2, CMY-R160-J1 016NU-HA1 IB1
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Refrigerant <u>let weight</u> leat exchanger <u>leat exchanger</u> <u>leat exchanger</u> <u>leat exchanger</u> <u>leat in the set of the </u>	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - KE94G421 Installatic Details refer th Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 101 Details on foundation work, duct work, insulation work, electrical wiring, p Manual. Due to continuing improvement, above specifications may be subject to c The ambient temperature of the Heat Source Unit needs to be kept below	Over-hea R410A x 11 lb d BC controller 411 plat 1	tt protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - - 25) Brazed 20 2.0 4G421 4G421 2, CMY-R160-J1 016NU-HA1 IB1
Refrigerant	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 3/4 (19.05) Brazed - KE94G421 Installatic Details refer to joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electrical wiring, p Manual. Due to continuing improvement, above specifications may be subject to c The ambient temperature of the Heat Source Unit needs to be kept below	Over-hea R410A x 11 lb d BC controller 411 plat 1	tt protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - 25) Brazed 20 2.0 4G421 2, CMY-R160-J1 016NU-HA1 1B1 shall be referred to the Installation
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Refrigerant <u>Vet weight</u> Heat exchanger <u>Pipe between unit and</u> <u>Distributor</u> Drawing Standard <u>attachment</u> Dptional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 3/4 (19.05) Brazed - KE94G421 Installatic Details refer to joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electrical wiring, p Manual. Due to continuing improvement, above specifications may be subject to c The ambient temperature of the Heat Source Unit needs to be kept below	Over-hea R410A x 11 lb d BC controller 411 plat 1	tt protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - - 5) Brazed 2) Brazed 4G421 2, CMY-R160-J1 016NU-HA1 IB1 shall be referred to the Installation
Refrigerant <u>Vet weight</u> Heat exchanger <u>Pipe between unit and</u> <u>Distributor</u> Drawing Standard <u>attachment</u> Dptional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - 1.52 .0 290 2.0 - 3/4 (19.05) Brazed - Statils refer tr Details refer tr giorr: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-P108, 1010, 101 Sub BC controller: CMB-P104, 101, 101 Sub BC controller: CMB-P104, 10, 101 Sub BC controller: CMB-P104, 10, 101 Sub BC controller: CMB-P104, 10, 101 Sub BC controller: CMB-P104, 11, 10 Banual Due to continuing improvement, above specifications may be subject to c The ambient relative humidud not be installed at outdoor B sure to be kept below The at Source Unit should not tob in	Over-hea R410A x 11 lb d BC controller 411 plat 1	tt protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - - 5) Brazed 2) Brazed 4G421 2, CMY-R160-J1 016NU-HA1 IB1 shall be referred to the Installation
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Refrigerant let weight leat exchanger lfC circuit (HIC: Heat In Pipe between unit and listributor prawing standard ttachment optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. tter-Changer) High pressure Low pressure External Wiring Document	G I psi MPa in. (mm)	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) Indoor LEV an 411 (186) Indoor LEV an 411 (186) plate type 1.32 5.0 290 2.0 - 3/4 (19.05) Brazed - State S	Over-hea R410A x 11 lb d BC controller 411 plat 1 3/4 (19.0 7/8 (22. C251 KE9 m Manual b kt: CMY-Q100CBK2 IY-Y202S-G2, CMY-Y302S-G: 3, 1016NU-GA1, 108, 1010, 1 08NU-GA1, CMB-P1016NU-H ower source switch, and other items hange without notice. 104*FD.B. (40*CD.B.) alow 80%. a strainer (more than 50 meshes) a w pressure side of the heat source ug, follow the installation manual.	att protection is + 1 oz (5.0 kg) (186) e type .32 5.0 290 2.0 - 35) Brazed 2) Brazed 4G421 2, CMY-R160-J1 016NU-HA1 IB1 shall be referred to the Installation at the water inlet piping of the unitunit.
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Control Indoor LEV and BC controller He weight Ibs (kg) 4111(186) 111(186) Heat exchanger plate type plate type plate type Water volume in plate G 1.32 5.0 Water pressure Max. psi 290 290 HC circuit (HIC: Heat Inter-Changer) - - - Pipe between unit and High pressure in. (mm) 3/4 (19.05) Brazed 3/4 (19.05) Brazed Drawing External KE94G421 KE94G421 KE94G421 Wiring KE94G421 Installation Manual KE94G421 Standard Document Installation Manual CMV-Y302S-G2, CMV-Y102CBK-G2, CMV-Y302S-G2, CMV-						
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Image: Solution Image: Solution Solution Solution HIC circuit (HIC: Heat Inter-Changer)	Heat exchanger	Water volume in plate	C			
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Net weight Ibs (kg) 512 (232) 512 (232) Heat exchanger Date type plate type plate type Water volume in plate G 1.32 1.32 I 5.0 5.0 Water pressure Max Dati 290 290 All C circuit (HIC: Heat Inter-Changer) - - - Pipe between unit and High pressure in. (mm) 7/8 (22.2) Brazed 7/8 (22.2) Brazed Drawing External - 1.1/8 (28.58) Brazed - Drawing External - 1.1/8 (28.58) Brazed Drawing External - 1.1/8 (28.58) Brazed Drawing External - 1.1/8 (28.58) Brazed Drawing External - KE94G421 Wring - Heat Source Twinning Kit: CMY-0200CBK Joptional parts - Details refore to External Drw Details on foundation work, duct work, insultation work, electrical wrind, youry-Y302S-G2, CMY-Y302S-G2, CMY-Y302S-G2, CMY-Y102S-G2, CMY-Y302S-G2, CMY-Y3	1	Inverter circuit Compressor			
Heat exchanger plate type plate type Water volume in plate G 1.32 1.32 Water pressure Max. Dsi 290 290 Velta pressure Max. Dsi 200 200 All C circuit (HIC: Heat Inter-Changer) - - - Pipe between unit and thigh pressure in. (mm) 7/8 (22.2) Brazed 7/8 (22.2) Brazed Sitributor - - - - Orawing External KE94G421 KE94G421 KE94G421 Sitandard Document Installation Manual 1nstallation Manual 1nstallation Manual Attachment Accessory Details refer to External Drw - - Optional parts - - - - - Optional parts -	Refrigerant	Inverter circuit Compressor Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	R410A x 13 lbs + 4 oz (6.0 kg)
Water volume in plate G 1.32 1.32 Water pressure Max. psi 290 290 MPa 2.0 2.0 Clic circuit (HIC: Heat Inter-Changer) - - Pipe between unit and distributor High pressure in. (mm) 7/8 (22.2) Brazed 7/8 (22.2) Brazed Drawing External KL94C252 1.1/8 (28.58) Brazed - Wrining KE94G421 KE94G421 KE94G421 Standard Document Installation Manual Attachment Accessory Details refer to External Drw Optional parts Heat Source Twinning kit: CMY-0200CBK Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-802S-G2, CMY-802S-G	Refrigerant	Inverter circuit Compressor Type x original charge	1	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an	R410A x 13 lbs + 4 oz (6.0 kg)
Water volume in plate G 1.32 1.32 Water pressure Max. psi 290 290 MPa 2.0 2.0 Clic circuit (HIC: Heat Inter-Changer) - - Pipe between unit and distributor High pressure in. (mm) 7/8 (22.2) Brazed 7/8 (22.2) Brazed Drawing External KL94C22 KE94G421 KE94G421 Wrining KE94G421 KE94G421 KE94G421 Standard Document Installation Manual attachment Accessory Details refer to External Drw Optional parts Heat Source Twinning kit: CMY-0200CBK joint: CMY-102S-G2, CMY-12S-G2, CMY-12	Refrigerant	Inverter circuit Compressor Type x original charge	lbs (kg)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller
Image: Control of the set of the	Refrigerant	Inverter circuit Compressor Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232)	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232)
Water pressure Max. psi MPa 290 290 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 Drawing External In. (mm) - 1.1/8 (25.8) Brazed Drawing External KE94G421 KE94G421 Wiring KE94G421 KE94G421 Standard Document Installation Manual attachment Accessory Details refer to External Drw Optional parts Heat Source Twinning kit: CMY-2020CBK joint: CMY-Y102S-G2, CMY-Y102S-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-Y302S-G2	Refrigerant 1 Net weight Heat exchanger	Inverter circuit Compressor Type x original charge Control		R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type
MPa 2.0 HIC circuit (HIC: Heat Inter-Changer) Interpretation Interpretation Pipe between unit and distributor High pressure in. (mm) 7/8 (22.2) Brazed Drawing External 1-1/8 (28.58) Brazed Drawing External KE94G421 Wiring KE94G421 KE94G421 Standard Document Installation Manual attachment Accessory Details refer to External Drw Optional parts Heat Source Twinning kit: CMY-Q200CBK joint: CMY-Y102SS-62, CMY-Y202S-62, CMY-Y302S-62, CMY-R160-J1 Main BC controller: CMB-P108, 1010, 1016NU-HB1 Sub BC Controller: CMB-P108, 1010, 1016NU-HB1 Sub BC controller: CMB-P108, 1010, 1016NU-HB1 Berarks Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be refered to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient relative humidity of the Heat Source Unit needs to be kept below 104°FD.B. (40°CD.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 104°FD.B. (40°CD.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 provide interpreting kit (My reposure side of the heat source unit. Install the supplied insulation material around b	Refrigerant 1 Net weight Heat exchanger	Inverter circuit Compressor Type x original charge Control		R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32
HIC circuit (HIC: Heat Inter-Changer) - - Pipe between unit and High pressure in. (mm) 7/8 (22.2) Brazed Stributor Low pressure in. (mm) 7/8 (22.2) Brazed Drawing External KL94C252 Wiring KE94G421 KE94G421 Standard Document Installation Manual attachment Accessorv Details refer to External Drw Optional parts Heat Source Twinning kit: CMY-Q200CBK joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1010, 1016NU-HA1 Sub BC controller: CMB-P108, 1010, 1016NU-HA1 Sub BC controller: CMB-P108, 1010, 1016NU-HB1 Bemarks Details on foundation 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. Remarks Be sure to provide installation Manual. Due to controlling: CMP-P104, 108HU-GB1, CMB-P105, DB, (0*CD.B,) The ambient relative humidity of the Heat Source Unit needs to be kept below 40%CD.B, (10, WCD.B, CD.B,) The ambient relative humidity of the ent outdow of the lows to be show the installation manual. Betails on foundation mork, duct work, insulation material to the low topressure side of the heat source unit. Install	Refrigerant ' Net weight Heat exchanger	Inverter circuit Compressor Type x original charge Control Water volume in plate	G	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 5.0
Pipe between unit and distributor High pressure in. (mm) 7/8 (22.2) Brazed 1/18 (26.58) Brazed Drawing External KL94C252 Wiring KE94G421 KE94G421 Standard Document Resource KE94G421 Accessory Details refer to External Drw Optional parts Heat Source Twinning kit: CMY-0200CBK join: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 Main BC controller: CMB-P104, 108NU-GB1, CMB-P104R, 1010, 1016NU-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 relative humidity of the Heat Source Unit needs to be kept below 104°FD.B. (40°CD.B.) The ablent temperature of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to provide interloking for the unit operation and water circuit. The Heat Source Unit should not be installed at outdoor. Be sure to provide interloking for the unit operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. Inters: Unit converter	Refrigerant ' Net weight Heat exchanger	Inverter circuit Compressor Type x original charge Control Water volume in plate	G I psi	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290
distributor Low pressure in. (mm) - 1-1/8 (28.58) Brazed Drawing External KE94G421 KE94G421 Wiring KE94G421 KE94G421 Standard Document Installation Manual Attachment Accessory Details refer to External Drw Optional parts Heat Source Twinning kit: CMY-Q200CBK joint: CMY-Y102S-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1010, 1016NU-HA1 Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1 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 relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed a 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 Unit should not be installed a outdoor. Be sure to provide interlocking for the unit operation and water circuit. The Heat Source twinning kit (low pressure) sh	Refrigerant	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max.	G I psi	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 2.0
External KL94C252 Wiring KE94G421 KE94G421 Document Installation Manual attachment Accessory Details refer to External Drw Optional parts Heat Source Twinning kit: CMY-Q200CBK joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-R160-J1 Sub BC controller: CMB-P104, 108NU-GB1, CMB-P106NU-HB1 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 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 provide interlocking for the unit operation and water circuit. The Heat Source than on the supplied insulation material around both water and refirgerant piping, follow the installation manual. When installing insulation material around both water and refirgerant piping, follow the installation manual.	Refrigerant	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Changer)	G I psi MPa	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 -
Wiring KE94G421 KE94G421 Standard Document Installation Manual Attachment Accessory Details refer to External Drw Optional parts Heat Source Twinning kit: CMY-Q200CBK joint: 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-CB1, CMB-P1016NU-HB1 Sub BC controller: CMB-P104, 108NU-CB1, 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 relative humidity of the Heat Source Unit needs to be kept below 104°FD.B. (40°CD.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 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 round both water and refrigerant piping, follow the installation manual.	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed -
Standard 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-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 relative humidity of the Heat Source Unit needs to be kept below 104°FD.B. (40°CD.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 Unit should not be installed at outdoor. Be sure to provide interlocking for the unit operation and water circuit. The Heat Source unit should not be installed at outdoor. Be sure to provide interlocking for the unit operation and water circuit. The Heat Source unit should not be installed at outdoor. Be sure to provide insulation material to the unused drain-socket. When install the supplied insulation material around both water and refrigerant piping, follow the installation manual.	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure Low pressure	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed 1.1/8 (28.58) Brazed
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-R160-J1 Main BC controller: CMB-P108, 1010, 1016NU-HA1 Sub BC controller: CMB-P104, 108NU-GB1, CMB-P1016NU-HB1 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°FD.B. (40°CD.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 around both water and refrigerant piping, follow the installation manual.	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. Changer) High pressure Low pressure External	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed KL94	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1-1/8 (28.58) Brazed C252
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°FD.B. (40°CD.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.	Refrigerant I Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure Low pressure External Wiring	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - KE94G421	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed 1.1/8 (28.58) Brazed C252 KE94G421
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 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°FD.B. (40°CD.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.	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - KE94G421	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed 1.1/8 (28.58) Brazed C252 KE94G421 n Manual -
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°FD.B. (40°CD.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 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 around both water and refrigerant piping, follow the installation manual.	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - KE94G421 Installatic Details refer to	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed 1.1/8 (28.58) Brazed C252 KE94G421 n Manual D External Drw
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°FD.B. (40°CD.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. Idees: Unit converter	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - KE94G421 Installatic Details refer tr Heat Source Twinnin	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1-1/8 (28.58) Brazed C252 KE94G421 n Manual 5 External Drw g kit: CMY-Q200CBK
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°FD.B. (40°CD.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. Idets: Unit converter	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - KE94G421 Installatic Details refer to Heat Source Twinnin joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1.1/8 (28.58) Brazed C252 KE94G421 n n Manual - b External Drw - g kit: CMY-Q200CBK Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1
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°FD.B. (40°CD.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. Idets: Unit converter	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - KE94G421 Installatic Details refer to Heat Source Twinnin joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1.1/8 (28.58) Brazed C252 KE94G421 n n Manual - b External Drw - g kit: CMY-Q200CBK Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1
ferred 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°FD.B. (40°CD.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. Lotes:	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - KE94G421 Installatic Details refer tr joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB-	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed 1.1/8 (28.58) Brazed C252 KE94G421 n Manual External Drw g kit: CMY-Q200CBK Y-Y202S-G2, CMY-R160-J1 P108, 1010, 1016NU-HA1 200
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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:	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed KL94 KE94G421 Installatic Details refer to Heat Source Twinnin joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB- Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1.1/8 (28.58) Brazed C252 KE94G421 n n Manual - plate, CMY-Q200CBK - Y-Y202S-G2, CMY-R160-J1 - P108, 1010, 1016NU-HA1 - D8NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be resubject to change without notice.
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.	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed KL94 KL94 KL94 joint: CMY-Y102S-G2, CMY-Y102LS-G2, CM Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Sub BC controller: CMB-Sub CONTROLLER Sub BC controller: CMB-Sub BC controller: CMB-Sub BC controller: CMB-Sub BC controller: CMB-Sub CONTROLLER Sub BC controller: CMB-Sub BC controller: CMB-Sub CON	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1-1/8 (28.58) Brazed C252 KE94G421 - n Manual - D External Drw - g kit: CMY-Q200CBK - Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 - P108, 1010, 1016NU-HA1 - SNU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be resubject to change without notice. s kept below 104°FD.B. (40°CD.B.) -
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.	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an S12 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed KL94 K194G421 Installation Details refer to Heat Source Twinnin joint: CMY-Y102SS-G2, CMV-Y102LS-G2, CM Sub BC controller: CMB-P104, 1 Sub BC controller: CMB-P104, 1 Details on foundation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1-1/8 (28.58) Brazed C252 KE94G421 - n Manual - D External Drw - g kit: CMY-Q200CBK - Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 - P108, 1010, 1016NU-HA1 38NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be resubject to change without notice. subject to change without notice. s kept below 104°FD.B. (40°CD.B.) -
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	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed KL94 KL94 KL94 joint: CMY-Y102S-G2, CMY-Y102LS-G2, CM Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y102LS-G2	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1.1/8 (28.58) Brazed C252 KE94G421 - n Manual - p kit: CMY-0200CBK - Y-Y202S-G2, CMY-R160-J1 2108, 1010, 1016NU-HA1 D8NU-GB1, CMB-P1016NU-HB1 - cal wiring, power source switch, and other items shall be resubject to change without notice. + kept below 104°FD.B. (40°CD.B.) to be kept below 80%.
Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed - KL94 KL94 KL94 joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB- Sub BC controller: CMB- Sub BC controller: CMB- P104, 1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to controller: CMB- Sub BC controller: CMB- P104, 1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to controller: CMB- Sub BC controller: CMB- Sub BC controller: CMB- P104, 1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to controller: CMB- Sub BC controller: CMB- Sub	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 290 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed 1.1/8 (28.58) Brazed C252 KE94G421 n n Manual 0 D External Drw g kit: CMY-Q200CBK Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 P108, 1010, 1016NU-HA1 38NU-G81, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be resubject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit.
When installing insulation material around both water and refrigerant piping, follow the installation manual. Iotes: Unit converter	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an S12 (232) plate type 1.32 5.0 290 2.0 Colspan="2">KL94 KL94 KL94 KL94 KL94 KL94 KL94 KL94 KL94 KE94G421 Installatic Details refer to Heat Source Twinnin joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Sub BC controller: CMB-P104, 1 Sub BC controller: CMB-P104, 1 Sub BC controller: CMB-P104, 1 Details on foundation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The ambient temperature of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs to the The Assource Uni	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1-1/8 (28.58) Brazed - 252 KE94G421 n Manual - 9 kit: CMY-Q200CBK - Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 P108, 1016, 1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r circuit.
lotes: Unit converter	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed KL94 KL94 KL94 KL94 KL94 Details refer to KL94 KL94 Details refer to Main BC controller: CMB- Sub BC controller: CMB- Details on foundation work, duct work, insulation work, electrif Gradies on foundation work, duct work, insulation work, electrif Gradies on foundation work, duct work, insulation work, electrif Details on foundation work, above specifications may be The ambient temperature of the Heat Source Unit needs to be	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1.1/8 (28.58) Brazed C252 KE94G421 - n Manual - plate type - 1.1/8 (28.58) Brazed C252 KE94G421 - n Manual - plate type - 1.1/8 (28.58) Brazed C252 KE94G421 - n Manual - plate type - subject tochange without notice. - skept below 104*FD.B. (40°CD.B.) - subject to change without notice. - kept below 104*FD.B. (40°CD.B.) - to be kept below 80%. - ter inlet piping of the unit. - r circuit. - ctd to the low pressure side of the heat source unit. -
	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed - KL94 KL94 KL94 joint: CMY-Y102S-G2, CMY-Y1	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1-1/8 (28.58) Brazed C252 KE94G421 - n Manual - plate twpe - 1-1/8 (28.58) Brazed C252 KE94G421 - n Manual - p kit: CMY-Q200CBK - Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 P108, 1010, 1016NU-HA1 - D8NU-GB1, CMB-P1016NU-HB1 - cal wiring, power source switch, and other items shall be resubject to change without notice. e kept below 104°FD.B. (40°CD.B.) - to be kept below 80%. - ter inlet piping of the unit. - r cricuit. - cted to the low pressure side of the heat source unit.
	Refrigerant	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed - KL94 KL94 KL94 joint: CMY-Y102S-G2, CMY-Y1	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1.1/8 (28.58) Brazed C252 KE94G421 - n Manual - plate twpe - 1.1/8 (28.58) Brazed C252 KE94G421 - n Manual - p kit: CMY-Q200CBK - Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 P108, 1010, 1016NU-HA1 - D8NU-GB1, CMB-P1016NU-HB1 - cal wiring, power source switch, and other items shall be resplayed to change without notice. e kept below 104°FD.B. (40°CD.B.) - to be kept below 80%. - ter inlet piping of the unit. - r cricuit. - cted to the low pressure side of the heat source unit.
1.Nominal cooling conditions (Test conditions are based on AHRI 1230) BTU/h =kW x 3.412	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document	G I psi MPa in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an 512 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed - KL94 KL94 KL94 joint: CMY-Y102S-G2, CMY-Y1	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1.1/8 (28.58) Brazed - C252 KE94G421 n Manual - 9 kit: CMY-Q200CBK - YY-Y202S-G2, CMY-R160-J1 - P108, 1010, 1016NU-HA1 - 38NU-GB1, CMB-P1016NU-HB1 - cal wiring, power source switch, and other items shall be resubject to change without notice. - e kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. - r circuit. - cted to the low pressure side of the heat source unit. ket. - igerant piping, follow the installation manual.
	Refrigerant Net weight Heat exchanger HIC circuit (HIC: Heat Inter Pipe between unit and distributor Drawing Standard attachment Optional parts Remarks Notes:	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. -Changer) High pressure External Wiring Document Accessory	G I psi MPa in. (mm) in. (mm)	R410A x 13 lbs + 4 oz (6.0 kg) Indoor LEV an S12 (232) plate type 1.32 5.0 290 2.0 7/8 (22.2) Brazed KL94 KL94 KL94 KL94 KL94 Colspan="2">KL94 KL94 KL94 K194G421 Installatio Details refer to KMY-Y102SS-G2, CM/Y-Y102LS-G2, CM Main BC controller: CMB-Distall Source Twinnin giont: CMY-Y102SS-G2, CM/Y-Y102LS-G2, CM Sub BC controller: CMB-Distall Source Unit needs Sub BC controller: CMB-Distall Source Unit needs Sub BC controller: CMB-Distallion Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to be The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 5	R410A x 13 lbs + 4 oz (6.0 kg) d BC controller 512 (232) plate type 1.32 5.0 290 2.0 - 7/8 (22.2) Brazed - 1-1/8 (28.58) Brazed - 252 KE94G421 n Manual - £xternal Drw g kit: CMY-Q200CBK Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 P108, 1010, 1016NU-HA1 38NU-GB1, CMB-P1016NU-HB1 cal wiring, power source switch, and other items shall be r subject to change without notice. k kept below 104°FD.B. (40°CD.B.) to be kept below 80%. ter inlet piping of the unit. r cricuit. cted to the low pressure side of the heat source unit. ket. igerant piping, follow the installation manual.

Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B), Water temperature: 86°F (30°C)
 Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C)

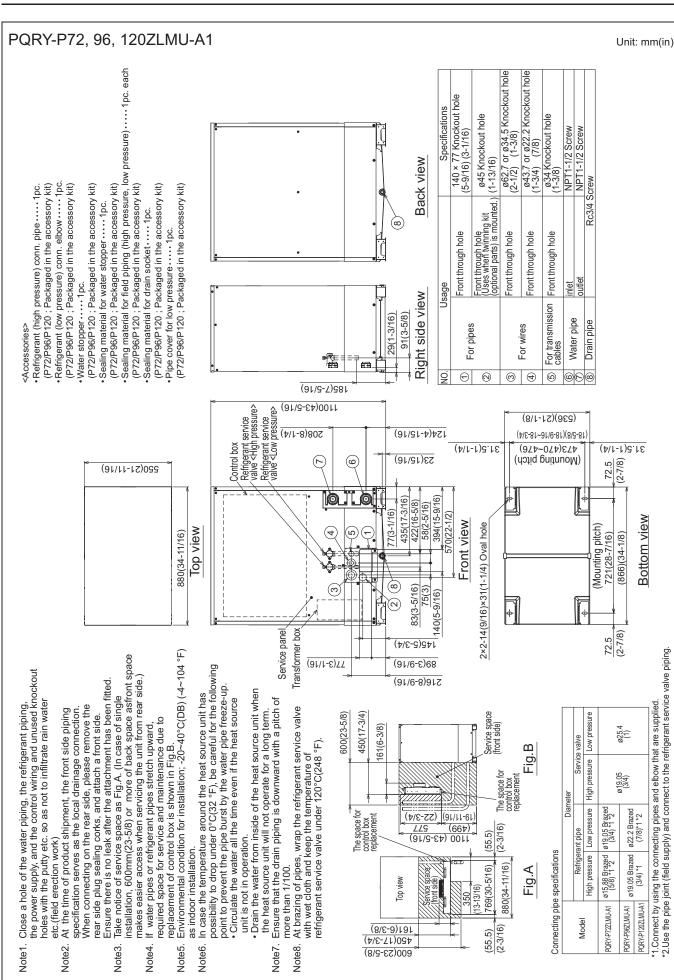
Heat Source Model			PQRY-P312		
Indoor Model Power source Cooling capacity *1 BTU/h		Non-Ducted		ucted	
		3-phase 3-wire 5	7 <u>5 V ±10% 60 Hz</u> .000		
(Nominal)	Ĭ	kW	91		
(Norminar)	Power input	kW	23		
(575	6) Current input	A	26		
(Rated)	••	BTU/h	297	,000	
		kW	87	7.0	
	Power input	kW	21.59		3.67
(575		А	24.0		26.4
Femp. range of	Indoor	W.B.	59~75°F (
cooling Circulating water °F		50~113°F			
Heating capacity	*2	BTU/h kW	350	, <u>000</u> 2.6	
Nominal)	Power input	kW	19		
(575	6) Current input	A	21		
(Rated)		BTU/h	334		
(rtatod)		kW	97		
	Power input	kW	17.62	1	7.96
(575	 Current input 	А	19.6	2	20.0
Temp. range of	Indoor	D.B.	59~81°F (15~27°C)	
neating	Circulating water	٩F	50~113°F		
ndoor unit	Total capacity		50~150% of heat s		
connectable	Model/Quantity	[P06~P96/2~50 (Connectable b		.)
	easured in anechoic room)	dB <a>	58		
Refrigerant	High pressure	in. (mm) in. (mm)	1-1/8 (28.5		
<u>piping diameter</u> Set Model	Low pressure	i in. (mm)	1-3/8 (34.9	DIAZEU	
Set Model Nodel			PQRY-P168ZLMU-A1		44ZLMU-A1
Minimum Circuit Ampaci	itv	А	16		13
Maximum Overcurrent P		A	25		20
Circulating water	Water flow rate	G/h	1,902 -		
U		G/min (gpm)	31.7 -		
		m ³ /h	7.20 -		
		L/min	120 -		
		cfm	4.2 -		
	Pressure drop	psi	6.38		5.38
		kPa	44		44
	Operating volume	G/h		9 ~ 3,054 + 3,054 3 ~ 50.9 + 50.9 ~ 11.6 + 11.6	
	range	G/min (gpm) m ³ /h			
Compressor	Type x Quantity	m-/n	4.5 + 4.5 ~ Inverter scroll hermetic compressor x 1		netic compressor x 1
Compressor	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION		I ELECTRIC CORPORATION
	Starting method		Inverter		verter
	Motor output	kW	11.0		9.5
	Case heater	kW	-		-
	Lubricant		MEL32	М	EL32
External finish			Galvanized steel sheets	Galvanized	d steel sheets
External dimension H x	WxD	in.	57-1/8 x 34-11/16 x 21-11/16		1/16 x 21-11/16
		mm	1,450 x 880 x 550		880 x 550
Protection devices	High pressure protection	n		High pressure sensor, High p	
	- · ·		psi)		osi)
	Inverter circuit		Over-heat protection, Over-current protection		Over-current protection
Defricerent	Compressor Type x original charge		Over-heat protection R410A x 13 lbs + 4 oz (6.0 kg)		at protection s + 4 oz (6.0 kg)
Refrigerant	Control		R410A x 13 lbs + 4 02 (6.0 kg) Indoor LEV an		S + 4 02 (6.0 kg)
Net weight	Control	lbs (kg)	512 (232)		2 (232)
Heat exchanger		(1197)	plate type		e type
	Water volume in plate	G	1.32		.32
			5.0		5.0
	Water pressure Max.	psi	290		290
		MPa	2.0		2.0
HIC circuit (HIC: Heat In		1	-		-
Pipe between unit and	High pressure	in. (mm)	7/8 (22.2) Brazed		2) Brazed
distributor	Low pressure	in. (mm)	-		.58) Brazed
Drawing	External		KL94		40.404
Stondard	Wiring		KE94G421		4G421
Standard attachment	Document Accessory		Installatio Details refer to	n Manual	
Optional parts	ACCESSOLY			g kit: CMY-Q200CBK	
optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM		2 CMY-R160-J1
			Main BC controller: CMB-		, ,
			Sub BC controller: CMB-P104, 1		IB1
Remarks			Details on foundation work, duct work, insulation work, electri		
			ferred to the Installation Manual.		
			Due to continuing improvement, above specifications may be		
			The ambient temperature of the Heat Source Unit needs to be The ambient relative humidity of the Heat Source Unit needs		.o.)
			The Heat Source Unit should not be installed at outdoor.	10 00 Kopi Doluw 00%.	
			Be sure to mount a strainer (more than 50 meshes) at the wa	ter inlet piping of the unit.	
			Be sure to provide interlocking for the unit operation and wate	er circuit.	
			The Heat Source twinning kit (low pressure) should be conne	cted to the low pressure side	of the heat source unit.
			Install the supplied insulation material to the unused drain-soc		llation manual
			When installing insulation material around both water and refr	igerant piping, follow the insta	anauon manual.
lotes:					Linit convertor
	, , , , , , , , , , , , , , , , , , ,		(222)		Unit converter
1.Nominal cooling condi	tions (Test conditions are b				BTU/h =kW x 3,412
1.Nominal cooling condi Indoor: 81°FD.B./66°F\	N.B. (27°CD.B./19°CW.B.)	, Water temperation	ature: 86°F (30°C)		
Indoor: 81°FD.B./66°F\ 2.Nominal heating condi		, Water temperation water temperation water temperature tem	ature: 86°F (30°C)		BTU/h =kW x 3,412

*Above specification data is

Heat Source Model Indoor Model			PQRY-P336 Non-Ducted	ZSLMU-A1 Ducted
Power source		Non-Ducted Ducted Ducted 3-phase 3-wire 575 V ±10% 60 Hz		
Cooling capacity	*1	BTU/h	<u>336</u>	
(Nominal)	·	kW	98	
	Power input	kW	26	•
	Current input	A	29	
(Rated)		BTU/h	320	
(kW	93	
	Power input	kW	24.76	25.85
(575)	Current input	А	27.6	28.8
Temp. range of	Indoor	W.B.	59~75°F (15~24°C)
coolina	Circulating water	°F	50~113°F	
Heating capacity	*2	BTU/h	378	
(Nominal)		kW	11).8
	Power input	kW	20	77
(575)	Current input	А	23	.1
(Rated)		BTU/h	361	000
· · · ·		kW	10	
	Power input	kW	19.16	20.05
(575)	Current input	А	21.3	22.3
Temp. range of	Indoor	D.B.	59~81°F	
heating	Circulating water	٩F	50~113°F	(10~45°C)
Indoor unit	Total capacity		50~150% of heat s	
	Model/Quantity		P06~P96/2~50 (Connectable b	
Sound pressure level (mea		dB <a>	59	
Refrigerant	High pressure	in. (mm)	1-1/8 (28.5	
piping diameter	Low pressure	in. (mm)	1-5/8 (41.2	
Set Model)		
Model			PQRY-P168ZLMU-A1	PQRY-P168ZLMU-A1
Minimum Circuit Ampacity		А	16	16
Maximum Overcurrent Pro		A	25	25
Circulating water	Water flow rate	G/h	1,902 -	
		G/min (gpm)	31.7 -	
		m ³ /h		
		L/min	7.20 + 7.20 120 + 120	
		cfm	4.2 -	
	Pressure drop	psi	6.38	6.38
	kPa		44	44
·	Operating volume G/h		1,189 + 1,189 -	
	range	G/min (gpm)	19.8 + 19.8 ~ 50.9 + 50.9 4.5 + 4.5 ~ 11.6 + 11.6	
	range	m ³ /h		
Compressor	Type x Quantity	101 /01	4.5 + 4.5 ~ Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
Compressor	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	
	Motor output	kW	11.0	Inverter 11.0
	Case heater	kW	-	11.0
	Lubricant	KVV	 MEL32	 MEL32
External finish	Lubricarit		Galvanized steel sheets	Galvanized steel sheets
External dimension H x W	<u></u>	in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
	хD	mm	1,450 x 880 x 550	1,450 x 880 x 550
		Inni		High pressure sensor, High pressure switch at 4.15 MPa (6)
Protection devices	High pressure protection	n	psi)	psi)
·			. ,	
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
Defeirerer i	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)
N a f sua factor	Control	11	Indoor LEV an	
Net weight		lbs (kg)	512 (232)	512 (232)
Heat exchanger			plate type	plate type
	Water volume in plate	G	1.32	1.32
			5.0	5.0
	Water pressure Max.	psi	290	290
		MPa	2.0	2.0
HIC circuit (HIC: Heat Inte		in (m.)	-	-
Pipe between unit and	High pressure	in. (mm)	7/8 (22.2) Brazed	7/8 (22.2) Brazed
distributor	Low pressure	in. (mm)	-	1-1/8 (28.58) Brazed
Drawing	External		KL94	
Oten de ed	Wiring		KE94G421	KE94G421
Standard	Document		Installatio	
attachment	Accessory		Details refer to	
Optional parts			Heat Source Twinnin joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CM Main BC controller: CMB Sub PC controller: CMB P104 1	Y-Y202S-G2, CMY-Y302S-G2, CMY-R160-J1 P108, 1010, 1016NU-HA1
Remarks			Sub BC controller: CMB-P104, 1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient temperature of the Heat Source Unit needs to b The ambient relative humidity of the Heat Source Unit needs. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wa Be sure to provide interlocking for the unit operation and wate	cal wiring, power source switch, and other items shall be re subject to change without notice. kept below 104°FD.B. (40°CD.B.) o be kept below 80%. er inlet piping of the unit.
			The Heat Source twinning kit (low pressure) should be conne Install the supplied insulation material to the unused drain-so	cted to the low pressure side of the heat source unit. ket.
Notes:			The Heat Source twinning kit (low pressure) should be conne	cted to the low pressure side of the heat source unit. ket.
lotes:	ns (Test conditions are b	pased on AHRI	The Heat Source twinning kit (low pressure) should be conne Install the supplied insulation material to the unused drain-so When installing insulation material around both water and refu	ted to the low pressure side of the heat source unit. ket. gerant piping, follow the installation manual.

Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B), Water temperature: 86°F (30°C)
 Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°FD.B. (20°CD.B.), Water temperature: 68°F (20°C)

PQRY-P-Z(S)LMU-A1



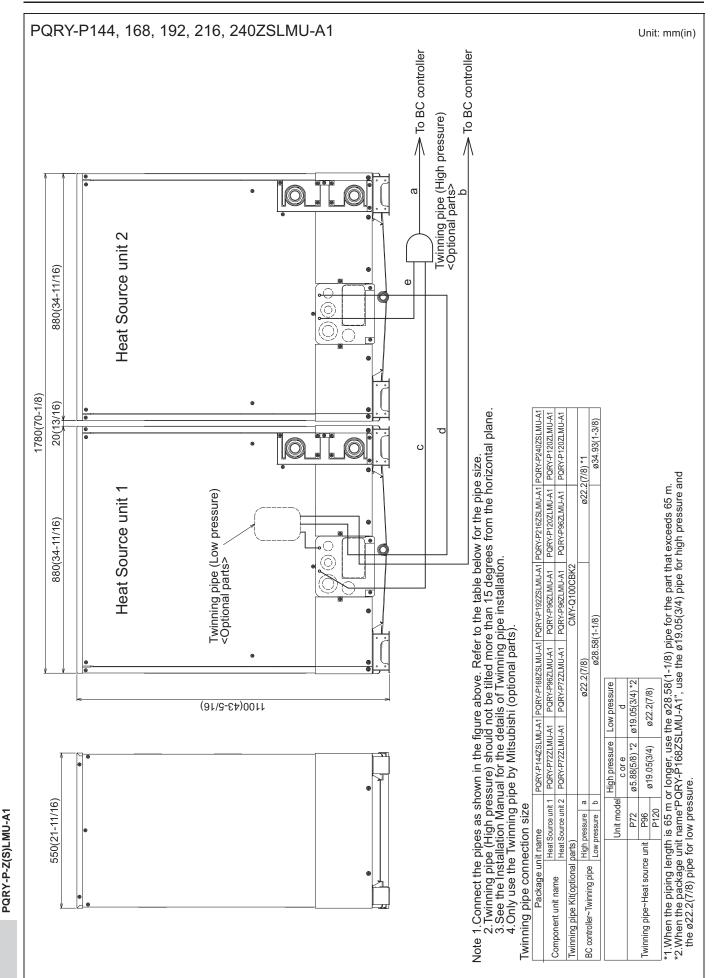
2. EXTERNAL DIMENSIONS

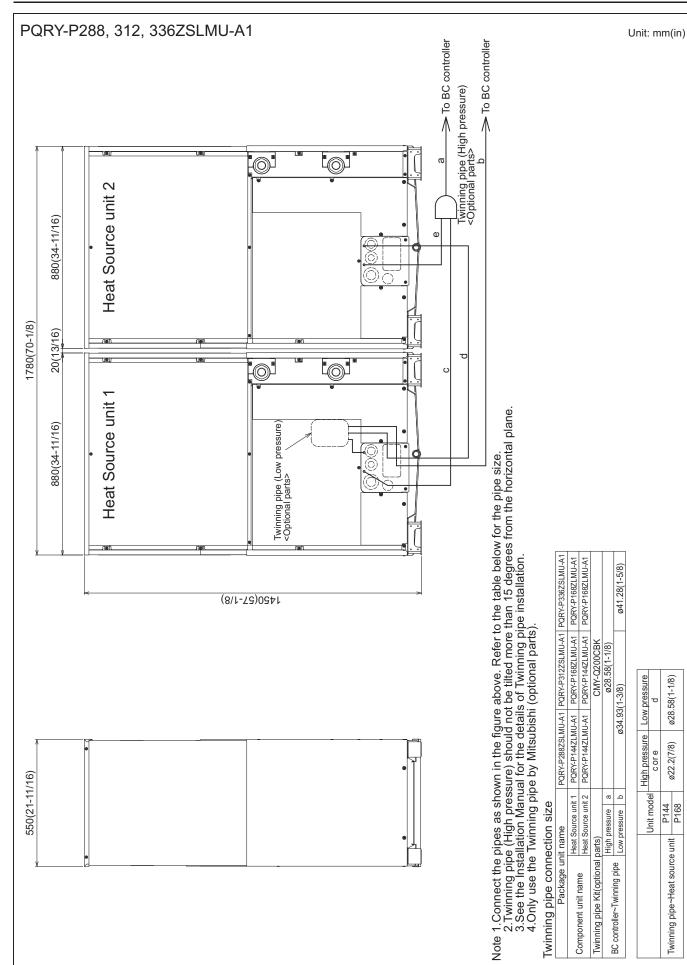
Heat source units

2. EXTERNAL DIMENSIONS

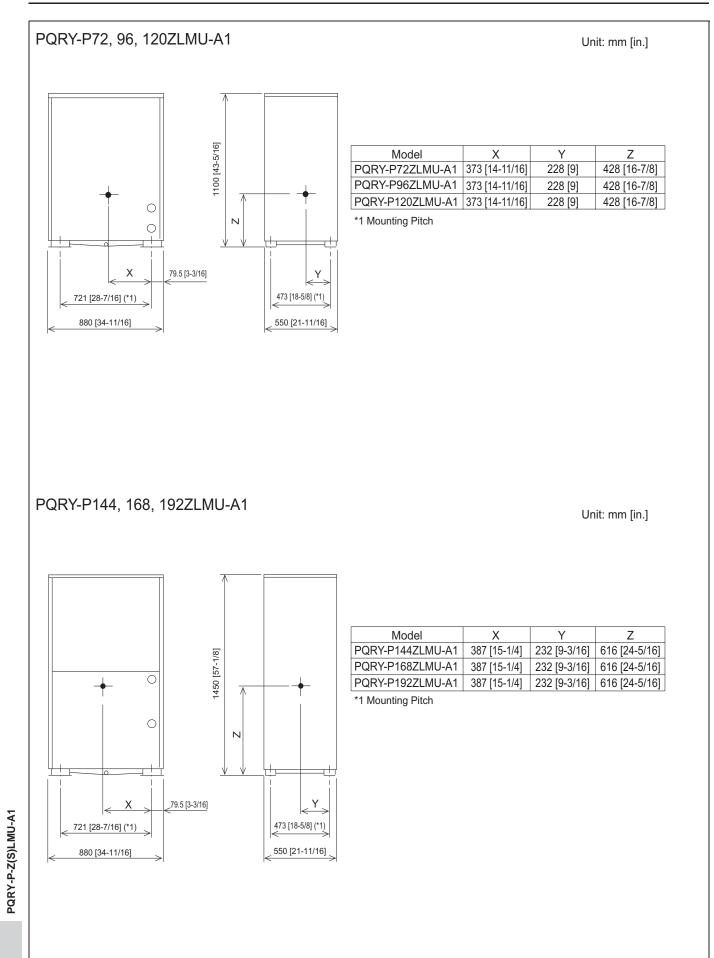
PQRY-P144, 168, 192ZLMU-A	1	Unit: mm(in)
 10c. ssory kit) ssory kit) ssory kit) ssory kit) tpc. ssory kit) 	Back view	Specifications Ie Specifications (1-10, × 77, Knockout hole ning kit (3-1/16) ning kit (4-5, %16) smounted.) (1-13/16) smounted.) (1-13/16) ie (2-12) ie (2-12) ie (2-12) ie (2-13/2) ie (2-13/2) ie (2-13/2) ie (2-13/2) ie (2-3/2) ie (2-12) ie (2-12) ie (2-3/4) if (7/6) ie (2-12) if (7/8) if (7/8) if (7/8) if (7/12) if (1-3/8) if NPT1-1/2 RC3/4 Screw RC3/4 Screw
 Accessories> Accessories> Petrigerant (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) Adrater 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) Sealing material for field piping (high pressure, low pressure) Sealing material for drain socket ••••• 1pc. (P144/P168/P192; Packaged in the accessory kit) Sealing material for drain socket •••••• 1pc. (P144/P168/P192; Packaged in the accessory kit) Sealing material for low pressure •••••••••• Packaged in the accessory kit) Sealing material for drain socket ••••••• 1pc. (P144/P168/P192; Packaged in the accessory kit) Sealing material for parel ••••••••••• Packaged in the accessory kit) Sealing material for parel •••••••• Packaged in the accessory kit) Sealing material for parel ••••••• Packaged in the accessory kit) Sealing material for parel ••••••• Packaged in the accessory kit) Sealing material for parel ••••••• Packaged in the accessory kit) Sealing material for parel ••••••• Packaged in the accessory kit) 	278(11) Right side view	NO. Usage ① Front through hole ② Front through hole ③ Front through hole ③ For pipes ④ (optional parts) is mounted.) ④ Front through hole ⑥ Front through hole ⑥ Front through hole ⑥ Front through hole ⑥ Front through hole ⑦ Mater pipe ⑧ Unter pipe 0 outlet
ار (۱/۱۲-۱۲)038 م (۱/۱۲-۱۲)038 م لا ش ت ت ت ت ت ت ت ت ت ت ت ت ت ت ت ت ت ت	Control box Refrigerant service valve <high pressures<br="">valve <high pressures<br="">a20(12-5/8) 367(14-1/2) 422(16-5/8) 23(15/16) 233(15/16) 233(15/16)</high></high>	31.5(1-1/4) (1/1-1)2.15 31.5(1-1/4) (1/1-1)2.15 (1/1
880(34-11/16) Top view		Front view -14(9/16)X31(1-1/4) Oval hole -14(9/16)X31(1-1/4) Oval hole -14(9/16)X31(1-1/4)
 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. 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 easily 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 required space for ser	<u>216(8-9/16)</u>	(55.5) 769(30-5/16) (53.5) The space for banke space for banke space for banke space for bank bank (2-3/16) (2-3/16) (2-3/16) (10 mit side) (2-3/16) (2-3/16) (2-3/16) (2-3/16) Eig.A (2-3/16) (2-3/16) (10 mit side) Connecting pipe specifications (2-3/16) (2-3/16) (2-3/16) Model Refrigerant pipe Diameter Service valve PORY-P144ZLMU-A1 0 0 0 PORY-P143ZLMU-A1 0 0 0 PORY-P192ZLMU-A1 0 0

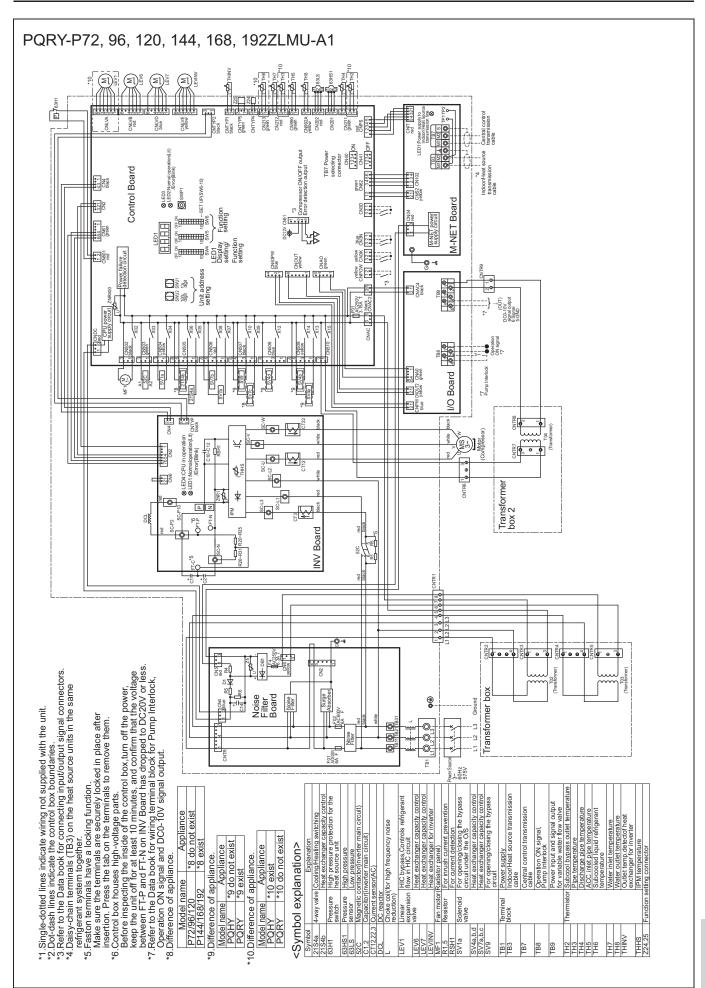
Heat source units

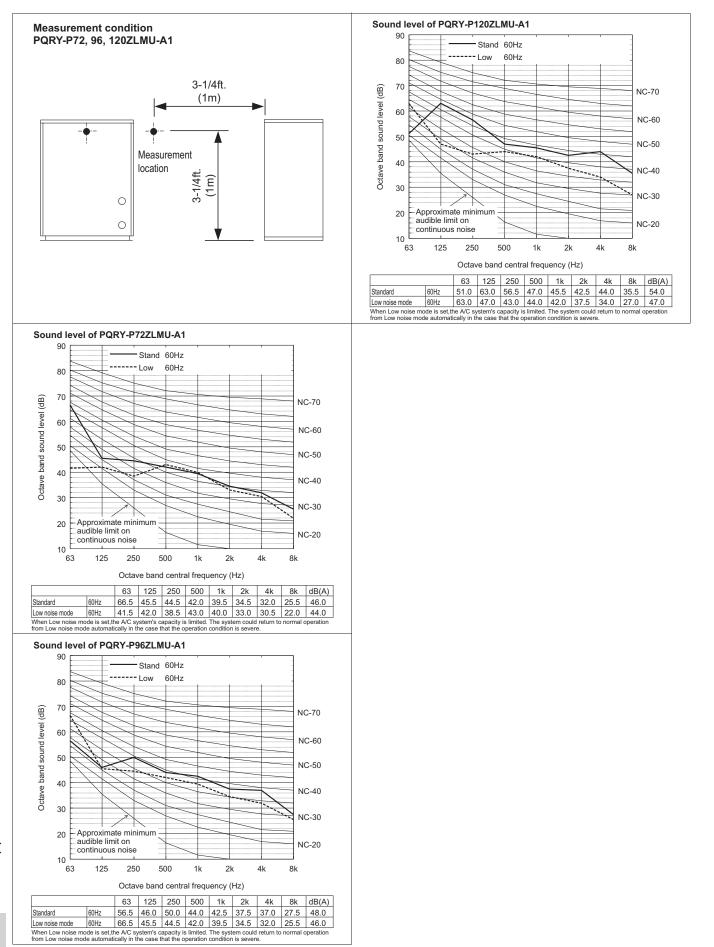


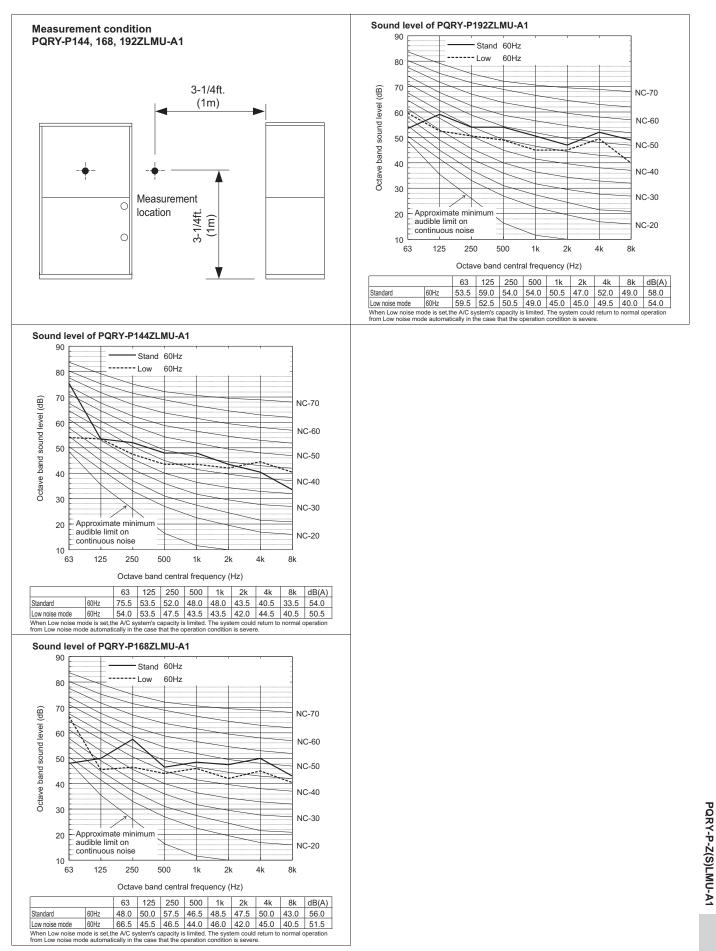


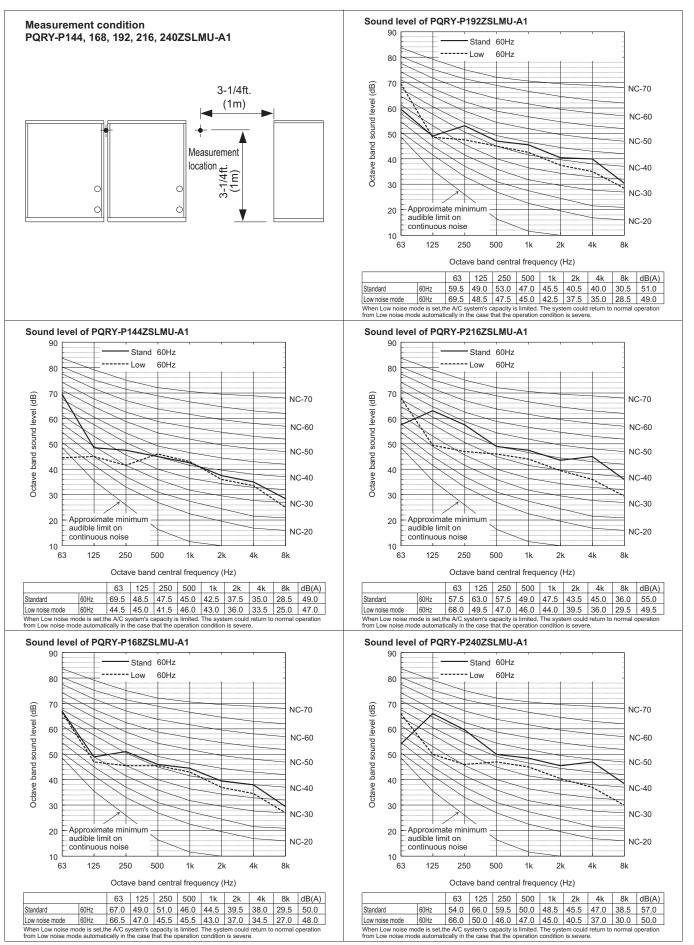
3. CENTER OF GRAVITY

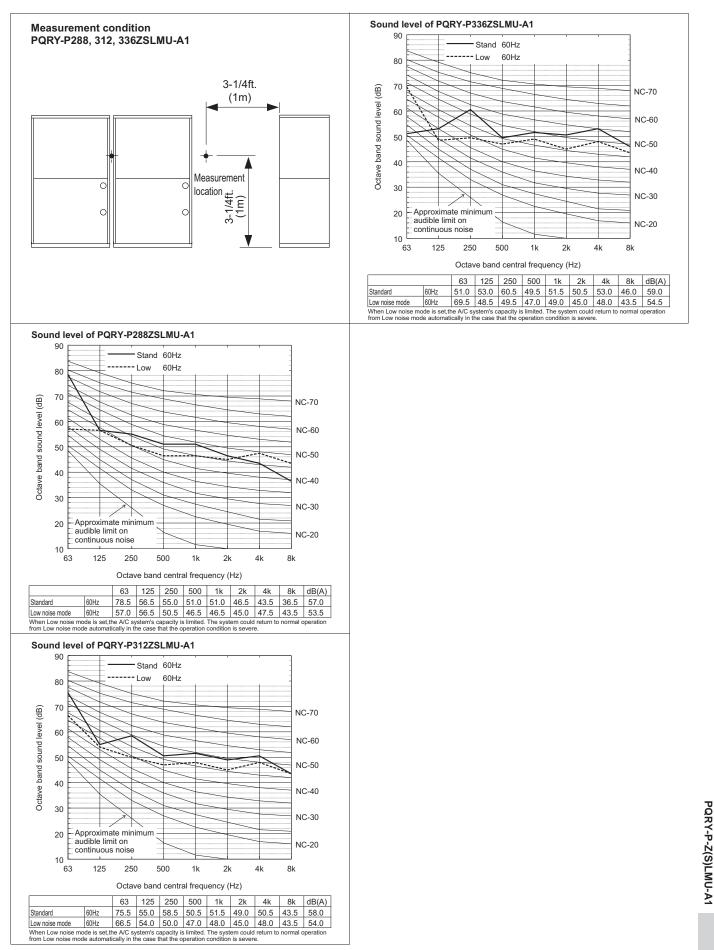




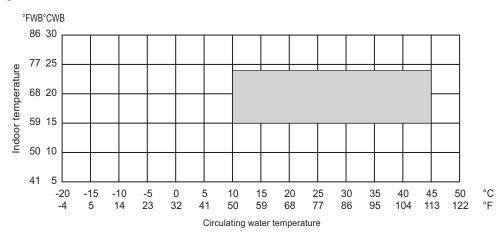




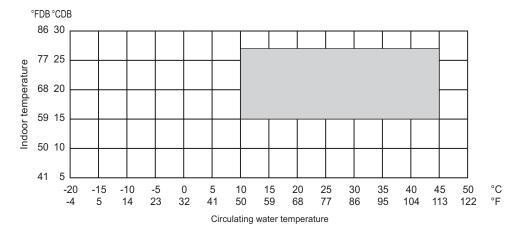




Cooling



Heating

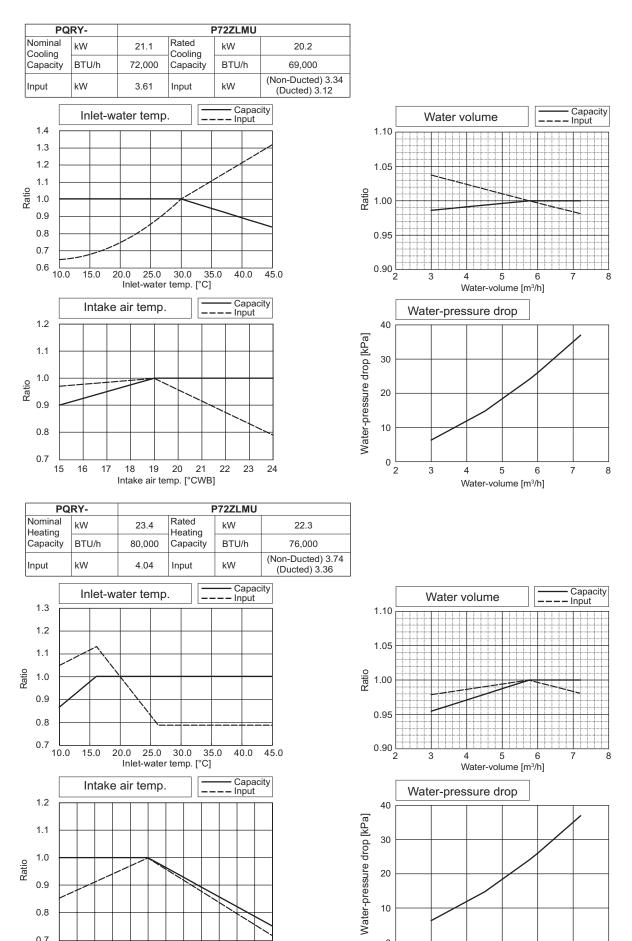


• Combination of cooling/heating operation (Cooling main or Heating main)

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

7-1. 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.



Capacity

8

7

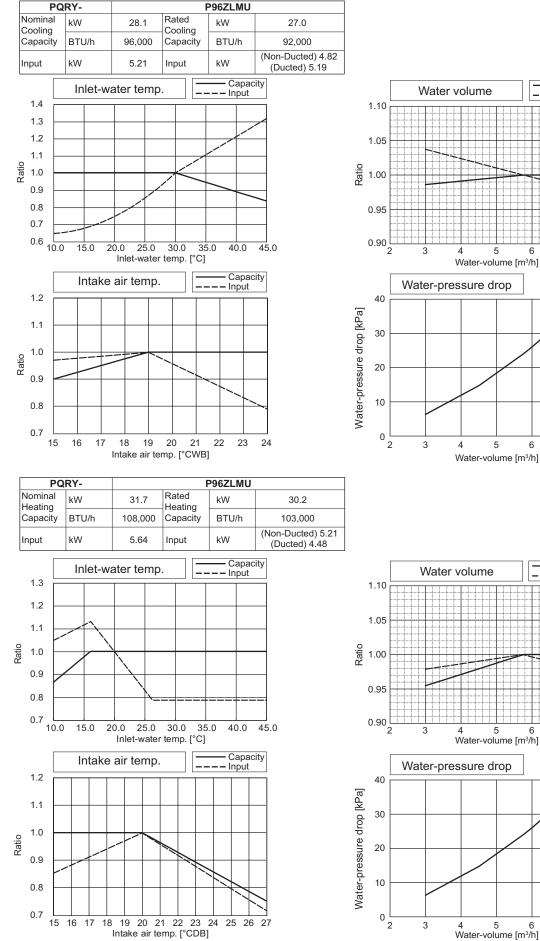
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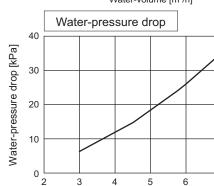
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8

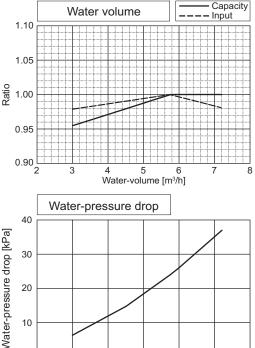
Input

6





Water-volume [m3/h]



Capacity

8

Input

6

6

6

7

Capacity

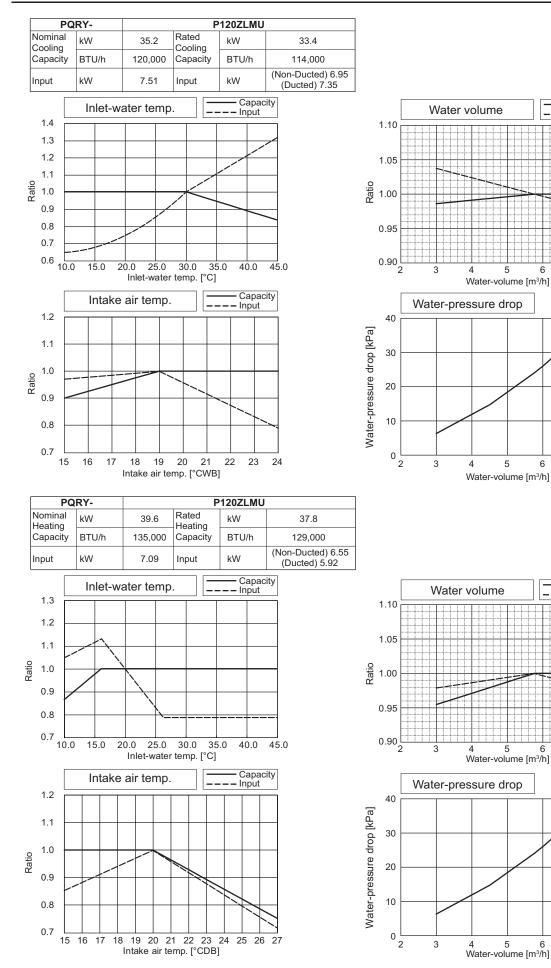
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7

8

Input

8

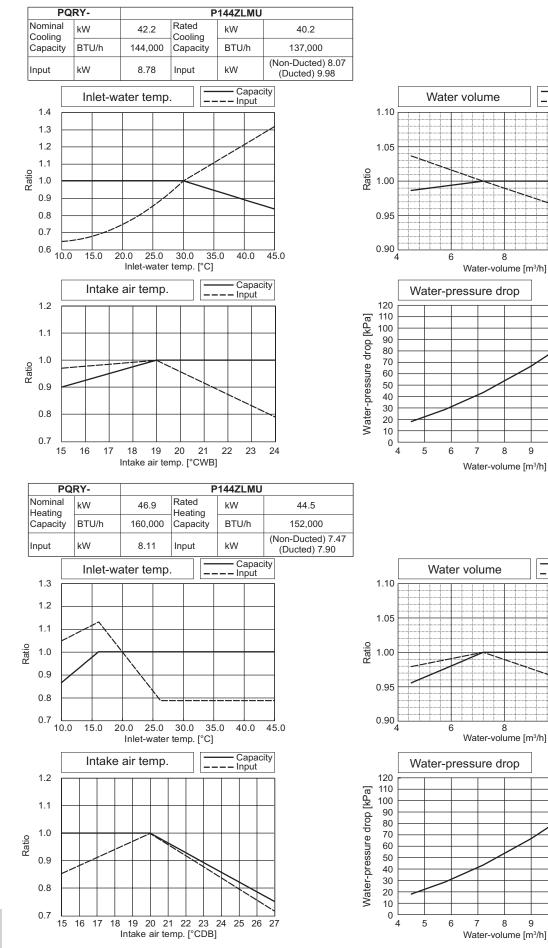


Capacity

Input

 Capacity

- Input

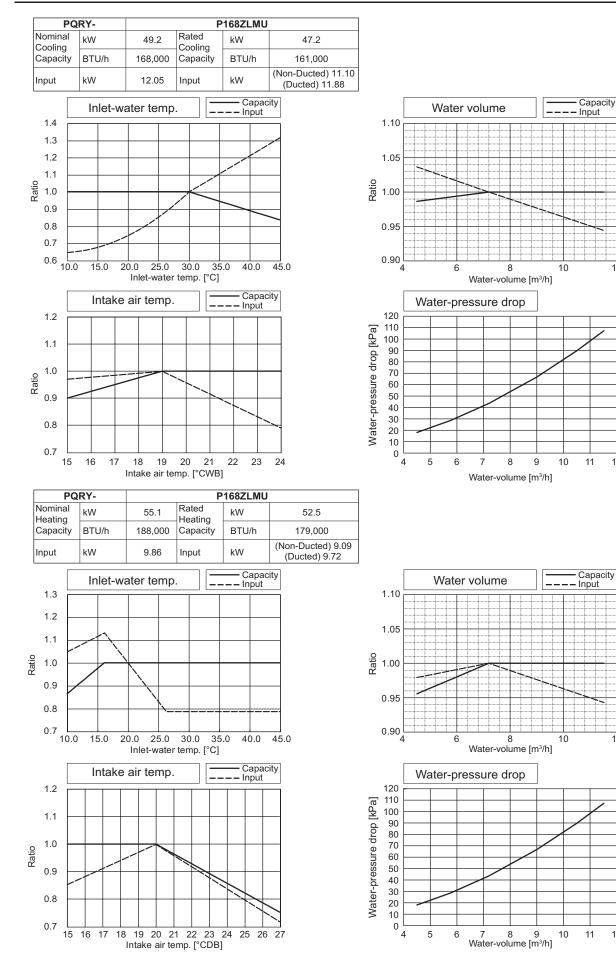


12

12

12

12



· Capacity

12

12

11

Capacity

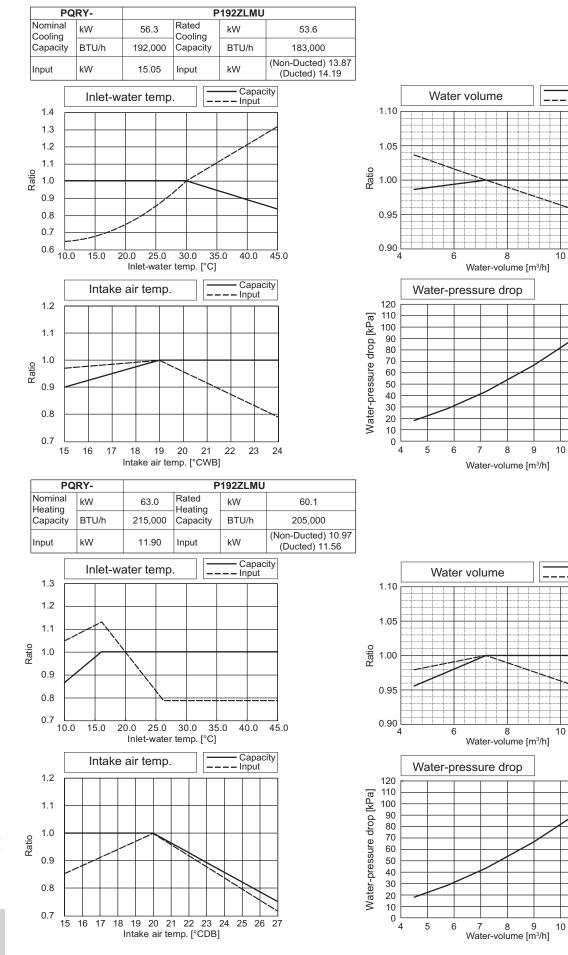
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11

12

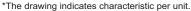
– Input

– Input



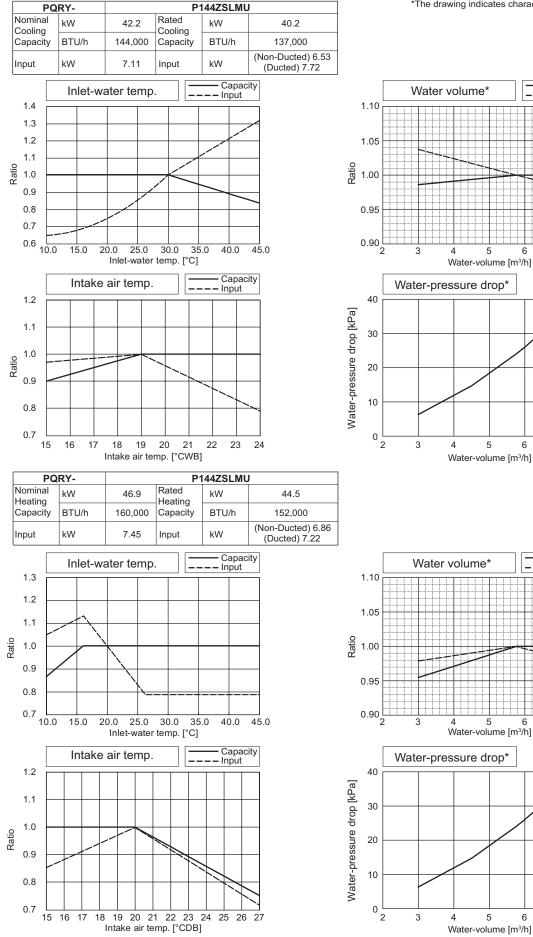
Capacity

Input



Capacity

- Input



PQRY-P-Z(S)LMU-A1

Capacity

Input

7

7

Capacity

- Input

7

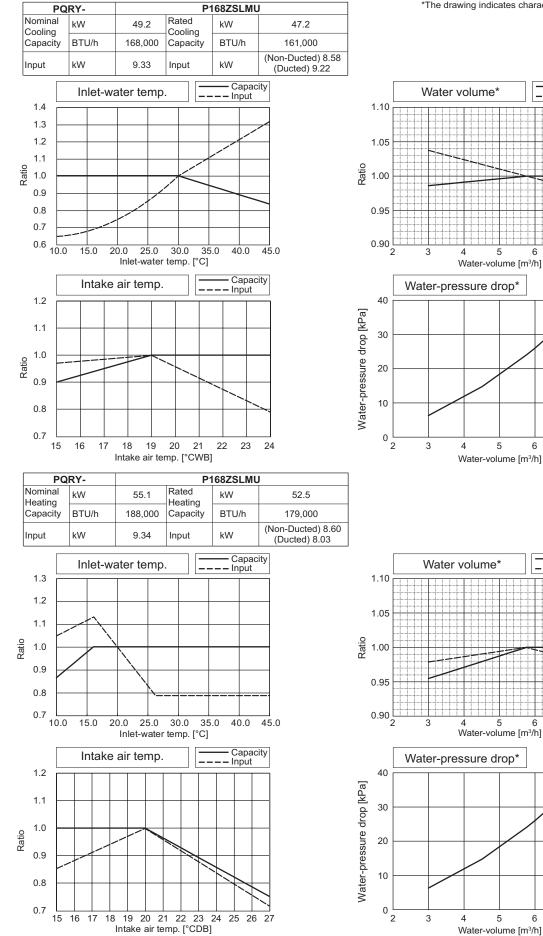
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8

8

8

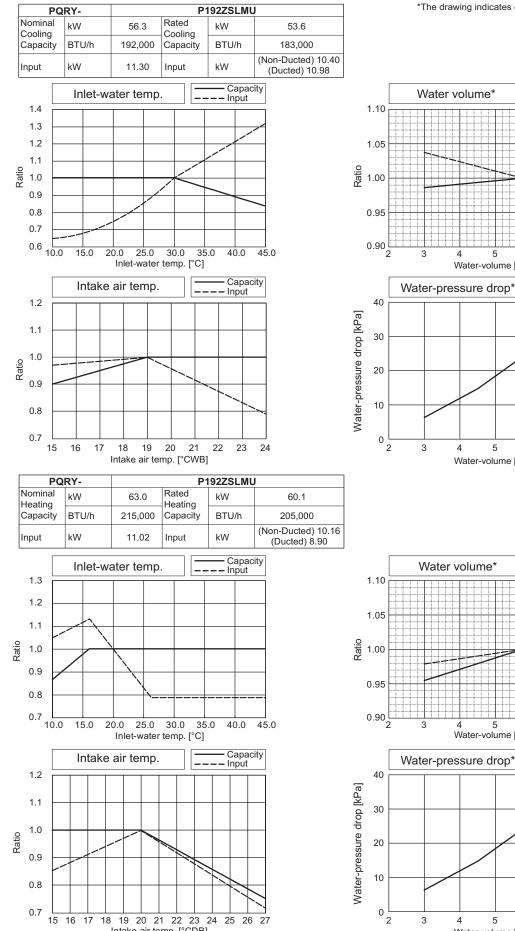
8



*The drawing indicates characteristic per unit.

Capacity

Input



Intake air temp. [°CDB]

*The drawing indicates characteristic per unit.

Water-volume [m3/h]

Water-volume [m³/h]

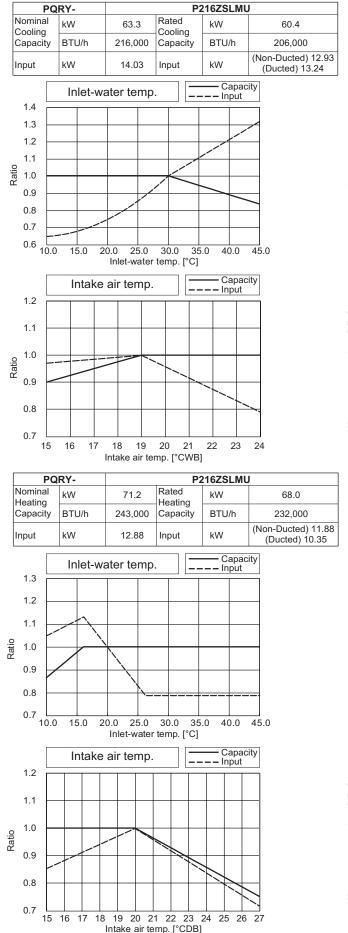
Water-volume [m3/h]

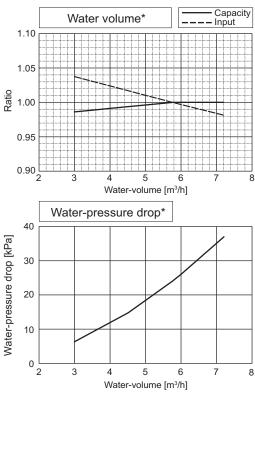
Capacity

- Input

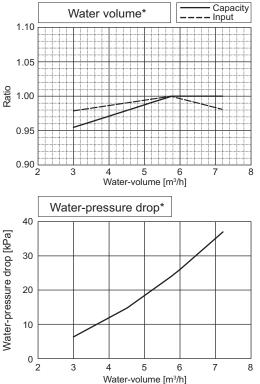
Water-volume [m3/h]

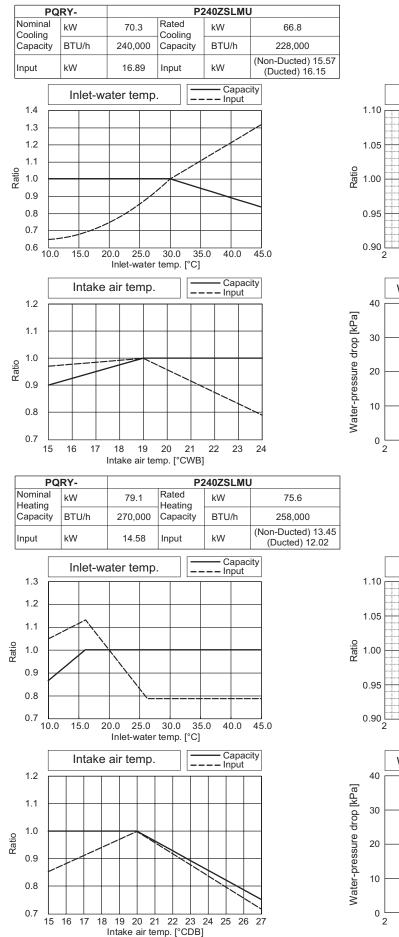
PQRY-P-Z(S)LMU-A1

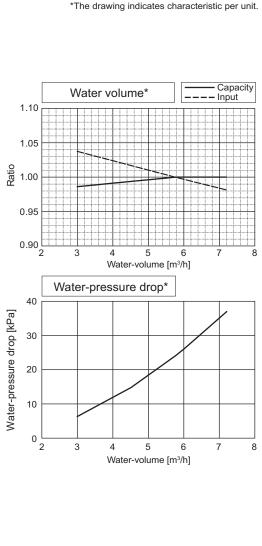


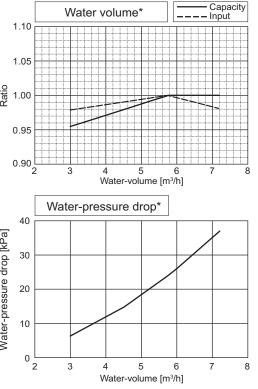


*The drawing indicates characteristic per unit.









PQRY-P-Z(S)LMU-A1

Capacity

12

12

Capacity

12

12

- Input

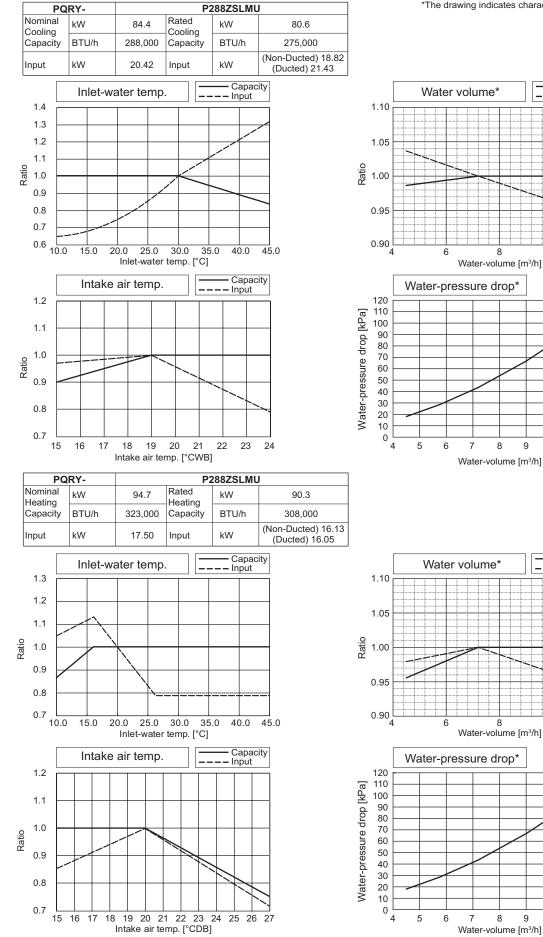
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10 11

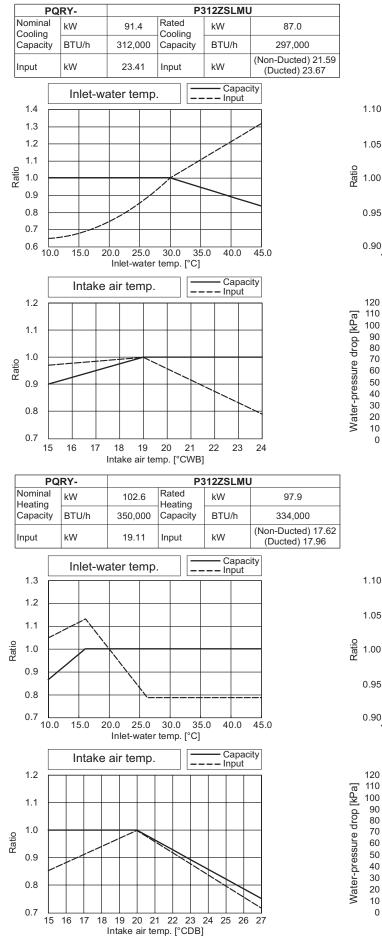
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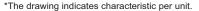
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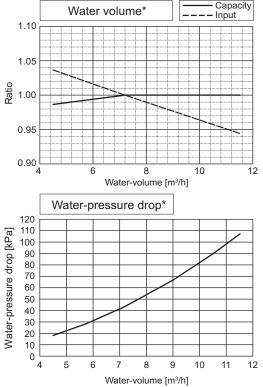
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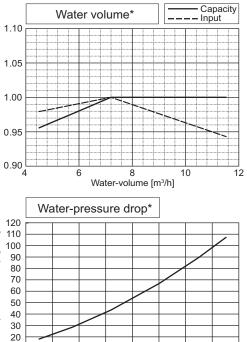


*The drawing indicates characteristic per unit.









8 9

Water-volume [m3/h]

10 11

12

4 5 6 7

Capacity

12

– Input

10

10 11 12

Capacity

- Input

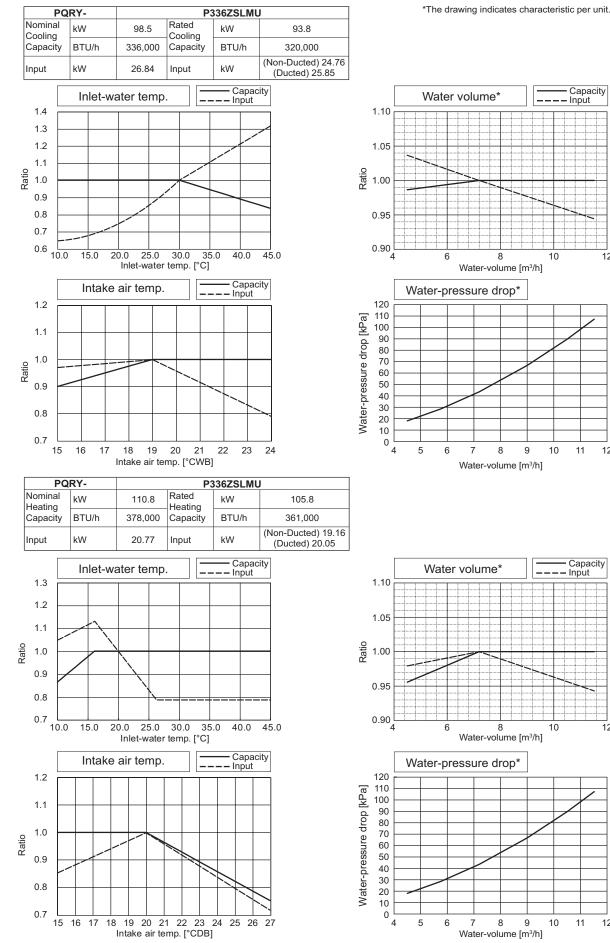
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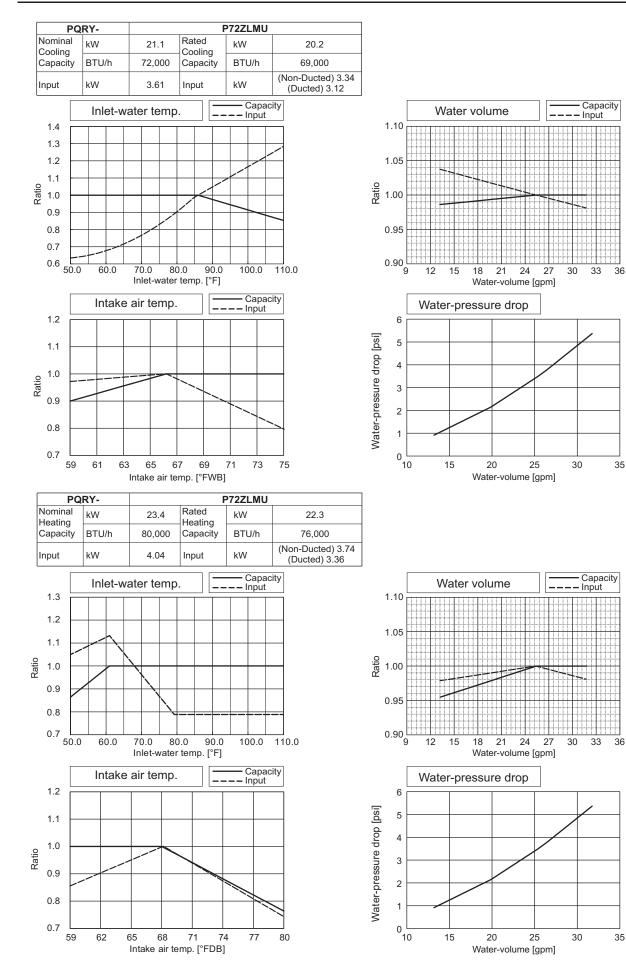
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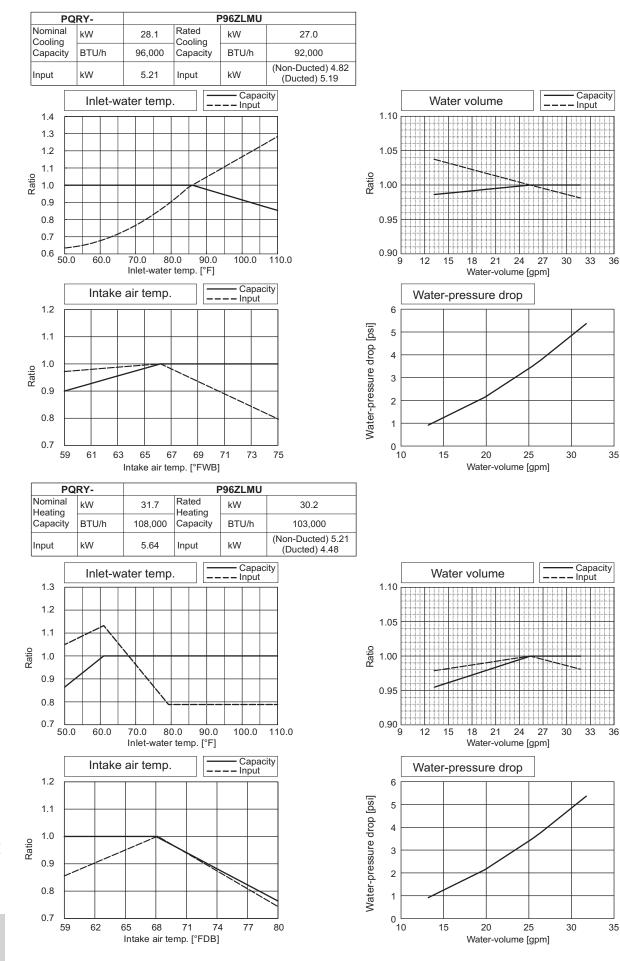
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12



PQRY-P-Z(S)LMU-A1

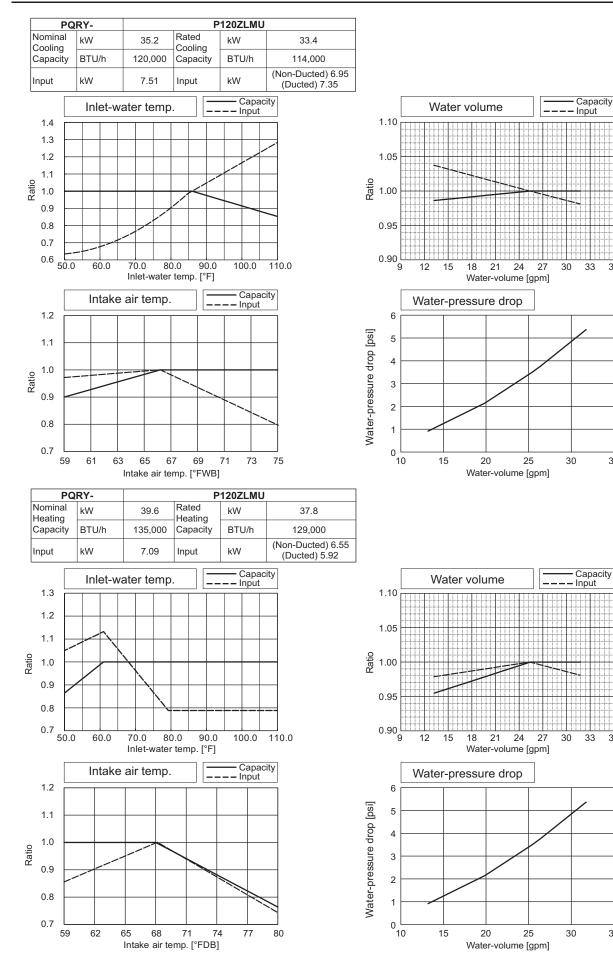


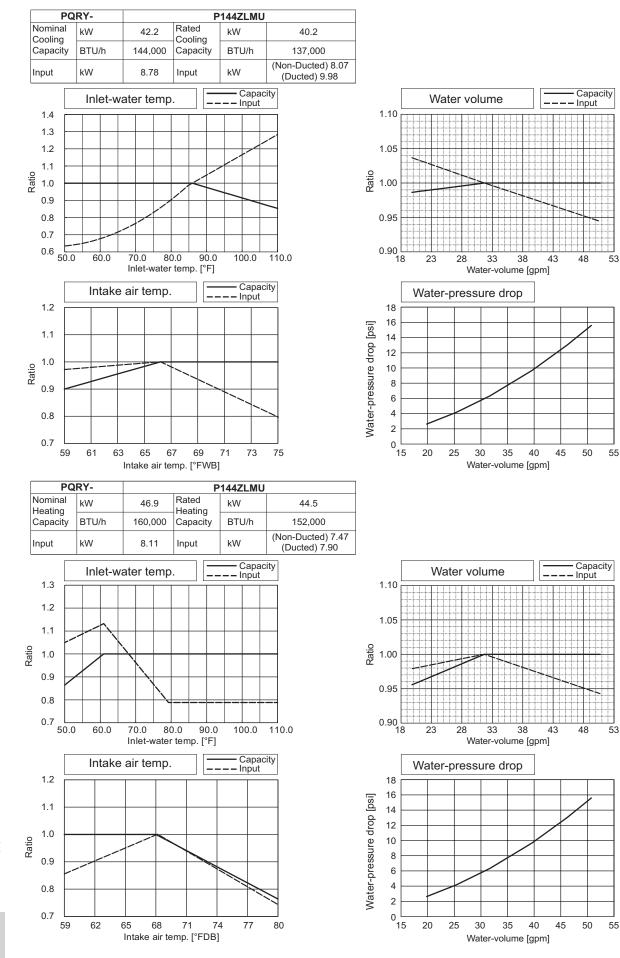


36

35

36





Capacity

Input

48

50

Capacity

Input

48

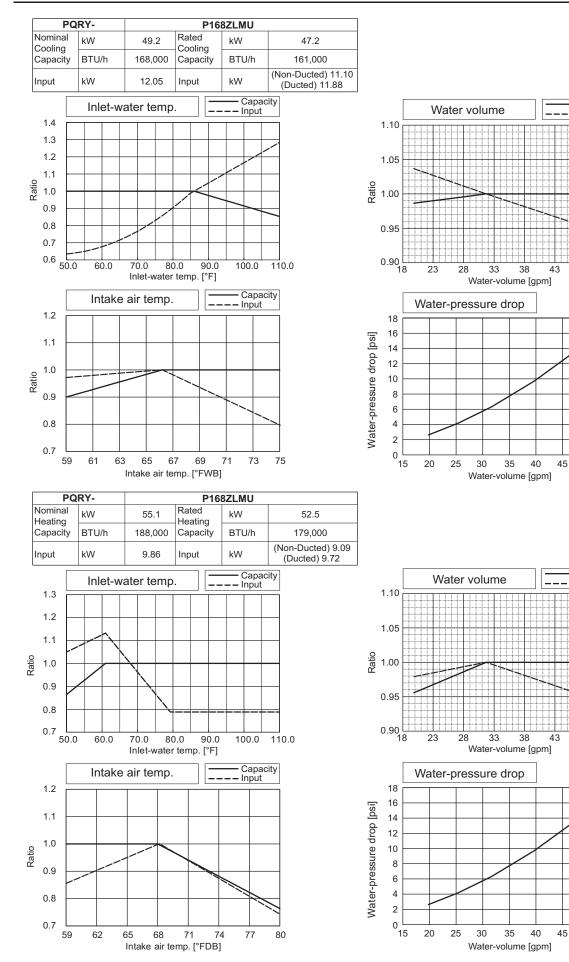
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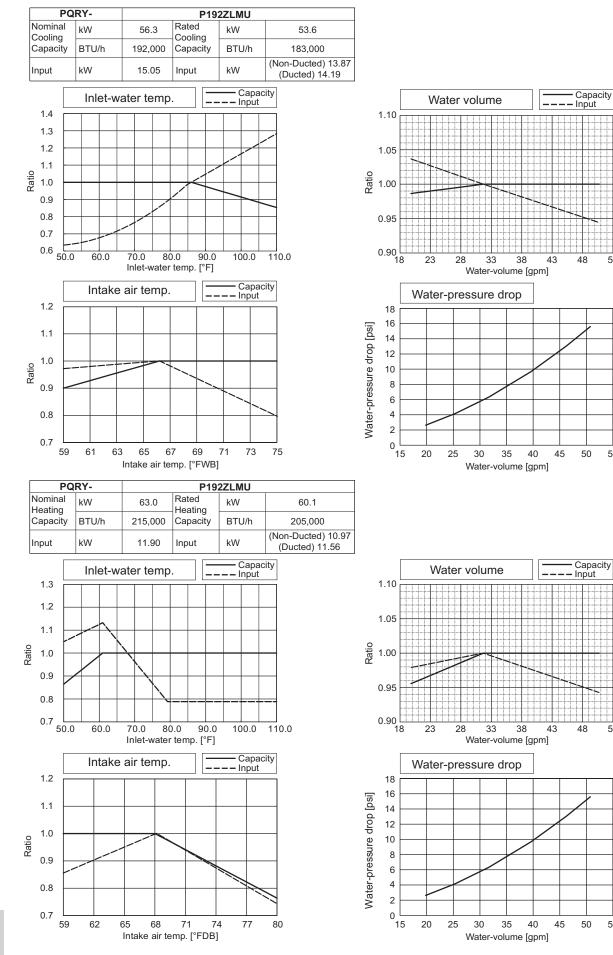
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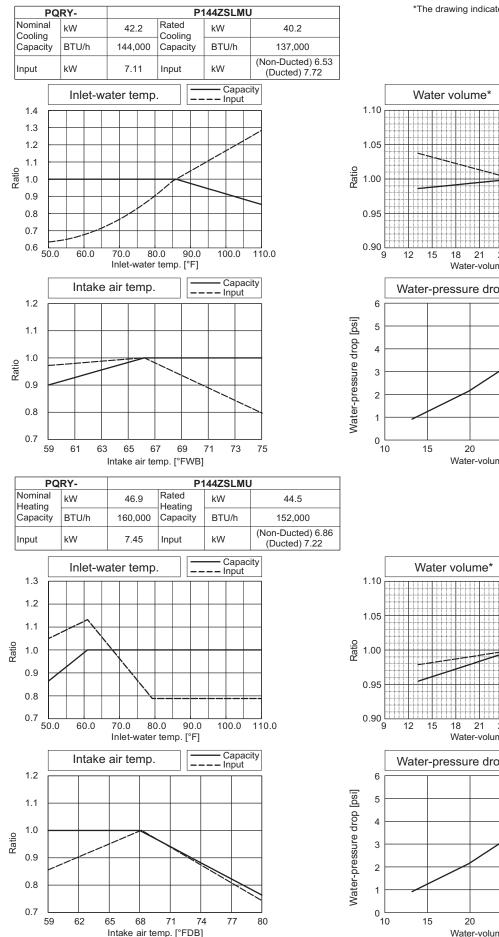
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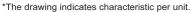
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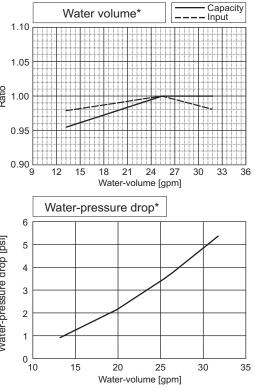
PQRY-P-Z(S)LMU-A1

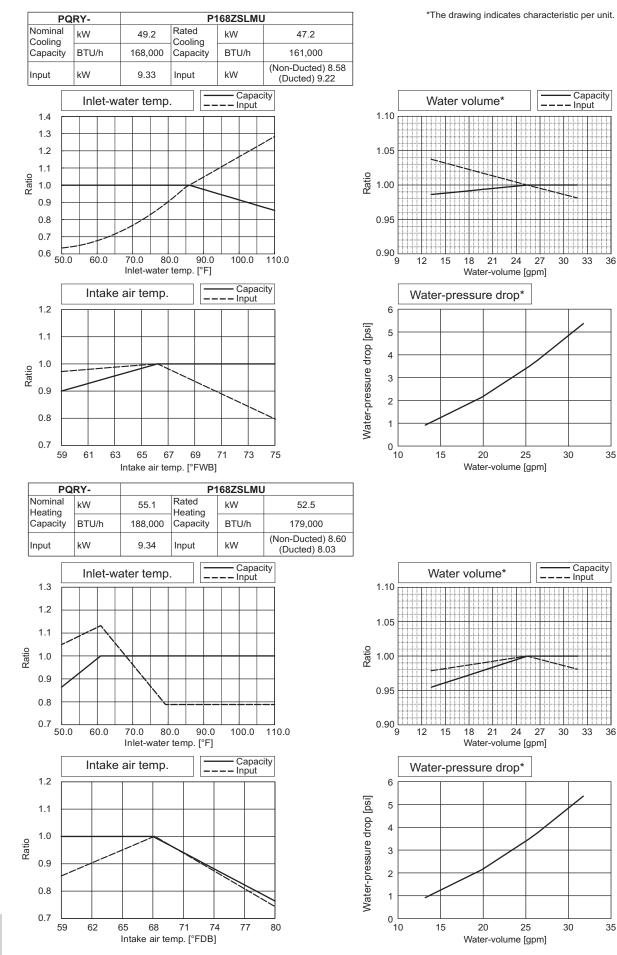




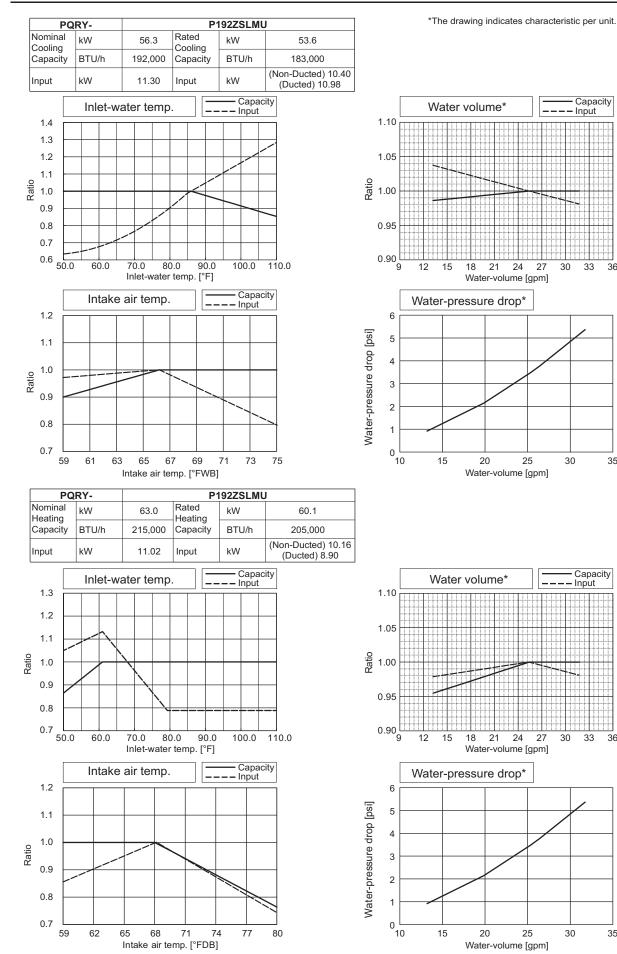


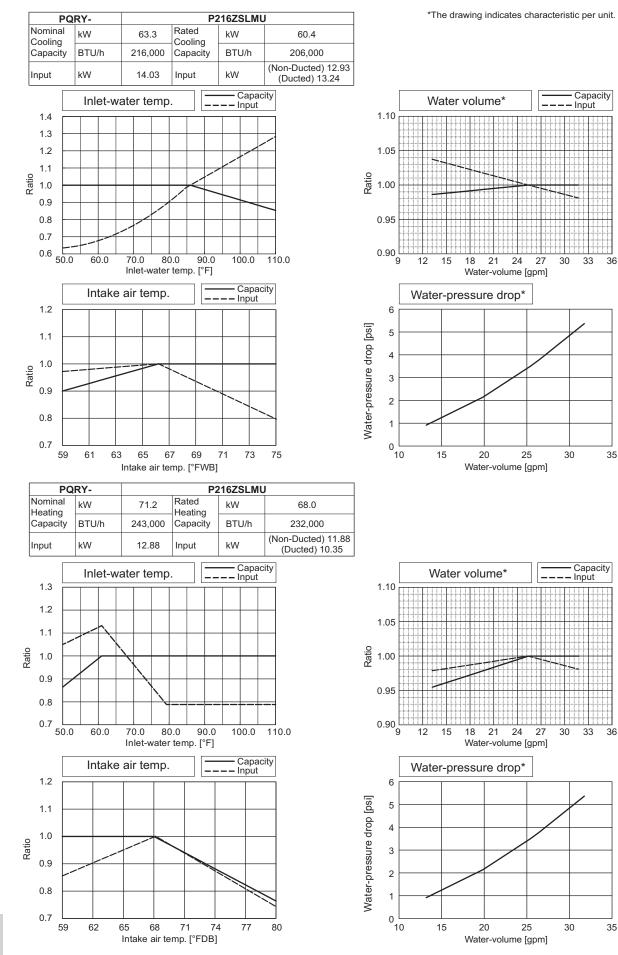
Capacity - Input 27 30 33 36 24 Water-volume [gpm] Water-pressure drop* 35 25 30 Water-volume [gpm]





PQRY-P-Z(S)LMU-A1





PQRY-P-Z(S)LMU-A1

Capacity

- Input

30 33 36

35

Capacity

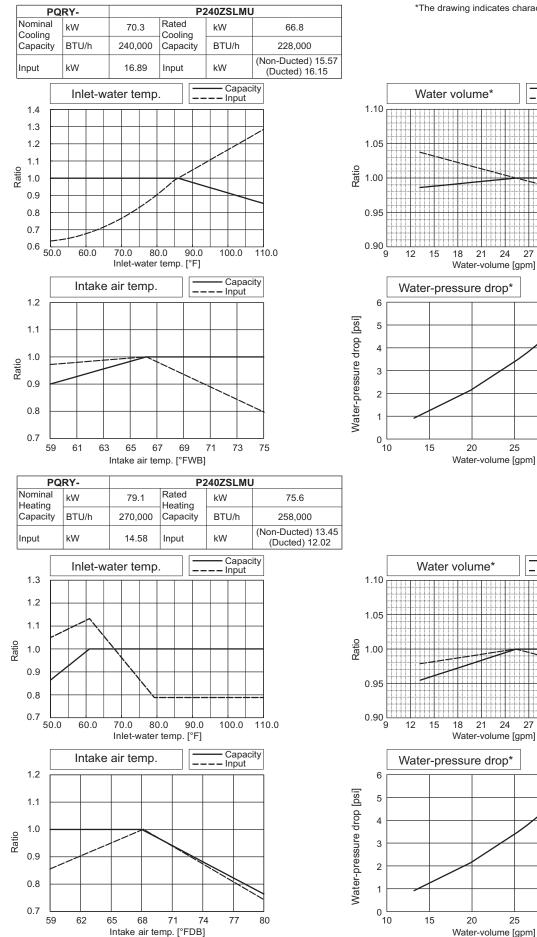
Input

30 33 36

30

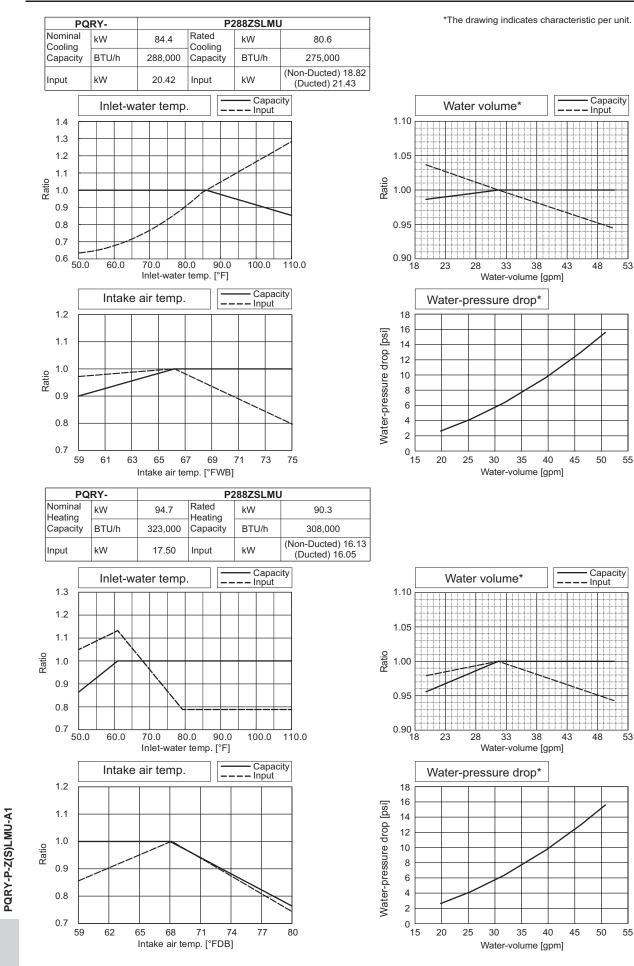
35

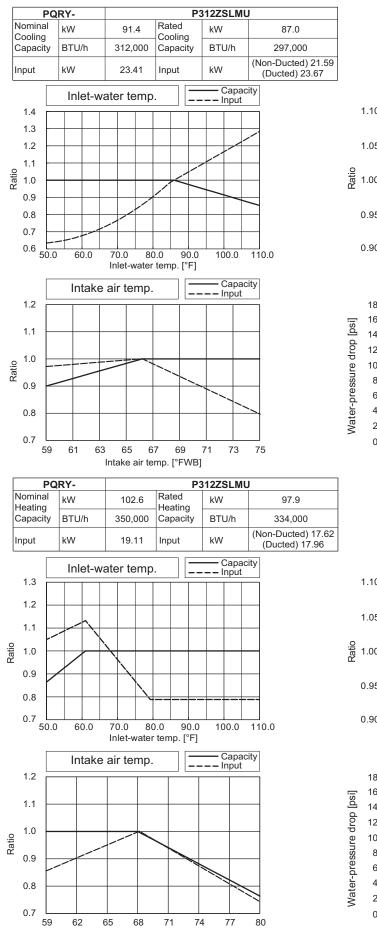
30



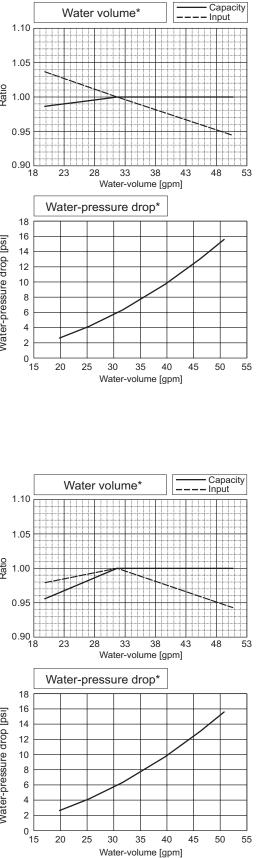
*The drawing indicates characteristic per unit.

PQRY-P-Z(S)LMU-A1

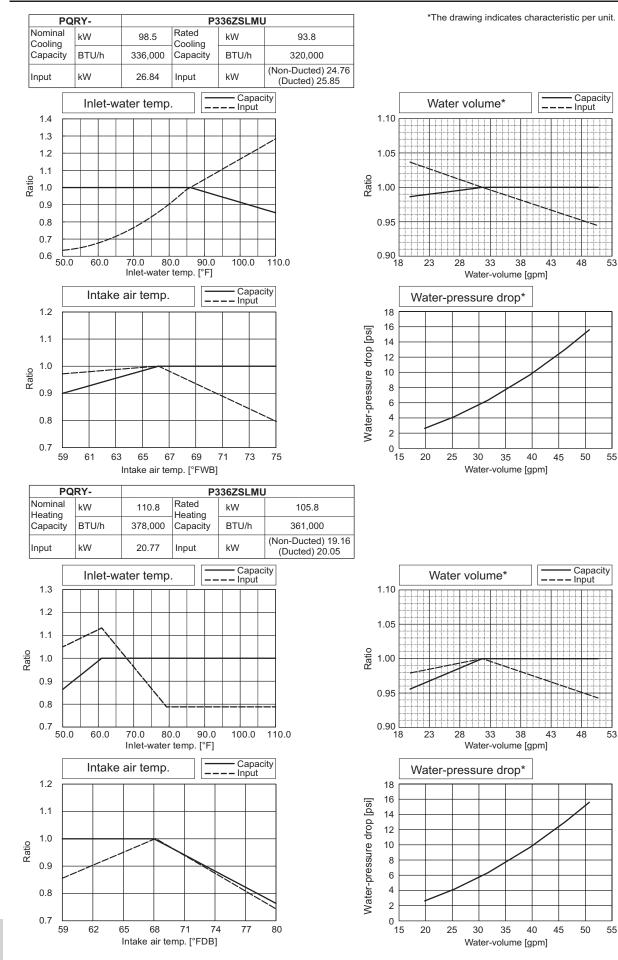




Intake air temp. [°FDB]

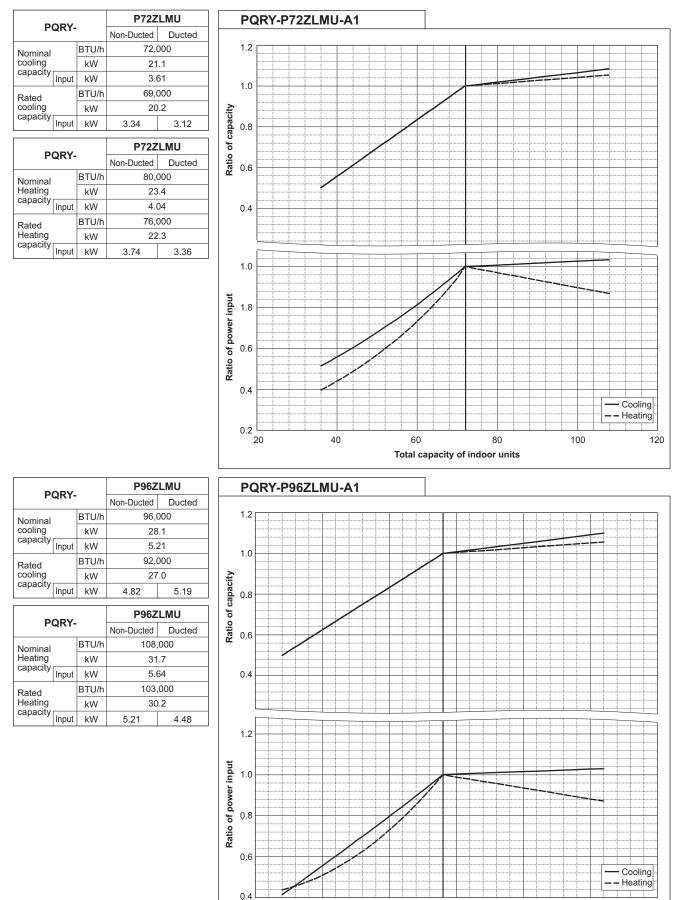


*The drawing indicates characteristic per unit.



7-2. 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.



40

60

80

100

120

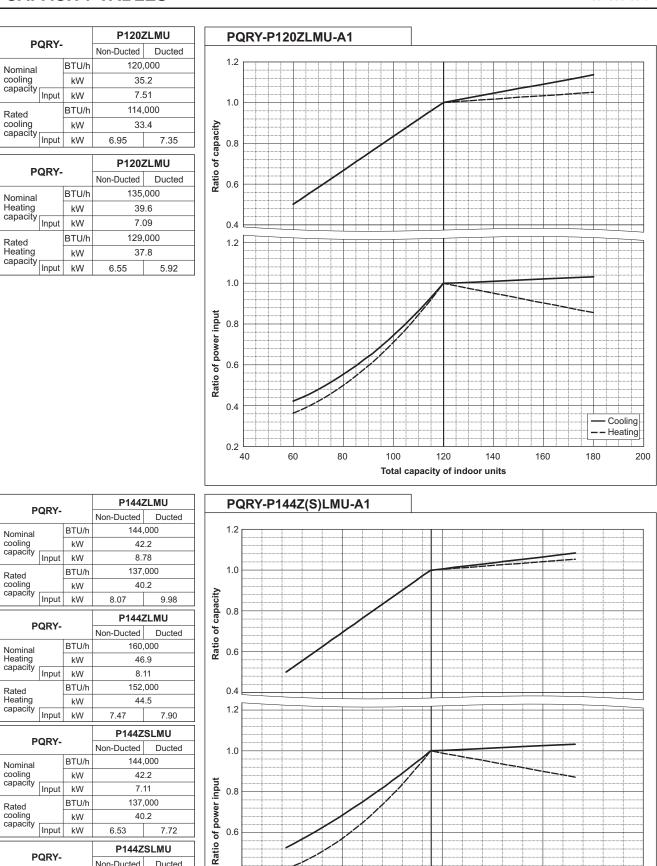
140

Cooling

250

– – Heating

200



PQRY-P-Z(S)LMU-A1

Nominal Heating capacity Rated Heating capacity

Input kW

PQRY-

Input

Input kW

BTU/h

kW

kW

BTU/h

kW

6.53

Non-Ducted

6.86

P144ZSLMU

160,000

46.9

7.45

152,000

44.5

7.72

Ducted

7.22

0.6

0.4

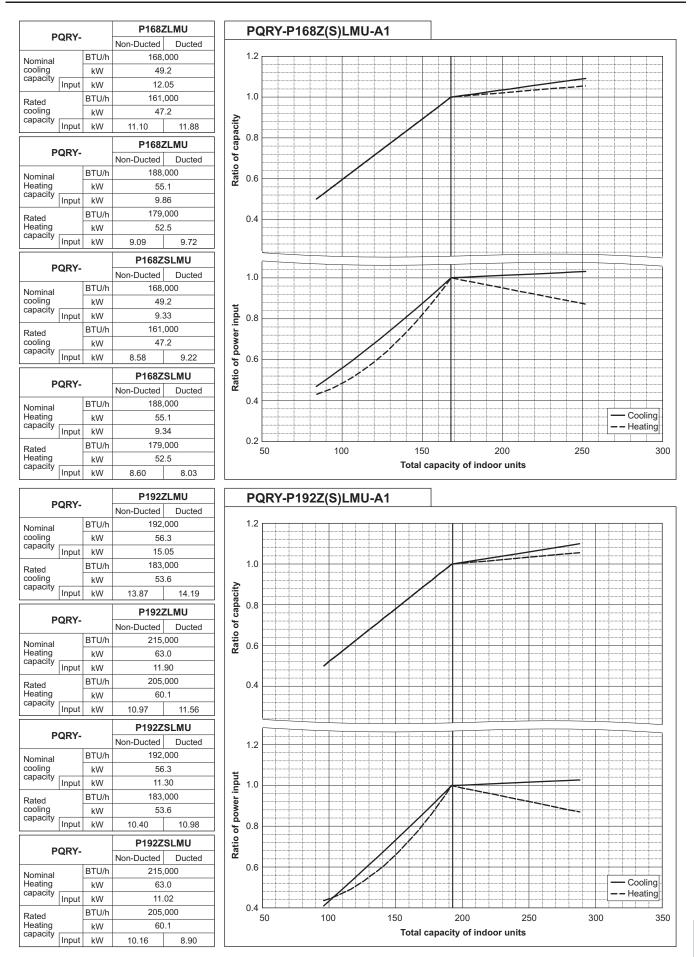
0.2

50

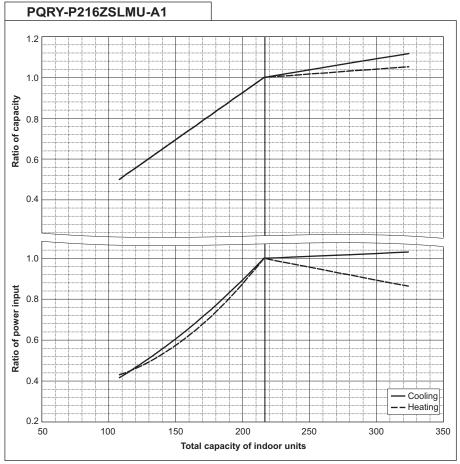
100

150

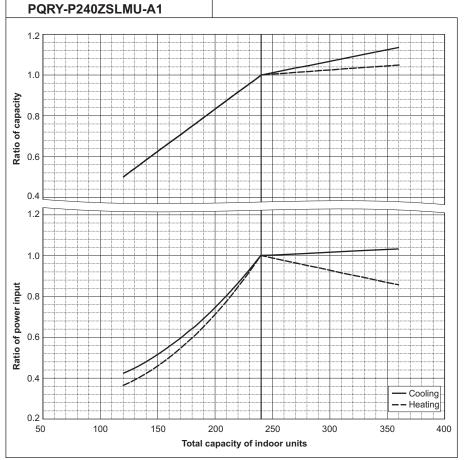
Total capacity of indoor units



PQRY-		P216ZSLMU		
F	PQRI-		Non-Ducted	Ducted
Nominal		BTU/h	216,	000
cooling		kW	63	.3
capacity	Input	kW	14.	03
Rated		BTU/h	206,	000
cooling		kW	60	.4
capacity	Input	kW	12.93	13.24
			P216Z	SLMU
Р	QRY-		P216Z Non-Ducted	SLMU Ducted
P	QRY-	BTU/h		Ducted
Nominal Heating	QRY-	BTU/h kW	Non-Ducted	Ducted 000
Nominal	QRY-		Non-Ducted 243,	Ducted 000 .2
Nominal Heating		kW	Non-Ducted 243, 71	Ducted 000 .2 88
Nominal Heating capacity		kW kW	Non-Ducted 243, 71	Ducted 000 .2 88 000

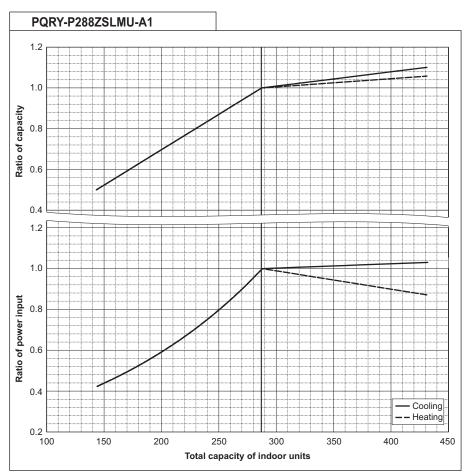


DODY		P240ZSLMU		
P	QRY-		Non-Ducted	Ducted
Nominal		BTU/h	240,	000
cooling		kW	70	.3
capacity	Input	kW	16.	89
Rated		BTU/h	228,	000
cooling		kW	66	.8
capacity	Input	kW	15.57	16.15
			P240Z	SLMU
Р	QRY-		P240Z	
P	QRY-	BTU/h		Ducted
Nominal Heating	QRY-	BTU/h kW	Non-Ducted	Ducted
Nominal	QRY-		Non-Ducted 270,	Ducted 000 .1
Nominal Heating		kW	Non-Ducted 270, 79	Ducted 000 .1 58
Nominal Heating capacity		kW kW	Non-Ducted 270, 79 14.	Ducted 000 .1 58 000



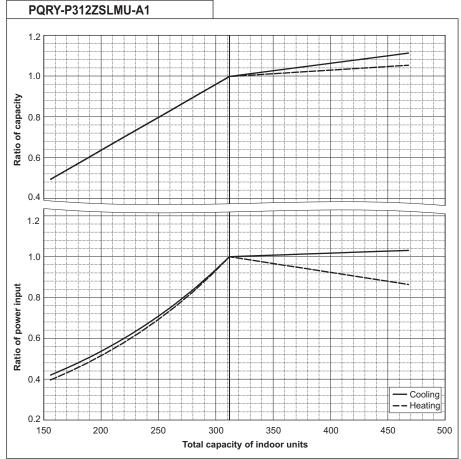


DODY			P288ZSLMU	
	QRY-		Non-Ducted	Ducted
Nominal		BTU/h	288	000
cooling		kW	84	.4
capacity	Input	kW	20	.42
Rated		BTU/h	275	000
cooling		kW	80	.6
capacity	Input	kW	18.82	21.43
	PQRY-		P288ZSLMU	
			Non-Ducted	Ducted
Nominal	BTU/h		323,000	
Heating		kW	94	.7
capacity	Input	kW	17	.50
Rated		BTU/h	308,000	
Heating		kW	90	.3



PQRY-		P312Z	SLMU	
		Non-Ducted	Ducted	
Nominal		BTU/h	312,	000
cooling		kW	91	.4
capacity	Input	kW	23.	41
Rated		BTU/h	297,	000
cooling		kW	87	.0
capacity	Input	kW	21.59	23.67
P312ZSLMU			SLMU	

PQRY-			P3122	SLINU
			Non-Ducted	Ducted
Nominal		BTU/h	350	,000
Heating		kW	10:	2.6
capacity	Input	kW	19	.11
Rated Heating		BTU/h	334	,000
		kW	97	. 9
capacity	Input	kW	17.62	17.96



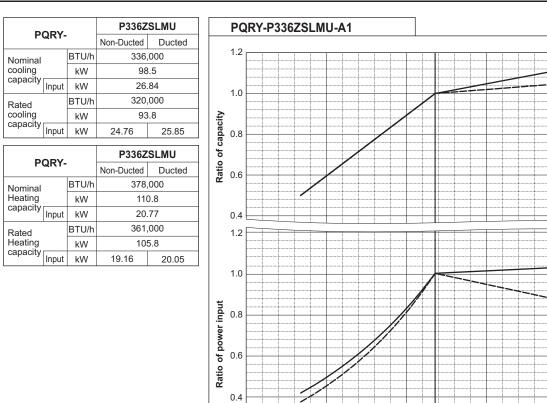
— Cooling — – Heating

600

500

400

Total capacity of indoor units



0.2 └─ 100

200

0

100

200

300

Piping equivalent length

400

500

600 ft.

0

100

200

300

Piping equivalent length

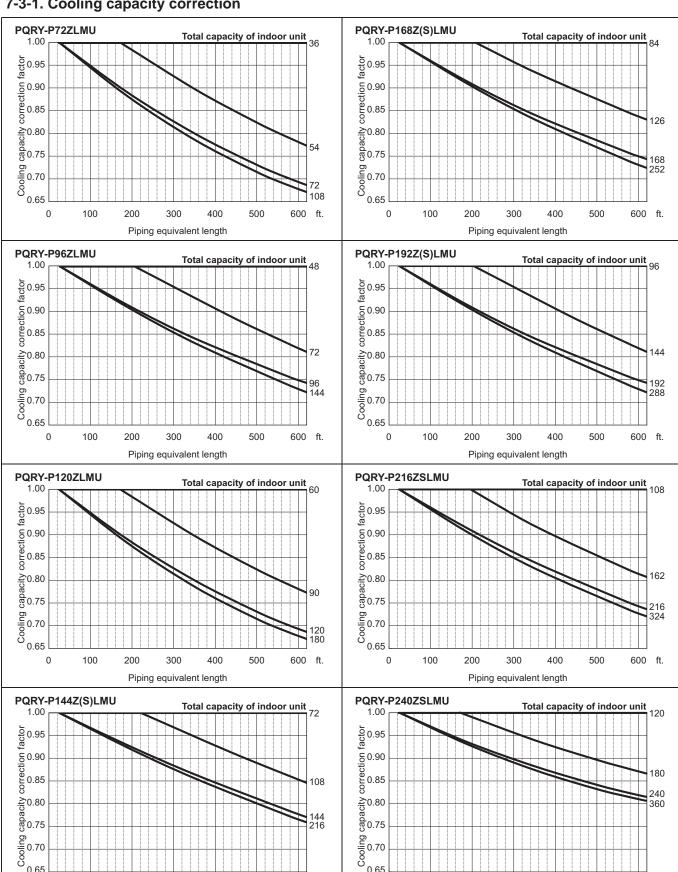
400

500

600 ft.

7-3. 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 7-3-1 and 7-3-2, the capacity can be observed. 7-3-3 shows how to obtain the equivalent length of piping.



7-3-1. Cooling capacity correction

0

100

200

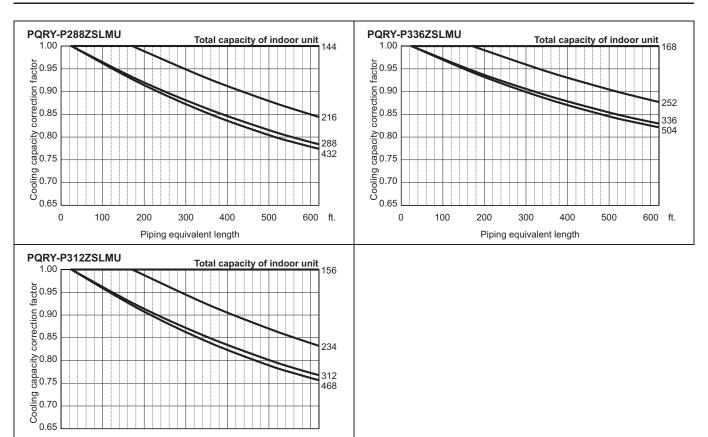
300

Piping equivalent length

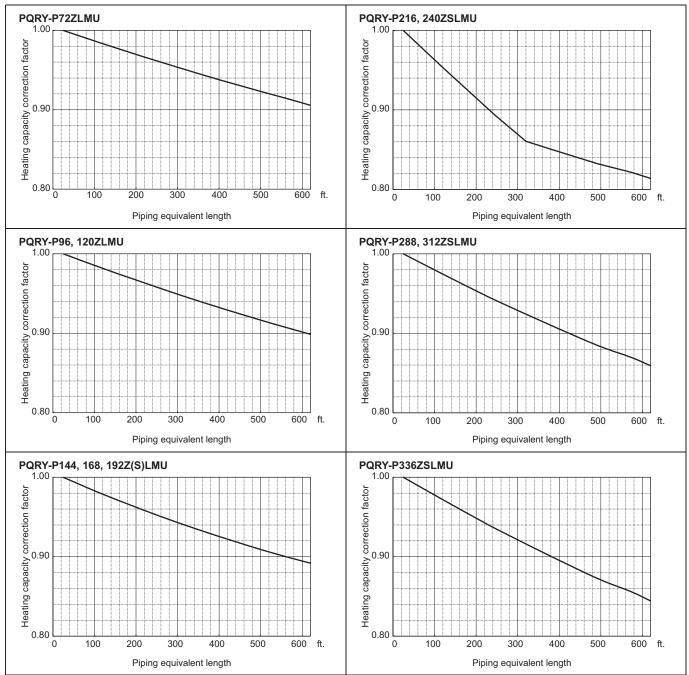
400

500

600 ft.



7-3-2. Heating capacity correction



7-3-3. How to obtain the equivalent piping length

1. PQRY-P72ZLMU

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. PQRY-P96ZLMU**

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. PQRY-P120ZLMU**

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. PQRY-P144, 168, 192, 216, 240Z(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. PQRY-P288, 312ZSLMU

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. PQRY-P336ZSLMU

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) + $(0.80 \times \text{number of bent on the piping)} [m]$

8-1. Designing of water circuit system

1) Example of basic water circuit

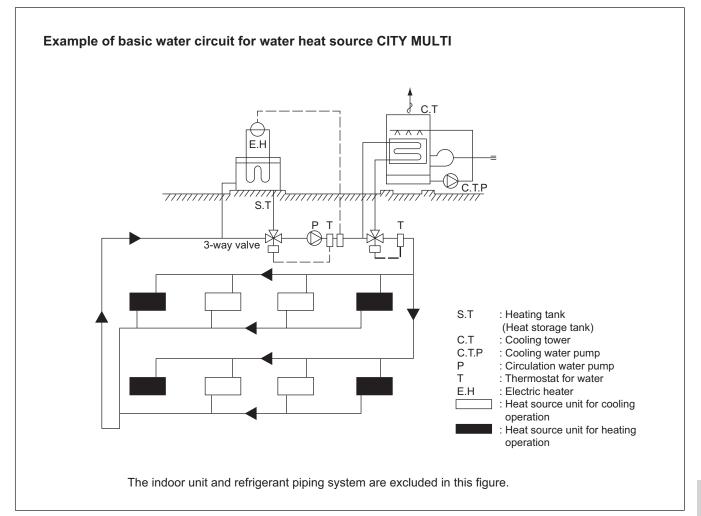
The water circuit of the water heat source CITY MULTI connects the heat source unit with the cooling tower/auxiliary heat source/heat storage tank/circulation pump with a single system water piping as shown in the figure below. The selector valve automatically controls to circulate water toward the cooling 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.



Cooling tower

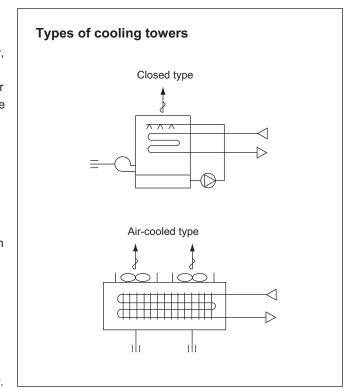
a) Types of cooling tower

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 = $\frac{Qc + 860 \times (\Sigma Qw + Pw)}{3,900}$ (Refrigeration ton)

Qc : Maximum cooling load under actual state (kcal/h) Qw : Total input of water heat source CITY MULTI at simultaneous operation

under maximum state (kW) Pw : Shaft power of circulation pumps (kW)

Cooling tower capacity = $\frac{Qc + 3,412 \times (\Sigma Qw + Pw)}{15,500}$ (Refrigeration ton)

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 = H	ICT(1OPh_) - 1000 × Vw × ∆T - 860 × Pw	
	QH HC⊤	: Auxiliary heat source capacity : Total heating capacity of each water heat source CITY MULTI	(kcal/h) (kcal/h)
	СОРн	: COP of water heat source CITY MULTI at heating	(KCal/II)
	Vw	: Holding water volume inside piping	(m ³)
	ΔT	: Allowable water temperature drop = TwH - TwL	(°C)
	Тwн	: Heat source water temperature at high temperature side	(°C)
	TWL	: Heat source water temperature at low temperature side	(°C)
	Pw	: Heat source water pump shaft power	(kW)
/		1	

QH = HCT
$$(1 - \frac{1}{COP_h}) - 8.343 \times Vw \times \Delta T - 3412 \times Pw$$

QH	: Auxiliary heat source capacity	(BTU/h)	
HC⊤	: Total heating capacity of each water heat source CITY MULTI	(BTU/h)	
СОРн	: COP of water heat source CITY MULTI at heating		
Vw	: Holding water volume inside piping	(G)	
ΔT	: Allowable water temperature drop = TwH - TwL	(°F)	
Тwн	: Heat source water temperature at high temperature side	(°F)	
TWL	: Heat source water temperature at low temperature side	(°F)	
Pw	: Heat source water pump shaft power	(kW)	/

When heat storage tank is not used

	$HQ_{1T} \cdot \left(1 - \frac{1}{COP_{h}}\right) - 860 \times Pw \times T_{2}$	
QH = -		(kcal)
	T1	()
QH1T	: Total of heating load on weekday including warming up	(kcal/day)
T 1	: Operating hour of auxiliary heat source	(h)
T2	: 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'e1	: Thermal load from human body in each zone	(kcal/h)
Q'e2	: Thermal load from lighting fixture in each zone	(kcal/h)
Q'e3	: Thermal load from equipment in each zone	(kcal/h)
Ψ	: Radiation load rate	0.6~0.8
TΟ	A in a secolitie selector in a secon	

$$HQ_{1T} \cdot \left(1 - \frac{1}{COP_{h}}\right) - 3,412 \times Pw \times T_{2}$$

$$QH = \frac{1}{T1} \times K \qquad (BTU)$$

$$QH_{1T} : Total of heating load on weekday including warming up (BTU/day) : Operating hour of auxiliary heat source (h)$$

T₂ : Operating hour of heat source water pump

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

(h)

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'e1	: Thermal load from human body in each zone	(BTU/h)
Q'e2	: Thermal load from lighting fixture in each zone	(BTU/h)
Q'e3	: Thermal load from equipment in each zone	(BTU/h)
Ψ	: Radiation load rate	0.6~0.8
、T2	: Air conditioning hour	

PQRY-P-Z(S)LMU-A1

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

$$V = \frac{HQ_{2T} \left(1 - \frac{1}{COP_{h}}\right) - 860 \times Pw \times T_{2} - QH \times T_{2}}{\Delta T \times 1,000 \times \eta V}$$
(ton)

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

$$HQ_{2T} : 1.3 \times (\SigmaQ'a + \SigmaQ'c + \SigmaQ'd + \SigmaQ'f) T_{2} - \Psi (\SigmaQe2 + \SigmaQe3) (T2 - 1)$$

$$V = \frac{HQ_{2T} \left(1 - \frac{1}{COP_{h}}\right) - 3,412 \times Pw \times T_{2} - QH \times T_{2}}{\Delta T \times \eta V}$$
(lbs)

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

$$HQ_{2T} : 1.3 \times (\SigmaQ'a + \SigmaQ'c + \SigmaQ'd + \SigmaQ'f) T_{2} - \Psi (\SigmaQe2 + \SigmaQe3) (T2 - 1)$$$$$$$$$$

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

$$V = \frac{HQ_{2T} \left(1 - \frac{1}{COP_{h}}\right) - 860 \times Pw \times T_{2}}{\Delta T \times 1,000 \times \eta V}$$
(ton)

 $\begin{array}{ll} HQ_{2T} & : \mbox{Maximum heating load including load required for the day after the holiday (kcal/day)} \\ \Delta T & : \mbox{Temperature difference utilized by heat storage tank} & (^{\circ}C) \\ \eta V & : \mbox{Heat storage tank efficiency} \end{array}$

HQ_{2T} : 1.3 × (
$$\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f$$
) T₂ - ψ ($\Sigma Qe2 + \Sigma Qe3$) (T₂ - 1)

$$V = \frac{HQ_{2T} \left(1 - \frac{1}{COP_{h}}\right) - 3,412 \times Pw \times T_{2}}{\Delta T \times \eta V}$$
(Ibs)

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

$$HQ_{2T} : 1.3 \times (\SigmaQ'a + \SigmaQ'c + \SigmaQ'd + \SigmaQ'f) T_{2} - w (\SigmaQe2 + \SigmaQe3) (T_{2} - 1)$$$$$$

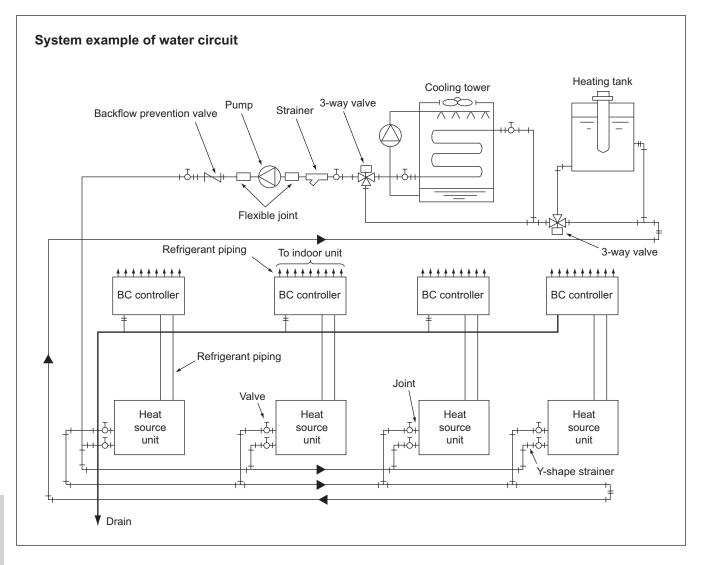
4) Piping system

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.



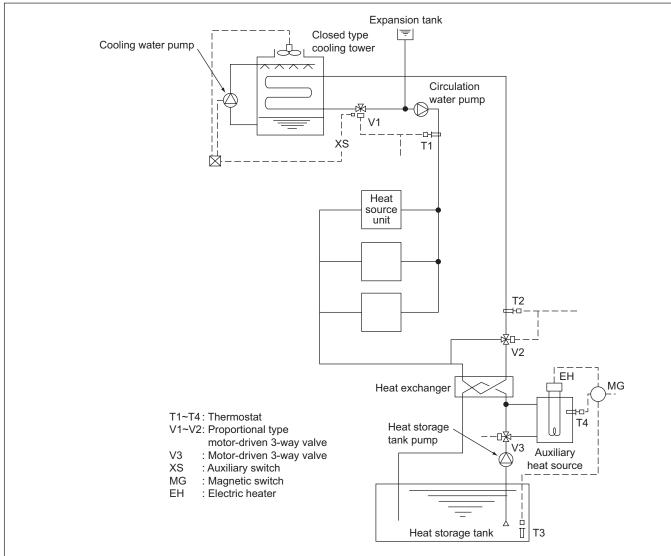
5) Practical System Examples and Circulation Water Control

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)

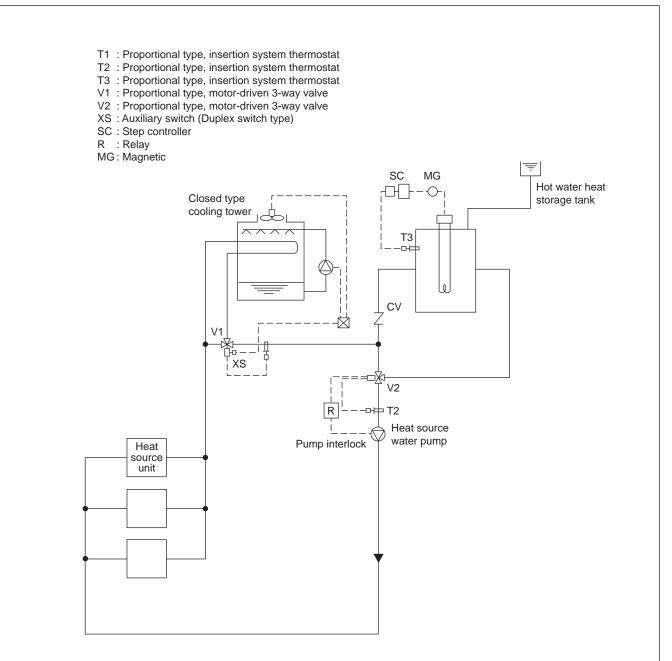


By detecting the circulation water temperature of the water heat source CITY MULTI system with T1 (around 32° C [90°F]) and T2 (around 20°C [68°F]), the temperature will be controlled by opening/closing V1 in the summer and V2 in the winter.

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



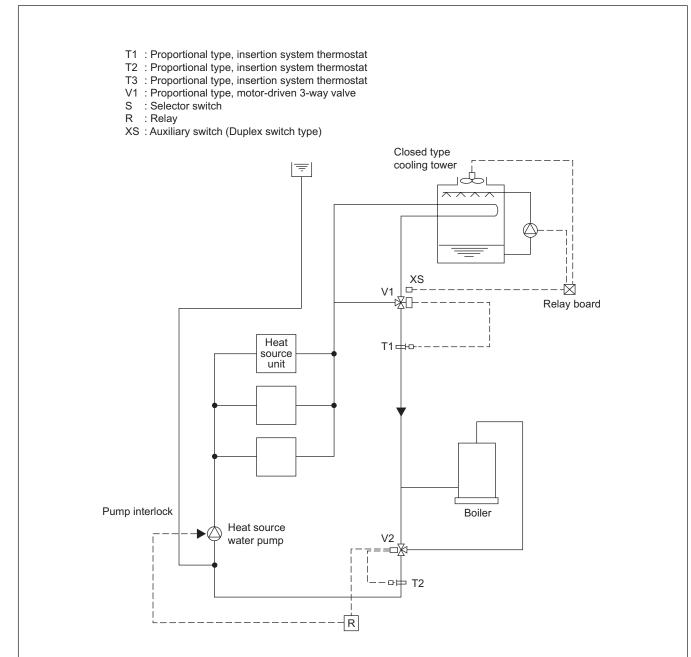
In the summer, as the circulation water temperature rises exceeding the set temperature of T1, the bypass port of V1 will open to lower the circulation water temperature. In the winter, if the circulation water temperature stays below 25°C [77°F], V2 will open/close by the command of T2 to keep the circulation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

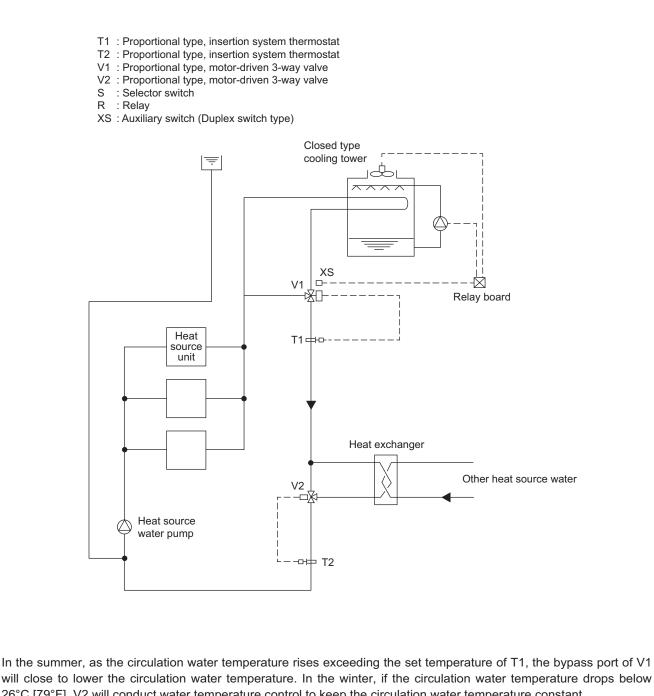
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control of the fan and pump following the command of the auxiliary switch XS of V1, that operates only the fan at the light load while the fan and pump at the maximum load thus controlling water temperature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

Example-3 Combination of closed type cooling tower and boiler



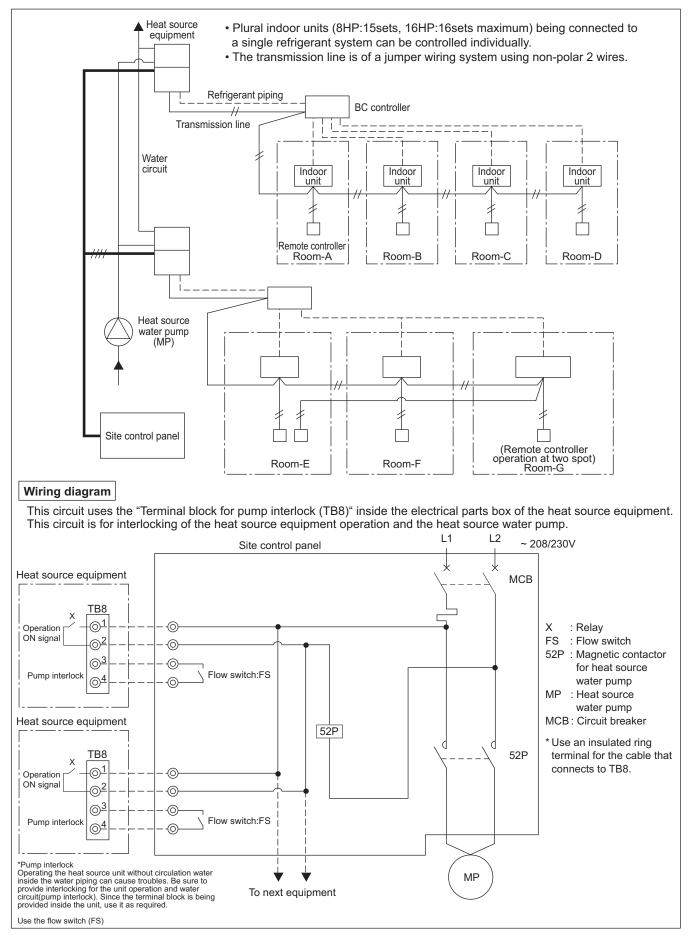
In the summer, as the circulation water temperature rises exceeding the set temperature of T1, the bypass port of V1 will close to lower the circulation water temperature. In the winter, if the circulation water temperature drops below 25°C [77°F], V2 will conduct water temperature control to keep the 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)



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



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.
	SW4 0: OFF, 1: ON 1 2 3 4 5 6 7 8 9 10 1 0 1 0 1 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 controlle (Note: It is output even if the thermostat is OFF (when the compressor is stopped).)
p Interlock	
p Interlock Terminal No.	ТВ8-3, 4
	TB8-3, 4 Level signal
Terminal No.	
Terminal No. Input Operation Remove the s To prevent a fa	Level signal
Terminal No. Input Operation Remove the s To prevent a fa	Level signal If the circuit between TB8-3 and TB8-4 is open, compressor operation is prohibited. hort circuit wire between 3 and 4 when wiring to TB8. alse detection of error resulting from contact failure, use a flow switch with a minimum urrent of 5 mA or below for FS. TB8 TB8
Terminal No. Input Operation Remove the s To prevent a fa	Level signal If the circuit between TB8-3 and TB8-4 is open, compressor operation is prohibited. hort circuit wire between 3 and 4 when wiring to TB8. alse detection of error resulting from contact failure, use a flow switch with a minimum irrent of 5 mA or below for FS.

7) Water flow rate control

The function described here calculates the amount of circulating water required for the heat-exchanger unit based on the operation status of the heat-exchanger, and then outputs signals that adjust the water control valve. Signals requesting to decrease the water control valve opening are output when the heat-source unit is in partial-load operation, which decreases the amount of circulating water supplied to the heat-source unit and helps reduce the power required to operate the circulating water pump in the water circuit system.

a) Specifications

- 1. Circuit board: Signals can be output from the I/O board that is standard-equipped in heat-source units.
- 2. Variable flow rate control signal output: 0V-10 VDC
 - Signal output settings can be changed with the Dip SW on the heat-source unit.
 - (Settings need to be changed to suit given specifications of the water control valve.)

Switch		Function Operation accord		to the switch setting	Switch setting timing	Linit (Noto 2)	
		Function	OFF (LED3: Unlit)	ON (LED3: Lit)	Switch setting timing	Unit (Note 2)	
SW4 1-10 [0: OFF; 1: ON] (Note 1) SW6-10: ON	No. 810	0101010011	Outputs circulating water flow rate control signal		0 V: Fully closed 10 V: Fully open	After power on and while the compressor is stopped	С

(Note 1) To switch between the ON/OFF settings, first set SW6-10 to ON, then set SW4, and finally press and hold SWP1 for two seconds or longer to reflect the change.

LED3 will be lit when the switch is set to ON, and LED3 will be unlit when the switch is set to OFF.

Check the LED3 indicator status to make sure the setting is set as intended.

The switch needs to be re-set at the replacement of the control board.

Note the settings on the electrical wiring diagram label on the control box.

(Note 2) A: Requires the switch on OC to be set.

B: Requires the switches on both OC and OS to be set to the same setting.

- C: Requires the switches on both OC and OS to be set.
- D: Requires the switches on either OC or OS to be set.
- The amount of circulating water required for the heat-exchanger unit is calculated based on the operation status of the heat-exchanger, and signals are output in the range between 0 and 10 VDC. (See b)-1. for details.)
- 3. Power supply: 3~ 575 V ... for heat-source unit
 - 24 VAC or 24 VDC ... for (motor-powered) water flow rate control valve
 - See Figure c)-1 and Table c)-1 for information on supplying power to water flow rate control system.
- 4. Water temperature range: 10 to 45°C (-5 to 45°C when using brine)
 The same temperature range applies regardless of the Enable/Disable setting status of the circulating water flow rate control function.
- 5. Water flow rate range: The table below summarizes the water flow rate ranges for heat-source units.

Мо	del	Water flow rate range
P72-P120 7.5-12.5HP		3.0-7.2 m ³ /h (50-120 L/min)
P144-P192	15-20HP	4.5-11.6 m ³ /h (75-192 L/min)

• The same water flow rate range applies regardless of the Enable/Disable setting status of the circulating water flow rate control function.

6. Water-circuit components: To be procured on site

• Water-circuit components that are necessary to control circulating water include such components as (motor-powered) water flow rate control valve, control valve, and shut-off valve. Valves that meet the water-flow-rate specification of the heat-source unit must be used.

• See Figure c)-1 and Table c)-1 for information on the components in the circuit that is subject to circulating water flow rate control.

• When a system includes multiple heat-source units, each unit requires a water flow rate control valve.

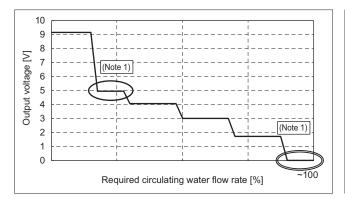
7. Electrical wiring: To be procured on site

• See Figure c)-1 and Table c)-2 for information on supplying power to water flow rate control system.

b) Circulating water flow rate control signal output

 Water flow rate control signal output Signal to control the water flow rate control valve is calculated by using the circulating water flow rate required, which is calculated based on the operating status of the unit. Table below shows the three signal output conditions.

Status A		B-1 B-2		С
Condition	Unit at stoppage	All heat-source units	During compressor operation	
Condition	Unit at stoppage	Dip SW4 (901) = ON	Dip SW4 (901) = OFF	During compressor operation
Dip SW4 (810)= OFF	10 V	10 V	5 V (Min. water flow rate)	5-0 V
Dip SW4 (810) = ON	0 V	0 V	7.6 V (Min. water flow rate)	7.6-9.1 V



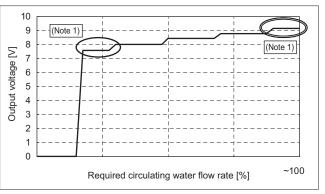


Figure b)-1 Analog signal output (when Dip SW4 (810) is set to OFF)

Figure b)-2 Analog signal output (when Dip SW4 (810) is set to ON)

(Note 1) Output signals may deviate from the values shown in the tables by up to 10%.

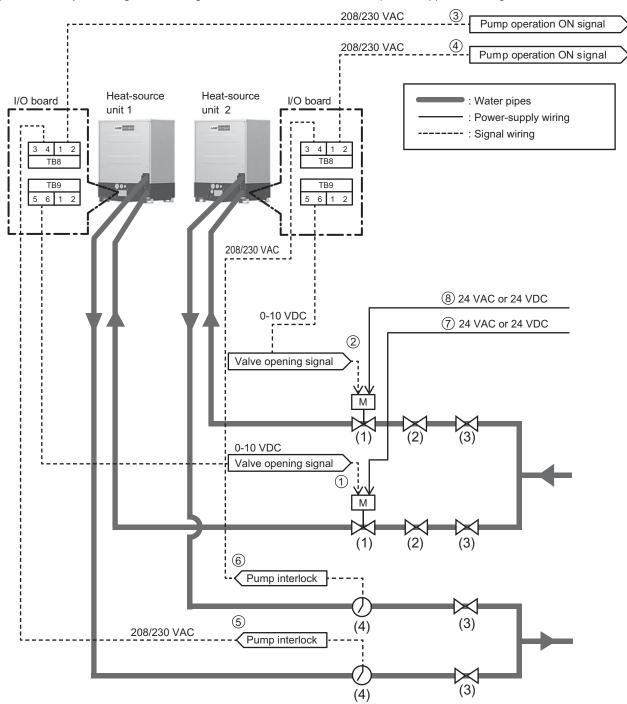
During the test run, check that the flow rate of the circulating water supplied to the heat-source units falls within the operating range, even with the variations in output signals.

(Output voltage as indicated by a single circle: Greater than the minimum water flow rate; output voltage as indicated by double circles: Less than the maximum water flow rate)

- (Note 2) To stabilize the heat-source unit operation, valve opening signal may temporarily exceeds the operating range.
- (Note 3) It is recommended to use the type of water flow rate control valve that fully opens at 0 V and to set the Dip SW so that sufficient amount of circulating water will be supplied to the heat-source units even if the valve opening signal to the variable water flow control valve is lost.
- (Note 4) When a system includes multiple heat-source units, each unit requires a water flow rate control valve that controls the circulating water flow rate.
- 2. Specifications of (motor-powered) water flow rate control valve

Note the following regarding (motor-powered) water flow rate control valve.

- 1) Select the valve capacity based on the range of circulating water supply to heat-source units and on the analog signal output range.
- 2) The types of valves with an inverting function (fully opens at 0 V) are recommended to ensure that sufficient amount of circulating water is supplied to the heat-source unit, even if the valve opening signal to the water flow rate control valve is lost.
- 3) It is recommended to use valves that allow for manual operation and for confirmation of present opening angle for easy test run and maintenance.



c) Schematic system diagram including heat-source units, water circuits, power supplies, and signals

Figure c)-1 Schematic system diagram

Table c)-1 Water-circuit system

Symbol	Component	Usage	Note
(1)	(Motor-powered) water flow rate control valve	For controlling water flow rate	To be procured on site (See b)-2.)
(2)	Control valve	For keeping the circulating water flow rate within the operating range	To be procured on site
(3)	Shut-off valve	For the maintenance of devices	To be procured on site
(4)	Flow switch	For detecting the lower limit of circulating water flow rate	To be procured on site

Table c)-2 Electrical wiring specification

Symbol	Component	Specification	Connection example	Note
1	Command to adjust valve opening (Unit 1)	0 to10 VDC	Unit 1 (TB9-5, 6) -Water flow rate control valve 1	Analog output
2	Command to adjust valve opening (Unit 2)	0 to10 VDC	Unit 2 (TB9-5, 6) -Water flow rate control valve 2	Analog output
3	Pump operation ON signal (Unit 1)	208/230 VAC	Unit 1 (TB8-1, 2) - Control board	Digital output
4	Pump operation ON signal (Unit 2)	208/230 VAC	Unit 2 (TB8-1, 2) - Control board	Digital output
5	Pump interlock (Unit 1)	208/230 VAC	Flow switch - Unit 1 (TB8-3, 4)	Digital input
6	Pump interlock (Unit 2)	208/230 VAC	Flow switch - Unit 2 (TB8-3, 4)	Digital input
7	Power supply for water flow rate control valve (Unit 1)	24 VAC or 24 VDC	Control board - Water flor rate control valve 1	Power supply
	Dowor owerly for water flow rate control value (Unit 2)		Control board Water flow rate control value 2	Devuer eventy

d) Electrical wiring diagram of heat-source unit

Terminal blocks TB8 and TB9 for controlling water flow rate are found on the I/O board. Wiring connections need to be made for each heat-source unit.

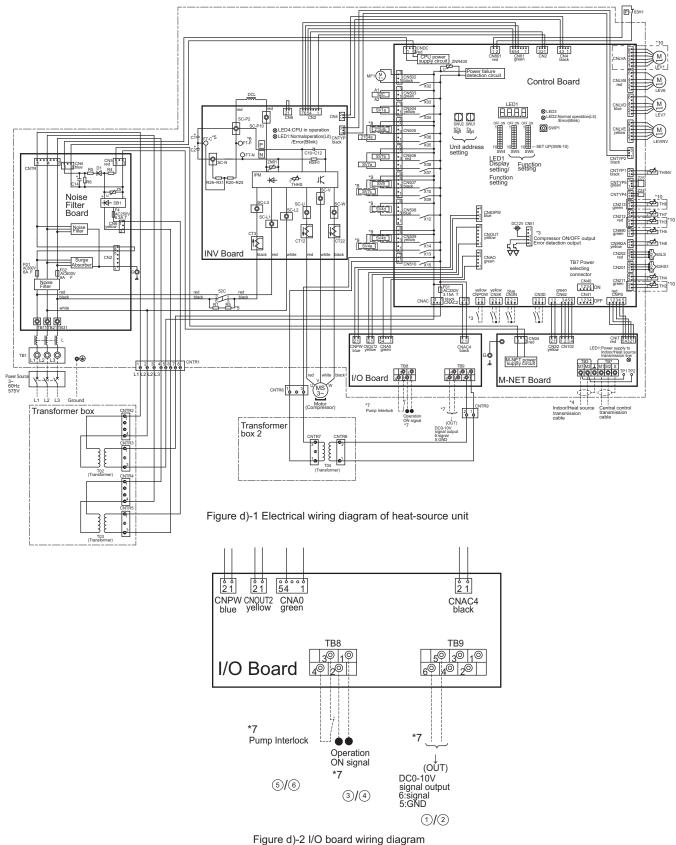


Figure d)-2 i/O board wiring diagra

(Note 1) Use insulated terminals for connection to TB8 and TB9.

e) Installation

Note the following for installing the circulating water flow rate control system.

- 1. Make sure that water circuit components necessary to build a circulating water flow rate control system are in place.
 - See Figure c)-1 and Table c)-1.
 - When a system includes multiple heat-source units, each unit requires a water flow rate control valve.
- 2. Connect all wirings (power-supply, signal, etc.) required by the circulating water flow rate control system.
 * See Figure c)-1 and Table c)-2.
- 3. Check the circulating water flow rate control system (including the heat-source unit) for proper operation.
- 4. Check that the circulating water supplied to the heat-source unit is within the operating range.
 - Make sure the circulating water temperature is within the operating range.
 - · Make sure the water strainer is not clogged.
 - Make sure the circulating water flow rate is within the operating range in both the single-heat-source-unit systems or in the multiple-heat-source-unit systems and both during Thermo-OFF and in operation.
 - When using a single pump for multiple heat-source units in multiple systems, make sure that the flow rate of the circulating water supplied to each unit is within the operating range regardless of the ON/OFF status of the heat-source units in the system.
 - To check for proper operation of water flow rate control valve and to check that the circulating water flow rate is within the operating range, the use of device that outputs a voltage between 0 VDC and 10 VDC is recommended.
- 5. Check the system for the following items to use the circulating water control system in the normal operating range.
 Management of supply water flow rate that takes strainer clogging and other possible problems that can occur during operation into consideration.
 - Adjustment of water-quality during operation
 - Measures against possible problems with the water-circuit system

(Examples: Water outage, circulating water flow rate outside the specification range, clogged strainer, air in the circulation system, water pump failure, water flow rate control valve problem, pump interlock failure, etc.)

	Switch		Operation accor		to the switch setting	Switch setting timing	Unit (Note 2)	
Switch		Function	OFF (LED3: Unlit)	ON (LED3: Lit)	Switch setting tinning			
SW4 1-10 [0: OFF; 1: ON] (Note 1) SW6-10: ON	No. 901	1010000111	Changes signal output when all heat-source units (OC/OS) go into Thermo-OFF	Water flow rate control valve remains open when all heat-source units (OC/OS) go into Thermo-OFF. (Minimum water flow rate) [Default]	Water flow rate control valves will close when all heat-source units (OC/OS) go into Thermo-OFF.	After power on and while the compressor is stopped	С	
SW4 1-10 [0: OFF; 1: ON] (Note 1) SW6-10: ON	No. 917	1010100111	Pump operation ON signal	Signals are output when heat-source units go into Ther- mo-OFF. [Default]	Signals are output when Cooling/Heat- ing operation signals are received from the controller.	After power on and while the compressor is stopped	A	

f) Expansion function for the management of circulating water flow rate

Making the following settings can reduce the power required to operate the circulating water pump in the water circuit system. (Note that doing so may delay the start of heat-source units by a few minutes.)

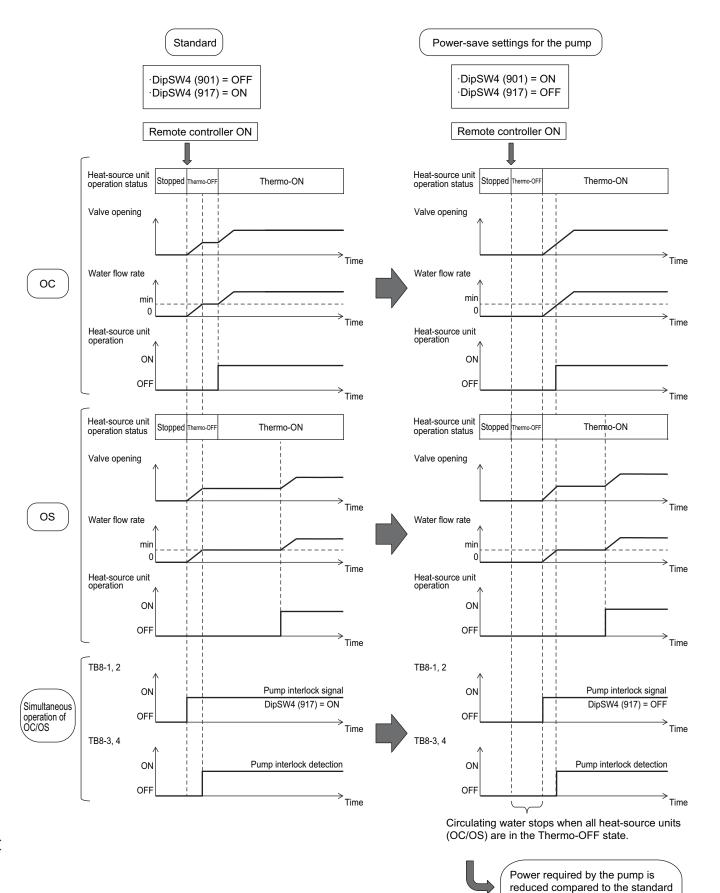
(Note 1) To switch between the ON/OFF settings, first set SW6-10 to ON, then set SW4, and finally press and hold SWP1 for two seconds or longer to reflect the change.

LED3 will be lit when the switch is set to ON, and LED3 will be unlit when the switch is set to OFF.

- Check the LED3 indicator status to make sure the setting is set as intended.
- The switch needs to be re-set at the replacement of the control board.

Note the settings on the electrical wiring diagram label on the control box.

- (Note 2) A: Requires the switch on OC to be set.
 - B: Requires the switches on both OC and OS to be set to the same setting.
 - C: Requires the switches on both OC and OS to be set.
 - D: Requires the switches on either OC or OS to be set.
- (Note 3) To use the functions above, be sure to set the switches in the following combinations.
 - Set SW4 (901) to OFF and SW4 (917) to ON to keep the pumps on all heat-source units (OC/OS) to operate during Thermo-OFF and to keep the water flow rate control valve open.
 - Set SW4 (901) to ON and SW4 (917) to OFF to stop the pumps on all heat-source units (OC/OS) during Thermo-OFF and to close the water flow rate control valve.



settings.

8-2. Water piping work

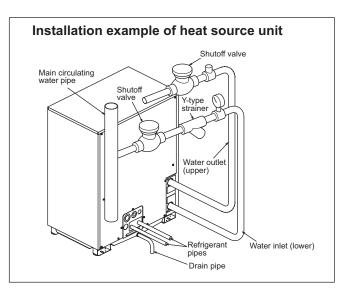
Although the water piping for the CITY MULTI WR2 system does not differ from that for ordinary air conditioning systems, pay special attention to the items below in conducting the piping work.

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.
- (1) Wrap the joint with sealing tape in the direction of the threads (clockwise), and do not let the tape run over the edge.
- (2) 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.
- (3) 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 : $30^{\circ}C[86^{\circ}F]$, winter : $20^{\circ}C[68^{\circ}F]$).
- 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



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.

			Lower m temperature		Tendency	
	Items		Recirculating water [20 <t<60°c] [68<t<140°f]< td=""><td>Make-up water</td><td>Corrosive</td><td>Scale- forming</td></t<140°f]<></t<60°c] 	Make-up water	Corrosive	Scale- forming
	pH (25°C[77°F])		7.0 ~ 8.0	7.0 ~ 8.0	0	0
	Electric conductivity (mS/m) (25°C[77°F])	30 or less	30 or less	0	0
	(µS/cm) (25°C[77°F		[300 or less]	[300 or less]	0	
	Chloride ion	(mg Cl-/ 🧷)	50 or less	50 or less	0	
Standard	Sulfate ion	(mg SO4 ²⁻ / ([/])	50 or less	50 or less	0	
items	Acid consumption (pH4.8) (mg CaCO ₃ / ℓ)		50 or less	50 or less		0
	Total hardness	(mg CaCO ₃ / (/)	70 or less	70 or less		0
	Calcium hardness	(mg CaCO ₃ / (/)	50 or less	50 or less		0
	Ionic silica	(mg SiO ₂ / (/)	30 or less	30 or less		0
Refer-	Iron	(mg Fe/ 🦉)	1.0 or less	0.3 or less	0	0
ence	Copper	(mg Cu/ 🖉)	1.0 or less	0.1 or less	0	
items	Sulfide ion	(mg S²-/ 🖉)	not to be detected	not to be detected	0	
	Ammonium ion	(mg NH4*/ (/)	0.3 or less	0.1 or less	0	
	Residual chlorine	(mg Cl/ //)	0.25 or less	0.3 or less	0	
	Free carbon dioxide	e (mg CO₂/ (/)	0.4 or less	4.0 or less	0	
	Ryzner stability inde	-	-	0	0	

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.

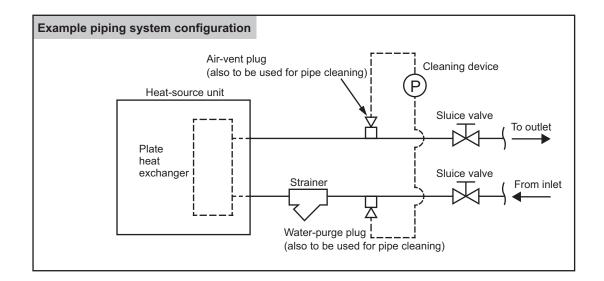
4) Pump interlock

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 plote heat exchangers and/or pipes as well as resultant refrigerant leaks and

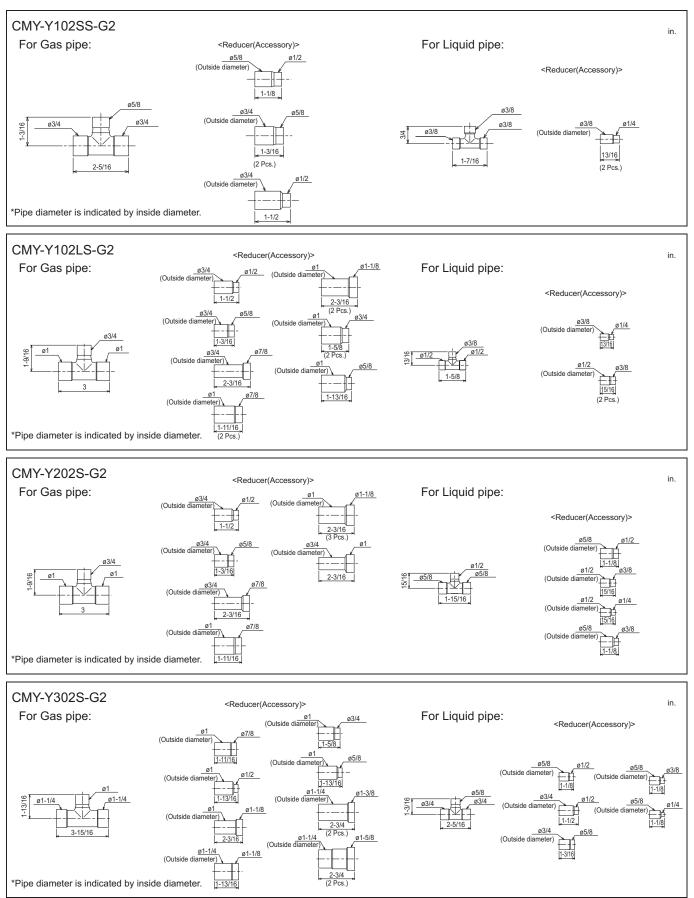
<Maintaining plate heat exchangers>

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.
 - 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.

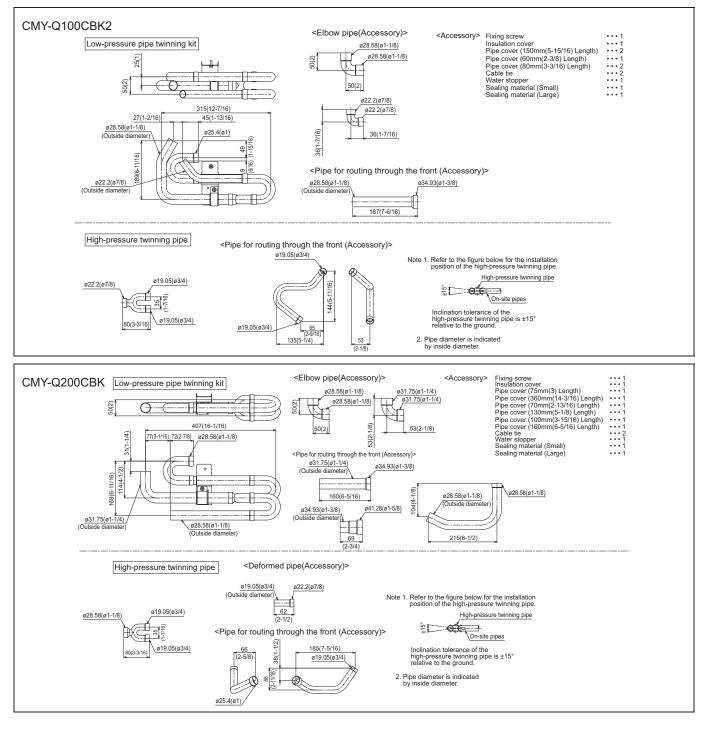
9-1. JOINT

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 "Piping Design" or the Installation Manual that comes with the Joint set for how to install the Joint set.

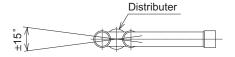


9-2. OUTDOOR TWINNING KIT

The following optional Outdoor Twinning Kit is needed to use to combine multiple refrigerant pipes. Refer to section "Piping Design" for the details of selecting a proper twinning kit.



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



The angle of the branch pipe for hign pressure is within ±15° against the horizontal plane.

2. Use the attached pipe to braze the port-opening of the distributer.

3. Pipe diameter is indicated by inside diameter.

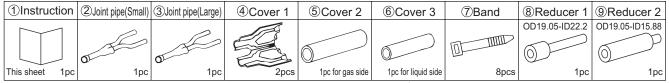
mm (in.)

ø15.88(5/8")

9-3. 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.

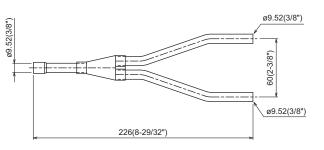
The Joint kit include following items:



③Joint pipe (for gas side)

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)



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

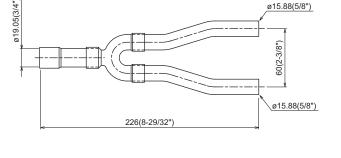
The maximum down-stream Indoor capacity for 1 port of BC controller is P54. When the down-stream Indoor capacity is above P54, Joint kit CMY-R160-J1 is needed to combined 2 ports of BC controller to enlarge the capacity, like Group 2 and 3 in Fig. 1.

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.

2. Piping at the installation site



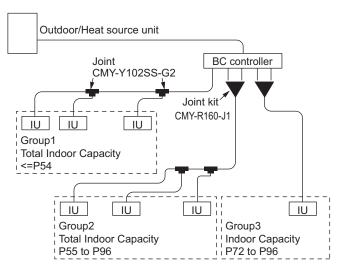
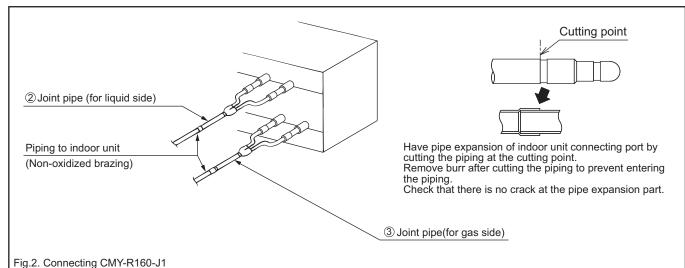


Fig.1. CMY-R160-J1 applying scheme

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.

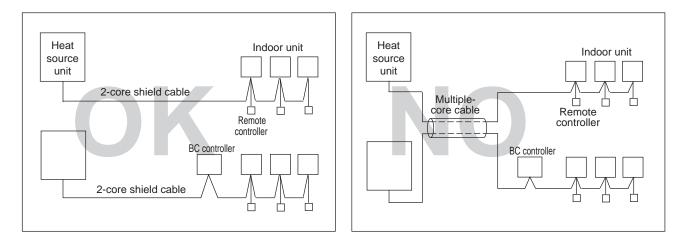
After piping and air-tight testing, insulation work to the Joint and pipe should be done. Details is available at the Installation Manual.



10. ELECTRICAL WORK

10-1. General cautions

- ① Follow ordinance of your governmental organization for technical standard related to electrical equipment, wiring regulations, and guidance of each electric power company.
- ② Wiring for control (hereinafter referred to as transmissioncable) shall be (50mm[1-5/8in] or more) apart from power source wiring so that it is not influenced by electric noise from power source wiring. (Do not insert transmission cable and power source wire in the same conduit.)
- ③ Be sure to provide designated grounding work to heat source unit.
- ④ Give some allowance to wiring for electrical part box of indoor and heat source unit, because the box is sometimes removed at the time of service work.
- In the second second
- Ise 2-core shield cable for transmission cable. If transmission cables of different systems are wired with the same multiplecore cable, the resultant poor transmitting and receiving will cause erroneous operations.
- ⑦ When extending the transmission line, make sure to extend the shield cable as well.



10-2. Power supply for Heat source unit

10-2-1. Electrical characteristics of Heat source unit at cooling mode

Symbols: MCA: Minimum Circuit Ampacity SC: Starting Current, RLA: Rated Load Amps

Model	Unit Combination			Compressor				
woder	Unit Combination	Hz	Volts	Voltage range	MCA(A)	MOP(A)	Output (kW)	SC(A)
PQRY-P72ZLMU	-				5	15	4.3	7
PQRY-P96ZLMU	-				7	15	6.0	7
PQRY-P120ZLMU	-				11	15	7.7	7
PQRY-P144ZLMU	-				13	20	9.5	7
PQRY-P168ZLMU	-				16	25	11.0	7
PQRY-P192ZLMU	-				20	30	12.4	7
PQRY-P144ZSLMU	PQRY-P72ZLMU				5	15	4.3	7
	PQRY-P72ZLMU				5	15	4.3	7
PQRY-P168ZSLMU	PQRY-P72ZLMU	_			5	15	4.3	7
	PQRY-P96ZLMU				7	15	6.0	7
PQRY-P192ZSLMU	PQRY-P96ZLMU	6011-	E7E\/	518 to 633V	7	15	6.0	7
	PQRY-P96ZLMU	- 60Hz	575V	518 10 633 V	7	15	6.0	7
PQRY-P216ZSLMU	PQRY-P96ZLMU				7	15	6.0	7
	PQRY-P120ZLMU				11	15	7.7	7
PQRY-P240ZSLMU	PQRY-P120ZLMU				11	15	7.7	7
	PQRY-P120ZLMU				11	15	7.7	7
PQRY-P288ZSLMU	PQRY-P144ZLMU				13	20	9.5	7
	PQRY-P144ZLMU				13	20	9.5	7
PQRY-P312ZSLMU	PQRY-P144ZLMU				13	20	9.5	7
	PQRY-P168ZLMU	1			16	25	11.0	7
PQRY-P336ZSLMU	PQRY-P168ZLMU	7			16	25	11.0	7
	PQRY-P168ZLMU	1			16	25	11.0	7

10-3. Power cable specifications

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

	Model	Minimum w	Minimum wire thickness (mm ² /AWG)				
	Model	Main cable	Branch	Ground			
Heat source unit	PQRY-P72ZLMU	2.1/14	-	2.1/14			
	PQRY-P96ZLMU	2.1/14	-	2.1/14			
	PQRY-P120ZLMU	2.1/14	-	2.1/14			
	PQRY-P144ZLMU	3.3/12	-	3.3/12			
	PQRY-P168ZLMU	5.3/10	-	5.3/10			
	PQRY-P192ZLMU	5.3/10	-	5.3/10			
Total operating	F0 = 15 or less *1	2.1/14	2.1/14	2.1/14			
current of	F0 = 20 or less *1	3.3/12	3.3/12	3.3/12			
the indoor unit	F0 = 30 or less *1	5.3/10	5.3/10	5.3/10			

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

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

F2 = {V1 x (Quantity of Type1)/C} + {V1 x (Quantity of Type2)/C} + {V1 x (Quantity of Type3)/C} + {V1 x (Quantity of Type4)/C} + {V1 x (Quantity of Type5)/C} + {V1 x (Quantity of Type5)/ $\{V1 \times (Quantity of Type6)/C\} + \{V1 \times (Quantity of Others)/C\}$

	Indoor unit					
Type1	PEFY-NMSU	18.6	2.4			
Type2	PEFY-NMAU, PVFY-NAMU	38.0	1.6			
Type3	PEFY-NMHSU	13.8	4.8			
Type4	PLFY-NBMU, PCFY-NKMU	19.8	2.4			
Type5	PKFY-NHMU, PKFY-NKMU, PMFY-NBMU	9.9	2.4			
Type6	PLFY-NEMU, PLFY-NFMU	17.1	2.4			
Others	Other indoor unit	0	0			

C: Multiple of tripping current at tripping time 0.01s

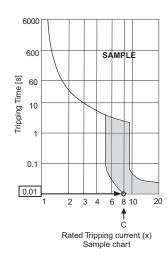
Please pick up "C" from the tripping characteristic of the breaker.

<Example of "F2" calculation>

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

- $F2 = 18.6 \times 4/8 + 38 \times 1/8$
- = 14.05

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



*2 Current sensitivity is calculated using the following formula.

G1 = (V2 x Quantity of Type1) + (V2 x Quantity of Type2) + (V2 x Quantity of Type3) + (V2 x Quantity of Type4) + (V2 x Quantity of Type5) + (V2 x Quantity of Type6) + (V2 x Quantity of Others) + (V3 x Wire length [km])

Γ	G1	Current sensitivity	Wire thickness	V3
Γ	30 or less	30 mA 0.1sec or less	1.5 mm ²	48
Г	100 or less	100 mA 0.1sec or less	2.5 mm ²	56

1. Use dedicated power supplies for the heat source unit and indoor unit. Ensure OC and OS are wired individually.

2. Bear in mind ambient conditions (ambient temperature, direct sunlight, rain water, etc.) when proceeding with the wiring and connections.

4.0 mm²

- The wire size is the minimum value for metal conduit wiring. If the voltage drops, use a wire that is one rank thicker in diameter. Make sure the power-supply voltage does not drop more 3. than 10%. Make sure that the voltage imbalance between the phases is 2% or less.
- 4. Specific wiring requirements should adhere to the wiring regulations of the region.
- 5. Power supply cords of parts of appliances for heat source use shall not be lighter than polychloroprene sheathed flexible cord (design 245 IEC57). For example, use wiring such as YZW.
- 6. A switch with at least 3 mm [1/8 in.] contact separation in each pole shall be provided by the Air Conditioner installer.

• Be sure to use specified wires for connections and ensure no external force is imparted to terminal connections. If connections are not fixed firmly, heating or fire may result.

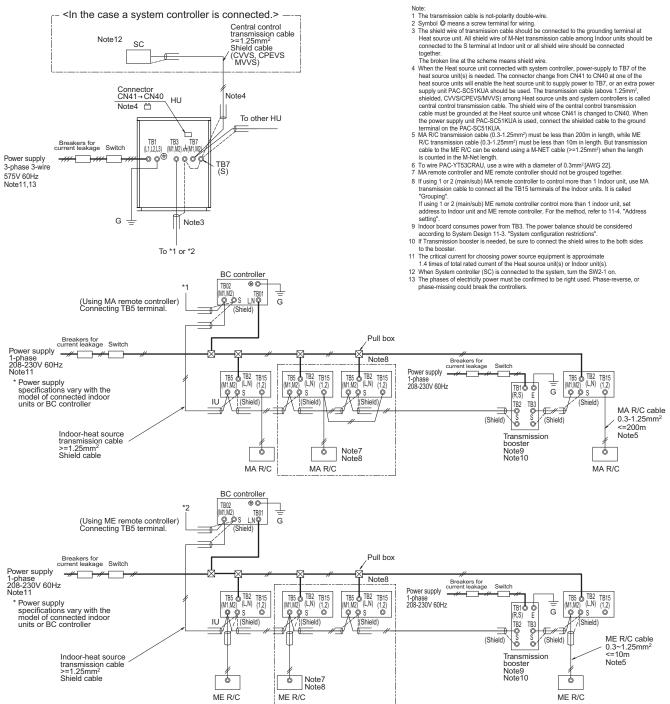
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+ Be sure to use the appropriate type of overcurrent protection switch. Note that generated overcurrent may include some amount of direct current.

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

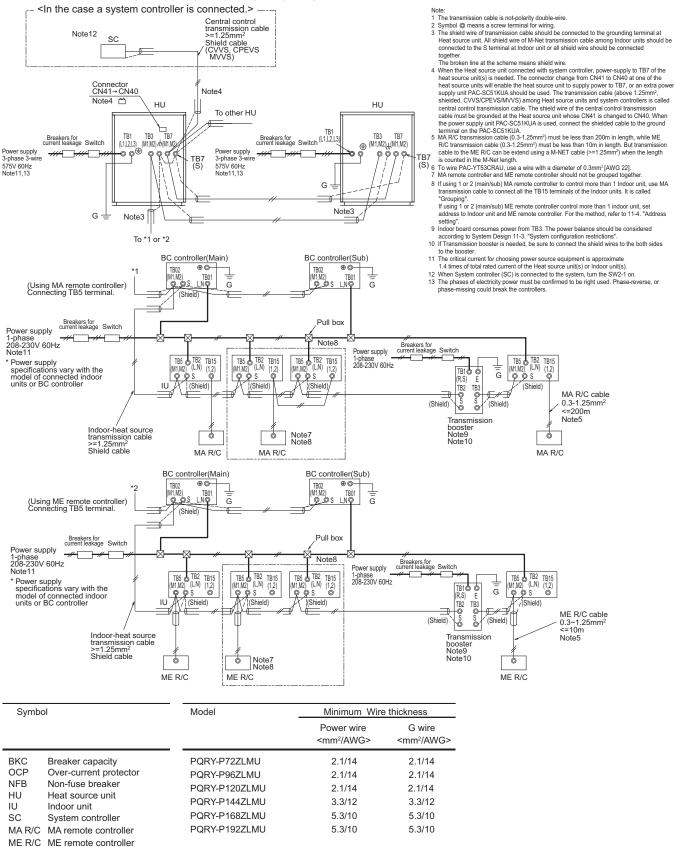
10-4. Power supply examples

The local standards and/or regulations is applicable at a higher priority. 10-4-1. PQRY-P72, 96, 120, 144, 168, 192ZLMU



Symbo	ol	Model	Minimum Wire thickness		
			Power wire <mm² awg=""></mm²>	G wire <mm² awg=""></mm²>	
вкс	Breaker capacity	PQRY-P72ZLMU	2.1/14	2.1/14	
OCP	B Non-fuse breaker	PQRY-P96ZLMU	2.1/14	2.1/14	
NFB		PQRY-P120ZLMU	2.1/14	2.1/14	
HU IU	Heat source unit Indoor unit	PQRY-P144ZLMU	3.3/12	3.3/12	
SC	System controller	PQRY-P168ZLMU	5.3/10	5.3/10	
	MA remote controller	PQRY-P192ZLMU	5.3/10	5.3/10	
ME R/C	ME remote controller				

The local standards and/or regulations is applicable at a higher priority. 10-4-2. PQRY-P144, 168, 192, 216, 240, 288, 312, 336ZSLMU

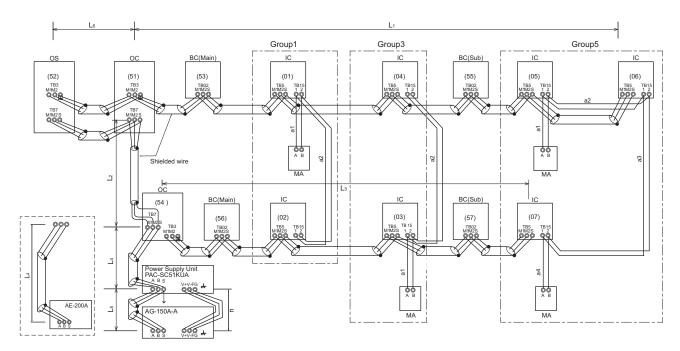


11-1. Transmission cable length limitation

11-1-1. Using MA Remote controller

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

Long transmission cable causes voltage d	Long transmission cable causes voltage down, therefore, the length limitation should be obeyed to secure proper transmission.							
Max. length via Heat source (M-NET cable)	L1+L2+L3, L1+L2+L4+L5, L3+L4+L5, L6+L2+L3, L6+L2+L4+L5	<=500m[1640ft.]	1.25mm ² [AWG16] or thicker					
Max. length to Heat source (M-NET cable)	L1+L6, L3, L2+L4+L6, L5	<=200m[656ft.]	1.25mm ² [AWG16] or thicker					
Max. length from MA to Indoor for each group	a1+a2, a1+a2+a3+a4	<=200m[656ft.]	0.3-1.25 mm ² [AWG22-16]					
24VDC to AG-150A-A	n	<=50m[164ft.]	0.75-2.0 mm ² [AWG18-14]					



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

n

11-1-2. Using ME Remote controller

ME remote controller refers to Smart ME Controller.

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

 Max. length via Heat source (M-NET cable)
 L1+L2+L3+L4, L1+L2+L6+L7, L1+L2+L3+L5, L3+L4+L6+L7, L8+L2+L3+L4, L1+L2+L3+L5, L3+L4+L6+L7, L8+L2+L3+L4, L2+L3+L5, L3+L2+L6+L7
 <=500m[1640ft.]</td>
 1.25mm² [AWG16] or thicker

 Max. length to Heat source (M-NET cable)
 L1+L8, L3+L4, L2+L6+L8, L7, L3+L5
 <=200m[656ft.]</td>
 1.25mm² [AWG16] or thicker

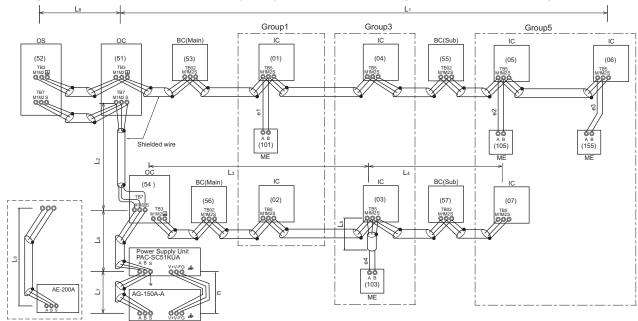
 Max. length from ME to Indoor
 e1, e2, e3, e4
 <=10m[32ft.]*1</td>
 0.3-1.25 mm² [AWG22-16]*1

<=50m[164ft.]

0.75-2.0 mm² [AWG18-14]

24VDC to AG-150A-A

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



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

11-2. Transmission cable specifications

	Transmission cables (Li)	ME Remote controller cables	MA Remote controller cables	
Type of cable Shielding wire (2-core) CVVS, CPEVS or MVVS Cable size More than 1.25mm²[AWG16]		Sheathed 2-core cable (unshielded) CVV		
		0.3~1.25mm ² [AWG22~16]	0.3 ~1.25mm ² [AWG22~16]*1	
Remarks	Remarks —		Max length : 200m [656ft]	

*1 To wire PAR-CT01MAU and PAC-YT53CRAU, use a wire with a diameter of 0.3 mm² [AWG22] CVVS, MVVS: PVC insulated PVC sheathed shielded control cable CPEVS: PE insulated PVC sheathed shielded communication cable CVV: PVC insulated PVC sheathed control cable

11-3. System configuration restrictions

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

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

- A) 1 Group of Indoor units can have 1-16 Indoor units;
- B) Maximum 2 remote controllers for 1 group;
 - *MA/ME remote controllers cannot be present together in 1group.
 - *When a PAR-CT01MAU is connected to a group, no other MA remote controllers can be connected to the same group. *To wire PAR-CT01MAU and PAC-YT53CRAU, use a wire with a diameter of 0.3 mm² [AWG22]
- C) 1 Lossnay unit can interlock maximum 16 Indoor units; 1 Indoor unit can interlock only 1 Lossnay unit.
- D) Maximum 3 System controllers are connectable when connecting to TB3 of the Outdoor/Heat source unit.
- E) A maximum of 6 system controller are connectable to TB3 and TB7 of Outdoor/Heat source unit.
- F) 4 System controllers or more are connectable when connecting to TB7 of the Outdoor/Heat source unit, if the transmission power is supplied by the power supply unit PAC-SC51KUA.

*System controller connected as described in D) would have a risk that the failure of connected Outdoor/Heat source unit would stop power supply to the System controller.

11-3-2. Ensuring proper communication power and the number of connected units for M-NET

In order to ensure proper communication among Outdoor/Heat source unit, Indoor unit, Lossnay, and Controllers, the transmission power situation for the M-NET should be observed. In some cases, Transmission booster should be used. Taking the power consumption of Indoor unit as 1, the equivalent power consumption or supply of others are listed at Table 1 and Table 2.

Both the transmission line for centralized controller and indoor-outdoor transmission line must meet the conditions listed below. (Both conditions a) and b) must be met.)

- a) [Total equivalent power consumption] ≤ [The equivalent power supply]
- b) [Total equivalent number of units (Table1)] ≤ [40]

Category	Model	The equivalent power consumption	The equivalent number of units
Indoor unit	Sized P06-P96, PEFY-AF1200CFM-E	1	1
Indoor unit	PEFY-AF1200CFMR-E	2	2
BC controller	СМВ	2	1
	P36NMU-E-BU	6	1
PWFY *1	P36NMU-E2-AU	1	1
	P72NMU-E2-AU	5	1
MA remote controller/Lossnay	PAR-CT01MAU PAC-YT53CRAU PAR-FA32MA LGH-F-RX ₅ -E1 PZ-60DR-E PZ-43SMF-E	0	0
ME remote controller PAR-U01MEDU		0.5	1
	AE-200A AE-50A EW-50A LM-AP	0	0
System controller	AG-150A-A EB-50GU-A PAC-IF01AHC-J	0.5	1
	TC-24B	1.5	5
	PAC-YG60MCA PAC-YG66DCA PAC-YG63MCA	0.25	1
ON/OFF controller	PAC-YT40ANRA	1	1
MN converter	CMS-MNG-E	2	1
Outdoor/Heat source unit	TB7 power consumption	0	0
System control interface	MAC-333IF-E	0	0
A-M converter	PAC-IF01MNT-E	1	2

Table 1 The equivalent power consumption and the equivalent number of units

*1 PWFY cannot be connected to PUMY model.

11. M-NET CONTROL

Table 2 The equivalent power supply

Category	Model	The equivalent power supply				
Transmission Booster	PAC-SF46EPA	25 *1				
Power supply unit	PAC-SC51KUA		5			
Expansion controller	PAC-YG50ECA	6				
BM ADAPTER	BAC-HD150	6				
	AE-200A/AE-50A	0.75				
System controller	EW-50A					
	LM-AP	0				
		TB3 and TB7 total	TB7 only	TB3 only		
Outdoor/Heat source unit	Outdoor unit other than the following units *2			32*1 - equivalent power supplied to TB7		
	S-Series outdoor unit	12 *1 0		12 *1		
	TLMU/TKMU outdoor unit	32 *1	- *3	32 *1		

*1 When one or more indoor units listed below is connected, subtract 3 from the equivalent power supply.

Table 3

Category	Model		
Lindoor linit	Sized P72, P96 PEFY-AF1200CFM(R)-E		

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

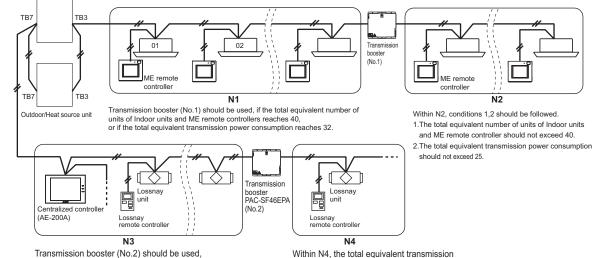
*3 Do not supply power to TB7 from TLMU/TKMU outdoor units.

Use PAC-SC51KUA or PAC-SF46EPA when connecting an M-NET device to TB7.

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

- (A) Firstly, count from TB3 at TB3 side the total equivalent number of units of Indoor units, ME remote controller, and System controllers. If the total equivalent number of units reaches 40, a PAC-SF46EPA should be set.
- (B) Secondly, count from TB7 side to TB3 side the total transmission power consumption. If the total equivalent power supply reaches 32, a PAC-SF46EPA should be set. Yet, if a PAC-SC51KUA or another controller with a built-in power supply, such as PAC-YG50ECA, is used to supply power at TB7 side, count from TB3 side only.
- (C) Thirdly, count from TB7 at TB7 side the total transmission power consumption, If the total equivalent power supply for only TB7 reaches 6, a PAC-SF46EPA should be set. Also, count from TB7 at TB7 side the total equivalent number of units of System controllers, and so on. If the total equivalent number of units reaches 40, a PAC-SF46EPA should be set.
- * The equivalent power supply of S-Series outdoor unit is 12.
- * When one or more indoor units listed in Table 3 is connected, subtract 3 from the equivalent power supply.

System example



if the total equivalent transmission power consumption reaches 5.

Within N4, the total equivalent transmission power consumption should not exceed 25.

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

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

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

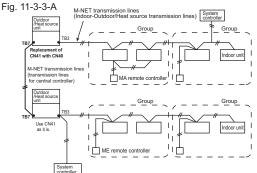
B) Connecting to TB7 of the Outdoor/Heat source unit and receiving power from the Outdoor/Heat source unit.

- (Not applicable to the PUMY model and PUHY/PURY-TLMU/TKMU model)
- Connecting to TB7 of the Outdoor/Heat source unit but receiving power from power supply unit PAC-SC51KUA. System controllers (AE-200A, AE-50A, EW-50A, BAC-HD150, LM-AP) have a built-in function to supply power to the M-NET transmission lines, so no power needs to be supplied to the M-NET transmission lines from the Outdoor/Heat source units or from PAC-SC51KUA.

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

Outdoor/Heat source unit.

Maximum 3 System controllers can be connected to TB3. If there is more than 1 Outdoor/Heat source unit, it is necessary to replace power supply switch connector CN41 with CN40 on one Outdoor/Heat source unit.



11-3-3-B. When connecting to TB7 of the Outdoor/Heat source unit and receiving power from the Outdoor/Heat source unit. (Not applicable to the PUMY model and PUHY/PURY-TLMU/TKMU model)

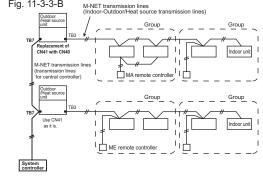
Fig. 11-3-3-B

A maximum of 6 system controller are connectable to TB3 and TB7 of Outdoor/Heat source unit.

(Not applicable to the PUMY model and PUHY/PURY-TLMU/TKMU model) It is necessary to replace power supply switch connector CN41 with CN40 on one Outdoor/Heat source unit.

Note (only for PUHY/PURY model)

- · When YLMU/YKMU Outdoor unit model is used, the male power supply connector can be connected to CN40, and the System controller can be connected to TB7 side.
- When the male power supply connector is connected from TLMU/TKMU Outdoor unit to CN40, the power is supplied to TB7 side even when the main power of the TLMU/TKMU outdoor unit is switched off, and the System controller may store an error in the error history and emit an alarm signal.



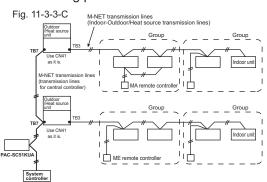
· If only Lossnay units or outdoor units in different refrigerant circuits are connected to TB7 side, the male power supply connector can be connected from TLMU/TKMU outdoor unit to CN40.

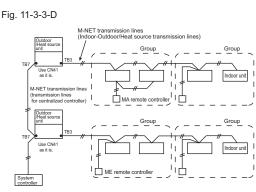
11-3-3-C. When connecting to TB7 of the Outdoor/Heat source unit but receiving power from PAC-SC51KUA.

When using PAC-SC51KUA to supply transmission power, the power supply connector CN41 on the Outdoor/Heat source units should be kept as it is. It is also a factory setting. 1 PAC-SC51KUA supports maximum 1 AG-150A-A or 1 EB-50GU-A unit due to the limited power 24VDC at its TB3. However, 1 PAC-SC51KUA supplies transmission power at its TB2 equal to 5 Indoor units, which is referable at Table 2. If System controller, ON/OFF controller connected to TB7 consume transmission power more than 5 (Indoor units), Transmission booster PAC-SF46EPA is needed. PAC-SF46EPA supplies transmission power equal to 25 Indoor units.

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

Leave the power supply connector on the Outdoor/Heat source unit connected to CN41 as it is. Refer to 11-3-2 for information about the power-supply capacity of each system controller (EW-50A, BAC-HD150, LM-AP) to the low-level system controllers.





PQRY-P-Z(S)LMU-A1

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

1-phase 208-230VAC power supply is needed.

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

11-3-5. Power supply to expansion controller

1-phase 100-240VAC power supply is needed. The power supply unit PAC-SC51KUA is not necessary. The expansion controller supplies power through TB3, which equals 6 indoor units. (refer to Table 2)

11-3-6. Power supply to BM ADAPTER

1-phase 100-240VAC power supply is needed. The power supply unit PAC-SC51KUA is not necessary when only BM ADAPTER is connected. Yet, make sure to move the power jumper from CN41 to CN40 on the BM ADAPTER.

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

1-phase 100-240VAC power supply is needed. The power supply unit PAC-SC51KUA is not necessary when connecting only the AE-200A/AE-50A/EW-50A.

11-4. Address setting

11-4-1. Switch operation

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

① Address No. of heat source unit, indoor unit and ME remote controller. The address No. is set at the address setting board.

In the case of WR2 system, it is necessary to set the same No. at the branch No. switch of indoor unit as that of the BC controller

connected. (When connecting two or more branches, use the lowest branch $\ensuremath{\mathsf{No.}}\xspace)$

Rotary switch					
Branch No. setting Unit address No. setting					
1713456 4 4 4 7 173456 8 4 5 6 8 4 5 6 8 4 5 6 8 4 5 6 8 4 5 6 8 4 5 6 8 4 5 6 8 4 5 6 8 4 5 6 8 4 5 6 8 4 5 6 8 1 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9	$ \begin{array}{c} $				

⁽²⁾ Caution for switch operations

- Be sure to shut off power source before switch setting. If operated with power source on, switch can not operate properly.
- No units with identical unit address shall exist in one whole air conditioner system. If set erroneously, the system can not operate.
- ③ MA remote controller
 - When connecting only one remote controller to one group, it is always the main remote controller. When connecting two remote controllers to one group, set one remote controller as the main remote controller and the other as the sub remote controller.
 - · The factory setting is "Main".

PAC-YT53CRAU

Setting the dip switches

There are switches on the back of the top case. Remote controller Main/Sub and other function settings are performed using these switches. Ordinarily, only change the Main/Sub setting of SW1. (The factory settings are ON for SW1, 3, and 4 and OFF for SW2.)

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

11-4-2. Rule of setting address

	Unit	Address setting	Example	Note
Sy (M A-I	oor unit stem control interface AC-333IF-E) A converter AC-IF01MNT-E)	01 ~ 50	$ \begin{array}{c} $	Use the most recent address within the same group of indoor units. Make the indoor units address connected to the BC controller (Sub) larger than the indoor units address connected to the BC controller (Main). If applicable, set the sub BC controllers in an PQRY system in the following order: (1) Indoor unit to be connected to the BC controller (Main) (2) Indoor unit to be connected to the BC controller (No.1 Sub) (3) Indoor unit to be connected to the BC controller (No.2 Sub) Set the address so that (1)<(2)<(3)
Heat source unit		51 ~ 99, 100 (Note1)	$ \begin{array}{c} $	The smallest address of indoor unit in same refrigerant system + 50 Assign sequential address numbers to the heat source units in one refrigerant circuit system. OC and OS are automatically detected. (Note 2) * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
	C controller lain)	52 ~ 99, 100	$ \begin{array}{c} $	The address of heat source unit + 1 * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
	C controller ub)	52 ~ 99, 100	$10 \qquad \qquad$	Lowest address within the indoor units connected to the BC controller (Sub) plus 50.
te controller	ME, Lossnay Remote controller (Main)	101 ~ 150	$\begin{array}{c} \textbf{1} \\ Fixed \end{array} \begin{array}{c} \begin{bmatrix} 0 & 0 & -z \\ -z & 0 & -z \\ -z & 0 & -z \\ 10 \end{bmatrix} \begin{bmatrix} 0 & 0 & z \\ -z & 0 & -z \\ 0 & 0 & -z \\ 1 \end{bmatrix}$	The smallest address of indoor unit in the group + 100 * The place of "100" is fixed to "1"
Local remote	ME, Lossnay Remote controller (Sub)	151 ~ 199, 200	$1_{\text{Fixed}} \qquad \underbrace{\begin{bmatrix} 0 & 0 \\ r & 0 \\ r & 0 \\ r & 0 \\ 10 \end{bmatrix}}_{10} \underbrace{\begin{bmatrix} 0 & 0 \\ r & 0 \end{bmatrix}}_{1}$	The address of main remote controller + 50 *The address automatically becomes "200" if it is set as "00"
	ON/OFF remote controller	201 ~ 250	$\begin{array}{c} & & & \\ & & & & \\ & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & &$	The smallest group No. to be managed + 200 * The smallest group No. to be managed is changeable.
controller	AE-200A/AE-50A AG-150A-A EB-50GU-A EW-50A TC-24B	000, 201 ~ 250	0 0 0	*TC-24B cannot be set to "000".
System co	PAC-YG50ECA	000, 201 ~ 250	0 0 0	* Settings are made on the initial screen of AG-150A-A.
	BAC-HD150	000, 201 ~ 250	0 0 0	* Settings are made with setting tool of BM ADAPTER.
	LMAP04U-E	201 ~ 250	$\begin{array}{c} 2 \\ Fixed \end{array} \qquad \begin{array}{c} \overbrace{\begin{matrix} 0 \\ -0 \\ -0 \\ 10 \end{array}}^{\left(0 \\ 0 \\ -0 \\ 0 \\ 0 \\ 10 \end{array} \right)} \overbrace{\begin{matrix} 0 \\ -0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 $	
	PAC-YG60MCA	01 ~ 50	$10 \qquad \qquad$	
PI, AI, DIDO	PAC-YG63MCA	01 ~ 50	$10 \begin{bmatrix} 0 & 0 \\ 0 & 0 \\ 0 \\ -0 \\ -0 \\ -0 \\ -0 \\$	
Ā	PAC-YG66DCA	01 ~ 50	$10 \begin{bmatrix} 0 & 0 \\$	
Lc	ssnay	01 ~ 50	$10 \qquad \qquad$	After setting the addresses of all the indoor units, assign an arbitrary address.
P/	C-IF01AHC-J	201 ~ 250	$\sum_{\text{Fixed}} \sum_{i=0}^{\infty} \frac{1}{10} \sum_{j=0}^{\infty} \frac{1}{10} \sum_{i=0}^{\infty} \frac{1}{10} \sum_{i=0}^{\infty} \frac{1}{10} \sum_{j=0}^{\infty} \frac{1}{10} \sum_{i=0}^{\infty} \frac{1}{10} \sum_{j=0}^{\infty} \frac{1}{10} \sum_{i=0}^{\infty} 1$	

Note1: To set the address to "100", set it to "50" Note2: Heat source units OC and OS in one refrigerant circuit system are automatically detected. OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

11-4-3. System examples

Factory setting

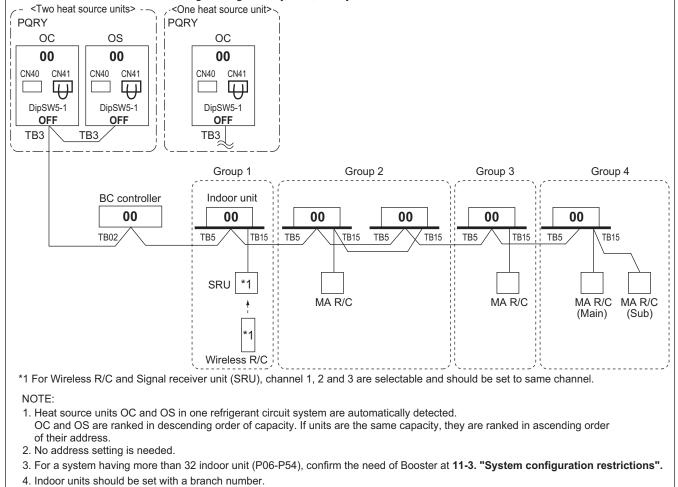
Original switch	setting of	the heat sou	rces, indoors,	controllers, LM-AP	P, and BM ADAPTER at shipment is as follows.
	••		00 0N144 0		

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

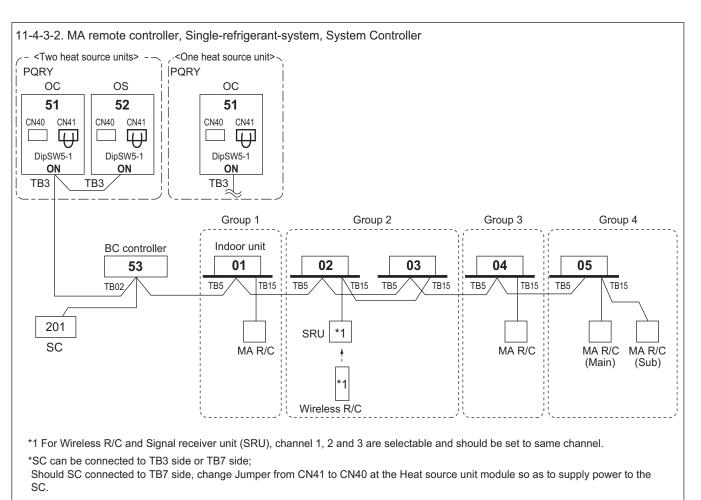
Setting at the site

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





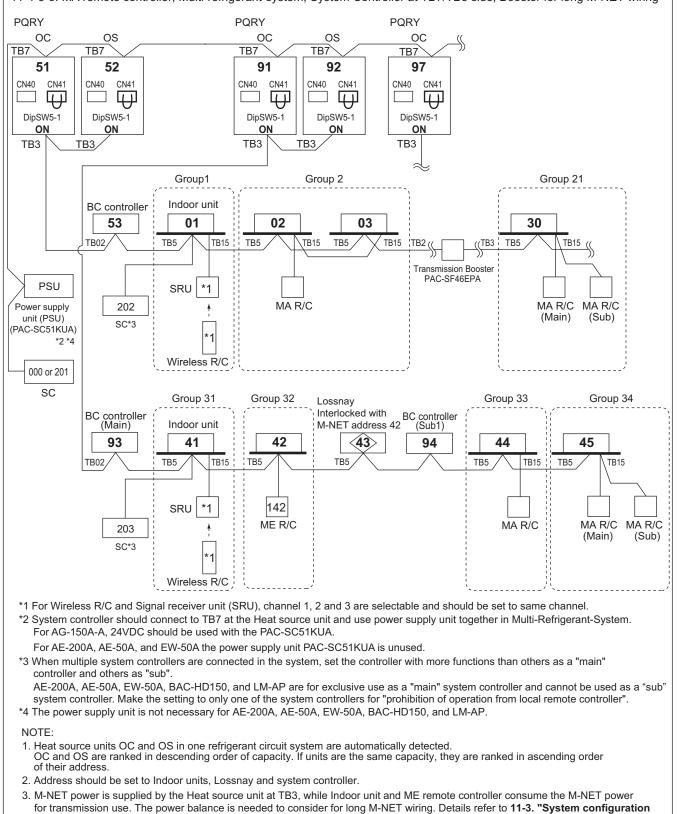
5. Address setting is required if a sub BC controller is connected.



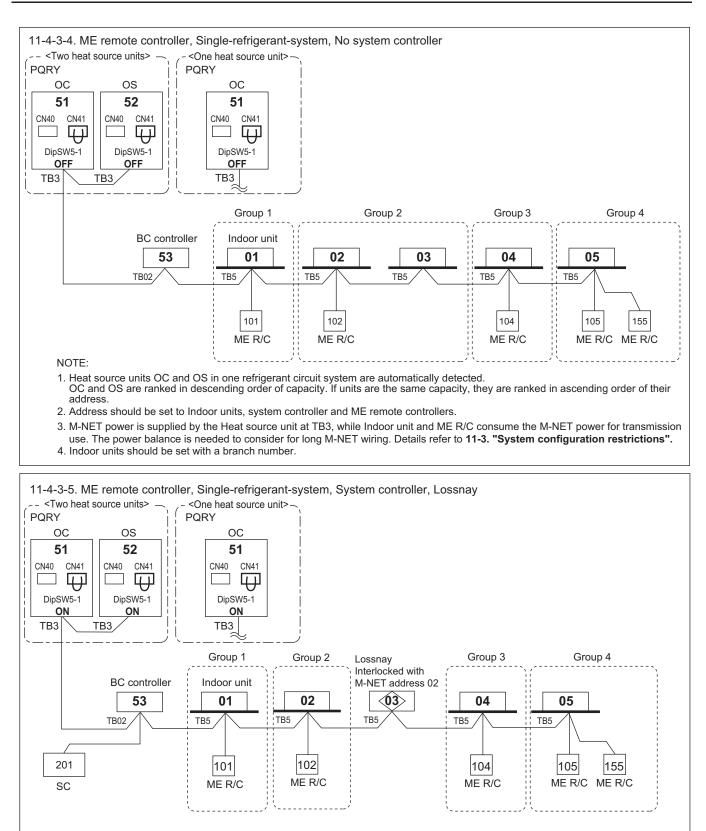
NOTE:

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

Heat source units



- **restrictions".** 4. Indoor units should be set with a branch number.
- Assign an address to each of the sub BC controllers which equals the sum of the smallest address of the indoor units that are connected to each sub BC controller and 50.



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

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

NOTE

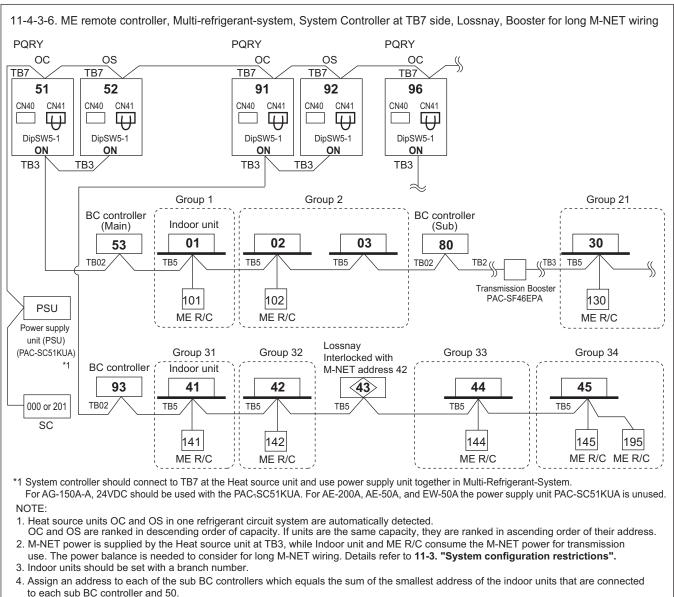
1. Heat source units OC and OS in one refrigerant circuit system are automatically detected.

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

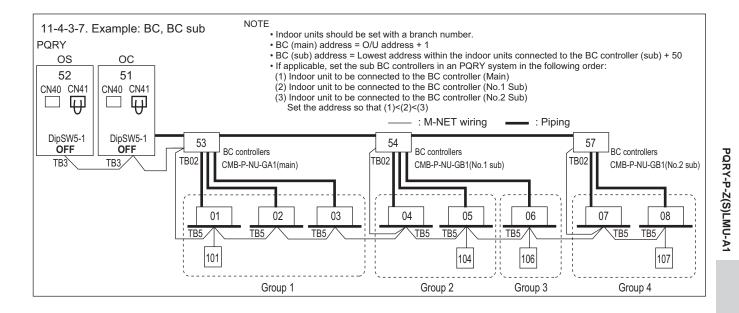
2. Address should be set to Indoor units, Lossnay, system controller, and ME remote controllers.

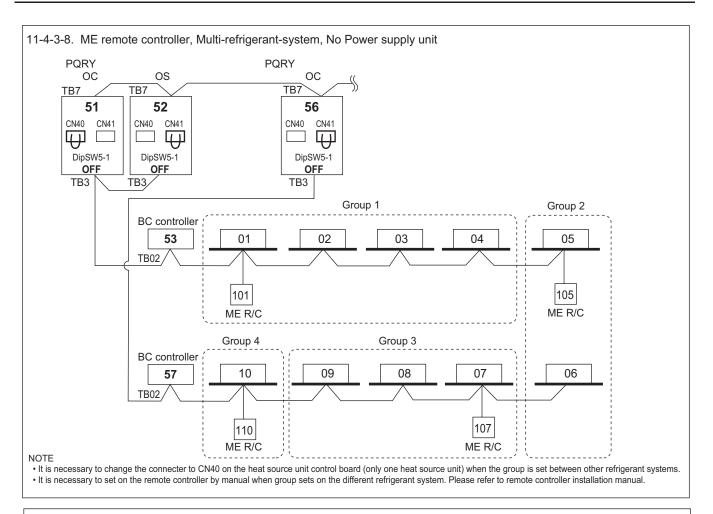
3. For a system having more than 32 indoor unit (P06-P54), confirm the need of Booster at 11-3. "System configuration restrictions".

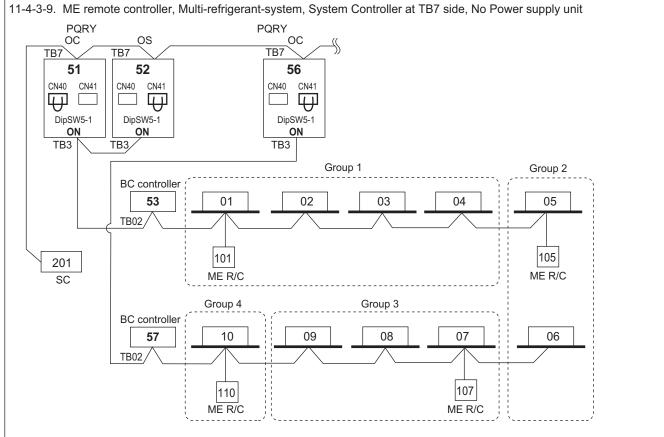
4. Indoor units should be set with a branch number.

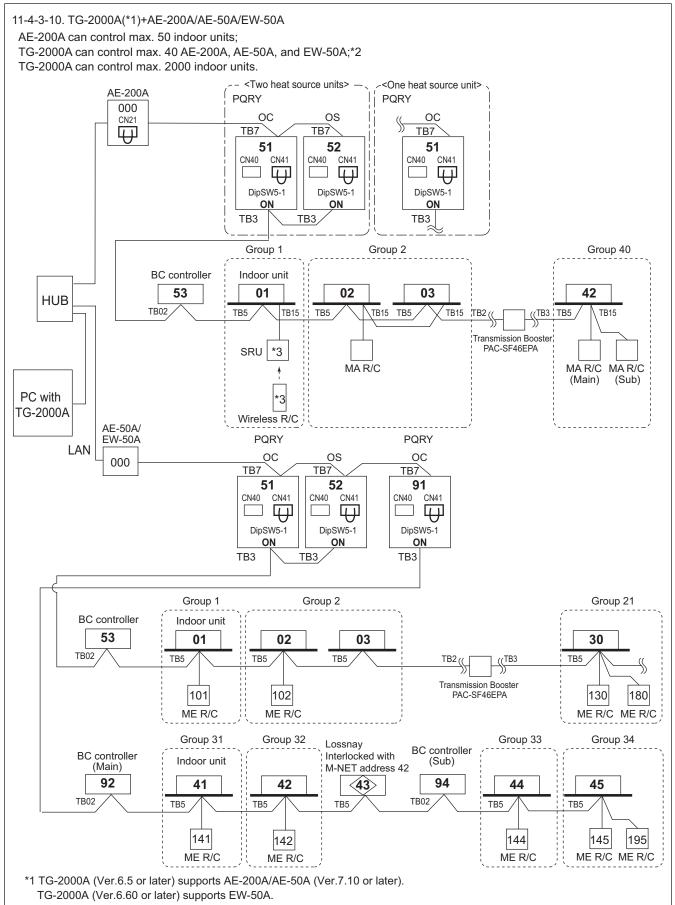


When the address assigned to sub BC controller overlaps those of any other units including heat source units (OC/OS) or main BC controller, sub BC controller will be given priority to have the address.



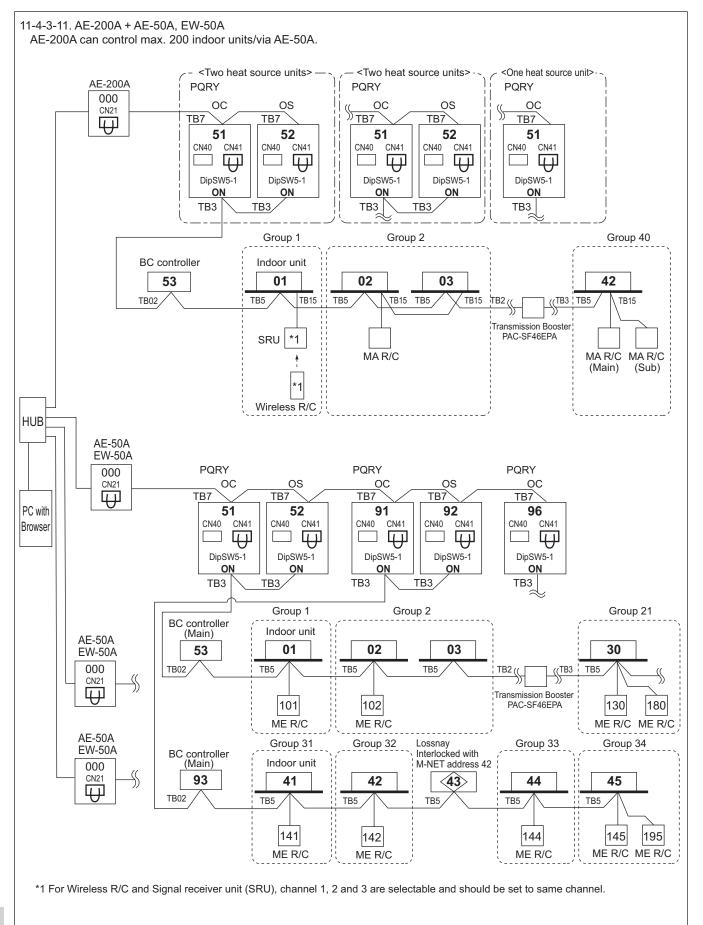


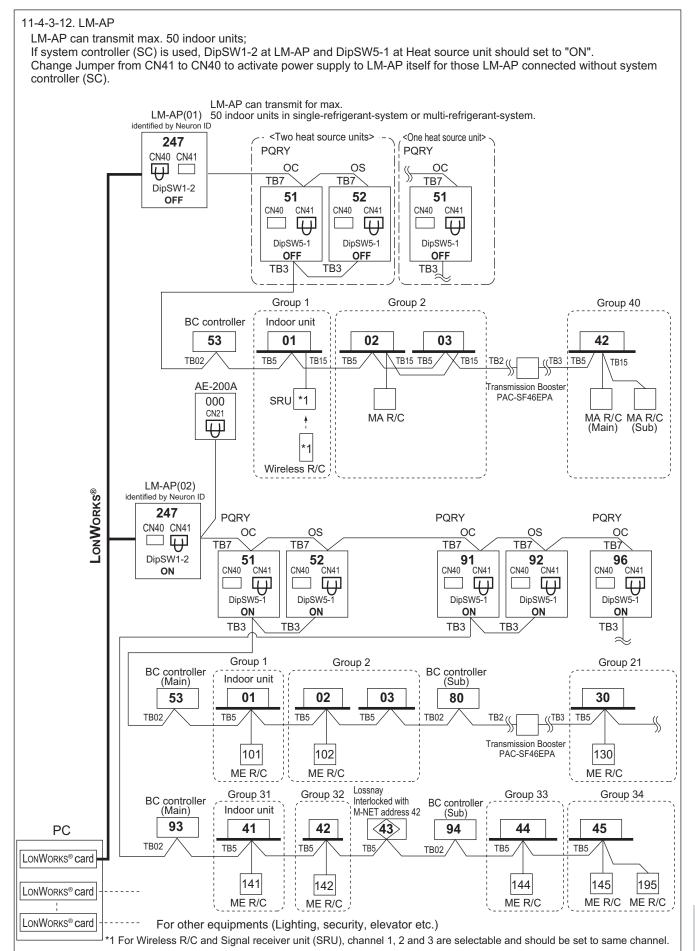




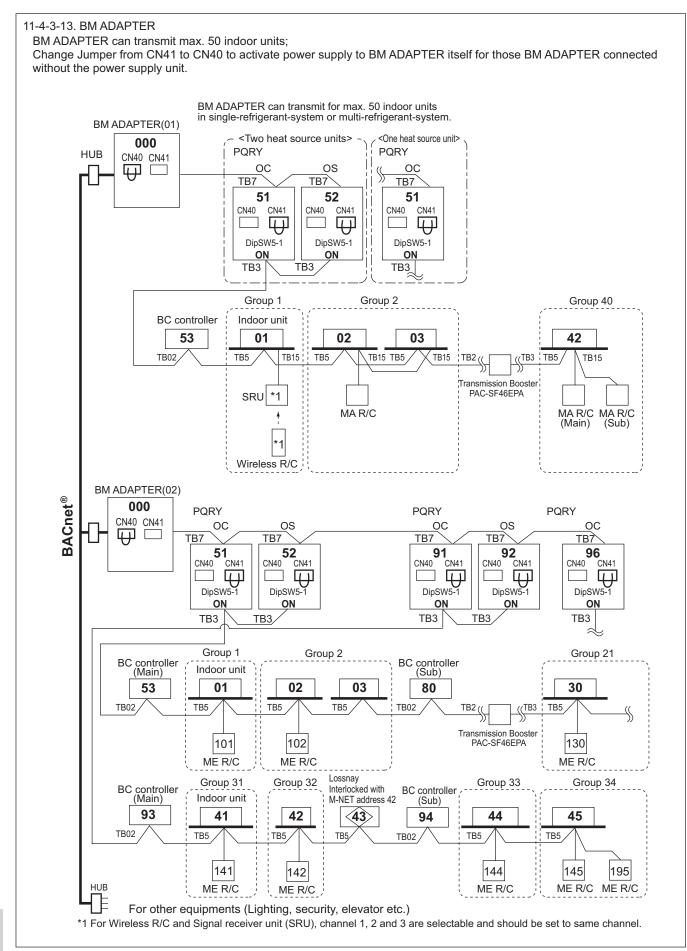
*2 When AE-200A connected with AE-50A is connected, the number of AE-50A will be the maximum controllable number. TG-2000A can control up to 40 AE-200A/AE-50A or AE-200A without AE-50A connection.

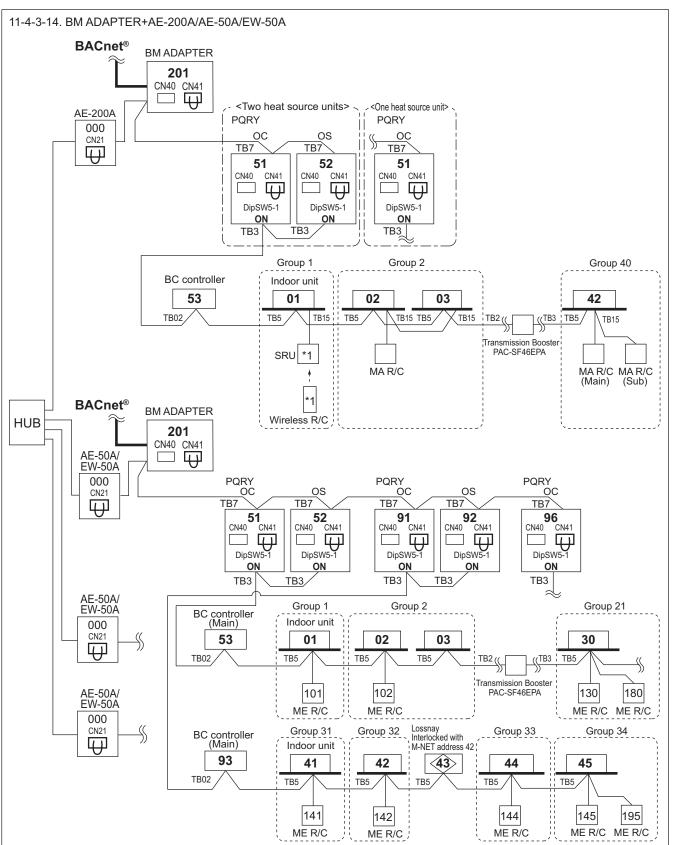
*3 For Wireless R/C and Signal receiver unit (SRU), channel 1, 2 and 3 are selectable and should be set to same channel.





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NOTE

•It is not necessary to connect the M-NET transmission line to the TB3 on BM ADAPTER. Leave the power jumper of BM ADAPTER connected to CN41.

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

*2 Consult your dealer for restrictions when connecting both AE-200A/AE-50A and BM ADAPTER.

*3 In a system that uses AE-200A and/or AE-50A, each BM-ADAPTER must be connected to the M-NET line.

PQRY-P-Z(S)LMU-A1

12. PIPING DESIGN

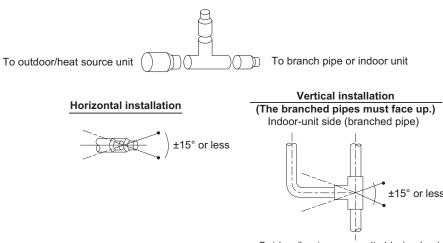
12-1. R410A Piping material

The maximum operation pressure of R410A air conditioner is 4.15 MPa [601 psi]. The refrigerant piping should ensure the safety under the maximum operation pressure. You shall follow the local industrial standard.

Procedures for installing the branched pipes

Refer to the instructions that came with the branched pipe kit (separately sold) for details. [1] Branches on the indoor-unit side

∎Joint



Outdoor/heat source-unit side (main pipe)

Restrictions for installing the joint described here only apply to CMY-Y202S-G2 and CMY-Y302S-G2 in the gas line.
CMY-Y202S-G2 and CMY-Y302S-G2 in the gas line must be installed horizontally (see figure above) or with the branched pipes facing up.

•If the size of the refrigerant pipe that is selected by following the instructions under "Piping Design" section does not match the size of the joint, use a reducer to connect them. A reducer is included in the kit.

■Header



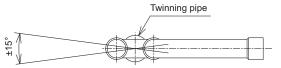
To outdoor/heat source unit

•No restrictions apply to the installation of the header.

•If the size of the refrigerant pipe that is selected by following the instructions under "Piping Design" section does not match the size of the header, cut the pipe to an appropriate size using a pipe cutter, or use a reducer to connect them.

- •If the number of header branches exceeds the number of pipes to be connected, cap the unused header branches. Caps are included in the kit.
- [2] Branches on the outdoor/heat source-unit side

Note. Refer to the figure below for the installation position of the twinning pipe.



Slope of the twinning pipes are at an angle within $\pm 15^{\circ}$ to the horizontal plane.

Inclination of the branched pipes

The inclination of the branched pipes must be $\pm 15^{\circ}$ or less against the horizontal plane. Excessive inclination of the branched pipes may damage the unit.

•Minimum length of the straight section of the pipe before the branched pipes

Always use the pipes supplied in the branched pipe kit, and make sure the straight section of the pipe immediately before it connects to the branched pipe is at least 500 mm (19-11/16 in.). Failure to do so may damage the unit.

12-2. Piping Design

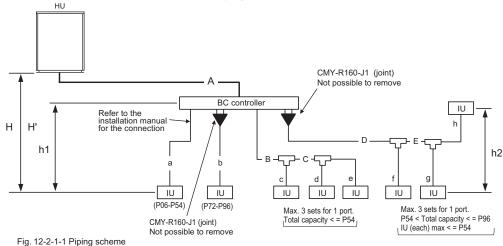
12-2-1. IF 16 ports or less are in use, i.e., if only one BC controller is in use with no sub BC controller.

Note1.PQRY systems do not require headers.

- Note2. Indoor units sized P72-P96 should be connected to a BC controller using the Y-shaped CMY-R160-J1 joint adapter. These indoor units cannot use the same BC controller ports
 - as other units. (They must use their own individual BC controller port.)
- Note3.As bends cause pressure loss on transportation of refrigerant, the fewer bends in the system, the better it is. Piping length needs to factor in the actual length and equivalent length in which the bends are counted.
- Note4. Indoor units connected to the BC controller sharing one port cannot operate separately in
- heating and cooling modes simultaneously; i.e., they must function in either heating or cooling in tandem. Note5. Indoor unit capacities are included in the model name. For example, PEFY-P24NMSU-E has a capacity

of 24,000 BTUs.

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



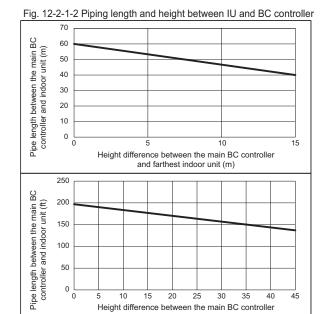
Piping length limitation			(m [ft.])	Bends equivalent le	ength "M"
Item	Piping in the figure	Max. length	Vax. equivalent length	Heat source Model	M (m/bent [ft./bent])
Total piping length	A+B+C+D+E+a+b+c+d+e+f+g+h	*1	-	P72ZLMU	0.35 [1.15']
Farthest IU from HU	A+D+E+h	165 [541']	190 [623']	P96ZLMU	0.42 [1.38']
Distance between HU and BC	А	110 [360'] *1	110 [360'] *1	P120ZLMU	0.47 [1.54']
Farthest IU from BC controller	D+E+h	40 [131'] *2	40 [131'] *2	P144ZLMU	0.50 [1.64']
Height between HU and IU (HU above IU)	Н	50 [164']	-	P168ZLMU	0.50 [1.64']
Height between HU and IU (HU under IU)	H'	40 [131']	-	P192ZLMU	0.50 [1.64']
Height between IU and BC	h1	15 [49'] (10 [32']) *3 _		
Height between IU and IU	h2	30 [98'] (20 [65'])*4 -		

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

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

*2. Farthest Indoor from BC controller "D+E+h" can exceed 40 m [131 ft.] till 60 m [197 ft.] if no Indoor sized P72, P96 connected. Details refer to Fig. 12-2-1-2 *3. Distance of Indoor sized P72, P96 from BC must be less than 10 m [32 ft.], if any.

*4. Distance of Indoor sized P72, P96 from IU must be less than 20 m [65 ft.], if any.



Piping "A"size selection rule		(mm [in.])
Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P72ZLMU	ø15.88 [5/8"]	ø19.05 [3/4"]
P96-120ZLMU	ø19.05 [3/4"]	ø22.20 [7/8"]
P144-192ZLMU	ø22.20 [7/8"]	ø28.58 [1-1/8"]

Piping "B", "C", "D", "E" size seleciton rule

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

Piping "a", "b", "c", "d", "e", "f", "g", "h" size selection rule (mm [in.])

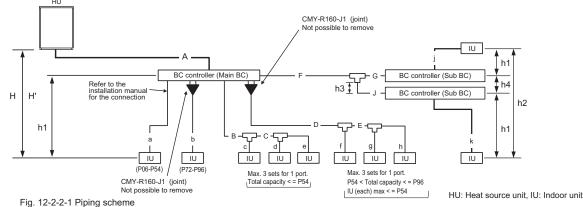
Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P06 to P18	ø6.35 [1/4"]	ø12.70 [1/2"]
P24 to P54	ø9.52 [3/8"]	ø15.88 [5/8"]
P72	ø9.52 [3/8"]	ø19.05 [3/4"]
P96	ø9.52 [3/8"]	ø22.20 [7/8"]

(mm [in.])

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

- Note1. PQRY systems do not require headers. Note2. Indoor units sized P72-P96 should be connected to a BC controller using the Y-shaped CMY-R160-J1 joint adapter. These indoor units cannot use the same BC controller ports as other units. (They must use their own individual BC controller port.) Note3. As bends cause pressure loss on transportation of refrigerant, the fewer bends in the system the better it is. Piping length needs to factor in the actual length and equivalent length in which the bends are counted. Note4. Indoor units connected to the BC controller sharing one port cannot operate separately in heating and cooling modes simultaneously; i.e., they must function in either heating or cooling in tandem. Note5. For sub BC controller CMB-P-NU-GB1, the total connectable indoor unit capacity can be 126,000 BTUs or less. If two sub BC controllers are used, the total indoor unit capacity connected to BOTH sub BC controllers also cannot exceed 126,000 BTUs.

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



Piping length limitation			(m [ft.])
Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length	A+B+C+D+E+F+G+J+a+b+c+d+e+f+g+h+j+k	*1	-
Farthest IU from HU	A+F+J+k	165 [541']	190 [623']
Distance between HU and BC	A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+h or F+J+k	40 [131'] *2	40 [131'] *2
Height between HU and IU (HU above IU)	J	50 [164']	-
Height between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32'])*3 -
Height between IU and IU	h2	30 [98'] (20 [65'])*4 -
Height between BC(Main) and BC(Sub)	h3	15 [49'] (10 [32'])*5 -
Height between BC(Sub) and BC(Sub)	h4	10 [32']	-

Bends equivalent length "M" Heat source Model M (m/bent [ft./bent]) P72ZLMU 0.35 [1.15] P96ZLMU 0.42 [1.38'] P120ZLMU 0.47 [1.54'] P144ZLMU 0.50 [1.64'] 0.50 [1.64'] P168ZLMU

0.50 [1.64']

P192ZLMU

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

*1. Please refer to 12-2-4

- *2. Farthest Indoor from BC controller "D+E+h or F+J+k" can exceed 40 m [131 ft.] till 60 m [197 ft.] if no Indoor sized P72, P96 connected. Details refer to Fig. 12-2-2-2
- *3. Distance of Indoor sized P72, P96 from BC must be less than 10 m [32 ft.], if any.
- *4. Distance of Indoor sized P72, P96 from IU must be less than 20 m [65 ft.], if any.

*5. Distance between BC (Main) and BC (Sub) must be less than 10 m, if two BC (Sub) are installed or Indoor sized P72 and/or P96 is connected.

Fig. 12-2-2-2 Piping length and height between IU and BC controller 70 60 B e main B(unit (m) 50 the r 40 and indoor 30 length between 20 troller 10 0 ğ Pipe Height difference bet een the main BC controlle and farthest indoor unit (m) 250 BC 200 · unit (ft) main 150 the and indoor between. 100 50 length b controller 0 Pipe 15 20 25 30 40 45 5 10 35 Height difference between the main BC controller and farthest indoor unit (ft)

Piping "A"size selection rule		(mm [in.])
Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P72ZLMU	ø15.88 [5/8"]	ø19.05 [3/4"]
P96-120ZLMU	ø19.05 [3/4"]	ø22.20 [7/8"]
P144-192ZLMU	ø22.20 [7/8"]	ø28.58 [1-1/8"]

Piping "B", "C", "D", "E" size selection rule		(mm [in.])
Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P54 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P55-P72	ø9.52 [3/8"]	ø19.05 [3/4"]
P73-P96	ø9.52 [3/8"]	ø22.20 [7/8"]

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

HP: High pressure, LP: Low pressure

Piping "a", "b", "c", "d", "e", "f", "g", "h", "j",	, "k" size selection rule (mm [in.])

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

Main unit

M (m/bent [ft./bent])

0.50 [1.64']

0.50 [1.64']

0.50 [1.64']

0.50 [1.64']

0.50 [1.64']

0.70 [2.29']

0.70 [2.29']

0.80 [2.62]

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

- Note1. PQRY systems do not require headers. Note2. Indoor units sized P72-P96 should be connected to a BC controller using the Y-shaped CMY-R160-J1 joint adapter. These indoor units cannot use the same BC controller ports
- as other units. (They must use their own individual BC controller port.) Note3. As bends cause pressure loss on transportation of refrigerant, the fewer bends in the system
- the better it is. Piping length needs to factor in the actual length and equivalent length in which the bends are counted. Note4. Indoor units connected to the BC controller sharing one port cannot operate separately in heating
- Iote4. Indoor units connected to the BC controller sharing one port cannot operate separately in heating and cooling modes simultaneously; i.e., they must function in either heating or cooling in tandem.
- Note5. For sub BC controller CMB-P-NU-GB1, the total connectable indoor unit capacity can be 126,000 BTUs or less. If two sub BC controllers are used, the total indoor unit capacity connected to BOTH sub BC controllers also cannot exceed 126,000 BTUs.

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

- Note6. Indoor unit capacities are included in the model name. For example, PEFY-P24NMSU-E has a capacity of 24,000 BTUs.
- Note7. Total "downstream indoor capacity" is the total of all the indoor units connected downstream. For example, PEFY-P24NMSU-E + PEFY-P12NMSU-E: Total Indoor Unit Capacity = P24 + P12 = P36.

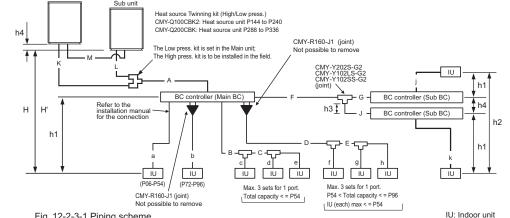


Fig. 12-2-3-1 Piping scheme Piping length limitation Bent equivalent length "M" (m [ft.]) Item Piping in the figure Max. length Max. equivalent length Heat source Model K+L+M+A+B+C+D+E+F+G+J+a+b+c+d+e+f+g+h+j+k P144ZSLMU Total piping length *1 Farthest IU from HU K(L)+A+F+J+k 165 [541'] 190 [623'] P168ZSLMU 110 [360'] *1 110 [360'] *1 P192ZSLMU Distance between HU and BC K(L)+A D+E+h or F+G+i or F+J+k 40 [131'] *2 P216ZSLMU Farthest IU from BC controller 40 [131'] *2 Height between HU and IU (HU above IU) н 50 [164'] P240ZSLMU Height between HU and IU (HU under IU) H' 40 [131'] P288ZSLMU Height between IU and BC h1 15 [49'] (10 [32']) *3 P312ZSLMU Height between IU and IU P336ZSLMU 30 [98'] (20 [65']) *4 h2 Height between BC(Main or Sub) and BC(Sub) h3 15 [49'] (10 [32']) *5 Distance between Main unit and Sub unit K+L or M 5 [16] Height between Main unit and Sub unit h4 0.1 [0.3] Height between BC(Sub) and BC(Sub) h4 10 [32]

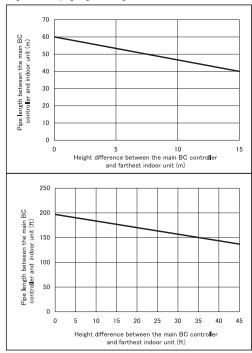
HU: Heat source Unit; IU: Indoor Unit; BC: BC controller

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

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

- *3. Distance of Indoor sized P72, P96 from BC must be less than 10 m [32 ft.], if any.
- *4. Distance of Indoor sized P72, P96 from IU must be less than 20 m [65 ft.], if any.
- *5. Distance between BC (Main) and BC (Sub) must be less than 10 m, if two BC (Sub) are installed or Indoor sized P72 and/or P96 is connected.

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



Piping "A"size selection rule		(mm [in.])
Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P144-192ZSLMU	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P216ZSLMU	ø22.20 [7/8"] *5	ø28.58 [1-1/8"]
P240ZSLMU	ø22.20 [7/8"] *5	ø34.93 [1-3/8"]
P288-312ZSLMU	ø28.58 [1-1/8"]	ø34.93 [1-3/8"]
P336ZSLMU	ø28.58 [1-1/8"]	ø41.28 [1-5/8"]

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

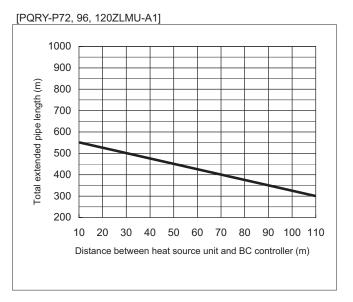
Piping "B", "C", "D", "E" size seleciton rule		(mm [in.])
Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P54 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P55-P72	ø9.52 [3/8"]	ø19.05 [3/4"]
P73-P96	ø9.52 [3/8"]	ø22.20 [7/8"]

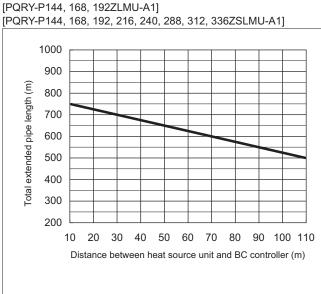
Piping "F", "G", "J" size selection	rule		(mm [in.])
Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(HP Gas)	Pipe(LP Gas)
P72 or less	ø9.52 [3/8"]	ø15.88 [5/8"]	ø19.05 [3/4"]
P73 to P108	ø9.52 [3/8"]	ø19.05 [3/4"]	ø22.20 [7/8"]
P109 to P126	ø12.70 [1/2"]	ø19.05 [3/4"]	ø28.58 [1-1/8"]
P127 to P144	ø12.70 [1/2"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P145 to P168	ø15.88 [5/8"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
HP: High pressure, LP: Low pressure			

Piping "K", "L", "M" size selection rule		(mm [in.])
Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P144ZSLMU	ø15.88 [5/8"]	ø19.05 [3/4"]
P168-240ZSLMU	ø19.05 [3/4"]	ø22.20 [7/8"]
P288-336ZSLMU	ø22.20 [7/8"]	ø28.58 [1-1/8"]

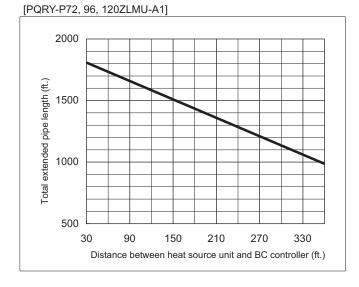
Piping "a", "b", "c", "d", "e", "f",	"g", "h", "j", "k"size selection rule	(mm [in.])
Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P06 to P18	ø6.35 [1/4"]	ø12.70 [1/2"]
P24 to P54	ø9.52 [3/8"]	ø15.88 [5/8"]
P72	ø9.52 [3/8"]	ø19.05 [3/4"]
P96	ø9.52 [3/8"]	ø22.20 [7/8"]

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

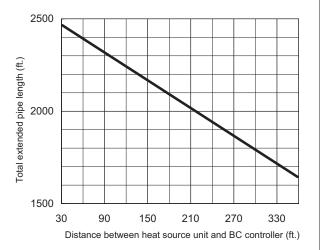




Total piping length restrictions (ft.)

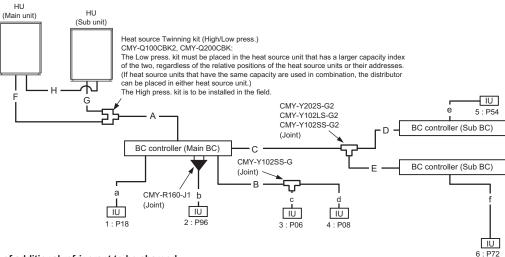


[[]PQRY-P144, 168, 192ZLMU-A1] [PQRY-P144, 168, 192, 216, 240, 288, 312, 336ZSLMU-A1]



12-3. Refrigerant charging calculation

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



Amount of additional refrigerant to be charged

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

Calculating the amount of additional refrigerant to be charged

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

When connecting PLFY-P08NBMU-E2, add 0.3kg [11oz] of refrigerant per indoor unit.

When connecting PLFY-EP08NEMU-E, add 0.3kg [11oz] of refrigerant per indoor unit.

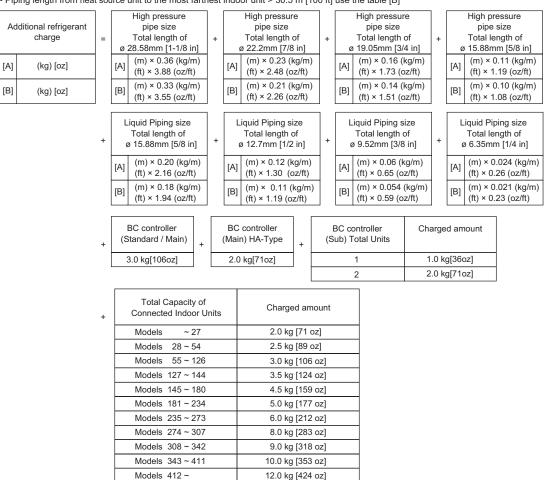
Round up the calculation result to the nearest 0.1kg[4oz]. (i.e., 16.08 kg = 16.1 kg)

<Amount of additional refrigerant to be charged>

Calculating the amount of additional refrigerant to be charged

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

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



12. PIPING DESIGN

Amount of factory charged refrigerant Sample calculation

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

	-						
A :	ø28.58 [1-1/8"]	40m [131ft.]	1 : P18	a :	ø6.35 [1/4"]	5m [16ft.]	
B :	ø9.52 [3/8"]	10m [32ft.]	2 : P96	b :	ø9.52 [3/8"]	3m [10ft.]	
C :	ø12.70 [1/2"]	10m [32ft.]	3 : P06	с:	ø6.35 [1/4"]	2m [6ft.]	
D :	ø9.52 [3/8"]	5m [16ft.]	4 : P08	d :	ø6.35 [1/4"]	3m [10ft.]	
E :	ø9.52 [3/8"]	5m [16ft.]	5 : P54	e :	ø9.52 [3/8"]	3m [10ft.]	
F :	ø22.20 [7/8"]	2m [6ft.]	6 : P72	f :	ø9.52 [3/8"]	10m [32ft.]	
G :	ø22.20 [7/8"]	1m [4ft.]					
Total	length for each pip	e size : ø28.58	8 A = 40m	[131ft.]			
		ø22.20) F+G = 2+	⊦1 = 3m	[10ft.]		
		ø12.70) C = 10m	[32ft.]			
		ø9.52	B+D+E+I	b+e+f =	36m [116ft.]		
		ø6.35	a+c+d =1	10m [32	ft.]		
There	efore, additional refr	0 0	= 40×0.33+3	3×0.21+	10×0.11+36×0	054+10×0.021+3.0+	2.0+6.0
		(kg)	= 28.08kg				
		or	= 28.1kg				
There	efore, additional refi	• ·	= 131×3.55 = 990.5oz	+10×2.2	6+32×1.19+11	6×0.59+32×0.23+106	\$+71+212

= 991oz

Limitation of the amount of refrigerant to be charged

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

Total index of the heat sour	rce units	P72 ZLMU	P96 ZLMU	P120 ZLMU	P144 ZLMU	P168 ZLMU	P192 ZLMU	P144 ZSLMU	P168 ZSLMU
	Factory charged	5.0kg	5.0kg	5.0kg	6.0kg	6.0kg	6.0kg	10.0kg	10.0kg
	Charged on site	28.0kg	32.0kg	33.0kg	44.0kg	45.0kg	52.0kg	44.0kg	45.0kg
Maximum refrigerant charge	Total for system	33.0kg	37.0kg	38.0kg	50.0kg	51.0kg	58.0kg	54.0kg	55.0kg
Maximum reingerant charge	Factory charged	11 lbs 1 oz	11 lbs 1 oz	11 lbs 1 oz	13 lbs 4 oz	13 lbs 4 oz	13 lbs 4 oz	22 lbs 1 oz	22 lbs 1 oz
	Charged on site	61 lbs 12 oz	70 lbs 9 oz	72 lbs 13 oz	97 lbs 1 oz	99 lbs 4 oz	114 lbs 11 oz	97 lbs 1 oz	99 lbs 4 oz
	Total for system	72 lbs 13 oz	81 lbs 10 oz	83 lbs 13 oz	110 lbs 4 oz	112 lbs 7 oz	127 lbs 14 oz	119 lbs 1 oz	121 lbs 5 oz

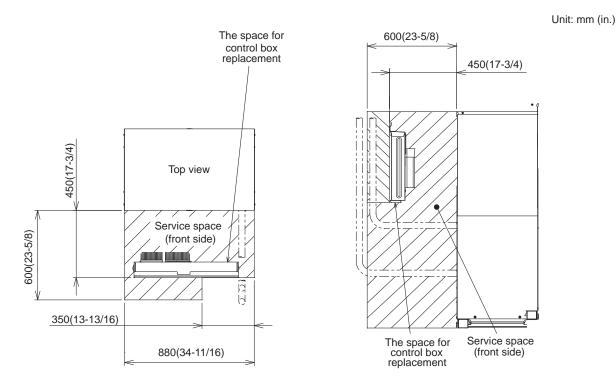
Total index of the heat sou	rce units	P192 ZSLMU	P216 ZSLMU	P240 ZSLMU	P288 ZSLMU	P312 ZSLMU	P336 ZSLMU
	Factory charged	10.0kg	10.0kg	10.0kg	12.0kg	12.0kg	12.0kg
	Charged on site	50.0kg	56.0kg	59.0kg	74.0kg	74.0kg	76.0kg
Maximum refrigerant charge	Total for system	60.0kg	66.0kg	69.0kg	86.0kg	86.0kg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

13-1. General requirements for installation

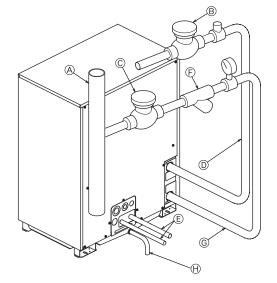
- 1. If possible, locate the unit to reduce the direct thermal radiation to the unit.
- Consider the amount of noise the unit produces when choosing an installation location.
 Valves and refrigerant flow on the outdoor/heat source unit may generate noise.
- 3. Avoid sites that may encounter strong winds.
- 4. Ensure the installation site can bear the weight of the unit.
- 5. Condensation should be moved away from the unit, particularly in heating mode.
- 6. Provide enough space for installation and service as shown in section 13-2. Spacing.
- 7. Avoid sites where acidic solutions or chemical sprays (such as sulfur sprays) are used frequently.
- 8. The unit should be provided from combustible gas, oil, steam, chemical gas like acidic solution, sulfur gas and so on.

13-2. Spacing

In case of single installation, 600mm or more of back space as front space makes easier access when servicing the unit from rear side.



13-3. Piping direction



(F)

G

(H)

Y-type strainer

Drain pipe

Water inlet (lower)

- (A) Main circulating water pipe
- B Shutoff valve
- C Shutoff valve
- D Water outlet (upper)
- (E) Refrigerant pipes

1. Insulation installation

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

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

2. Water processing and water quality control

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

- Removal of foreign objects or impurities within the pipes. During installation, be careful that foreign objects, such as welding fragments, sealant particles, or rust, do not enter the pipes.
- Water Quality Processing
 - Depending on the quality of the cold-temperature water used in the air conditioner, the copper piping of the heat exchanger may become corroded. We recommend regular water quality processing.
 Cold water circulation systems using open heat storage tanks are particularly prone to corrosion.

When using an open-type heat storage tank, install a water-to-water heat exchanger, and use a closed-loop circuit on the air conditioner side. If a water supply tank is installed, keep contact with air to a minimum, and keep the level of dissolved oxygen in the water no higher than $1 \text{ mg}/\ell$.

② Water quality standard

				id-range water system	Tend	ency
	Items		Recirculating water [20 <t<60°c] [68<t<140°f]< td=""><td>Make-up water</td><td>Corrosive</td><td>Scale- forming</td></t<140°f]<></t<60°c] 	Make-up water	Corrosive	Scale- forming
	pH (25°C)[77°F]		7.0 ~ 8.0	7.0 ~ 8.0	0	0
	Electric conductivity (n	, , , ,	30 or less	30 or less	0	0
	(L	IS/cm) (25°C)[77°F]	[300 or less]	[300 or less]		<u> </u>
	Chloride ion	(mg Cl⁻/ ℓ)	50 or less	50 or less	0	
Standard	Sulfate ion	(mg SO4 2./ l)	50 or less	50 or less	0	
items	ns Acid consumption (pH4.8)		50 or less	50 or less		0
		(mg CaCO₃/ ℓ)	00 01 1633	30 01 1633		Ŭ
	Total hardness	(mg CaCO₃/ ℓ)	70 or less	70 or less		0
	Calcium hardness	(mg CaCO ₃ / ℓ)	50 or less	50 or less		0
	Ionic silica	(mg SiO₂/ ℓ)	30 or less	30 or less		0
Refer-	Iron	(mg Fe/ l)	1.0 or less	0.3 or less	0	0
ence	Copper	(mg Cu/ ℓ)	1.0 or less	0.1 or less	0	
items	Sulfido ion	(mg S²-/ℓ)	not to be	not to be	0	
	Sulfide ion (mg S ²		detected	detected		
	Ammonium ion	(mg NH4 ⁺ / ℓ)	0.3 or less	0.1 or less	0	
	Residual chlorine	(mg Cl/ ℓ)	0.25 or less	0.3 or less	0	
	Free carbon dioxid	e (mg CO₂/ℓ)	0.4 or less	4.0 or less	0	
	Ryzner stability ind	ex	-	-	0	0

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

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

1.	Installation information	Ua-1-2
	1-1. General precautions	Ua-1-2
	1-2. Precautions for Indoor unit and BC controller	Ua-1-3
	1-3. Precautions for Outdoor unit/Heat source unit	Ua-1-4
	1-4. Precautions for Control-related items	Ua-1-5

1. Installation information

1-1. General precautions

1-1-1. Usage

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

1-1-2. Installation environment

•Do not install any unit other than the dedicated unit in a place where the voltage changes a lot, large amounts of mineral oil (e.g., cutting oil) are present, cooking oil may splash, or a large quantity of steam can be generated such as a kitchen. •Do not install the unit in acidic or alkaline environment.

Installation should not be performed in the locations exposed to chlorine or other corrosive gases. Avoid near a sewer.
To reduce the risk of fire, do not install the unit in a place where flammable gas may be leaked or inflammable material is present.

•This air conditioning unit has a built-in microcomputer. Take the noise effects into consideration when deciding the installation position. Especially in a place where antenna or electronic device are installed, it is recommended that the air conditioning unit be installed away from them.

•Install the unit on a solid foundation according to the local safety measures against typhoons, wind gusts, and earthquakes to prevent the unit from being damaged, toppling over, and falling.

1-1-3. Backup system

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

1-1-4. Unit characteristics

•Heat pump efficiency of outdoor unit depends on outdoor temperature. In the heating mode, performance drops as the outside air temperature drops. In cold climates, performance can be poor. Warm air would continue to be trapped near the ceiling and the floor level would continue to stay cold. In this case, heat pumps require a supplemental heating system or air circulator. Before purchasing them, consult your local distributor for selecting the unit and system.

•When the outdoor temperature is low and the humidity is high, the heat exchanger on the outdoor unit side tends to collect frost, which reduces its heating performance. To remove the frost, Auto-defrost function will be activated and the heating mode will temporarily stop for 3-10 minutes. Heating mode will automatically resume upon completion of defrost process.

•Air conditioner with a heat pump requires time to warm up the whole room after the heating operation begins, because the system circulates warm air in order to warm up the whole room.

•The sound levels were obtained in an anechoic room. The sound levels during actual operation are usually higher than the simulated values due to ambient noise and echoes. Refer to the section on "SOUND LEVELS" for the measurement location.

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

•The total capacity of the connected indoor units can be greater than the capacity of the outdoor/heat source unit. However, when the connected indoor units operate simultaneously, each unit's capacity may become smaller than the rated capacity.

•When the unit is started up for the first time within 12 hours after power on or after power failure, it performs initial startup operation (capacity control operation) to prevent damage to the compressor. The initial startup operation requires 90 minutes maximum to complete, depending on the operation load.

1-1-5. Relevant equipment

+Use an earth leakage breaker (ELB) with medium sensitivity, and an activation speed of 0.1 second or less.

- •Consult your local distributor or a qualified technician when installing an earth leakage breaker.
- +If the unit is inverter type, select an earth leakage breaker for handling high harmonic waves and surges.
- •Leakage current is generated not only through the air conditioning unit but also through the power wires. Therefore, the leakage current of the main power supply is greater than the total leakage current of each unit. Take into consideration the capacity of the earth leakage breaker or leakage alarm when installing one at the main power supply. To measure the leakage current simply on site, use a measurement tool equipped with a filter, and clamp all the four power wires together. The leakage current measured on the ground wire may not accurate because the leakage current from other systems may be included to the measurement value.

•Do not install a phase advancing capacitor on the unit connected to the same power system with an inverter type unit and its equipment.

•If a large current flows due to the product malfunctions or faulty wiring, both the earth leakage breaker on the product side and the upstream overcurrent breaker may trip almost at the same time. Separate the power system or coordinate all the breakers depending on the system's priority level

1-1-6. Unit installation

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

1-1-7. Optional accessories

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

1-1-8. Operation/Maintenance

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

1-2. Precautions for Indoor unit and BC controller

1-2-1. Operating environment

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

1-2-2. Unit characteristics

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

1-2-3. Unit installation

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

1-3. Precautions for Outdoor unit/Heat source unit

1-3-1. Installation environment

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

1-3-2. Circulating water

•Follow the guidelines published by JRAIA (JRA-GL02-1994) to check the water quality of the water in the heat source unit regularly.

•A cooling tower and heat source water circuit should be a closed circuit that water is not exposed to the atmosphere. When a tank is installed to ensure that the circuit has enough water, minimize the contact with outside air so that the oxygen from being dissolved in the water should be 1 mg/L or less.

1-3-3. Unit characteristics

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

1-3-4. Relevant equipment

•Provide grounding in accordance with the local regulations.

1-4. Precautions for Control-related items

1-4-1. Product specification

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

1-4-2. Installation environment

- •The surge protection for the transmission line may be required in areas where lightning strikes frequently occur.
- •A receiver for a wireless remote controller may not work properly due to the effect of general lighting. Leave a space of at least 1 m between the general lighting and receiver.
- •When the Auto-elevating panel is used and the operation is made by using a wired remote controller, install the wired remote controller to the place where all air conditioners controlled (at least the bottom part of them) can be seen from the wired remote controller. If not, the descending panel may cause damage or injury, and be sure to use a wireless remote controller designed for use with elevating panel (sold separately).

Install the wired remote controller (switch box) to the place where the following conditions are met.

- •Where installation surface is flat
- •Where the remote controller can detect an accurate room temperature
- The temperature sensors that detect a room temperature are installed both on the remote controller and indoor unit. When a room temperature is detected using the sensor on the remote controller, the main remote controller is used to detect a room temperature. In this case, follow the instructions below.
- Install the controller in a place where it is not subject to the heat source.
- (If the remote controller faces direct sunlight or supply air flow direction, the remote controller cannot detect an accurate room temperature.)
- Install the controller in a place where an average room temperature can be detected.
- Install the controller in a place where no other wires are present around the temperature sensor.
- (If other wires are present, the remote controller cannot detect an accurate room temperature.)
- •To prevent unauthorized access, always use a security device such as a VPN router when connecting AE-200A/AE-50A/EW-50A/AG-150A/EB-50GU-A or TG-2000A to the Internet.

1.	Caution for refrigerant leakage	Ub-1-2
	1-1. Refrigerant property	Ub-1-2
	1-2. Confirm the Critical concentration and take countermeasure	Ub-1-2

1. Caution for refrigerant leakage

The installer and/or air conditioning system specialist shall secure safety against refrigerant leakage according to local regulations or standards. The following standard may be applicable if no local regulation or standard is available.

1-1. Refrigerant property

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

Critical concentration

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

Critical concentration of R410A: 0.44kg/m³

(The weight of refrigeration gas per 1 m³ air conditioning space.);

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

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

1-2. Confirm the Critical concentration and take countermeasure

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

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

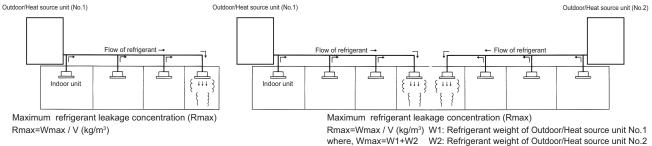


Fig. 1-1 The maximum refrigerant leakage concentration

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

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

- 1-2-2. Find the possible maximum leakage (Wmax) in the room. If a room has Indoor unit(s) from more than 1 Outdoor/Heat source unit, add up the refrigerant of the Outdoor/Heat source units.
- 1-2-3. Divide (Wmax) by (V) to get the maximum refrigerant leakage concentration (Rmax).
- 1-2-4. Find if there is any room in which the maximum refrigerant leakage concentration (Rmax) is over 0.44kg/m³.

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

- If yes, following countermeasure is recommended to do at site.
- Countermeasure 1: Let-out (making V bigger)

Design an opening of more than 0.15% of the floor area at a low position of the wall to let out the refrigerant whenever leaked. e.g.make the upper and lower seams of door big enough.

Countermeasure 2: Smaller total charge (making Wmax smaller)

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

- e.g.Using smaller model size but more Outdoor/Heat source units.
- e.g.Shorten the refrigerant piping as much as possible.
- Countermeasure 3: Fresh air in from the ceiling (Ventilation)

As the density of the refrigerant is bigger than that of the air. Fresh air supply from the ceiling is better than air exhausting from the ceiling. Fresh air supply solution refers to Fig.1-2~4.

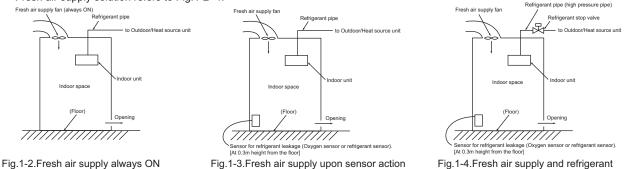


Fig.1-4.Fresh air supply and refrigerant shut-off upon sensor action

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

Note 2. In principle, MITSUBISHI ELECTRIC requires proper piping design, installation and air-tight testing after installation to avoid leakage happening. In the area should earthquake happen, anti-vibration measures should be fully considered.

CAUTION FOR REFRIGERANT LEAKAGE



for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

∆ Warning

Do not use refrigerant other than the type indicated in the manuals provided with the unit and on the nameplate.

- Doing so may cause the unit or pipes to burst, or result in explosion or fire during use, repair, or at the time of disposal of the unit.
- It may also be in violation of applicable laws.
- MITSUBISHI ELECTRIC CORPORATION cannot be held responsible for malfunctions or accidents resulting from the use of the wrong type of refrigerant.

Our air conditioning equipment and heat pumps contain a fluorinated greenhouse gas, R410A.

MITSUBISHI ELECTRIC CORPORATION

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