

#### AIR CONDITIONING SYSTEMS

# CITY MULTI



## DATA BOOK

MODEL

### PQHY-P72-360Z(S)LMU-B







#### Water Cooled WY Series - 575V



Type(BTU/h)	72K	96K	120K
Model Name	PQHY-P72ZLMU-B	PQHY-P96ZLMU-B	PQHY-P120ZLMU-B



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



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



Type(BTU/h)	288K	312K	336K
Model Name	PQHY-P288ZSLMU-B	PQHY-P312ZSLMU-B	PQHY-P336ZSLMU-B
Type(BTU/h)	360K		
Model Name	PQHY-P360ZSLMU-B		

1. SPECIFICATIONS	2
2. EXTERNAL DIMENSIONS	17
3. CENTER OF GRAVITY	21
4. ELECTRICAL WIRING DIAGRAMS	22
5. SOUND LEVELS	23
6. OPERATION TEMPERATURE RANGE	26
7. CAPACITY TABLES	
7-1. Correction by temperature	27
7-2. Correction by total indoor	
7-3. Correction by refrigerant piping length	
8. SYSTEM DESIGN GUIDE	
8-1. Designing of water circuit system	
8-2. Water piping work	
9. OPTIONAL PARTS	
9-1. JOINT	
9-2. HEADER 9-3. HEAT SOURCE TWINNING KIT	
10.ELECTRICAL WORK	
10-2. Power supply for Heat source unit	
10-3.Power cable specifications	
10-4.Power supply examples	
11.M-NET CONTROL	
11-1.Transmission cable length limitation	
11-2. Transmission cable specifications	
11-3.System configuration restrictions	
11-4.Address setting	
12.PIPING DESIGN	
12-1.R410A Piping material	
12-2.Piping Design 12-3.Refrigerant charging calculation	
13.INSTALLATION	
13-1. General requirements for installation	
13-3.Caution on selecting heat source unit	
13-4.Piping direction	

Suppose 3-wire STV = UPG0 00 /z           coming capacity         1           coming capacity         1           filt         70,000           coming capacity         1           (57)         Current input         A           (50)         Current input <th>Heat Source Model</th> <th></th> <th></th> <th>PQHY-P72ZLMU</th> <th></th>	Heat Source Model			PQHY-P72ZLMU		
soling cospety         *1         ITLIN         72.000           (TS)         Generating and Average	ndoor Model					
tornal         W         211           (252)         Current input         A           (152)         Current input         A           (152) </th <th>Power source</th> <th></th> <th>1</th> <th></th> <th>0% 60 Hz</th>	Power source		1		0% 60 Hz	
Image: Processing and the second se	Cooling capacity	*1				
(ch)         Constrained         A         40           (Ref         STU-h         65,000         702         7000           (ref         STU-h         65,000         700         700         700           (ref         State         W         3.00         700         700         700           (ref         State         W         100         500         700         700           (ref         State         W         100         7000         7000         700	Nominal)	-				
Reset         DTUh         0.0000         0.0000           (3)         Description         NW         3.00         3.00         3.00           (1)         Description         NW         3.00         3.00         3.00           (1)         Description         NW         3.00         5.00         3.00           (1)         Description         40         50-7071         10-0470         -           (1)         Description         Thin         0.0000         -         -         -           (1)         Description         NW         3.00         3.00         -						
Image of the second s	,	75) Current input				
int         Sever input         NV         3.60         4.0           inpi, strip of line         Intext         4.0         4.0         4.0           inpi, strip of line         Intext         0.0         4.0         4.0           inpi, strip of line         N/R         0.0         0.0         0.0           inpi of line         N/R         0.0         0.0         0.0           inpi of line         N/R         0.0         0.0         0.0           inpi of line         N/R         0.0         0.0         0.0         0.0           inpi of line         N/R         0.0 <td>(Rated)</td> <td></td> <td>-</td> <td></td> <td></td>	(Rated)		-			
Image of the set of		-				
emp:         indo         W8.         99-757 (15-24°C)           elling description         %         000-1137 (10-42°C)           elling description         2         000           frame         000-1137 (10-42°C)           (15)         Cover input         XV           (16)         Coverinput         XV           (16						
ording approxy         Picture         9-1171 (10-4°C)           ending approxy         2010.         60.000           ending approxy         2010.         60.000           ending approxy         2010.         60.000           ending approxy         2010.         60.000           ending approxy         2010.         70.000           (cf)         Current tiped         A         4.04           (cf)         Current tiped         A         4.02         3.75           (cf)         Current tiped         A         4.22         3.76           (cf)         Current tiped         A         4.22         3.76           (cf)         Current tiped         A         4.22         3.76           (cf)         Total capocity         0.0130% of histoware tiped						
ending specify (minul)         ?         F1Uh         0000           (57)         Carrent tipud         W         2.44           (57)         Carrent tipud         A         4.64           (57)         Carrent tipud         A         4.64           (57)         Carrent tipud         A         3.7           (57)         Carrent tipud         A         3.6					,	
ioninal         ioninal         ioninal         ioninal         224           (37)         Corrent input         A         4.04				50~113°F (10~45°C)		
Image         Image <th< td=""><td>• • •</td><td>*2</td><td></td><td></td><td></td></th<>	• • •	*2				
173         Carrier liquid         A         4.5           174         TU/h         75000           1757         Carrier liquid         A         4.23           1700         Carrier liquid         A         4.22           1700         Carrier liquid         A         4.25           1700         Carrier liquid         A         4.25           1700         Carrier liquid         A         0.65           1700         Carrier liquid         A         0.65           1700         A         0.65         1.440           1700         Carrier liquid         A         1.440           1700         Carrier liquid         A         1.65           1700         Carrier liquid         A         1.65           1700	Nominal)					
If Bield         BTuh         75,000           reger input         KW         3.73         3.30           mer, range of lang         Index wile         0.9         3.7         3.7           stands         Index wile         0.9         0.9         3.7         1.0           stands         Index wile         0.9         0.9         3.7         1.0           stands         1.0         0.9         0.9         1.0         1.0         1.0           stands         1.0         0.9         0.9         1.0						
No.         No.         Current input         No.         Construct input         No.         Construct input         No.         State           emp. ronge of cating         Index edite         P         0.00 - 00-0117 (10-52°C)         3.7           eating         Index edite         P         0.00 - 100-1057 (10-52°C)         -           construction         Total capacity         0.00 - 100-1057 (10-52°C)         -         -           construction         Total capacity         0.00 - 00-1057 (10-52°C)         -         -           construction         Total capacity         0.00 - 00-0107 (10-00000000000000000000000000000000000		75) Current input				
Image: State         Process input:         XW         3.78         3.36           mom, range of lindox         D.8.         59-81°F (15-2°C).         3.77           door unit         Tatal capacity         50-130° (10-45°C).         3.77           door unit         Tatal capacity         50-130° (10-45°C).         50-130° (10-45°C).           door unit         Tatal capacity         50-130° (10-45°C).         50-130° (10-45°C).           door unit         Tatal capacity         50-130° (10-45°C).         50-130° (10-45°C).           door unit         Tatal capacity         60.5         60-10° (10-45°C).           dor unit door unit         Tatal capacity         60.5         60-10° (10-45°C).           dor unit door unit         Tatal capacity         60.5         60-10° (10-45°C).           dor unit door unit         Gon (10-10° (10-45°C))         60-10° (10-45°C).         60-10° (10-45°C).           dor unit door uni	(Rated)					
(75)         Current input         A         42         3.7           entrop: range of holds or unit         Index water         9         3.9         3.7           or unit         Total caped/y         5.9         5.9         5.7         5.7           concertable:         ModeMaxmum quantity         90         5.0         5.0         5.0           or unit dip dameter         Liquid pipe         in. (m)         3.8         6.5.5         5.0           officerant         Liquid pipe         in. (m)         3.0         6.5.5         5.0           officerant         Cape pipe         in. (m)         3.0         6.5         5.0           officerant         1.4         0         5.0         5.0         5.0           officerant         0.5         5.0         5.0         5.0         5.0           officerant         0.4         0.0         5.0         5.0         5.0           officerant         0.5         5.0         5.0         5.0         5.0           officerant         0.5         5.0         5.0         5.0         5.0         5.0         5.0         5.0         5.0         5.0         5.0         5.0         5.0						
mip: direg of index with the second						
mile         mile         P         09-112F (10-45°C)           Total capacity         50-112F (10-45°C)         50-112F (10-45°C)         50-112F (10-45°C)           onectable         ModeMashium quantity         60-125 (10-45°C)         50-125 (10-45°C)         50-125 (10-45°C)           onegretable         Gaspige         in, (mm)         38 (0.52) Firsted         50-125 (10-45°C)         50-125 (10-45°C)           offigerant         Lindig Dipe         in, (mm)         38 (10-22) Firsted         50-125 (10-45°C)         50-125 (10-45°C)           offigerant         Lindig Dipe         in, (mm)         38 (10-22) Firsted         50-125 (10-45°C)         50-125 (10-45°C)           offigerant         Gaspige         in, (mm)         38 (10-22) Firsted         50-125 (10-45°C)         50-125 (10-45°C)           offigerant         Gaspige         in, (mm)         30-12 (10-45°C)         50-125 (10-45°C)         50-125 (10-45°C)           orgerasize         Grin         12-2-31.7         min         12-2-31.7         50-125 (10-45°C)           ongressor         Type 2 Gambip         In         Gabranized steel steels         50-125 (10-45°C)         50-125 (10-45°C)           ongressor         Type 2 Gambip         In         Gabranized steel steels         60-125 (10-125°C)         10-125 (10	,	/				
doci unit         Total cagady         60-130% of heatsource unit angoing           nonclable         Mode/Maximum quantity         P04-P00/16           unit generative (measured in anceholic room)?3         68 4.A         60.5           forgenant         Liqué pipe         in. (mn)         380 (52.3) Brazed           pipe diameter         Gas pape         in. (mn)         381 (62.3) Brazed           nimum Circuit Ampaoby         A         6         adminima Circuit Ampaoby           A         15         adminima Circuit Ampaoby         A           A         15         adminima Circuit Ampaoby         A           A         15         adminima Circuit Ampaoby         A           A         32.2         adminima Circuit Ampaoby         A           A         710%         5.45         adminima Circuit Ampaoby           A         0         2.3.17         adminima Circuit Ampaoby         A           Operating volume         Cin.         13.2.3.17         adminima Circuit Ampaoby         A           Operating volume         Cin.         13.4.2.3.17         adminima Circuit Ampaoby         A           Operating volume         Cin.         Trat Adminima Circuit Ampaoby         A         A           Circuit <td>emp. range of</td> <td>Indoor</td> <td></td> <td></td> <td>,</td>	emp. range of	Indoor			,	
Inded Model Maximum quantity         P04-P09/16           origonal que travel que que pois on y1 dB 4.4         00.5           origonal que travel que que pois on y1 dB 4.4         00.5           origonal que travel que que pois on y1 dB 4.4         0           gue que travel que que pois on y1 dB 4.4         0           minum Origonal que travel que	eating	Inlet water	٩F	50~113°F (10~45	°C)	
Damp Generitevial (massurful na matchic room)"3         68 + A         0.05           regression         Liquid pile         in, (mn)         383 (19.29) Brazed           ping dammeri         Ga pipe         in, (mn)         383 (19.29) Brazed           azimum Occul Amagnety         A         6           azimum Occul Amagnety         A         6           azimum Occul Amagnety         A         15           including water         Grinin         24           m <sup>2</sup> /m         Grinin         24           m <sup>2</sup> /m         Grinin         24           m <sup>2</sup> /m         Grinin         3.43           m <sup>2</sup> /m         Grinin         3.43           m <sup>2</sup> /m         Grinin         3.2           Pressure drop         pai         0.2           m <sup>2</sup> /m         M <sup>2</sup> /m         3.43           Grinin         3.2         3.17           m <sup>2</sup> /m         M <sup>2</sup> /m         3.0 - 7.2           orgenessor         Type X Quantify         Inceedeessing           Starting method         K         4.3           Granin         M <sup>2</sup> /M <sup>2</sup> /	idoor unit	Total capacity		50~130% of heatsource u	nit capacity	
efegenant Luqu ppe fingmant Luqu ppe fingmant Liqu ppe fingmant Case ppe fingmant Case ppe fingmant A A A A A A A A A A A A A A A A A A A	onnectable	Model/Maximum quantit	у	P04~P96/18		
efegenant Luqu ppe fingmant Luqu ppe fingmant Liqu ppe fingmant Case ppe fingmant Case ppe fingmant A A A A A A A A A A A A A A A A A A A	ound power level (me			60.5		
ping diameter         Ose pipe         in. (mm)         34(10.00) Brand           aximum Occut Arrenality         A         0           aximum Occut Arrenality         0         1.440           Comm         2.4         0           (mn)         0.13         3.43           (mn)         0.13         2.4           (Deparing volume         (Gh         7.83 - 1.002           (mn)         1.92 × 3.0         1.000         1.000           (Tange method         Inverter         1.000         1.000           (Autor)         1.000	Refrigerant	,		3/8 (9.52) Braze	ed	
Inimum Creat Angeachy A  C  Ch  Ch  Ch  Ch  Ch  Ch  Ch  Ch  C	iping diameter		· · · ·			
admum Overcurrent Protection         A         15           inculating water         Water flow rate         Ch         1.440           Chrin         24         Pressure drop         Presscressu	1 0		· · ·			
Incluising water           Water flow rate         Ch         1.40           Gimm         24           m <sup>3</sup> /m         5.45           Limin         91           dfm         3.2           Pressure drop         pail           Operating volume         Ch           off         3.48           orget         Ch           ange         Camin           m <sup>3</sup> /m         3.43           operating volume         Ch           Coperating volume         Ch           Coperating volume         Camin           Camper         Camin           Starting method         Inverter scroll homefore compressor x 1           Starting method         Metor output           Motor output         KW           Case heater         KW           Case heater         Case heater           colored         High pressure protection           Inverter scrout         Cove-heat protection           Compressor         Cove-heat protection           Cove-heat protection         Cove-heat protection           Coverpressor         Cove-heat protection           Coverpressor         Cove-heat protection           Coveland High pressure sensort, Migh pre						
Grimin         94           m/h         545           Umin         91           eff         3.48           Brain         3.48           Operating volume         Gin           arage         Min           Starting method         10.2           More output         KW           Address output         KW           Case heater         KW           Compresor         Compresor						
Im         Im         9           Im         12           Im         12           Im         12           Im         3.48           Operating volume         Grin           Im         132 - 31.7           Im         Imvetter           Motor couples         W           Stating method         Invetter           Motor couples         KW           Case heater         KV           Case heater         KV           Case heater         KW           Concrease         Imm           Interfer circuit         Concrease           Concrease         Imm           Concrease         Imm           Concrease         Imm           Concrease         Imm           Concrease         Concrease           Implementer         Imm           Concrease         Imm           Concrease         Imm				-		
Imm         91           dm         32           Pressure drop         pai         3.48           Operating volume         Gn         132 - 1.902           range         Grinin         132 - 21.7           ompressor         Type X Quantity         Inverter scrol hermetel compressor x 1           Stating method         Inverter         Inverter           Moto output         KW         4.3           Case heater         KW         0.035           Lubricant         Moto output         KW         0.035           Univertant         Moto output         Moto output         Moto output           Moto output         KW         0.035         Intransport           Univertant         Moto output         Moto output         Moto output           Moto output         Intransport         Moto output         Moto output           Case heater         KW         0.035         Intransport           Intransport         Moto output         Moto output						
dm         3.2           Pressure         6m         3.48           Operating volume         6m         783 - 1902           ange         6mm         13.2 - 31.7           mPn         13.2 - 31.7         13.2 - 31.7           starting method         13.2 - 31.7           Starting method         13.2 - 31.7           Motor output         kW         4.3           Case heater         kW         0.035           Lubricant         Metricant function         Metricant function           Kernal function         HW         0.035           Case heater         kW         0.035           Lubricant         Metricant function         Metricant function           Internet circuit         mn         1.104.254168.741.1168.741.1166           Internet circuit         mn         1.104.824.156.154.1166           Pressure protection         High pressure protection         Metricant function           Internet circuit         Over-heat protection         Metricant function           Pressure function         High pressure protection         Metricant function           Internet circuit         Over-heat protection         Metricant function           Prest orignat charge         Pressure functin						
Pressure drop         peril         3.48           Operating volume         G/h         783 - 1,002           Gmmin         13.2 - 31.7           mage         Gmmin         3.6 - 7.2           myn         Inverter scale Interact Compressor X 1           Starting method         Inverter           Motor output         KW         0.035           Lubricant         Motor output         KW           Case heater         KW         0.035           Lubricant         Galvanized steal sheets         mm           veternal finish         Galvanized steal sheets         mm           rotoction devices         High pressure protection         High pressure protection         Motor output           Innerter circuit         Over-heat protection         Over-heat protection         Over-heat protection           Interfer circuit         Ibs (kg)         400 (181)         et and           et exchanger         Ibs (kg)         400 (181)         et and           IC circuit (HIC: Heat Inter-Changer)         Interfer circuit interfer interfere interfer interfer interfere interfer interfere i						
ist         ist         24           Operating volume         Gr         783 - 1902           range         Grinin         132 - 317           00         0.0 - 7.2         0.0 - 7.2           ompressor         Type x Quantity         Inverter           Starting method         Inverter         Inverter           Motor output         KW         4.3           Case heater         KW         0.035           Lubricant         GB/warring distel sheets           vtermal finish         Inverter           starting method         Inverter           Inverter         GB/warring distel sheets           vtermal finish         Inverter           vtermal finish         Inverter           coorpessor         No or output           rotection devices         High pressure protection           High pressure protection         High pressure switch at 4.15 MPa (601 psi)           Inverter circuit         Over-that protection           Control         Control           Control         Ethol (200)           Control         Inverter circuit           Valer pressure Max         pi           Query         Starting tharge           Control         D		Pressure drop				
Operating volume range         Grh Grmin m <sup>2</sup> h         782 - 1.902           ompressor         Type x Quantity         Invefr scale latence Motor output         Invefr scale latence Invefr scale latence Quantity           Motor output         KW         0.33 - 1.2           Quart Scale latence Laber latence Laber latence Compressor         Invefr scale latence Invefr scale latence Laber laber laber Laber laber laber laber laber laber laber Laber laber l		Plessule diop				
$ \begin{array}{ c c c c } \hline \begin{tabular}{ c c c } \hline \begin{tabular}{ c c c c } \hline \begin{tabular}{ c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		On continuous konse				
m³h         30 - 7.2           ompressor         Type X Quntity         Inverter scroll hermétic compressor x 1           Starting method         Inverter         Inverter           Motor output         kW         4.3           Case heater         kW         0.035           Lubricant         Gavanized steel sheets         MEL32           xternal dimension H x W x D         in         Gavanized steel sheets           rotection devices         High pressure protection         High pressure sensor. High pressure soutch at 4.15 MPa (601 psi)           rotection devices         High pressure protection         Over-heat protection, Over-current protection           Inverter circuit         Over-heat protection, Over-current protection         Over-heat protection, Over-current protection           compressor         Over-heat protection, Over-current protection         Inverter circuit         Over-heat protection, Over-current protection           et weight         Type x original charge         Rot 102 ×						
ompressor         Type x Quantity         Inverter scroll hermetic compressor x 1           Battring method         Inverter         Inverter           Case heater         KW         0.335           Lubricant         Metro output         KW           Case heater         KW         0.035           Lubricant         Inverter         Metro output           Xetmal finish         Gasehater         Metro output           Xetmal finish         Gasehater         Metro output           Veteral dimension H x W x D         In         1.0.0.436/16.334.11/16.21.11/16           mm         1.100.x 880 x 550         1.0.0.0480 x 550           Order-toricalt         Over-theat protection         0.0.04.11.05.20.01.01.01.01.01.01.01.01.01.01.01.01.01		range				
Starting method         Inverter           Motor output         kW         4.3           Case heater         kW         0.035           Lubricant         MEL32           xternal finish         Gavanizad stell sheets           rotex-leap protection, Over-leap protection			m³/h			
Motor output         kW         4.3           Case heater         kW         0.035           Lubricant         MEL32           sternal finish         Galvanized steel sheets           sternal dimension H x W x D         in.         435/16 x 31/11/6 x 21/11/16           mm         1.00 x 880 x 550         mm           rotection devices         High pressure protection         High pressure sorted x 11/16 x 10 x 680 x 550           offergrant         Compressor         Over-heat protection           Type x original charge         R10A x 11 bs + 10 z (50 kg)           Control         LEV and H/C circuit           det exchanger         Ibs (kg)         400 (181)           eat exchanger         plate type           at exchanger         plate type           (Circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           rawing         External         MPa           circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           rawing         External Drw         Plate type           plonal parts         plate type         122           uschere to External Drw         Details for to charge trans Drw           plonal parts         joint: CMY-Y102S-G2; CMY-Y102LS-G2           <	Compressor				npressor x 1	
Case heater         kW         0.035           tubricant         MEL32           xternal finish         Galvanized steel sheets           xternal dimension H x W x D         in.           mm         1.45/16 x 321-11/16           rolection devices         High pressure protection           High pressure protection         High pressure sensor, High pressure switch at 4.15 MPa (601 psi)           Inverter circuit         Over-heat protection           Compressor         Over-heat protection           Control         LEV and HIC circuit           et weight         Ibs (kg)           et weight         Ibs (kg		-				
Lubricant         MEL32           xternal dimension H x W x D         in.         Galvanized steel sheets           xternal dimension H x W x D         in.         43-5/16 x 34-11/16 x 21-11/16           mm         1.100 x 880 x 550         response           rotection devices         High pressure protection         High pressure sensor, High pressure switch at 4.15 MPa (801 psi)           Inverter circuit         Over-heat protection         Over-heat protection           Compressor         Control         LEV and HIC circuit           Control         LEV and HIC circuit         10 x 60 x 90           et weight         Ibs (kg)         400 (161)           eat exchanger         122         1           Water volume in plate         G         1 22           If         4.8         200           Viring         XEMPA         200           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           rawing         KE94-0.345         11/10 x 23-22           tandard         Document         Installation Manual           tackment         KE94-0.345         11/10 x 20-32           tandard         Document         Installation Manual           tacrould (HIC: Heat Inter-Changer)         In the stable o						
Xternal finish         Galvanized steel sheets           xternal dimension H x W x D         in.         43-5/16 x 34-11/16 x 21-11/16           mm         1.100 x 800 x 550           rotection devices         High pressue protection         High pressue sensor, High pressue switch at 4.15 MPa (601 psi)           Inverter circuit         Over-heat protection, Over-current protection         Over-heat protection           Inverter circuit         Over-heat protection         Over-heat protection           Compressor         Over-heat protection         Over-heat protection           Compressor         Over-heat protection         Over-heat protection           effigerant         Type x original charge         R410A X 11 lbs + 1 oz (5.0 kg)           et weight         Ibs (kg)         400 (181)           eat exchanger         plate type           Water pressure Max         psi         220           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           raving         KE940.345         XE940.345           tandard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           plant starter         Plate type         Installation Manual           tachment         Accessory		Case heater	kW	0.035		
xternal dimension H x W x D       in.       43-6/16 x 34-11/16 x 21-11/16         mm       1,100 x 880 x 550         cordection devices       High pressure protection       High pressure source high pressure witch at 4.15 MPa (601 psi)         inverter circuit       Over-heat protection       Over-heat protection         effigerant       Type x original charge       R410A x 11 lb s + 1 oz (5.0 kg)         control       LEV and HIC circuit       Et and HIC circuit         et weight       gain       400 (181)         eat exchanger       plate type       1         Water volume in plate       G       1.22         in       4.6       1.22         Water pressure Max.       psi       2.0         Viring       KE942.45       1         tachard       KE942.45       1         tachard       Decument       Installation Manual         plonal parts       joint: CMY-Y102SS-G2, CMY-Y102LS-G2       Header: CMY-Y102LS-G2         Header: CMY-Y102SS-G2, CMY-Y102LS-G2       Header: CMY-Y102LS-G2       Header: CMY-Y102LS-G2         Header: CMY-Y102SS-G2, CMY-Y102LS-G2       Header: CMY-Y102LS-G2       Header: CMY-Y102LS-G2         Header: CMY-Y102SS-G2, CMY-Y102LS-G2       Header: CMY-Y102		Lubricant		MEL32		
mm         1,100 x 880 x 550           rotection devices         High pressure protection         High pressure sensor, High pressure switch at 4.15 MPa (601 psi)           Inverter circuit         Over-heat protection, Over-current protection, Over-current, adver septifications may be subject to change witho	External finish					
High pressure protection         High pressure sensor, High pressure sentor, Over-current protection           Inverter circuit         Over-heat protection, Over-current protection           Compressor         Ver-heat protection           Type x original charge         R410A x 11 lbs + 1 oz (5.0 kg)           Control         LEV and HIC circuit           et weight         Ibs (kg)         400 (181)           eat exchanger         Ibs (kg)         1.22           Water volume in plate         I         4.6           Water pressure Max.         psi         2.0           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           rawing         External         KB94C7L2           Wiring         Installation Manual           Document         Installation Manual           tachard         Document         Installation Wanual           ploinal parts         ploin for Ver-Y102S-G2           Header: CMY-Y104, 108, 1010C-G         Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation wanual.           Due to continuing improvement, above specifications may be subject to change without notice.           The ambient relative humidity of the Heat Source Unit heads to be kept below 80%.           The ambient relative humidity of the Heat Source Unit heads to b	External dimension H	x W x D	in.	43-5/16 x 34-11/16 x 2	21-11/16	
Inverter circuit         Over-heat protection, Over-current protection           Compressor         Over-heat protection           Type x original charge         R410A x111bs + 10 z (50 kg)           Control         LEV and HIC circuit           et weight         Ibs (kg)           eat exchanger         plate type           Water volume in plate         G           1         4.6           Water pressure Max.         psi           200         200           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-In-tube structure           rawing         External           Wring         KE94L345           tandard         Document           Accessory         Details refer to External Drw           plotal to the Installation Manual         Installation Manual           tachment         Accessory           plotal sterfer to External Drw         Joint: CMY-Y102SS-G2, CMY-Y102LS-G2           Header: CMY-Y102SS-G2, CMY-Y104, 108, 1010C-G         Header: CMY-Y104, 108, 1010C-G           emarks         Details refer to External Drw           point: CMY-Y102SS-G2, CMY-Y104, 108, 1010C-G         Header: CMY-Y104, 108, 1010C-G           emarks         Details refer to External Drw           plonal parts         Iboint interfer to			mm	1,100 x 880 x 55	50	
Compressor         Over-heat protection           effigerant         Type x original charge         R410A x 11 lbs + 1 oz (5.0 kg)           Control         LEV and HIC circuit           et weight         lbs (kg)         400 (181)           eat exchanger         plate type           Water volume in plate         G         1.22           I         4.6         290           Water pressure Max.         psi         290           IVPa         Coopper pige, tube-in-tube structure         200           IC circuit (HIC: Heat Inter-Changer)         Coopper pige, tube-in-tube structure         KB94C7L2           randard         MPa         2.0         20           IC corcuit (HIC: Heat Inter-Changer)         Installation Manual         External         KB94C7L2           Wring         KE94L345         1         1           trandard         Document         Installation Manual         1           tandard         Accessory         Details refer to External Drw         1           ploinal parts         joint: CMY-Y102S-G2, CMY-Y102LS-G2         Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, duct work, insulation work, duct work, insulation work, duct work, insulating, prever source switch, and other items shall be ferre	rotection devices	High pressure protection	1	High pressure sensor, High pressure sw	itch at 4.15 MPa (601 psi)	
Type x original charge         R410A x 11 lbs + 1 oz (5.0 kg)           Control         LEV and HIC circuit           teweight         lbs (kg)         400 (181)           eat exchanger         0         plate type           Water volume in plate         G         1.22           Water pressure Max         psi         290           Cc circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           rawing         External         KB94C7.2           Wring         KB94C7.2         KB94C7.2           Wring         KE94L345         1.24           tachment         Accessory         Details refer to External Drw           plotal parts         joint: CMV-Y102SS-62, CMV-Y102LS-62           Header: CMY-Y104, 108, 1010C-G         Header: CMY-Y104, 108, 1010C-G           mearks         Details on foundation work, duct work, insulation work, lectrical wiring, power source switch, and other items shall be forred to the Installation Manual.           Due to confinuing 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 lead Source Unit should not be installed on under.           Be sure to provide interlocking for the unit operation and refrigerant piping, follow the installation manual.           The		Inverter circuit		Over-heat protection, Over-current protection		
Control         LEV and HIC circuit           et weight         Ibs (kg)         400 (181)           eat exchanger         plate type           Water volume in plate         G         1.22           I         4.6           Water pressure Max.         psi         290           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           rawing         External         KB94C7L2           Wiring         MPa         0.0           tandard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           plonal parts         joint: CMY-Y102SS-G2, CMY-Y102LS-G2           Header: CMY-Y104, 108, 1010C-G         Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be firred 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 mount a strainer (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, fo		Compressor		Over-heat protect	lion	
Control         LEV and HIC circuit           et weight         Ibs (kg)         400 (181)           eat exchanger         plate type           Water volume in plate         G         1.22           I         4.6           Water pressure Max.         psi         290           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           rawing         External         KB94C7L2           Wiring         MPa         0.0           tandard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           plonal parts         joint: CMY-Y102SS-G2, CMY-Y102LS-G2           Header: CMY-Y104, 108, 1010C-G         Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be firred 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 mount a strainer (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, fo	efrigerant			R410A x 11 lbs + 1 oz	(5.0 kg)	
et weight   bs (kg) 400 (181) plate type plate type Vater volume in plate G 1 1 4.6 Water pressure Max. psi Water pressure Max. psi MPa 200 IC circuit (HIC: Heat Inter-Changer) Copper pipe, tube-in-tube structure rawing External Wring KE94L345 tandard Document NB94C7L2 Wiring KE94L345 tandard Document John Manual tachment Accessory John Manual Accessory Details refer to External Drw plonal parts John: CMY-Y102LS-G2 Header: CMY-Y102LS-G2 Header: CMY-Y104, 108, 1010C-G emarks Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°° D.B. (40°° D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to provide interlocking for the unit operation and water ricruit. Installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). tes:						
eat exchanger     plate type       Water volume in plate     G       I     1.22       Water pressure Max.     psi       Desi     290       MPa     2.0       IC circuit (HIC: Heat Inter-Changer)     Copper pipe, tube-in-tube structure       rawing     External       Wring     KB94C7L2       Wring     KE94L345       tandard     Document       It accessory     Details refer to External Drw       plonal parts     joint: CMY-Y102S-G2, CMY-Y102LS-G2       Header: CMY-Y104, 108, 1010C-G       emarks     Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred 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*F D.B. (40*C D.B.) The ambient temperature of the Heat Source Unit needs to be kept below 00%.       The Heat Source Unit should not be installed at outdoor.       Be sure to mount a strainer (more than 50 meshes) at the water rintel tipping of the unit.       Be sure to provide interJocking for the unit operation and water circuit.       Installing insulation material around both water and refigerant piping, follow the installation manual.       The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	et weight		lbs (kg)			
Water volume in plate       G       1.22         I       4.6         Water pressure Max.       psi         MPa       290         IC circuit (HIC: Heat Inter-Changer)       Copper pipe, tube-in-tube structure         rawing       External         Wiring       KE941345         tandard       Document         dtachment       Accessory         Details refer to External Drw         ptional parts       joint: CMY-Y102SS-G2, CMY-Y102LS-G2         Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred to the Installation Manual.         Due to continuing improvement, above specifications may be subject to change without notice.         The ambient tredepreture of the Heat Source Unit needs to be kept below 80%.         The ambient relative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed and under circuit.         Be sure to provide interforking for the unit operation and water circuit.         Be sure to provide interforking for the unit operation and water circuit.         The ambient treative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed an outdoor.         Be sure to provide interforking for	leat exchanger					
I       4.6         Water pressure Max.       psi         Decircuit (HIC: Heat Inter-Changer)       Copper pipe, tube-in-tube structure         rawing       External         Wiring       KE94L345         tandard       Document         Accessory       Details refer to External Drw         ptional parts       joint: CMY-Y102S-G2, CMY-Y102LS-G2         Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.)         The ambient 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 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.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	č	Water volume in plate	G			
Water pressure Max.         psi MPa         290 2.0           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           rawing         External         KB94C7L2           Wiring         KE94L345           tandard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           ptional parts         join: CMY-Y102SS-G2, CMY-Y102LS-G2           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit ineeds to be kept below 80%. The Heat Source Unit ineeds to be kept below 80%. The Heat Source Unit needs to be use the provide interdoxing for the unit. Be sure to provide interdoxing for the unit operation and water circuit. Install the supplied insulation material of the unater circuit. Be sure to provide interdoxing for the unit operation and water circuit. Unit converter			-			
MPa         2.0           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure           rawing         External         KB94C7L2           Wiring         KE94L345         KB94C7L2           tandard         Document         Installation Manual           tacchment         Accessory         Details refer to External Drw           ptional parts         join: CMY-Y102SS-G2, CMY-Y102LS-G2           Header: CMY-Y104, 108, 1010C-G         Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred 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 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.           The Heat Source Unit meds to be a closed circuit (water is not exposed to the atmosphere).		Water pressure Max				
IC circuit (HIC: Heat Inter-Changer)       Copper pipe, tube-in-tube structure         rawing       External       KB94C7L2         Wiring       KE94L345         tandard       Document       Installation Manual         tachment       Accessory       Details refer to External Drw         ptional parts       joint: CMY-Y102S-G2, CMY-Y102LS-G2         Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred 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 or the unit operation and water circuit.         Install the supplied insulation material around both water and refrigerant piping, follow the installation manual.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         eters:       Unit converter		Trator prosoure max.				
External       KB94C7L2         Wiring       KE94L345         tandard       Document         Accessory       Details refer to External Drw         ptional parts       joint: CMY-Y102SS-G2, CMY-Y102LS-G2         Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit 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 circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         etes:       Unit converter		Inter-Chapger)	1VII a		e structure	
Wiring         KE94L345           tandard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           ptional parts         joint: CMY-Y102SS-G2, CMY-Y102LS-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).						
bournent         Installation Manual           tachment         Accessory         Details refer to External Drw           ptional parts         joint: CMY-Y102SS-G2, CMY-Y102LS-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to 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. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	awing					
tachment         Accessory         Details refer to External Drw           ptional parts         joint: CMY-Y102SS-G2, CMY-Y102LS-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to provide interlocking for the unit loperation 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. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	tandard	U U				
ptional parts joint: CMY-Y102SS-G2, CMY-Y102LS-G2 Header: CMY-Y104, 108, 1010C-G Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).						
Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor.         Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         eters:       Unit converter		Accessory				
emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.)         The ambient relative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed at outdoor.         Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit.         Be sure to provide interlocking for the unit operation and water circuit.         Install the supplied insulation material around both water and refrigerant piping, follow the installation manual.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         otes:	puonal parts			· · · · · · · · · · · · · · · · · · ·		
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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water rinet 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. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).						
Unit converter				ferred to the Installation Manual. Due to continuing improvement, above specifications may be subject The ambient temperature of the Heat Source Unit needs to be kept b The ambient relative humidity of the Heat Source Unit needs to be kept The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet 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	to change without notice. elow 104°F D.B. (40°C D.B.) spt below 80%. piping of the unit.  piping, follow the installation manual.	
					Unit converter	
	otes:					

 1. Nominal cooling conditions (Test conditions are based on AHRI 1230)
 BTU/h
 =kW x 3,412

 Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)
 cfm
 =m<sup>3</sup>/min x 35.31

 2. Nominal heating conditions (Test conditions are based on AHRI 1230)
 Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)
 lbs
 =kg/0.4536

 3. The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).
 Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)
 \*Above sereifection date

Heat Source Model			PQHY-P96ZLMU-B		
ndoor Model			Non-Ducted D	ucted	
Power source			3-phase 3-wire 575 V ±10% 60 Hz		
Cooling capacity	*1	BTU/h	96,000		
Nominal)		kW	28.1		
		kW	5.21		
(575)		A	5.8		
(Rated)	Ourient input	BTU/h	92,000		
(Italeu)					
		kW	27.0	- 15	
()	Power input	kW		5.45	
	Current input	A		6.0	
emp. range of	Indoor	W.B.	59~75°F (15~24°C)		
ooling	Inlet water	°F	50~113°F (10~45°C)		
leating capacity	*2	BTU/h	108,000		
Nominal)		kW	31.7		
,	Power input	kW	5.64		
(575)	Current input	А	6.2		
(Rated)	ouriontinput	BTU/h	103,000		
(Italeu)		kW	30.2		
	<b>D</b> · ·				
	Power input	kW		1.48	
()	Current input	A		4.9	
emp. range of	Indoor	D.B.	59~81°F (15~27°C)		
eating	Inlet water	٩F	50~113°F (10~45°C)		
ndoor unit	Total capacity		50~130% of heatsource unit capacity		
onnectable	Model/Maximum quantit	v	P04~P96/24		
	ured in anechoic room) *3		65.0		
	,	ab <a></a>			
Refrigerant	Liquid pipe	· · /	3/8 (9.52) Brazed (1/2 (12.7) Brazed, total length >= 90 m)		
iping diameter	Gas pipe	in. (mm)	7/8 (22.2) Brazed		
linimum Circuit Ampacity		A	9		
Aximum Overcurrent Pro	otection	А	15		
Circulating water	Water flow rate	G/h	1,522		
		G/min	25.4		
		m <sup>3</sup> /h	5.76		
		L/min	96		
	-	cfm	3.4		
	Pressure drop	psi	3.48		
		kPa	24		
	Operating volume	G/h	793 ~ 1,902		
	range	G/min	13.2 ~ 31.7		
	Ŭ	m <sup>3</sup> /h	3.0 ~ 7.2		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		
Sompressor	Starting method		Inverter		
	-	kW	6.0		
	Motor output				
	Case heater	kW	0.035		
	Lubricant		MEL32		
External finish			Galvanized steel sheets		
External dimension H x W	/ x D	in.	43-5/16 x 34-11/16 x 21-11/16		
		mm	1,100 x 880 x 550		
Protection devices	High pressure protection	1	High pressure sensor, High pressure switch at 4.15 MPa (601	psi)	
	Inverter circuit		Over-heat protection, Over-current protection	. ,	
Defrigerer	Compressor		Over-heat protection		
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)		
	Control		LEV and HIC circuit		
let weight		lbs (kg)	400 (181)		
leat exchanger			plate type		
	Water volume in plate	G	1.22		
		1	4.6		
	Water pressure Max.	psi	290		
		MPa	290		
	Change	ivir d			
HC circuit (HIC: Heat Inte			Copper pipe, tube-in-tube structure		
Drawing	External		KB94C7L2		
	Wiring		KE94L345		
Standard	Document		Installation Manual		
attachment	Accessory		Details refer to External Drw		
Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS-G2		
			Header: CMY-Y104, 108, 1010C-G		
temarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switc ferred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without not The ambient trenter the trent source Unit needs to be kept below 104°F D.B. (40°C The mabient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installed the supplied insulation material around both water and refrigerant piping, follow the installed to the supplied insulation material around both water and refrigerant piping, follow the installed the supplied insulation material around both water and refrigerant piping, follow the installed the supplied insulation material around both water and refrigerant piping, follow the installed the supplied insulation material around both water and refrigerant piping, follow the installed the supplied insulation material around both water and refrigerant piping.	ice. ≿ D.B.) Ilation manual.	
lotes:	ons (Test conditions are b			Unit converter BTU/h =kW x 3,412	
				-,=	
ndoor: 81°F D.B./66°FW	1 B (27°C D D /40°C M/ D			cfm =m <sup>3</sup> /min x 35.31	

 1.Nominal cooling conditions (Test conditions are based on AHRI 1230)
 BTU/h
 =kW x 3,412

 Indoor: 81°F D.B. /66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)
 cfm
 =m³/min x 35.31

 Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)
 lbs
 =kg/0.4536

 3. The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).
 Test conditions: Indoor: 81°FD.B./66°FW.B. (27°C D.B./19°CW.B.), Inlet water temperature: 86°F (30°C)
 lbs
 =kg/0.4536

Heat Source Model			PQHY-P120ZLMU-B		
Indoor Model			Non-Ducted	Ducted	
Power source			3-phase 3-wire 575 V ±10% 60 Hz		
Cooling capacity	*1	BTU/h	120,000		
Nominal)		kW	35.2		
()	Power input	kW	7.51		
(575)		A	8.3		
(Rated)		A BTU/h	115,000		
(Rated)					
		kW	33.7		
	Power input	kW	7.38	7.77	
(575)	Current input	A	8.2	8.6	
emp. range of	Indoor	W.B.	59~75°F (15~24°C)		
ooling	Inlet water	°F	50~113°F (10~45°C)		
leating capacity	*2	BTU/h	h 135,000		
Nominal)	-	kW	39.6		
(online)	Power input	kW	7.09		
(575)					
	Current input	A	7.9		
(Rated)		BTU/h	129,000		
		kW	37.8		
	Power input	kW	5.78	5.89	
(575)	Current input	А	6.4	6.5	
emp. range of	Indoor	D.B.	59~81°F (15~27°C)		
eating	Inlet water	°F	50~113°F (10~45°C)		
idoor unit					
	Total capacity		50~130% of heatsource unit capacity	у	
onnectable	Model/Maximum quantit		P04~P96/30		
	ured in anechoic room) *3	dB <a></a>	71.0		
efrigerant	Liquid pipe	in. (mm)	3/8 (9.52) Brazed (1/2 (12.7) Brazed, total lengt	th >= 40 m)	
iping diameter	Gas pipe	in. (mm)	7/8 (22.2) Brazed		
linimum Circuit Ampacit		A	13		
laximum Overcurrent Pr		A	20		
Circulating water	Water flow rate	G/h	1,522		
		G/min	25.4		
		m <sup>3</sup> /h	5.76		
		L/min	96		
		cfm	3.4		
	Pressure drop	psi	3.48		
	Flessule ulop	kPa	24		
	Operating volume	G/h	793 ~ 1,902		
	range	G/min	13.2 ~ 31.7		
		m <sup>3</sup> /h	3.0 ~ 7.2		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x	1	
	Starting method		Inverter		
	Motor output	kW	7.7	-	
	Case heater	kW	0.035		
		KVV			
	Lubricant		MEL32		
External finish		1	Galvanized steel sheets		
External dimension H x W	/ x D	in.	43-5/16 x 34-11/16 x 21-11/16		
		mm	1,100 x 880 x 550		
Protection devices	High pressure protection	<u></u> ו	High pressure sensor, High pressure switch at 4.15	5 MPa (601 psi)	
	Inverter circuit		Over-heat protection, Over-current prote		
	Compressor		Over-heat protection, Over-current protection		
Defrigerent					
Refrigerant	Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)		
	Control		LEV and HIC circuit		
let weight		lbs (kg)	400 (181)		
leat exchanger			plate type		
	Water volume in plate	G	1.22		
		1	4.6		
	Water pressure Max.	nsi	290		
	water pressure Max.	psi	-		
		MPa	2.0		
IC circuit (HIC: Heat Inte	<b>U</b> 1		Copper pipe, tube-in-tube structure		
Drawing	External		KB94C7L2		
	Wiring		KE94L345		
Standard	Document		Installation Manual		
ttachment	Accessory		Details refer to External Drw		
ptional parts	,		joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY	Y-Y2028-G2	
			Header: CMY-Y104, 108, 1010C-G		
temarks			Details on foundation work, duct work, insulation work, electrical wiring, power s ferred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change The ambient temperature of the Heat Source Unit needs to be kept below 104° The mathematical transmission of the Heat Source Unit needs to be kept below 8 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 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, foll The determine the methematical to the operated insult for the sole for the sole of t	e without notice. F D.B. (40°C D.B.) 30%. he unit. low the installation manual.	
			The cooling tower and the water circuit must be a closed circuit (water is not exp	posed to the atmosphere).	
			The cooling tower and the water circuit must be a closed circuit (water is not ex	posed to the atmosphere).	
otes:				Unit converter	
				Unit converter	
			1000)	B	
.Nominal cooling conditi	ons (Test conditions are b V.B. (27°C D.B./19°C W.B			BTU/h =kW x 3,412 cfm =m <sup>3</sup> /min x 35.31	

 1.Nominal cooling conditions (Test conditions are based on AHRI 1230)
 BTU/h
 =kW x 3,412

 Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)
 cfm
 =m<sup>3</sup>/min x 35.31

 2.Nominal heating conditions (Test conditions are based on AHRI 1230)
 Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 86°F (30°C)
 ibs
 =kg/0.4536

 3.The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).
 Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)
 ibs
 =kg/0.4536

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*Above specification data is 
subject to rounding variation.
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door Model					
				ucted	
ower source		1	3-phase 3-wire 575 V ±10% 60 Hz		
ooling capacity	*1		144,000		
lominal)		kW	42.2		
	Power input	kW	8.78		
	<ol><li>Current input</li></ol>	A	9.7		
(Rated)		BTU/h	138,000		
	Derrorationent	kW	40.4	0.40	
(575	Power input	kW		0.12	
	5) Current input	A		11.2	
emp. range of	Indoor	W.B.	59~75°F (15~24°C)		
poling	Inlet water	°F	50~113°F (10~45°C)		
eating capacity	*2		160,000		
lominal)	-	kW	46.9		
	Power input	kW	8.11		
	<ol><li>Current input</li></ol>	A	9.0		
(Rated)		BTU/h	152,000		
		kW	44.5		
	Power input	kW		7.92	
,	5) Current input	A		8.8	
emp. range of	Indoor	D.B.	59~81°F (15~27°C)		
eating	Inlet water	°F	50~113°F (10~45°C)		
door unit	Total capacity		50~130% of heatsource unit capacity		
onnectable	Model/Maximum quantit		P04~P96/36		
	sured in anechoic room) *3		68.0		
efrigerant	Liquid pipe	in. (mm)	1/2 (12.7) Brazed		
ping diameter	Gas pipe	in. (mm)	1-1/8 (28.58) Brazed		
inimum Circuit Ampaci	ity	A	15		
aximum Overcurrent P	Protection	А	25		
irculating water	Water flow rate	G/h	1,902		
·		G/min	31.7		
		m <sup>3</sup> /h	7.20		
		L/min	120		
		cfm	4.2		
	Pressure drop	psi	6.38		
	1 rooodio diop	kPa	44		
	Operating volume	G/h	1,189 ~ 3,054		
	range	G/min	19.8 ~ 50.9		
	range	m <sup>3</sup> /h	4.5 ~ 11.6		
ompressor	Type x Quantity	111-711	Inverter scroll hermetic compressor x 1		
ompressor	Starting method				
	Motor output	kW	Inverter 9.5		
	Case heater				
		kW	0.045		
xternal finish	Lubricant		MEL32		
xternal finisn xternal dimension H x '	M D		Galvanized steel sheets		
xternal dimension H x	W X D	in.	57-1/8 x 34-11/16 x 21-11/16		
		mm	1,450 x 880 x 550		
rotection devices	High pressure protection	1	High pressure sensor, High pressure switch at 4.15 MPa (601	psı)	
	Inverter circuit		Over-heat protection, Over-current protection		
	Compressor		Over-heat protection		
efrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)		
	Control		LEV and HIC circuit		
et weight		lbs (kg)	499 (226)		
eat exchanger		1	plate type		
	Water volume in plate	G	1.22		
		1	4.6		
	Water pressure Max.	psi	290		
		MPa	2.0		
IC circuit (HIC: Heat In	ter-Changer)		Copper pipe, tube-in-tube structure		
rawing	External		KB94C7L3		
	Wiring		KE94L345		
tandard	Document		Installation Manual		
tachment	Accessory		Details refer to External Drw		
ptional parts			joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2		
			Header: CMY-Y104, 108, 1010C-G		
emarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switc ferred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without not The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the insta The cooling tower and the water circuit must be a closed circuit (water is not exposed to the	ice. ≿ D.B.) Ilation manual.	
otes:		based on AHRI		Unit converter BTU/h =kW x 3,412	

<ol> <li>Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)</li> <li>Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)</li> <li>The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).</li> </ol>	 =kW x 3,412 =m <sup>3</sup> /min x 35.31 =kg/0.4536
Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)	e specification data is to rounding variation.

Heat Source Model			PQHY-P168	ZLMU-B
Indoor Model			Non-Ducted	Ducted
Power source			3-phase 3-wire 575	
Cooling capacity	*1	BTU/h	168,00	
Nominal)	,	kW	49.2	
Normal)	Power input	kW	12.05	
(575		A	13.4	
(575	) Current input	A BTU/h		
(Rated)			160,00	
		kW	46.9	
	Power input	kW	11.98	12.47
(575	/ ·	А	13.3	13.9
emp. range of	Indoor	W.B.	59~75°F (15	,
ooling	Inlet water	°F	50~113°F (1	0~45°C)
leating capacity	*2	BTU/h	188,000	
Nominal)		kW	55.1	
	Power input	kW	9.86	
(575	) Current input	А	11.0	
(Rated)	,	BTU/h	178,00	00
· /		kW	52.2	
	Power input	kW	8.86	9.66
(575		A	9.8	10.7
emp. range of	Indoor	A D.B.		
1 0		D.B. ⁰F	59~81°F (15	
eating	Inlet water	۲ <b>۲</b>	50~113°F (1	
door unit	Total capacity		50~130% of heatsou	
onnectable	Model/Maximum quantit	1	P04~P9	
	sured in anechoic room) *3	dB <a></a>	70.0	
efrigerant	Liquid pipe	in. (mm)	5/8 (15.88)	
iping diameter	Gas pipe	in. (mm)	1-1/8 (28.58)	Brazed
inimum Circuit Ampaci	ty	A	21	
laximum Overcurrent P	rotection	А	35	
irculating water	Water flow rate	G/h	1,902	)
and any match		G/min	31.7	
		m <sup>3</sup> /h	7.20	
		L/min	120	
		cfm	4.2	
	Pressure drop	psi	6.38	
		kPa	44	
	Operating volume	G/h	1,189 ~ 3	0,054
	range	G/min	19.8 ~ 5	i0.9
	5	m <sup>3</sup> /h	4.5 ~ 1	
Compressor	Type x Quantity	/	Inverter scroll hermeti	
omprocool	Starting method		Inverter	•
	Motor output	kW	11.0	
		kW	0.045	
	Case heater	KVV	•	
	Lubricant		MEL3	
xternal finish		L.	Galvanized ste	
xternal dimension H x V	N x D	in.	57-1/8 x 34-11/1	
		mm	1,450 x 880	
rotection devices	High pressure protection	n	High pressure sensor, High pressur	e switch at 4.15 MPa (601 psi)
	Inverter circuit		Over-heat protection, Ov	er-current protection
	Compressor		Over-heat pr	otection
efrigerant	Type x original charge		R410A x 13 lbs +	
-	Control		LEV and HI	
et weight	- · ·	lbs (kg)	499 (22	
leat exchanger			plate ty	
our ononanyon	Water volume in plots	G	plate ty 1.22	•
	Water volume in plate	9		
		1	4.6	
	Water pressure Max.	psi	290	
		MPa	2.0	
IC circuit (HIC: Heat Int	ter-Changer)		Copper pipe, tube-ir	n-tube structure
rawing	External		KB94C	7L3
	Wiring		KE94L3	345
tandard	Document		Installation	
ttachment	Accessory		Details refer to E	
ptional parts			joint: CMY-Y102SS-G2, CMY-Y	
puonai pano				
emarks			Header: CMY-Y104 Details on foundation work, duct work, insulation work, electrical	
Cinarka			Forred to the Installation Manual. Due to continuing improvement, above specifications may be su The ambient temperature of the Heat Source Unit needs to be k The ambient relative humidity of the Heat Source Unit needs to The Heat Source Unit should not be installed at outdoor.	bject to change without notice. ept below 104°F D.B. (40°C D.B.)
			Be sure to mount a strainer (more than 50 meshes) at the water Be sure to provide interlocking for the unit operation and water of Install the supplied insulation material to the unused drain-socker	sircuit.
			Be sure to provide interlocking for the unit operation and water or Install the supplied insulation material to the unused drain-socke When installing insulation material around both water and refrige	sircuit. et. erant piping, follow the installation manual.
			Be sure to provide interlocking for the unit operation and water or Install the supplied insulation material to the unused drain-socket	sircuit. et. erant piping, follow the installation manual.
			Be sure to provide interlocking for the unit operation and water or Install the supplied insulation material to the unused drain-socke When installing insulation material around both water and refrige	sircuit. et. erant piping, follow the installation manual. (water is not exposed to the atmosphere).
otes:	ions (Test conditions are t		Be sure to provide interlocking for the unit operation and water or Install the supplied insulation material to the unused drain-socke When installing insulation material around both water and refrige The cooling tower and the water circuit must be a closed circuit	sircuit. et. erant piping, follow the installation manual.

 Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)
 Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)
 The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m). Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C) cfm =m<sup>3</sup>/min x 35.31 lbs =kg/0.4536 \*Abo

ove	spe	cifica	ation	data

a is subject to rounding variation.

Heat Source Model			PQHY-P192ZLMU-B		
Indoor Model			Non-Ducted Ducted		
Power source		1	3-phase 3-wire 575 V ±10% 60 Hz		
Cooling capacity	*1		192,000		
(Nominal)	Dever innut	kW kW	56.3		
/676	Power input	A	15.05		
(Rated)	5) Current input	A BTU/h	184,000		
(realed)		kW	53.9		
	Power input	kW		15.00	
(575	5) Current input	A		16.7	
Temp. range of	Indoor	W.B.	59~75°F (15~24°C)		
cooling	Inlet water	°F	50~113°F (10~45°C)		
Heating capacity	*2	BTU/h	215.000		
Nominal)		kW	63.0		
, , , , , , , , , , , , , , , , , , ,	Power input	kW	11.90		
(575	5) Current input	А	13.2		
(Rated)		BTU/h	204,000		
		kW	59.8		
	Power input	kW	10.78	11.53	
(575	<li>Current input</li>	А	12.0	12.8	
Temp. range of	Indoor	D.B.	59~81°F (15~27°C)		
neating	Inlet water	٩F	50~113°F (10~45°C)		
ndoor unit	Total capacity		50~130% of heatsource unit capacity		
connectable	Model/Maximum quanti	ty	P04~P96/48		
	sured in anechoic room) *3		72.0		
Refrigerant	Liquid pipe	in. (mm)	5/8 (15.88) Brazed		
piping diameter	Gas pipe	in. (mm)	1-1/8 (28.58) Brazed		
Minimum Circuit Ampac	ity	А	26		
Maximum Overcurrent F	Protection	А	45		
Circulating water	Water flow rate	G/h	1,902		
		G/min	31.7		
		m <sup>3</sup> /h	7.20		
		L/min	120		
		cfm	4.2		
	Pressure drop	psi	6.38		
		kPa	44		
	Operating volume G/h range G/min		1,189 ~ 3,054 19.8 ~ 50.9		
		m <sup>3</sup> /h	4.5 ~ 11.6		
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1		
	Starting method		Inverter		
	Motor output	kW	12.4		
	Case heater	kW	0.045		
	Lubricant		MEL32		
External finish		1	Galvanized steel sheets		
External dimension H x	WxD	in.	57-1/8 x 34-11/16 x 21-11/16		
		mm	1,450 x 880 x 550		
Protection devices	High pressure protectio	n	High pressure sensor, High pressure switch at 4.15 MPa (601	psi)	
	Inverter circuit		Over-heat protection, Over-current protection		
	Compressor		Over-heat protection		
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)		
lat waint t	Control	lhe (lim)	LEV and HIC circuit		
Net weight		lbs (kg)	499 (226)		
Heat exchanger	Materia de la companya de la		plate type		
	Water volume in plate	G	1.22		
	Motor pressure Man	l noi	4.6		
	Water pressure Max.	psi	290		
	tor Changer)	MPa	2.0 Conner nine, tube in tube structure		
HIC circuit (HIC: Heat In			Copper pipe, tube-in-tube structure		
Drawing	External		KB94C7L3		
Standard	Wiring		KE94L345		
attachment	Document Accessory		Installation Manual Details refer to External Drw		
Optional parts	70003301 y		joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-	(3025-62	
optional parts			Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY- Header: CMY-Y104, 108, 1010C-G	10020-02	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source swite	ch and other items shall be	
			Farred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without no The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40° 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 inst The circuit for the unit be a closed circuit (water is not exposed to the	tice. C D.B.) allation manual.	
lotes:				Unit converter	
	tions (Test conditions and		1230)	BTU/h =kW x 3,412	
	tions (Test conditions are I W.B. (27°C D.B./19°C W.E				
2.Nominal heating condi	itions (Test conditions are	based on AHR	l 1230)	cfm =m <sup>3</sup> /min x 35.31	
	C D.B.), Inlet water temper			lbs =kg/0.4536	
	sound power level (PWL)		3744:2010 (r=3.5m). 3.), Inlet water temperature: 86°F (30°C)		

	* 4 1	an a sification data
nditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.). Inlet water temperature: 86°F (30°C)		
und values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).		
1 D.D. (20 0 D.D.), mile water temperature. 60 1 (20 0)	lbs	=kg/0.4536
al heating conditions (Test conditions are based on AHRI 1230)		
81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)	cfm	=m <sup>3</sup> /min x 35.31
al cooling conditions (rest conditions are based on ARKI 1230)		-KVV X 3.41Z

Indoor Model	Model			PQHY-P14 Non-Ducted	Ducted
Power source			<u>.                                    </u>	3-phase 3-wire 5	
Cooling capa	acity	*1		144,	
(Nominal)	1	David in set	kW	42	
	(575)	Power input Current input	kW A	7.	
(	(Rated)	Ourient input	BTU/h	138.	
``	· · ·		kW	40	
		Power input	kW	7.13	8.17
		Current input	A	7.9	9.1
Temp. range cooling	of	Indoor Inlet water	W.B. ⁰F	59~75°F (	
Heating capa	city	*2		50~113°F 160,	
(Nominal)	iony	2	kW	46	
(•••••••)		Power input	kW	7.4	
_	(575)	Current input	А	8.	3
(	(Rated)		BTU/h	152,	
	1	<b>D</b> · ·	kW	44	
	(575)	Power input Current input	kW A	<u>6.50</u> 7.2	7.29 8.1
Temp. range		Indoor	D.B.	59~81°F (	
heating		Inlet water	°F	50~113°F	
Indoor unit		Total capacity		50~130% of heats	purce unit capacity
connectable		Model/Maximum quanti		P04~F	
	level (measu	red in anechoic room) *3		63	
Refrigerant	tor	Liquid pipe	in. (mm)	1/2 (12.7	
piping diamet Set Model	lei	Gas pipe	in. (mm)	1-1/8 (28.5	00 JIAZEU
Model				PQHY-P72ZLMU-B	PQHY-P72ZLMU-B
Minimum Circ	cuit Ampacity		А	6	6
Maximum Ov	ercurrent Pro		А	15	15
Circulating wa	ater	Water flow rate	G/h	1,522 +	-
			G/min	25.4 +	
			m <sup>3</sup> /h L/min	5.76 + 96 +	
			L/min cfm		
		Pressure drop	psi	3.48	3.48
			kPa	24	24
		Operating volume	G/h	793 + 793 ~ 1	
		range	G/min	13.2 + 13.2 ~	
0		T	m <sup>3</sup> /h	3.0 + 3.0 -	
Compressor		Type x Quantity Starting method		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
		Starting method Motor output	kW	4.3	4.3
		Case heater	kW	4.3	4.3 0.035
		Lubricant	<u> </u>	MEL32	MEL32
External finish			1	Galvanized steel sheets	Galvanized steel sheets
External dime	ension H x W	x D	in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
			mm	1,100 x 880 x 550	1,100 x 880 x 550
Protection dev			n	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa ( psi)
FIOLECLIOITUE	evices	High pressure protection		F/	r/
FIOLECLION de	evices	0.1		Over-heat protection Over-current protection	Over-heat protection. Over-current protection
Fiotection de	evices	High pressure protection		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection Over-heat protection
	evices	Inverter circuit			
	evices	Inverter circuit Compressor		Over-heat protection	Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg)
Refrigerant Net weight		Inverter circuit Compressor Type x original charge	lbs (kg)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)
Refrigerant Net weight		Inverter circuit Compressor Type x original charge Control		Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type
Refrigerant Net weight		Inverter circuit Compressor Type x original charge	Ibs (kg)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)         LEV and 1           400 (181)         plate type           1.22         1.22	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22
Refrigerant Net weight		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)         LEV and 1           400 (181)         plate type           1.22         4.6	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22           4.6
Refrigerant Net weight		Inverter circuit Compressor Type x original charge Control		Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)         LEV and 1           400 (181)         plate type           1.22         1.22	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22
Refrigerant <u>Net weight</u> Heat exchang	ger	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max.	G I psi	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           290	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22           4.6           290
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe	G I psi MPa	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           KB94	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           C7PS
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor Drawing	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           KB94           KB94	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           IlC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           C7PS           KE94L345
Refrigerant Net weight Heat exchang <u>HIC circuit (H</u> Pipe between distributor Drawing Standard	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22         4.6           290           2.0         Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed         3/4 (19.05) Brazed           KB94           KE94L345           Installatio	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           C7PS           KE94L345           n Manual
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor Drawing Standard attachment	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           KB94           KB94	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           C7PS           KE94L345           n Manual           D External Drw
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor Drawing Standard attachment	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           KB94           KB94           KE94L345           Installatio           Details refer to	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           2/PS           KE94L345           n Manual           External Drw           y kit: CMY-Y100CBK3
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor Drawing Standard attachment Optional parts	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and F           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           KB94           KE94L345           Installatio           Details refer to           Heat Source Twinning           joint: CMY-Y102SS-G2, CMY-           Header: CMY-Y102	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           HIC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           C7PS           KE94L345           n Manual           External Drw           y102LS-G2, CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           04, 108, 1010C-G
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between Orawing Standard attachment Optional parts Remarks	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           200           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/8 (9.52) Brazed           3/4 (19.05) Brazed           KE94L345           Installatio           Details refer to           Header: CMY-Y10           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 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 wat           Be sure to provide interlocking for the unit operation and wate           Installation material around both water and refit	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           4IC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           C7PS           KE94L345           n Manual           plate: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           24, 108, 1010C-G           cal wiring, power source switch, and other items shall be r           subject to change without notice.           expt below 104°F D.B. (40°C D.B.)           o be kept below 80%.           er inlet piping of the unit.           r circuit.           ket.           igerant piping, follow the installation manual.
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor Drawing Standard attachment Optional parts	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and F           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/8 (9.52) Brazed           Structure           3/8 (9.52) Brazed           Brazed           Brazed           Brazed           Bestable           Heat Source Twinning joint: CMY-Y102SS-G2, CMY- Header: CMY-Y10           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 be The ambient relative humidity of the	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           4IC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           C7PS           KE94L345           n Manual           pixtermal Drw           kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           3/4 (18, 010C-G           cal wiring, power source switch, and other items shall be r           subject to change without notice.           expt below 104°F D.B. (40°C D.B.)           o be kept below 80%.           er inlet piping of the unit.           r circuit.           ket.           igerant piping, follow the installation manual.
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor Drawing Standard attachment Optional parts Remarks	ger IIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           200           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/8 (9.52) Brazed           3/4 (19.05) Brazed           KE94L345           Installatio           Details refer to           Header: CMY-Y10           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 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 wat           Be sure to provide interlocking for the unit operation and wate           Installation material around both water and refit	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           4IC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           C7PS           KE94L345           n Manual           D External Drw           kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           04, 108, 1010C-G           ral wiring, power source switch, and other items shall be r           subject to change without notice.           kept below 104°F D.B. (40°C D.B.)           o be kept below 80%.           er inlet piping of the unit.           r circuit.           ket.           igerant piping, follow the installation manual.           it (water is not exposed to the atmosphere).
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor Drawing Standard attachment Optional parts Remarks	ger IIC: Heat Inte n unit and	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document Accessory	G I psi MPa in. (mm) in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           KE94L345           Installatio           Details refer to           Heat Source Twinning joint: CMY-Y102SS-62, CMY-Y10           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 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           The abient relative humidity of the unused	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           IIC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           27PS           KE94L345           n Manual           b External Drw           kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           24, 108, 1010C-G           cal wiring, power source switch, and other items shall be is           subject to change without notice.           kept below 104°F D.B. (40°C D.B.)           o be kept below 80%.           er inlet piping of the unit.           r circuit.           ket.           igerant piping, follow the installation manual.           it (water is not exposed to the atmosphere).
Refrigerant Net weight Heat exchang HIC circuit (H Pipe between distributor Drawing Standard attachment Optional parts Remarks Remarks	ger <u>IIC: Heat Inte</u> n unit and s s s poling conditic = D.B./66°FW	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document Accessory	G I psi MPa in. (mm) in. (mm) an. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and H           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           3/4 (19.05) Brazed           KE94L345           Installatio           Details refer to           Head Source Twinning           joint: CMY-Y102SS-G2, CMY-           Header: CMY-Y11           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 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           Installing insulation material around bot water and refit           The cooling tower and the water circuit must be a closed circu           11230)           temperature: 86°F (30°C)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           4IC circuit           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           C7PS           KE94L345           n Manual           D External Drw           kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           04, 108, 1010C-G           ral wiring, power source switch, and other items shall be r           subject to change without notice.           kept below 104°F D.B. (40°C D.B.)           o be kept below 80%.           er inlet piping of the unit.           r circuit.           ket.           igerant piping, follow the installation manual.           it (water is not exposed to the atmosphere).

Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)
 3.The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).
 Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)

Heat Sourc				PQHY-P16		
Indoor Mode				Non-Ducted		ucted
Power sour		*1	BTU/h	3-phase 3-wire 5		
Cooling cap (Nominal)	pacity	. 1	kW	168		
(NOTIITAI)		Power input	kW	9.		
	(575)	Current input	A	9. 10		
	(Rated)	ourient input	BTU/h	160		
	(Rated)		kW	46		
		Power input	kW	8.87		9.66
	(575)	Current input	A	9.8		10.7
Temp. rang		Indoor	W.B.	5.0 59~75°F (		10.7
cooling	je ol	Inlet water	°F	50~113°F		
Heating cap	nacity	*2		188		
(Nominal)	puolity	2	kW	55		
(i torriniar)		Power input	kW	9.1		
	(575)	Current input	A	10		
	(Rated)	ounontinput	BTU/h	178		
	(. (atou)		kW	52		
		Power input	kW	8.05		3.04
	(575)	Current input	A	8.9		8.9
Temp. rang		Indoor	D.B.	59~81°F (		0.0
heating	JC 01	Inlet water	⁰F	50~113°F		
Indoor unit		Total capacity		50~130% of heats		
connectable		Model/Maximum quantit	v	P04~F		
		red in anechoic room) *3		66		
Refrigerant		Liquid pipe	in. (mm)	5/8 (15.8)		
piping diam		Gas pipe	in. (mm)	1-1/8 (28.5		
Set Model				1-1/6 (28.3	SI DIULOU	
Model				PQHY-P96ZLMU-B		72ZLMU-B
	ircuit Ampacity		А	9		6
	Overcurrent Pro		A	15		15
Circulating \		Water flow rate	G/h	1,522 -		
Circulating	water	Water now rate	G/min	25.4 -		
			m <sup>3</sup> /h	5.76 -		
			L/min			
			cfm	3.4 -		
		Pressure drop	psi	3.48		3.48
		Pressure drop	kPa			
		Our constitue of the second second		24		24
		Operating volume	G/h	793 + 793 ~ 10 0		
		range	G/min	13.2 + 13.2 -		
-			m <sup>3</sup> /h	3.0 + 3.0		
Compresso	or	Type x Quantity		Inverter scroll hermetic compressor x 1		metic compressor x 1
		Starting method		Inverter		verter
		Motor output	kW	6.0		4.3
		Case heater	kW	0.035		.035
		Lubricant		MEL32		EL32
External fini		-	1.	Galvanized steel sheets		d steel sheets
External din	mension H x W	хD	in.	43-5/16 x 34-11/16 x 21-11/16		11/16 x 21-11/16
			mm	1,100 x 880 x 550		880 x 550
Protection d	devices	High pressure protection	า	High pressure sensor, High pressure switch at 4.15 MPa (601		ressure switch at 4.15 MPa (60 psi)
				psi)		. ,
		• •				Over-current protection
		Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection,	
<b>B</b> (1)		Inverter circuit Compressor		Over-heat protection	Over-hea	at protection
Refrigerant	:	Inverter circuit Compressor Type x original charge		Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg)	Over-hea R410A x 11 lb	
		Inverter circuit Compressor		Over-heat protection R410A x 11 lbs + 1 oz (5.0 kg) LEV and I	Over-hea R410A x 11 lb HIC circuit	at protection ps + 1 oz (5.0 kg)
Net weight		Inverter circuit Compressor Type x original charge	lbs (kg)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)	Over-hea R410A x 11 lb HIC circuit 400	at protection s + 1 oz (5.0 kg)
Net weight		Inverter circuit Compressor Type x original charge Control	•	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type	Over-hea R410A x 11 lb HIC circuit 400 plai	at protection ps + 1 oz (5.0 kg) 0 (181) te type
Net weight		Inverter circuit Compressor Type x original charge	lbs (kg)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22	Over-hea R410A x 11 lb HC circuit 400 pla	at protection is + 1 oz (5.0 kg) 0 (181) te type 1.22
Net weight		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)         LEV and 1           400 (181)         plate type           1.22         4.6	Over-hea R410A x 11 lb HIC circuit 400 pla	at protection is + 1 oz (5.0 kg) 0 (181) te type 1.22 4.6
Net weight		Inverter circuit Compressor Type x original charge Control	G I psi	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)         LEV and 1           400 (181)         plate type           1.22         4.6           290         290	Over-hea R410A x 11 lb HIC circuit 400 pla	at protection ss + 1 oz (5.0 kg) 0 (181) 1 (181) 1 (182) 1 (1
Net weight Heat exchai	inger	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)         LEV and 1           400 (181)         plate type           1.22         4.6           290         2.0	Over-hea R410A x 11 lb HIC circuit 400 pla	at protection ss + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0
Net weight Heat exchar HIC circuit (	inger (HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer)	G I psi MPa	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure	Over-hea R410A x 11 lb HC circuit 400 pla Copper pipe, tul	at protection s + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0 be-in-tube structure
Net weight Heat exchar HIC circuit ( Pipe betwee	inger (HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)         LEV and I           400 (181)         1.22           4.6         290           2.0         Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed         3/8 (9.52) Brazed	Over-hea R410A x 11 lb HIC circuit 400 pla pla Copper pipe, tut 3/8 (9.5	at protection is + 1 oz (5.0 kg) 0 (181) te type 1.22 4.6 290 2.0 De-in-tube structure 52) Brazed
Net weight Heat exchar HIC circuit ( Pipe betwee distributor	inger (HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe	G I psi MPa	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)         LEV and 1           400 (181)         1.22           4.6         290           2.0         Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed         7/8 (22.2) Brazed	Over-hea R410A x 11 lb HIC circuit 400 plat Copper pipe, tul 3/8 (9.5 7/8 (22	at protection s + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0 be-in-tube structure
Net weight Heat exchar HIC circuit ( Pipe betwee distributor	inger (HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KB94	Over-hea           R410A x 11 lb           IIC circuit           400           plai           Copper pipe, tul           3/8 (9.5)           7/8 (22)	at protection as + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0 De-in-tube structure 52) Brazed .2) Brazed
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing	inger (HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KB94           KE94L345	Over-hea R410A x 11 lb HIC circuit 400 pla Copper pipe, tul 3/8 (9.5 7/8 (22 C7PS KES	at protection is + 1 oz (5.0 kg) 0 (181) te type 1.22 4.6 290 2.0 De-in-tube structure 52) Brazed
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard	inger (HIC: Heat Inte ren unit and	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345	Over-heat           R410A x 11 lb           HC circuit           400           plai           Copper pipe, tul           3/8 (9.5           7/8 (22           C7PS           KES           n Manual	at protection as + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0 De-in-tube structure 52) Brazed .2) Brazed
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to	Over-heat           R410A x 11 lb           flC circuit           400           plain           Copper pipe, tut           3/8 (9.5)           7/8 (22)           C7PS           KES           n Manual           p External Drw	at protection as + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0 De-in-tube structure 52) Brazed .2) Brazed
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Heat Source Twinning	Over-hea           R410A x 11 lb           HIC circuit           400           plan           Copper pipe, tul           3/8 (9.5           7/8 (22           C7PS           KE5           n Manual           External Drw           y kit: CMY-Y100CBK3	at protection at protection at + 1 oz (5.0 kg) (181) (181) (181) (182) (
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Heat Source Twinning           joint: CMY-Y102SS-G2, CMY	Over-hei           R410A x 11 lb           4lC circuit           400           plai           Copper pipe, tul           3/8 (9.5           7/8 (22           C7PS           KES           n Manual           9 External Drw           kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2	at protection at protection at + 1 oz (5.0 kg) (181) (181) (181) (182) (
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional pa	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           LEV and I           LEV and I           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           T/8 (22.2) Brazed           Extract KB94           KE94L345           Installatic           Details refer to           Heat Source Twinning           joint: CMY-Y102SS-G2, CMY           Header: CMY-Y1	Over-hei           R410A x 11 lb           HC circuit           400           plai           Copper pipe, tul           3/8 (9.5           7/8 (22           C7PS           KES           n Manual           External Drw           kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           04, 108, 1010C-G	at protection at protection (181) (181) (122) (1.
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional pa	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY- Header: CMY-Y11           Details on foundation work, duct work, insulation work, electric	Over-hei           R410A x 11 lb           HC circuit           400           plai           Copper pipe, tul           3/8 (9.5           7/8 (22           C7PS           KES           n Manual           External Drw           kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           04, 108, 1010C-G	at protection at protection (181) (181) (122) (1.
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional par	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Head Source Twinning joint: CMY-Y102SS-G2, CMY           Header: CMY-Y1           Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual.	Over-hea           R410A x 11 lb           HIC circuit           400           plan           Copper pipe, tut           3/8 (9.5           7/8 (22           C7PS           KES           n Manual           External Drw           y kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           04, 108, 1010C-G           cal wiring, power source switc	at protection is + 1 oz (5.0 kg) 0 (181) te type 1.22 4.6 290 2.0 0 ee-in-tube structure 52) Brazed .2) Brazed
Refrigerant Net weight Heat exchar Pipe betwee distributor Drawing Standard attachment Optional par Remarks	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           LEV and I           Example           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           Example           KE94           KE94L345           Installation           Details refer to           Head Source Twinning           joint: CMY-Y102SS-G2, CMY           Header: CMY-Y1           Details on foundation work, duct work, insulation work, electric           ferred to the Installation Manual.           Due to continuing improvement, above specifications may be	Over-hei           R410A x 11 lb           HC circuit           400           plai           Copper pipe, tul           3/8 (9.5)           7/8 (22)           C7PS           KES           n Manual           External Drw           I kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           24, 108, 1010C-G           ral wiring, power source switc           subject to change without not	at protection at protection (181) (181) (122) (1.
Net weight Heat exchan HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional par	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Head Source Twinning           joint: CMY-Y102SS-G2, CMY-           Header: CMY-Y1           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 be	Over-hei           R410A x 11 lb           IIC circuit           400           plai           Copper pipe, tuil           3/8 (9.5           7/8 (22           C7PS           KES           n Manual           p External Drw           kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           ail wiring, power source switc           subject to change without not           kept below 104°F D.B. (40°C	at protection is + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0 be-in-tube structure 52) Brazed .2) Brazed .2) Brazed .2) Brazed .2) And the structure .2) Brazed .2)
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional par	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           LEV and I           Example           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           Example           KE94           KE94L345           Installation           Details refer to           Head Source Twinning           joint: CMY-Y102SS-G2, CMY           Header: CMY-Y1           Details on foundation work, duct work, insulation work, electric           ferred to the Installation Manual.           Due to continuing improvement, above specifications may be	Over-hei           R410A x 11 lb           IIC circuit           400           plai           Copper pipe, tuil           3/8 (9.5           7/8 (22           C7PS           KES           n Manual           p External Drw           kit: CMY-Y100CBK3           Y102LS-G2, CMY-Y202S-G2           ail wiring, power source switc           subject to change without not           kept below 104°F D.B. (40°C	at protection is + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0 be-in-tube structure 52) Brazed .2) Brazed .2) Brazed .2) Brazed .2) And the structure .2) Brazed .2)
Net weight Heat exchan HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional par	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Head Source Twinning joint: CMY-Y102SS-G2,	Over-hei           R410A x 11 lb           HC circuit           400           plai           Copper pipe, tul           3/8 (9.5)           7/8 (22)           C7PS           KES           n Manual           External Drw           y102LS-G2, CMY-Y202S-G2           04, 108, 1010C-G           ral wiring, power source switc           subject to change without not           kept below 104°F D.B. (40°C           o b kept below 80%.	at protection is + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0 2.0 be-in-tube structure 52) Brazed .2) Brazed .2) Brazed .2) Brazed .2) Article Structure .2) Brazed .2) Brazed
Net weight Heat exchan HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional par	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y1           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 trelative humidity of the Heat Source Unit needs to be           The ambient trelative fumidity 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 wait Be sure to provide interlocking for the unit operation and wate	Over-hea R410A x 11 lb HC circuit 400 plat Copper pipe, tut 3/8 (9.5 7/8 (22 C7PS KES n Manual D External Drw kit: CMY-Y100CBK3 Y102LS-G2, CMY-Y202S-G2 J4, 108, 1010C-G al wiring, power source switc subject to change without not kept below 104°F D.B. (40°C o be kept below 80%. er inlet piping of the unit. r circuit.	at protection is + 1 oz (5.0 kg) 0 (181) 1.22 4.6 290 2.0 2.0 be-in-tube structure 52) Brazed .2) Brazed .2) Brazed .2) Brazed .2) Article Structure .2) Brazed .2) Brazed
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional par	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           LEV Autor           KE94L345           Installation           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 be The ambient relative numidity of the Heat Source Unit needs to be The autore.           Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material to the unit operation and wate	Over-hea R410A x 11 lb 4IC circuit 400 plai Copper pipe, tul 3/8 (9.5 7/8 (22 C7PS KES n Manual External Drw 1 kit: CMY-Y100CBK3 Y102LS-G2, CMY-Y202S-G2 04, 108, 1010C-G cal wiring, power source switc subject to change without not kept below 104°F D.B. (40°C o be kept below 80%. er inlet piping of the unit. r circuit. ket.	at protection is + 1 oz (5.0 kg) 0 (181) te type 1.22 4.6 290 2.0 be-in-tube structure 52) Brazed .2) Brazed .2) Brazed .2) Brazed .2) Brazed .2) An other items shall be re- ice. C D.B.)
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional par	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Head Source Twinning           joint: CMY-Y102SS-G2, CMY           Header: CMY-Y1           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.           Be sure to mount a strainer (more than 50 meshes) at the wai           Be sure to provide interlocking for the unit operation and wate           Install the supplied insulation material around both water and refination	Over-hea R410A x 11 lb HC circuit 400 plai Copper pipe, tul 3/8 (9.5 7/8 (22 C7PS KES n Manual D External Drw kti: CMY-Y100CBK3 Y102LS-G2, CMY-Y202S-G2 x1 08, 1010C-G cal wiring, power source switc subject to change without not kept below 104°F D.B. (40°C o be kept below 80%. er inlet piping of the unit. r circuit. ket. gerant piping, follow the insta	at protection at protection (181) (181) (181) (122) (1.2
Net weight Heat exchar HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional pa	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           LEV Autor           KE94L345           Installation           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 be The ambient relative numidity of the Heat Source Unit needs to be The autore.           Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material to the unit operation and wate	Over-hea R410A x 11 lb HC circuit 400 plai Copper pipe, tul 3/8 (9.5 7/8 (22 C7PS KES n Manual D External Drw kti: CMY-Y100CBK3 Y102LS-G2, CMY-Y202S-G2 x1 08, 1010C-G cal wiring, power source switc subject to change without not kept below 104°F D.B. (40°C o be kept below 80%. er inlet piping of the unit. r circuit. ket. gerant piping, follow the insta	at protection at protection (181) (181) (181) (122) (1.2
Net weight Heat exchan HIC circuit ( Pipe betwee distributor Drawing Standard Attachment Optional par Remarks	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Head Source Twinning           joint: CMY-Y102SS-G2, CMY           Header: CMY-Y1           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.           Be sure to mount a strainer (more than 50 meshes) at the wai           Be sure to provide interlocking for the unit operation and wate           Install the supplied insulation material around both water and refination	Over-hea R410A x 11 lb HC circuit 400 plai Copper pipe, tul 3/8 (9.5 7/8 (22 C7PS KES n Manual D External Drw kti: CMY-Y100CBK3 Y102LS-G2, CMY-Y202S-G2 x1 08, 1010C-G cal wiring, power source switc subject to change without not kept below 104°F D.B. (40°C o be kept below 80%. er inlet piping of the unit. r circuit. ket. gerant piping, follow the insta	at protection as + 1 oz (5.0 kg) 0 (181) te type 1.22 4.6 290 2.0 De-in-tube structure 52) Brazed .2) Br
Net weight Heat exchan HIC circuit ( Pipe betwee distributor Drawing Standard attachment Optional par Remarks	(HIC: Heat Inte	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	G I psi MPa in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Head Source Twinning           joint: CMY-Y102SS-G2, CMY           Header: CMY-Y1           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.           Be sure to mount a strainer (more than 50 meshes) at the wai           Be sure to provide interlocking for the unit operation and wate           Install the supplied insulation material around both water and refination	Over-hea R410A x 11 lb HC circuit 400 plai Copper pipe, tul 3/8 (9.5 7/8 (22 C7PS KES n Manual D External Drw kti: CMY-Y100CBK3 Y102LS-G2, CMY-Y202S-G2 x1 08, 1010C-G cal wiring, power source switc subject to change without not kept below 104°F D.B. (40°C o be kept below 80%. er inlet piping of the unit. r circuit. ket. gerant piping, follow the insta	at protection as + 1 oz (5.0 kg) 2 (181) 1 te type 1.22 4.6 290 2.0 be-in-tube structure 52) Brazed .2) Dravel .2)
Net weight Heat exchar Pipe betwee distributor Drawing Standard attachment Optional par Remarks	(HIC: Heat Inte en unit and arts	Inverter circuit Compressor Type x original charge Control Water volume in plate Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document Accessory	G I psi MPa in. (mm) in. (mm)	Over-heat protection           R410A x 11 lbs + 1 oz (5.0 kg)           LEV and I           400 (181)           plate type           1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KE94L345           Installatic           Details refer to           Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Header: CMY-Y11           Details on foundation work, duct work, insulation work, electrin 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 Heat Source Unit should not be installed at outdoor.           Be sure to provide interlocking for the unit operation and wate           Installation material around both water and refer           The Heat Source Unit should not be installed at outdoor.           Be sure to provide interlocking for the unit operation and wate           Installing insulation material around both water and refer           The cooling tower and the water circuit must be a closed circuit	Over-hea R410A x 11 lb HC circuit 400 plai Copper pipe, tul 3/8 (9.5 7/8 (22 C7PS KES n Manual D External Drw kti: CMY-Y100CBK3 Y102LS-G2, CMY-Y202S-G2 x1 08, 1010C-G cal wiring, power source switc subject to change without not kept below 104°F D.B. (40°C o be kept below 80%. er inlet piping of the unit. r circuit. ket. gerant piping, follow the insta	at protection as + 1 oz (5.0 kg) 0 (181) te type 1.22 4.6 290 2.0 De-in-tube structure 52) Brazed .2) Br

Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)	cfm	=m <sup>3</sup> /min x 35.31
2.Nominal heating conditions (Test conditions are based on AHRI 1230)	onn	111 /11111 X 00:01
Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)	lbs	=kg/0.4536
3.The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).		
Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)		
	1	
	*Above	specification data is

Indoor Mode	e Model			PQHY-P19	
				Non-Ducted	Ducted
Power source		*1	DTU/	3-phase 3-wire 5	
Cooling capa Nominal)	acity	^1	BTU/h kW	<u> </u>	
Nominal)		Power input	kW	11.	
	(575)	Current input	A	12	
[	(Rated)		BTU/h	184.	
	, í		kW	53	.9
		Power input	kW	10.57	11.54
		Current input	А	11.7	12.8
emp. range	e of	Indoor	W.B.	59~75°F (	
ooling		Inlet water	°F	50~113°F	
leating cap	bacity	*2	BTU/h kW	215,	
Nominal)		Power input	kW	63	
	(575)	Current input	A	12	
	(Rated)	ouron input	BTU/h	204.	
	` '		kW	59	
		Power input	kW	9.53	8.82
	(575)	Current input	А	10.6	9.8
emp. range	e of	Indoor	D.B.	59~81°F (	
eating		Inlet water	٩F	50~113°F	
ndoor unit		Total capacity		50~130% of heats	
onnectable		Model/Maximum quantit		P04~F	
	er level (measu	red in anechoic room) *3	dB <a> in. (mm)</a>	68 5/8 (15.86	
Refrigerant	eter	Liquid pipe Gas pipe	in. (mm) in. (mm)	5/8 (15.88 1-1/8 (28.5	
Set Model	etei	Gas pipe		1-1/0 (20.3	b) brazed
Aodel				PQHY-P96ZLMU-B	PQHY-P96ZLMU-B
	ircuit Ampacity		А	9	9
	Vercurrent Pro		A	15	15
irculating w	water	Water flow rate	G/h	1,522 +	+ 1,522
			G/min	25.4 +	+ 25.4
			m <sup>3</sup> /h	5.76 +	
			L/min	96 +	
			cfm	3.4 -	
		Pressure drop	psi	3.48	3.48
		On exeting values	kPa G/h	24 793 + 793 ~ 1	24
		Operating volume range	G/min	13.2 + 13.2 -	
		lange	m <sup>3</sup> /h	3.0 + 3.0 -	
Compressor	r	Type x Quantity	•	Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
		Starting method		Inverter	Inverter
		Motor output	kW	6.0	6.0
		Case heater	kW	0.035	0.035
		Lubricant		MEL32	MEL32
External finis			1	Galvanized steel sheets	Galvanized steel sheets 43-5/16 x 34-11/16 x 21-11/16
External dim	nension H x W	хD	in. mm	43-5/16 x 34-11/16 x 21-11/16 1,100 x 880 x 550	1,100 x 880 x 550
				High pressure sensor, High pressure switch at 4.15 MPa (601	
Protection de	levices	High pressure protection	1	psi)	psi)
		Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
		Compressor		Over-heat protection	Over-heat protection
Refrigerant		Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	R410A x 11 lbs + 1 oz (5.0 kg)
		Control		LEV and I	
			lbs (kg)	400 (181)	400 (181)
let weight				plate type	
	nger				plate type
	nger	Water volume in plate	G	1.22	1.22
	nger		1	1.22 4.6	1.22 4.6
	nger	Water volume in plate Water pressure Max.	l psi	1.22 4.6 290	1.22 4.6 290
leat exchar		Water pressure Max.	1	1.22 4.6 290 2.0	1.22 4.6 290 2.0
leat exchar	HIC: Heat Inte	Water pressure Max. r-Changer)	l psi MPa	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure
leat exchar IIC circuit (l Pipe betwee	HIC: Heat Inte	Water pressure Max.	l psi	1.22 4.6 290 2.0	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure 3/8 (9.52) Brazed
leat exchar IIC circuit (ł ipe betwee istributor	HIC: Heat Inte	Water pressure Max. r-Changer) Liquid pipe	l psi MPa in. (mm)	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure 3/8 (9.52) Brazed	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure 3/8 (9.52) Brazed 7/8 (22.2) Brazed
leat exchar IIC circuit (ł ipe betwee istributor	HIC: Heat Inte	Water pressure Max. r-Changer) Liquid pipe Gas pipe	l psi MPa in. (mm)	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure 3/8 (9.52) Brazed 7/8 (22.2) Brazed	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure 3/8 (9.52) Brazed 7/8 (22.2) Brazed
leat exchar	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure 3/8 (9.52) Brazed 7/8 (22.2) Brazed KB94 KE94L345 Installatio	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure 3/8 (9.52) Brazed 7/8 (22.2) Brazed C7PS KE94L345 n Manual
leat exchar	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring	l psi MPa in. (mm)	1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           KB94           KE94L345           Installatio           Details refer to	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     C7PS     KE94L345 n Manual     D External Drw
leat exchar	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     KE94L345     KE94L345     Installatio     Details refer to     Heat Source Twinning	1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           C7PS           KE94L345           n Manual           5 External Drw           g kit: CMY-Y100CBK3
leat exchar	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     KB94     KE94L345     Installatio     Details refer to     Heat Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS-	1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           C7PS           KE94L345           n Manual           0           External Drw           kit: CMY-Y100CBK3           -G2, CMY-Y202S-G2, CMY-Y302S-G2
IIC circuit (I ipe betwee istributor rrawing itandard ttachment )ptional par	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     KB94     KE94L345     Installatio     Details refer tc     Heat Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS     Header: CMY-Y10	1.22 4.6 290 2.0 Copper pipe, tube-in-tube structure 3/8 (9.52) Brazed 7/8 (22.2) Brazed C7PS KE94L345 n Manual b External Drw g kit: CMY-Y100CBK3 G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G
Heat exchar H <u>C circuit (I</u> Pipe betwee istributor Prawing Standard ttachment Dptional par	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     KE94L345     KE94L345     Installatio     Details refer to     Heat Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS     Header: CMY-Y1 Details on foundation work, duct work, insulation work, electric	1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           C7PS           KE94L345           n Manual           p kit: CMY-Y100CBK3           G2, CMY-Y202S-G2, CMY-Y302S-G2           04, 108, 1010C-G
Heat exchar HC circuit (I Pipe betwee listributor Drawing Standard Uttachment Dptional par	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     KE94L345     KE94L345     Installatio     Details refer to     Heat Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS-     Header: CMY-Y10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual.	1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           7/8 (22.2) Brazed           C7PS           KE94L345           n Manual           0 External Drw           g kit: CMY-Y100CBK3           G2, CMY-Y202S-G2, CMY-Y302S-G2           04, 108, 1010C-G           cal wiring, power source switch, and other items shall be re
Het weight Heat exchar HC circuit (I Pipe betwee distributor Drawing Standard attachment Dptional par Remarks	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     KE94L345     KE94L345     Installatio     Details refer to     Heat Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS     Header: CMY-Y1 Details on foundation work, duct work, insulation work, electric	1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           7/8 (22.2) Brazed           crPS           KE94L345           n Manual           p kit: CMY-Y100CBK3           62, CMY-Y202S-G2, CMY-Y302S-G2           04, 108, 1010C-G           cal wiring, power source switch, and other items shall be resubject to change without notice.
Heat exchar HC circuit (I Pipe betwee listributor Drawing Standard Uttachment Dptional par	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     KB94     KE94L345     Installatio     Details refer to     Heat Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS-     Header: CMY-Y10 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 be The ambient relative humidity of the Heat Source Unit needs to be	1.22       4.6       290       2.0       Copper pipe, tube-in-tube structure       3/8 (9.52) Brazed       7/8 (22.2) Brazed       C7PS       KE94L345       n Manual       D External Drw       j kit: CMY-Y100CBK3       -G2, CMY-Y202S-G2, CMY-Y302S-G2       04, 108, 1010C-G       zal wiring, power source switch, and other items shall be resubject to change without notice.       skept below 104°F D.B. (40°C D.B.)
Heat exchar HIC circuit († Pipe betwee listributor Drawing Standard titachment Dptional par	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (2.2.) Brazed     KB94     KE94L345     Installatio     Details refer tc     Meator Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS-Header: CMY-Y10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient renperature of the Heat Source Unit needs to be The Heat Source Unit should not be installed at outdoor.	1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           7/8 (22.2) Brazed           c7PS           KE94L345           n Manual           p kit: CMY-Y100CBK3           62, CMY-Y202S-G2, CMY-Y302S-G2           04, 108, 1010C-G           cal wiring, power source switch, and other items shall be resubject to change without notice.           kept below 104°F D.B. (40°C D.B.)           to be kept below 80%.
Heat exchar HIC circuit (ł Pipe betwee distributor Drawing Standard <u>attachment</u> Dptional par	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22         4.6         290         2.0         Copper pipe, tube-in-tube structure         3/8 (9.52) Brazed         7/8 (22.2) Brazed         KB94         KE94L345         Installatio         Details refer to Heat Source Twinning joint: CMY-Y102LS- Header: CMY-Y102LS- He	1.22           4.6           290           2.0           Copper pipe, tube-in-tube structure           3/8 (9.52) Brazed           7/8 (22.2) Brazed           C7PS           KE94L345           n Manual           0 External Drw           jkit: CMY-Y100CBK3           -G2, CMY-Y202S-G2, CMY-Y302S-G2           24, 108, 1010C-G           cal wiring, power source switch, and other items shall be resubject to change without notice.           kept below 104°F D.B. (40°C D.B.)           to be kept below 80%.           ter inlet piping of the unit.
Heat exchar HC circuit (I Pipe betwee listributor Drawing Standard Uttachment Dptional par	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (2.2.) Brazed     KB94     KE94L345     Installatio     Details refer tc     Meator Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS-Header: CMY-Y10 Details on foundation work, duct work, insulation work, electric ferred to the Installation Manual. Due to continuing improvement, above specifications may be The ambient renperature of the Heat Source Unit needs to be The Heat Source Unit should not be installed at outdoor.	1.22         4.6         290         2.0         Copper pipe, tube-in-tube structure         3/8 (9.52) Brazed         7/8 (22.2) Brazed         C7PS         KE94L345         n Manual         D External Drw         g kit: CMY-Y100CBK3         G2, CMY-Y202S-G2, CMY-Y302S-G2         04, 108, 1010C-G         cal wiring, power source switch, and other items shall be resubject to change without notice.         kept below 104°F D.B. (40°C D.B.)         to be kept below 80%.         ter inlet piping of the unit.         r circuit.
eat exchar	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     KB94     KE94L345     Installatio     Details refer tc     Heat Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS-     Header: CMY-Y10 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 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 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 around both water and refr	1.22         4.6         290         2.0         Copper pipe, tube-in-tube structure         3/8 (9.52) Brazed         7/8 (22.2) Brazed         C7PS         KE94L345         n Manual         D External Drw         kternal Drw         g KE94L345         A (00, CMY-Y302S-G2         A (108, 1010C-G         cal wiring, power source switch, and other items shall be resubject to change without notice.         kept below 104°F D.B. (40°C D.B.)         to be kept below 80%.         ter inlet piping of the unit.         r circuit.         ket.         igerant piping, follow the installation manual.
eat exchar	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (2.2.) Brazed     KB94     KE94L345     Installatio     Details refer tc     Ke94L345     Installatio     Details on foundation work, duct work, insulation work, electric     ferred to the Installation Manual.     Due to continuing improvement, above specifications may be     The ambient renperature 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 to material to the unused drain-soc	1.22         4.6         290         2.0         Copper pipe, tube-in-tube structure         3/8 (9.52) Brazed         7/8 (22.2) Brazed         C7PS         KE94L345         n Manual         o External Drw         jkit: CMY-Y100CBK3         -G2, CMY-Y202S-G2, CMY-Y302S-G2         24, 108, 1010C-G         cal wiring, power source switch, and other items shall be resubject to change without notice.         kept below 104°F D.B. (40°C D.B.)         to be kept below 80%.         ter inlet piping of the unit.         r circuit.         ket.         igerant piping, follow the installation manual.
eat exchar	<u>(HIC: Heat Inte</u> en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	l psi MPa in. (mm)	1.22     4.6     290     2.0     Copper pipe, tube-in-tube structure     3/8 (9.52) Brazed     7/8 (22.2) Brazed     KB94     KE94L345     Installatio     Details refer tc     Heat Source Twinning     joint: CMY-Y102SS-G2, CMY-Y102LS-     Header: CMY-Y10 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 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 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 around both water and refr	1.22       4.6       290       2.0       Copper pipe, tube-in-tube structure       3/8 (9.52) Brazed       7/8 (22.2) Brazed       C7PS       KE94L345       n Manual       D External Drw       g kit: CMY-Y100CBK3       G2, CMY-Y202S-G2, CMY-Y302S-G2       04, 108, 1010C-G       cal wiring, power source switch, and other items shall be resubject to change without notice.       kept below 104°F D.B. (40°C D.B.)       to be kept below 80%.       et nilet piping of the unit.       r circuit.       ket.       igerant piping, follow the installation manual.       it (water is not exposed to the atmosphere).
Heat exchar	THC: Heat Inte en unit and	Water pressure Max. r-Changer) Liquid pipe Gas pipe External Wiring Document	I psi MPa in. (mm) in. (mm)	1.22         4.6         290         2.0         Copper pipe, tube-in-tube structure         3/8 (9.52) Brazed         7/8 (22.2) Brazed         KE94L345         Installatio         Details refer to         Heat Source Twinning         joint: CMY-Y102SS-G2, CMY-Y102LS         Header: CMY-Y102LS         Headsource 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 ambient temperature of the Heat Source Unit needs to be         The ambient temperature of the Heat Source Unit needs to be         The able source Unit should not be installed at outdoor.         Be sure to provide interlocking for the unit operation and wate         Install the supplied insulation material	1.22         4.6         290         2.0         Copper pipe, tube-in-tube structure         3/8 (9.52) Brazed         7/8 (22.2) Brazed         C7PS         KE94L345         n Manual         D External Drw         kternal Drw         g KE94L345         A (00, CMY-Y302S-G2         A (108, 1010C-G         cal wiring, power source switch, and other items shall be resubject to change without notice.         kept below 104°F D.B. (40°C D.B.)         to be kept below 80%.         ter inlet piping of the unit.         r circuit.         ket.         igerant piping, follow the installation manual.

 1.Nominal cooling conditions (Test conditions are based on AHRI 1230)
 B I U/n
 = KW X 3,412

 Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)
 cfm
 =m<sup>3</sup>/min x 35.31

 Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)
 ibs
 = kg/0.4536

 3. The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).
 Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)
 = kg/0.4536

Heat Source				PQHY-P21		
Indoor Mode				Non-Ducted	Ducted	
Power sourc		*1	D711/	3-phase 3-wire 5		
Cooling capa (Nominal)	acity		BTU/h kW	216,		
(Norminal)		Power input	kW	14.		
	(575)	Current input	A	15		
1	(Rated)		BTU/h	206,		
	. ,		kW	60	).4	
		Power input	kW	13.09	13.88	
	(575)	Current input	А	14.6	15.4	
Temp. range	e of	Indoor	W.B.	59~75°F (		
cooling		Inlet water	°F	50~113°F		
Heating cap	acity	*2	BTU/h kW	243,		
(Nominal)		Power input	kW	12		
	(575)	Current input	A	12		
	(Rated)	ouriontinput	BTU/h	232		
	(		kW	68		
		Power input	kW	11.11	10.04	
	(575)	Current input	А	12.3	11.2	
Temp. range	e of	Indoor	D.B.	59~81°F (		
heating		Inlet water	°F	50~113°F		
Indoor unit		Total capacity		50~130% of heats		
connectable		Model/Maximum quantit		P04~F		
	er ievel (measu	ured in anechoic room) *3		72		
Refrigerant piping diame	ator	Liquid pipe Gas pipe	in. (mm) in. (mm)	<u>5/8 (15.88</u> 1-1/8 (28.5		
Set Model	eler	Gas pipe	in. (mm)	1-1/6 (20.5	bo) Brazed	
Model				PQHY-P120ZLMU-B	PQHY-P96ZLMU-B	
	rcuit Ampacity	1	А	13	9	
	vercurrent Pro		A	20	15	
Circulating v		Water flow rate	G/h	1,522 +		
5.			G/min	25.4 +		
			m <sup>3</sup> /h	5.76 +		
			L/min	96 -	+ 96	
			cfm	3.4 +		
		Pressure drop	psi	3.48	3.48	
			kPa	24	24	
		Operating volume	G/h	793 + 793 ~ 1		
		range	G/min	13.2 + 13.2 -		
Comprosoor	-	Type x Quantity	m <sup>3</sup> /h	3.0 + 3.0 - Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1	
Compressor		Starting method		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1	
		Motor output	kW	7.7	6.0	
		Case heater	kW	0.035	0.035	
		Lubricant		MEL32	MEL32	
External finis	sh			Galvanized steel sheets	Galvanized steel sheets	
External dim	nension H x W	x D	in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16	
			mm	1,100 x 880 x 550	1,100 x 880 x 550	
Protection d	evices	High pressure protection	ı	High pressure sensor, High pressure switch at 4.15 MPa (601	High pressure sensor, High pressure switch at 4.15 MPa (6	
		• • •	-	psi)	psi)	
		Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection	
		Compressor		Over-heat protection	Over-heat protection	
Refrigerant		Type x original charge		R410A x 11 lbs + 1 oz (5.0 kg)	R410A x 11 lbs + 1 oz (5.0 kg)	
Makuustaks		Control	lba (lc=)	LEV and I		
Net weight	aor		lbs (kg)	400 (181)	400 (181)	
Heat exchar	iyei	Water volume in plate	G	plate type 1.22	plate type 1.22	
		water volume in piate	1	4.6	4.6	
		Water pressure Max.	psi	290	290	
			MPa	2.0	2.0	
HIC circuit (I	HIC: Heat Inte	er-Changer)		Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure	
Pipe betwee		Liquid pipe	in. (mm)	1/2 (12.7) Brazed	1/2 (12.7) Brazed	
distributor		Gas pipe	in. (mm)	7/8 (22.2) Brazed	7/8 (22.2) Brazed	
Drawing		External		KB94		
		Wiring		KE94L345	KE94L345	
Standard		Document			n Manual	
attachment		Accessory		Details refer to		
Optional par	τs			Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS-		
Remarks				joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2 Header: CMY-Y104, 108, 1010C-G Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be r 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual.		
				The cooling tower and the water circuit must be a closed circu	in (water is not exposed to the atmosphere).	
latar:					11.5	
Notes:		ons (Test conditions are b			Unit converter BTU/h =kW x 3,412	

 Nominal cooling conditions (Test conditions are based on AHRI 1230) Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temper 2.Nominal heating conditions (Test conditions are based on AHRI 1230) Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)
 3.The sound values are sound power level (PWL) based on ISO 3744:20 Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet

based on AHRI 1230)	BIU/h	=kW x 3,412
B.), Inlet water temperature: 86°F (30°C)	cfm	=m <sup>3</sup> /min x 35.31
based on AHRI 1230)		
ature: 68°F (20°C)	lbs	=kg/0.4536
based on ISO 3744:2010 (r=3.5m).		
CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)		

Safety cases/ly         12         Entry         22000           (FRed)         Event input         AW         14.5.8           (FRed)         WW         16.50         1.6.7           (FRed)         WW         12.8.3         1.1.6           (FRed)         WW         12.8.3         1.1.6           (FRed)         WW         12.8.3         1.1.6           (FRed)         Does input         AW         12.8.3         1.3.0           (FRed)         Does input         AW         1.3.0         1.3.0           (FRed)         Does input         A.         2.0.1         1.3.0 </th <th>Heat Source</th> <th></th> <th></th> <th></th> <th>PQHY-P24</th> <th></th>	Heat Source				PQHY-P24		
Original         1         IDU         426.00           155         Description         N/L         10.3           155         Description         N/L         10.3           157         Description         N/L         10.7           157         Control         N/L         10.7           157         Control         N/L         10.7           157         Control         N/L         10.8           157         Control         N/L         10.8         10.8           157         Control         N/L         10.8         10.8           157 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
month         model         model <th< td=""><td></td><td></td><td></td><td>DT11/</td><td></td><td></td></th<>				DT11/			
Speer Paid         W         16.88           (15)         Dever Tayat         Buth         202.00           (15)         Dever Tayat         A         17.5         18.73           (15)         Current Tread         A         17.5         18.73           (15)         Current Tread         A         17.5         18.73           (15)         Current Tread         A         17.5         18.73           (16)         Dever Tayat         A         17.5         18.73           (16)         Dever Tayat         A         17.5         18.73           (17)         Dever Tayat         A         17.5         18.73           (17)         Dever Tayat         AW         18.22         18.73           (17)         Dever Tayat         AW         18.23         19.73           (17)         Dever Tayat         AW         18.63         19.75           (17)         Dever Tayat         AW         19.74         19.75           (17)         Dever Tayat         AW         19.74         19.75           (17)         Dever Tayat         A         19.74         19.74           (17)         Dever Tayat         19.74 <td></td> <td>acity</td> <td>*1</td> <td></td> <td></td> <td></td>		acity	*1				
(15)         Carent insid         A         113           (15)         Deam insid         NM         1572         10           (15)         Deam insid         NM         1572         10           (15)         Deam insid         NM         1572         10           (15)         Deam inside         NM         10         10         10           (15)         Deam inside         NM         10         10         10         10           (15)         Carent trend         AW         10	nominal)	ĺ	Bower input				
Filte         Filte         State         State         State           (rsb)         Construct         NV         15.73         16.72           (rsb)         State state         NV         16.72         16.72           (rsb)         Construct         NV         16.72         16.72           (rsb)         Construct         A         16.33         16.72           (rsb)         Construct         A         16.72         16.72           (rsb)         Construct         A         16.72         16.72           (rsb)		(575)					
W         0	Г		Current input				
Image: Section of the sectio		(rated)					
Int 200         Current ingul, A.         IT.5         Image         Iter.           India and the set of the set			Power input				
Unit         Wet wet         P         Operating Construction           (MINU)         200.00         AVX         70.1           (MINU)         200.00         AVX         70.1           (MINU)         200.00         AVX         70.1           (MINU)         200.00         10.2         10.2           (MINU)		(575)					
State         Construction         Construction <thconstruction< th="">         Construction</thconstruction<>	<sup>r</sup> emp. range	e of	Indoor	W.B.	59~75°F	15~24°C)	
United         United         Point Indiana           (PS5)         Carter tingel         A         14.3         14.3           (PS6)         Carter tingel         A         14.3         13.0           (PS6)         Carter tingel         A         14.3         13.0           (PS6)         Carter tingel         A         14.3         13.0           (PS6)         Carter tingel         A         14.3         3.0           (PS6)         Carter tingel         A         14.3         3.0           (PS6)         Carter tingel         A         14.3         3.0           (PS6)         Carter tingel         A         14.3         A           (PS6)         Carter tingel         N         POH/P 1202/MLB         A           (PS6)         Carter tingel         N         11.02         D         D           (PS6)         Carter tingel         N         11.02         D         D         D           (PS6)         Carter tingel         N         11.02         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D	cooling		Inlet water	٩F	50~113°F	(10~45°C)	
Description         NW         44.88           (False)         BUL         226.000           (FALSE)         BUL         226.000           (FALSE)         Carrent final         A           (FALSE)         CARRENT         A           (FALSE)         A         A           (FALSE)         A         A           (FALSE)         Carrent final         A           (FALSE)         Carrent final         A           (FALSE)         Carrent final         A		acity	*2				
eff         Constrained         A         112           Interventional         A         112         1137           Processing and a low of the stand	Nominal)						
IPset         Tub         228.000           r030         Downed lipidud         NW         17.0           r031         Downed lipidud         A         11.3         11.0           r031         Downed lipidud         A         11.3         11.0           r031         Downed lipidud         A         11.3         13.0           r030         Downed lipidud         P         0.0         10.0         10.0           r030         Downed lipidud         A         10.3         10.0         10.0           r030         Downed lipidud         A         10.0							
With         750           1570         Gurant Input         A           1670         Gurant Input         A           1670         Gurant Input         A           1671         Gurant Input         A           1672         HIGB         HIGB           1671         Gurant Input         A           1712         Gurant Input         A           1712         Gurant Input         A <tr< td=""><td>г</td><td></td><td>Current input</td><td></td><td></td><td></td></tr<>	г		Current input				
Image: Second and the second		(Rated)					
Light         Current input         A         14.3         13.0           Index         D.B.         99-817 (16-97C)         100-93C)           atlan         00-1004 of Index under         P         00-1004 of Index under         00-1004 of Index under           und generative         00-1004 of Index under         P         00-1004 of Index under         00-1004 of Index under           und generative         00-1004 of Index under         P         00-1004 of Index under         00-1004 of Index under           und generative         0         0.0         7.0         7.0         7.0           und generative         0         0.0         0.0         0.0         0.0           consult networks         0         0.0         0.0         0.0         0.0           consult networks         0         0.0         0.0         0.0         0.0         0.0           consult networks         0         0.0 </td <td></td> <td></td> <td>Power input</td> <td></td> <td></td> <td></td>			Power input				
mp:         mp: <thm:< th=""> <thm:< th=""> <thm:< th=""></thm:<></thm:<></thm:<>		(575)					
atto         Instruction         Pt         0.5113° (F10-45°C)           observation         ModelMaxman quarthy         0.0011         0.0012         0.0011           Instruction         ModelMaxman quarthy         0.0012         0.0012         0.0012           Integrated         Integrate         0.0012         0.0012         0.0012         0.0012           Integrated         Integrate         0.0012         0.0012         0.0012         0.0012           observation         0.0012	emn range						
Total capacity         Sol - 130% of headpoore unit capacity           wind power lowel (missured in acceptor (more) '3 de 3-40- forgerant         74.0           forgerant         in (mm)         5.8 (15.8 B) faced           bits definition         5.8 (15.8 B) faced         1.0           bits definition         5.8 (15.8 B) faced         1.0           bits definition         6.8 (15.8 B) faced         1.0           bits definition         6.0         1.0         1.0           bits definition         A         2.0         2.0           bits definition         A         2.0         2.0           bits definition         A         2.0         2.0           column Occount         A         2.0         2.0           column	eating	5 61					
Instruction         Model Measurian quantity         P04-P9650           offgerant         Lipid pipe         In (rm)         56 (15.68) fbrzed           offgerant         Lipid pipe         In (rm)         56 (15.68) fbrzed           integration         Saspe         In (rm)         14.78 (25.68) fbrzed           integration         A         20         20           integration         A         20         20           integration         A         20         20           integration         Circul Ampach         A         20         20           integration         Circul Ampach         A         20         20           integration         Circul Ampach         A         20         24           integration         Circul Ampach         11/32 (21/52)         24         24           Operating volum         Ghin         708 - 783 - 78 - 78         24         24           Operating volume         Ghin         708 - 783 - 72 - 72         1002 (21/52)         25           integration         HW         025         0.055         0.055           integration         HW         025         0.055         100 (25/50)           integratintegration	ndoor unit			•			
Image         Image <th< td=""><td>onnectable</td><td></td><td></td><td>у</td><td></td><td></td></th<>	onnectable			у			
One demote         Ges pipe         In. (mm)         1-18 (28.88) Brazed           odd         POHY-P120ZLMU8         POHY-P120ZLMU8         POHY-P120ZLMU8           odd         13         13         13           oxform         0.0         1.52 ± 1.522         20           cruality water         Operating volume         0.0         1.52 ± 1.522         20           offin         2.5 ± 2.5 4         0.0         2.4         3.4           offin         2.4 ± 3.4         2.4         2.4         2.4           Operating volume         Grinin         3.0 ± 3.0 + 7.2 ± 7.2         2.4         2.4           Operating volume         Grinin         1.0 ± 2.5 ± 1.52 ± 1.5 ± 1.7 ± 3.1 × ± 3.1 × ± 1.7         3.0 ± 3.0 + 7.2 ± 7.2         2.4           Operating volume         Grinin         1.0 ± 4.5 ± 1.5	ound powe	r level (measu	red in anechoic room) *3	dB <a></a>			
et Model         PQHY-P120ZJMU/B         PQHY-P120ZJMU/B         PQHY-P120ZJMU/B           Inimum Concurrent Protection         A         13         13           cruiting water         Valler flow rate         C/n         13         13           cruiting water         Water flow rate         C/n         1522 + 1522         1522           cruiting water         Valler flow rate         C/n         254 + 254         3.48           Chin         23 + 132         317 + 737         23         733 + 733 + 733 + 737 + 737           Chin         3.0 + 3.0 - 73 + 733 + 733 + 737 + 737         3.0 + 3.0 - 72 + 72         24           Chingin method         Inverter acroil hemetic compressor x 1         Inverter         Inverter         Inverter           Starting method         WW         7.7         7.7         7.7           Case heater         WW         0.035         0.035         0.035           offending heater         WW         0.035         0.035         0.0405           fermal dimension H × W x D         in         4.34 + 15 MP 4(60)         High pressure second, High 200 MS 300         1.000 MS 0.350         1.030	Refrigerant						
odd         POHX-P120ZUMU-B         POHX-P120ZUMU-B           astmum Ciccul Ampachty         A         13         13           astmum Ciccul Ampachty         A         20         20           crulating water         Water flow rate         Chr.         20         20           Control         Chr.         1522 + 1522         20         20           Control         Chr.         152 + 1524         254 + 254         3.48           Control         Chr.         703 + 703 - 1002 + 1.002         24           Control registry         Chr.         703 + 703 - 1002 + 1.002         24           Control registry         Chr.         703 + 703 - 1002 + 1.002         703 + 703 - 72 + 72           Starting method         Inverter scrol hemelic compressor x 1         Inverter scrol hemelic compressor x 1         Inverter scrol hemelic compressor x 1           Starting method         Inverter scrol hemelic compressor x 1         Inverter scrol hemelic compressor x 1         Inverter scrol hemelic compressor x 1           Case heater         WW         0.72         7.7         7.7           Case heater         WW         0.03         0.035         0.035           Control method         Inverter         Inverter         0.045         0.043 <tr< td=""><td></td><td>eter</td><td>Gas pipe</td><td>in. (mm)</td><td>1-1/8 (28.5</td><td>i8) Brazed</td></tr<>		eter	Gas pipe	in. (mm)	1-1/8 (28.5	i8) Brazed	
Inimum Count Angeatry         A         13         13           crudating water         Water flow rate         Grin         20         1522 + 1522           crudating water         Water flow rate         Grin         21         22           crudating water         Water flow rate         Grin         3.4 + 25.4         20           in Th         5.76 + 5.76         0         24         24           Comparing volume         Chin         3.4 + 3.4         3.48         24           Comparing volume         Chin         3.4 + 3.4         24         24           Compressor         Type x Quantity         Inverter scroll hermetic compressor x 1         Inverter         Inverter           Motor output         KW         0.035         0.035         0.035           Carenal finish         Gabranzed steel sheets         Gabranzed steel sheets         10.0 x 88 x 550           Carenal finish         In         4.5 + 10 × 4.1 × 1.4	Set Model						
Description         A         20	<u>Aodel</u>						
redating water Water flow rate							
Image: Size of the							
Iminia         5.76 + 5.76           Uminia         3.4 + 3.4           Pressure drop         jei           Operating volume         Gh.           Improvement         13.2 + 13.2 - 13.7 + 31.7           Operating volume         Gh.           Improvement         13.2 + 13.2 - 31.7 + 31.7           Operating volume         Girain           Improvement         Inverter scoll hermetic compressor x 1           Molor output         KW           Molor output         KW           Molor output         KW           Caste hered         KW           Caste hered         Galaviracia deel sheets           Caste hered         Galaviracia deel sheets           Galaviracia deel sheets         Galaviracia deel sheets           Galaviraci deel sheets <t< td=""><td>Sirculating w</td><td>vater</td><td>Water flow rate</td><td></td><td></td><td></td></t<>	Sirculating w	vater	Water flow rate				
Imm         96           A4 + 3.4         3.44 + 3.4           Pressure drop         jpi           A4 + 3.4         3.48           Operating volume         G/n           Imperating volume         G/n           Type X - 1002 + 1002							
dm         3.4 + 3.4           Pressure of pain         3.48           Operating volume         Gh.           range         Gmin           mage         13.2 + 13.2 + 31.7 + 31.7           starting method         Inverter scoll hermetic compressor x 1           More output         KW           Case heater         KW           Case heater         KW           Otociant         MEL32           Univerter coll         Galvanzed steel alheets           Galvanzed steel alheets         Galvanzed steel alheets           Galvanzed steel alheets <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>							
Pressure drop         psi         3.48         3.48         24         24           Operating volume range         G/h         799 + 793 + 102 + 102 + 102 + 102         24           ompressor         Type X Quantity         Inveter         3.0 + 3.0 - 7.2 + 7.2         3.0 + 3.0 - 7.2 + 7.2           Station method         Inveter         Inveter         Inveter         Inveter         1           Station method         Inveter         Inveter         7.7         7.7           Case heater         KW         0.035         0.035           demail dimension H x W x D         In         4.324/16 x 24-1116 x 24-1116 x 24-1116 x 24-1116 x 24-11176           demail dimension H x W x D         In         4.324/16 x 24-1116 x 24-116 x				-			
Image         Pa         24         24           Operating volume range         Ght Gmin.         703 + 703 - 1092 + 1092         1032 + 132 - 31.7 + 31.7           Ompressor         Type x Quantity         Inverter scoil hermetic compressor x 1         Inverter scoil hermetic compressor x 1         Inverter scoil hermetic compressor x 1           Mater output         KW         7.7         7.7           Case heater         KW         0.035         0.035           demand imension H x W x D         In.         445/16 x 34-11/16 x 21-11/16         445/16 x 34-11/16 x 21-11/16           demand imension H x W x D         In.         445/16 x 34-11/16 x 21-11/16         445/16 x 34-11/16 x 21-11/16           inverter circuit         Over-heat protection         High pressure sensor, High pressere sensor, High pressere sensor, High pressere sensor,			Pressure drop				
Operating volume range         Ch         793 + 793 - 1902 + 1902           ompressor         32 + 133 - 137 + 7417         30 - 30 - 72 + 72           ompressor         Type & Countity         Inverter         Inverter           Stafing method         Inverter         Inverter         Inverter           Aution unstood         Inverter         Inverter         Inverter           Advanced steels         Galvanized steels steels         Galvanized steel steels           Advanced steel         High pressure protection         High pressure sensor, High ressure sens							
mage         time         112+132-31.7 + 31.7           ompressor         Type x Quantity         Inverter scroll hormelic compressor x 1         Inverter scroll hormelic compressor x 1           Starting method         Inverter         Inverter         Inverter           Case heater         NW         7.7         7.7           Case heater         NW         0.035         0.035           demail finish         MK         0.035         0.035           demail finish         Galvanized steel sheets         Galvanized steel sheets         Galvanized steel sheets           demail finish         In         43-5/16 x 41.116 x 21-11/16         1.000 x 800 x 550         1.100 x 800 x 550           demail finish         In         43-5/16 x 41.116 x 510 mP (601         High pressure witch at 4.15 MP (601         High pre			Operating volume				
mpressor         mvter         Inverter scult result         Inverter scult hermelic compressor x1         Inverter scult hermelic compressor x1           Mador output         kW         0.035         0.035           Lubricant         Mellor output         W         0.035           Lubricant         Galvanized steel sheets         Galvanized steel sheets         Galvanized steel sheets           demail finish         Galvanized steel sheets         Galvanized steel sheets         Galvanized steel sheets           demail dimension H x W x D         in         43-516 x 34-1116 x 21-1116         21-116 x 21-11716           demail dimension H x W x D         in         43-516 x 34-1116 x 21-11716         21-116 x 21-11716           otection devices         High pressure sensor, High pressure				-			
Starting method         Inverter         Inverter           Motor output         WW         7.7         7.7           Case heater         WW         0.035         0.035           Lubricont         MEI 32         MEI 32           demail finish         Galvanized steel sheets         Galvanized steel sheets           ternal dimension H x W x D         in.         43-6/16 x 34-11/16 x 21-11/16         43-6/16 x 34-11/16 x 21-11/16           intm         1.100 x 880 x 500         1.100 x 880 x 500         1.100 x 880 x 550           otection devices         High pressure protection         High pressure switch at 4.15 MP gel)         pgl)           inverter circuit         Over-heat protection. Over-current protection         Over-heat protection         Pgl)           fright         Type x original charge         R410A x 11 lbs + 1 oz (5.0 kg)         R410A x 11 lbs + 1 oz (5.0 kg)           for the         Iss.(kg)         400 (181)         400 (181)         400 (181)           ea exchanger         In         4.6         4.6         4.6           Water volume in plate         G         1.02 x 800 x620         2.0         2.0           C.circuit (HIC: Heat Inter-Changer)         Coopper pipe, tube-in-tube structure         Coopper pipe, tube-in-tube structure         2.0         2			5				
Motor output         WW         7.7         7.7           Case heater         WW         0.035         0.035           Lubricant         MEL32         MEL32           demal finish         Galvanized steal sheets         Galvanized steal sheets           fernal dimension H x W x D         in.         43.9/16 x 34.11/16 x 21.11/16         43.9/16 x 34.11/16 x 21.11/16           fernal dimension H x W x D         in.         43.9/16 x 34.11/16 x 21.11/16         1.00 x 880 x 550           otection devices         High pressure protection         Fight pressure sensor, High pressu	Compressor		Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1	
Case heater         WW         0.035         0.035           tubricant         ME1.32         ME1.32         ME1.32           demail finish         Galvanized steel sheets         Galvanized steel sheets         Galvanized steel sheets           demail finish         1.100 x 880 x 550         1.100 x 880 x 550         1.100 x 880 x 550           olection devices         High pressure protection         High pressure sensor, High pressure switch at 4.15 MPa (601 High pressure sensor, High pressure switch at 4.15 MP (pa)           inverter circuit         Over-heat protection         Over-heat protection         Over-heat protection           figherant         Type x original charae         R410A x 11 hs + 1 or (5.0 kg)         R410A x 11 hs + 1 or (5.0 kg)           contol         Extender         LEV and HIC circuit         Water volume in plate (G         1.22           wight         1         4.6         4.6         4.6           Water volume in plate (G         1.22         1.22         1.22           Water volume in plate (G         1.0         4.6         4.6           Water pressure Max         pial         2.0         2.0           C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         1.22 and 4.6           tubuor         Gas pipe in . (mm)         12.12.			Starting method	-	Inverter	Inverter	
Lubricant         MEL32         MEL32           termal finish         Galvanized steel sheets         Galvanized steel sheets         Galvanized steel sheets           termal dimension H x W x D         in.         43-5/16 x 34-11/16 x 21-11/16         43-5/16 x 34-11/16 x 21-11/16           otection devices         High pressure sort, High pressure switch at 4.15 MP a (611         High pressure sensor, High pressure switch at 4.15 MP a (611           inverter circuit         Over-heat protection         Over-heat protection         Over-heat protection           compressor         Over-heat protection         Over-heat protection         Over-heat protection           figerant         Type x opinal charge         R410A x 11 lb s + 10 z (5.0 kg)         R410A x 11 lb s + 10 z (5.0 kg)           at weight         Ibs (kg)         400 (181)         400 (181)         400 (181)           et weight         Ibs (kg)         Plate hype         plate hype         1.122           et weight         Ibs (kg)         900         290         200         200           C circuit (HIC: Heat Inter-Changer)         Copper pipe, Lube-in-Lube structure         Copper pipe, Lube-in-Lube structure         Copper pipe, Lube-in-Lube structure         Copper pipe, Lube-in-Lube structure           e between unit at         Liquid pipe         Int2 (12.7) Brazed         172 (12.7) Brazed <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
demail finish         Galvanized steel sheets         Galvanized steel sheets           termal dimension H x W x D         in.         43-5/16 x 34-11/16 x 21-11/16         43-5/16 x 34-11/16 x 21-11/16           termal dimension H x W x D         in.         43-5/16 x 34-11/16 x 21-11/16         43-5/16 x 34-11/16 x 21-11/16           in.         1.100 x 880 x 550         1.100 x 880 x 550         1.100 x 880 x 550           otection devices         High pressure protection         Figh pressure switch at 4.15 MPa (601         High pressure sensor, High pressure switch at 4.15 MPa (501           inverter circuit         Over-heat protection, Over-current protection         Over-heat protection, Over-neat protection           figherant         Type x original charge         R410A x 11 lbs + 1 oz (5.0 kg)         R410A x 11 lbs + 1 oz (5.0 kg)           et weight         lbs (kg)         400 (181)         LEV and HIC circuit         1.22           at exchanger         lbs (kg)         400 (181)         4.6         4.6           Water volume in plate         G         1.22         1.22         2.0           isibular         Galvanized steel sheets         Copper pips. Lube-in-Lube structure         2.00         2.0           gas pipe         in. (mm)         1.22 2         1.22         1.22         1.22         1.22         1.22				kW			
dernal dimension H x W x D         in.         43:5/16 x 34-11/16 x 21-11/16         43:5/16 x 34-11/16 x 21-11/16           mm         1.100 x 880 x 550         1.100 x 880 x 550           otection devices         High pressure protection         Pipi         Pipi           Inverter circuit         Over-heat protection. Over-current protection. Over-current protection. Over-current protection. Over-neat protection. Over-heat protection. Over-current protection. Over-current protection. Over-current protection. Over-current protection. Over-heat protection. Over-heat protection. Over-heat protection. Over-current protection. Over-current protection. Over-current protection. Over-heat protection. Over-current protection. Over-heat protection. Over-heat protection. Over-heat protection. Over-current protection. Over-heat protection. Over-he			Lubricant				
Imm         1.100 x 880 x 550         1.100 x 880 x 550           otection devices         High pressure protection         High pressure sensor, High Pressu				F.			
High pressure protection         High pressure sensor, High pressure sentor, Liph pressure sensor, High pressure sensor, H	xternal dim	iension H x W	хD	-			
Outcound devides         High pressure protection         Over-heat protection         Over-heat protection         Over-heat protection           Inverter circuit         Over-heat protection         Over-heat protection         Over-heat protection         Over-heat protection           affigerant         Type x original charge         R410A x 11 lbs + 1 oz (5.0 kg)         R410A x 11 lbs + 1 oz (5.0 kg)         R410A x 11 lbs + 1 oz (5.0 kg)           at weight         Ibs (kg)         400 (181)         400 (181)         400 (181)           at exchanger         Ibs (kg)         400 (181)         400 (181)         400 (181)           at exchanger         Ibs (kg)         400 (181)         400 (181)         400 (181)           at exchanger         Ibs (kg)         A00 (181)         400 (181)         400 (181)           at exchanger         Ibs (kg)         A.6         4.6         4.6           Water pressure Max.         psi         200         200         20         2.0				mm			
Inverter circuit         Over-heat protection, Over-current protection         Over-heat protection           Grompressor         Over-heat protection         Over-heat protection         Over-heat protection           aftigerant         Type x original charge         R410A x 11 lbs + 1 oz (5.0 kg)         R410A x 11 lbs + 1 oz (5.0 kg)           at weight         Ibs (kg)         400 (181)         LEV and HIC circuit         400 (181)           at exchanger         Ibs (kg)         1.22         1.22         1.22           Water volume in plate         G         1.22         1.22           Water pressure Max         psi         290         290           Dep proje         Ibs (hm)         1/2 (12.7) Brazed         1/2 (12.7) Brazed           Stibutor         Gas pipe         in. (mm)         1/2 (12.7) Brazed         1/8 (22.2) Brazed           wing         External         KE94L345         KE94L345         KE94L345           Addressory         Details on foundation Manual         10stallation Manual         10stallation Manual           terred to the installation Manual         Installation Manual         10stallation Manual         10stallation Manual           addred         Document         Installation Manual         10stallation Manual         10stallation Manual <td< td=""><td>Protection de</td><td>evices</td><td>High pressure protection</td><td>۱</td><td></td><td></td></td<>	Protection de	evices	High pressure protection	۱			
Compressor         Over-heat protection         Over-heat protection           efrigerant         Type x original charge         R410A x 11 lbs + 1 oz (5.0 kg)         R410A x 11 lbs + 1 oz (5.0 kg)           et weight         Ibs (kg)         400 (181)         LEV and HIC circuit           et weight         Ibs (kg)         400 (181)         400 (181)           et weight         Ibs (kg)         400 (181)         400 (181)           eat exchanger         plate type         plate type         plate type           Water volume in plate         G         1.22         1.22           Water pressure Max         psi         290         290           C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           p between unit and         Liquid pipe         in. (mm)         1/2 (12.7) Brazed         1/2 (12.7) Brazed           avaing         External         KB94C7PS         KB94C7PS           wiring         KE94L345         KE94L345           andard         Document         Installation Manual           parts         Use installation Marual         1010C-G           plott: CMY-102SE-G2, CMY-Y202S-G2, CMY-Y302S-G2         Header: CMY-Y100CBK3			Invertor circuit				
Type x original charge         R410A x 11 lbs + 1 oz (5.0 kg)         R410A x 11 lbs + 1 oz (5.0 kg)           Control         LEV and HIC circuit         400 (181)         400 (181)           at weight         Ibs (kg)         400 (181)         400 (181)         400 (181)           aat exchanger         plate type         plate type         plate type         1.22           Water volume in plate         G         1.22         1.22         2.0           C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         2.0         2.0           C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         1/2 (12.7) Brazed         1/2 (12.7) Brazed         1/2 (12.7) Brazed           andard         Gas pipe         in. (mm)         1/2 (12.7) Brazed         7/8 (22.2) Brazed         7/8 (22.2) Brazed           andard         Document         Installation Manual         KE94L345         KE94L345         KE94L345           andard         Document         Installation Manual         Installation Manual         Installation Manual           ptional parts         Details on foundation work, duct work, insuitalion wing, inciting HV-1100CBR3         joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y102S-G2, CMY-Y102S-G2         Header         Header CMV-Y102CBR-G2 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
Control         LEV and HIC circuit           et weight         lbs (kg)         400 (181)         400 (181)           at exchanger         plate type         plate type           Water volume in plate         G         1.22         1.22           Water pressure Max.         psi         290         290           Water pressure Max.         psi         290         20           C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           pe between unit and         Liquid pipe         in. (mm)         1/2 (12.7) Brazed         1/2 (12.7) Brazed           stributor         Gas pipe         in. (mm)         1/8 (22.2) Brazed         7/8 (22.2) Brazed           awing         External         KB94C7PS         KE94L345         KE94L345           Wring         KE94L345         KE94L345         KE94L345           andard         Document         Installation Manual         External Drw           ptional parts         Petails refer to External Drw         Head Source Twinning kit: CMY-Y100CBK3           point: CMY-Y102S-G2, CMY-Y102LS-G2, CMY-Y102LS-G2, CMY-Y102LS-G2         CMY-Y102CB-G2           Header: CMY-Y104 (104, 101, 101C-G         Header: CMY-Y104 (104, 101, 101C-G           emarks	Refrigerant		001110100001			over near protoction	
et weight         Ibs (kg)         400 (181)         400 (181)           plate type         plate type         plate type           water volume in plate         G         1.22         1.22           I         4.6         4.6           Water pressure Max         psi         290         290           C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           Gas pipe         in. (mm)         1/2 (12.7) Brazed         1/2 (12.7) Brazed         1/2 (12.7) Brazed           awing         External         KB94C7PS         KB94C7PS         K94L345         andard           bccument         Accessory         Details refer to External Drw         KE94L345         KE94L345           andard         Document         Installation Manual         Accessory         Heat Source Twinning kit: CMV-Y1002K3           poinal parts         Joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2         Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, duct work, insulation work, duct work, insulation work, duct work, insulation work, insulation work, duct work, insulation work.         Details on foundation manual.           tree to the Installation Manual         Buter themperature of	goranı						
eat exchanger         plate type         plate type           Water volume in plate         G         1.22         1.22           Water volume in plate         jpi         290         290         290           C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         20         2.0           C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         20         2.0           Pe between unit and         Liquid pipe         in. (mm)         1/2 (12.7) Brazed         1/2 (12.7) Brazed         1/2 (12.7) Brazed           awing         External         KE94L345         KE94L345         KE94L345           andard         Document         Installation Manual         Installation Manual           Lachment         Accessory         Details refer to External Drw         Heat Source Twinning kit: CMY-Y102CB43           joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y302S-G2         Head*GCMY-Y102LS-G2, CMY-Y302S-G2         Head*GCMY-Y102LS-G2, CMY-Y302S-G2           emarks         Details on foundation work, joute work, insulation work, jelectrical wiring, power source switch, and other items shall b ferred to the Installation Manual.         Ducto continuing improvement, above specifications may be subject to change without notice.           The ambient relative h	Vet weight			lbs (ka)			
Water volume in plate         G         1.22         1.22           Water volume in plate         I         4.6         4.6           Water pressure Max.         psi         290         290           C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           ge between unit and         Liquid pipe         in. (mm)         1/2 (12.7) Brazed         1/2 (12.7) Brazed           stributor         Gas pipe         in. (mm)         1/2 (12.7) Brazed         7/8 (22.2) Brazed           andard         Document         KE94L345         KE94L345           andard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           ptional parts         Pleatils on foundation work, duct work, insulation work, duct work, insulation wirk, duct work, insulation wirk, 0.010C-G           emarks         Details on foundation work, duct work, insulation work, duct work, insulation wirk, 0.010C-G           emarks         Details on foundation work, duct work, insulation work, duct work, insulation work, duct work, insulation wirk, 0.010C-G           emarks         Details on foundation work duct work, insulation work, duct work, insulation work, duct work, insulation work, duct work, insulation wirkeds to be kept below 104°F D.B. (40° C D.B.)		nger		\			
Image: Note of the second se		-	Water volume in plate	G			
Water pressure Max.         psi MPa         290         290           C. circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           pe between unit and stributor         Liquid pipe         in. (mm)         1/2 (12.7) Brazed         1/2 (12.7) Brazed           gaving         External         KB94C7PS           Wiring         KE94L345         KE94L345           andard         Document         Installation Manual           lachment         Accessory         Details refer to External Drw           ptional parts         Heat Source Twinning kit: CMY-Y100CBK3 joint: CMY-Y102S-G2, CMY-Y102LS-G2, CMY-Y102CS-G2, CMY-Y302S-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b ferred to the Installation Manual.           Due to continuing improvement, above specifications may be subject to change without notice. The ambient relative humal.         Due to continuing improvement, above specifications may be subject 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 should not be installed and duotoor. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused frain-socket. When installing insulation material atom unused train-socket. When installing insulation material around both water and refigerant				1			
C circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           pe between unit and stributor         Liquid pipe         in. (mm)         1/2 (12.7) Brazed         1/2 (12.7) Brazed           gas pipe         in. (mm)         1/2 (12.7) Brazed         1/2 (12.7) Brazed         1/2 (12.7) Brazed           awing         External         KB94C7PS         7/8 (22.2) Brazed         7/8 (22.2) Brazed           andard         Document         Installation Manual         KE94L345         KE94L345           andard         Accessory         Details refer to External Drw         Heat Source Twinning kit: CMY-Y100CBK3 joint: CMY-Y102S-G2, CMY-Y102LS-G2, CMY-Y302S-G2           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b 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°F D.B. (40°C D.B.) The ambient 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 mount a strainer (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 circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed			Water pressure Max.	psi	290	290	
pe between unit and stributor       Liquid pipe       in. (mm)       1/2 (12.7) Brazed       1/2 (12.7) Brazed         graving       External       KB94C7PS         Wiring       KE94L345       KE94L345         andard       Document       Installation Manual         tachment       Accessory       Heat Source Twinning kit: CMY-Y100CBK3 joint: CMY-Y102S-G2, CMY-Y102CB-G2, CMY-Y02CB-G2, CMY-Y02CB-G2, CMY-Y02CB-G2, CMY-Y102CB-G2         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b 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°F D.B. (40°C D.B.) The Heat Source Unit should not be installed a toutdoor.         Be sure to provide interlocking for the unit operation and water ricruit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         tets:       Unit converter				MPa			
stributor       Gas pipe       in. (mm)       7/8 (22.2) Brazed       7/8 (22.2) Brazed         rawing       External       KB94C7PS         wing       KE94L345       KE94L345         andard       Document       Installation Manual         tachment       Accessory       Details refer to External Drw         ptional parts       Heat Source Twinning kit: CMY-Y100CBK3 joint: CMY-Y102S-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b ferred 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed at outdoor. Be sure to provide interlocking for the unit spent on advater circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         tes:       Unit converter							
External       KE94L345       KE94L345         andard       Document       Installation Manual         tachment       Accessory       Details refer to External Drw         ptional parts       Heat Source Twinning kit: CMY-Y100CBK3 joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2 Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b 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°F D.B. (40°C D.B.) The ambient 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 interlocking for the unit operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         eters:       Unit converter	•	en unit and					
Wring         KE94L345         KE94L345           andard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           ptional parts         Heat Source Twinning kit: CMY-Y100CBK3 joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b ferred 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit needs to be kept below 80%. The Heat Source Unit needs to the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	Istributor			ın. (mm)			
Document         Installation Manual           tachment         Accessory         Details refer to External Drw           ptional parts         Heat Source Twinning kit: CMY-Y100CBK3 join: CMY-Y102S-G2, CMY-Y102CS-G2, CMY-Y302S-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the uni operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).			Evternal				
tachment         Accessory         Details refer to External Drw           ptional parts         Heat Source Twinning kit: CMY-Y100CBK3 joint: CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	)rawing						
Peters         Heat Source Twinning kit: CMY-Y100CBK3 joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).           etes:         Unit converter	)rawing		Wiring				
joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2         Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall b         ferred 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°F D.B. (40°C D.B.)         The ambient relative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed at outdoor.         Be sure to 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.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         ttes:       Unit converter	Drawing Standard		Wiring Document				
Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.) The ambient 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 mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	orawing Standard ttachment	ts	Wiring Document		Details refer to	External Drw	
emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be forred to the Installation Manual.         Due to continuing improvement, above specifications may be subject to change without notice.         The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.)         The Heat Source Unit should not be installed at outdoor.         Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit.         Be sure to provide interlocking for the unit operation and water circuit.         Install the supplied insulation material around both water and refrigerant piping, follow the installation manual.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         tes:       Unit converter	rawing tandard ttachment	ts	Wiring Document		Details refer to Heat Source Twinning	e External Drw y kit: CMY-Y100CBK3	
The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). tes: Unit converter	rawing tandard ttachment	ts	Wiring Document		Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS	9 External Drw 9 kit: CMY-Y100CBK3 G2, CMY-Y202S-G2, CMY-Y302S-G2	
	orawing Standard ttachment	ts	Wiring Document		Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y10 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 to be The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wai Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material to the unused drain-soor	<u>e External Drw</u> <u>i</u> kit: CMY-Y100CBK3 G2, CMY-Y202S-G2, CMY-Y302S-G2 <u>04, 108, 1010C-G</u> cal wiring, power source switch, and other items shall be r subject to change without notice. the kept below 104°F D.B. (40°C D.B.) to be kept below 80%. er inlet piping of the unit. r circuit. ket.	
	tandard ttachment optional part	ts	Wiring Document		Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y11 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 tent to humidity of the Heat Source Unit needs The Autore Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wal Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material around both water and refr	External Drw kit: CMY-Y100CBK3 G2, CMY-Y202S-G2, CMY-Y302S-G2 J4, 108, 1010C-G cal wiring, power source switch, and other items shall be r subject to change without notice. kept below 104°F D.B. (40°C D.B.) o be kept below 80%. er inlet piping of the unit. r circuit. ket. igerant piping, follow the installation manual.	
$PUM \land 2 M $	Drawing itandard ttachment Optional part	ts	Wiring Document		Details refer to Heat Source Twinning joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y11 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 tent to humidity of the Heat Source Unit needs The Autore Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wal Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material around both water and refr	b External Drw j kit: CMY-Y100CBK3 G2, CMY-Y202S-G2, CMY-Y302S-G2 )4, 108, 1010C-G cal wiring, power source switch, and other items shall be r subject to change without notice. kept below 104°F D.B. (40°C D.B.) o be kept below 80%. er inlet piping of the unit. r circuit. ket. igerant piping, follow the installation manual. it (water is not exposed to the atmosphere).	

 1.Nominal cooling conditions (Test conditions are based on AHRI 1230)
 BTU/h
 =KW x 3,412

 Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)
 cfm
 =m<sup>3</sup>/min x 35.31

 2.Nominal heating conditions (Test conditions are based on AHRI 1230)
 Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)
 ibs
 =kg/0.4536

 3.The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).
 Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)
 ibs
 =kg/0.4536

Heat Source Model			PQHY-P28		
Indoor Model			Non-Ducted		ucted
Power source			3-phase 3-wire 5		
Cooling capacity	*1		288		
(Nominal)	Devues in put	kW	84		
(575)	Power input Current input	kW A	20		
(Rated)		A BTU/h	22		
(Rated)		kW	80		
	Power input	kW	20.11		2.67
(575)		A	22.4		25.2
Temp. range of	Indoor	W.B.	59~75°F (	15~24°C)	
cooling	Inlet water	°F	50~113°F	(10~45°C)	
leating capacity	*2		323		
Nominal)		kW	94		
	Power input	kW	17		
	) Current input	А	19		
(Rated)		BTU/h	304		
		kW	89		5.00
(676)	Power input	kW	15.48		5.36
	) Current input	A	17.2		17.1
Temp. range of neating	Indoor Inlet water	D.B. ⁰F	<u>59~81°F (</u> 50~113°F		
neating ndoor unit	Total capacity	1.12	50~113°F 50~130% of heats		
ndoor unit connectable	Model/Maximum quantit	v	50~130% of heats P04~F		
	ured in anechoic room) *3		71		
Refrigerant	Liquid pipe	in. (mm)	3/4 (19.0)		
piping diameter	Gas pipe	in. (mm)	1-3/8 (34.9		
Set Model				•	
Vodel			PQHY-P144ZLMU-B	PQHY-P	144ZLMU-B
Minimum Circuit Ampacit	y	А	15		15
Maximum Overcurrent Pi	rotection	А	25		25
Circulating water	Water flow rate	G/h	1,902 -		
		G/min	31.7 -	+ 31.7	
		m <sup>3</sup> /h	7.20 -		
		L/min	120 -		
		cfm	4.2 -		
	Pressure drop	psi	6.38		6.38
	<b>A 1 1</b>	kPa	44		44
	Operating volume	G/h	1,189 + 1,189 -		
	range	G/min m <sup>3</sup> /h	19.8 + 19.8 -		
	Turne y Quentity	m°/h	4.5 + 4.5 ~		matia compressor v 1
Compressor	Type x Quantity Starting method		Inverter scroll hermetic compressor x 1 Inverter		metic compressor x 1 verter
	Motor output	kW	9.5		9.5
	Case heater	kW	9.5		9.045
	Lubricant	NVV	MEL32		EL32
External finish	Edbriddin		Galvanized steel sheets		d steel sheets
External dimension H x V	VxD	in.	57-1/8 x 34-11/16 x 21-11/16		11/16 x 21-11/16
		mm	1,450 x 880 x 550		880 x 550
Dratastian devices	Link pressure protection	-	High pressure sensor, High pressure switch at 4.15 MPa (601	High pressure sensor, High p	
Protection devices	High pressure protection	ו	psi)		psi)
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection	, Over-current protection
	Compressor		Over-heat protection		at protection
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	R410A x 13 lb	os + 4 oz (6.0 kg)
	Control			HIC circuit	
Net weight		lbs (kg)	499 (226)	499	9 (226)
Heat exchanger		-	plate type		te type
	Water volume in plate	G	1.22		1.22
		1	4.6		4.6
	Water pressure Max.	psi	290		290
		MPa	2.0		2.0
HIC circuit (HIC: Heat Int			Copper pipe, tube-in-tube structure		be-in-tube structure
Pipe between unit and	Liquid pipe	in. (mm)	1/2 (12.7) Brazed		.7) Brazed
distributor	Gas pipe	in. (mm)	1-1/8 (28.58) Brazed		3.58) Brazed
Drawing	External Wiring		KE04L245		241.246
Standard	Document		KE94L345	n Manual	94L345
attachment	Accessory		Details refer to		
Optional parts			Heat Source Twinning		
			joint: CMY-Y102SS-G2, CMY-Y102LS		'302S-G2
				04, 108, 1010C-G	-
Remarks			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 ! The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wal Be sure to provide interlocking for the unit operation and wate Install the supplied insulation material around both water and refr	subject to change without not kept below 104°F D.B. (40°C to be kept below 80%. er inlet piping of the unit. r circuit. ket.	ice. C D.B.)
			When installing insulation material around both water and refr The cooling tower and the water circuit must be a closed circu		
			·		1
Notes:			•		Unit converter

1.N Inc 2.N Inc 3.T Te L ч

Iominal cooling conditions (Test conditions are based on AHRI 1230)	BTU/h	=kW x 3,412
door: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)	cfm	=m <sup>3</sup> /min x 35.31
Iominal heating conditions (Test conditions are based on AHRI 1230)		
door: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)	lbs	=kg/0.4536
he sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).		
est conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)		
	**	an addition data is

				2ZSLMU-B
ndoor Model Power source			Non-Ducted	Ducted
Cooling capacity	*1	BTU/h		75 V ±10% 60 Hz .000
Nominal)	I	kW		1.4
(on any	Power input	kW		.41
(5	75) Current input	А	26	5.1
(Rated)		BTU/h	298	,000
		kW		7.3
	Power input	kW	22.45	24.98
	75) Current input	A	25.0	27.8
emp. range of ooling	Indoor Inlet water	W.B. ⁰F		(15~24°C) (10~45°C)
leating capacity	*2			,000
Nominal)	-	kW		2.6
	Power input	kW		.11
(5	75) Current input	А	21	1.3
(Rated)		BTU/h		,000
		kW		7.9
-	Power input	kW	17.09	17.12
	75) Current input	A	19.0	19.0
emp. range of eating	Indoor Inlet water	D.B. ⁰F		(15~27°C) (10~45°C)
ndoor unit	Total capacity	1.1		ource unit capacity
onnectable	Model/Maximum quanti	ty		296/50
	easured in anechoic room) *3			2.5
Refrigerant	Liquid pipe	in. (mm)		5) Brazed
iping diameter	Gas pipe	in. (mm)	1-3/8 (34.5	93) Brazed
Set Model				
	14 -		PQHY-P168ZLMU-B	PQHY-P144ZLMU-B
<u>/linimum Circuit Ampa</u> /laximum Overcurrent		A	21 35	<u> </u>
Circulating water	Water flow rate	A G/h		+ 1,902
inculating water	Water now rate	G/min		+ 31.7
		m <sup>3</sup> /h		+ 7.20
		L/min		+ 120
		cfm		+ 4.2
	Pressure drop	psi	6.38	6.38
		kPa	44	44
	Operating volume	G/h	1,189 + 1,189 ·	~ 3,054 + 3,054
	range	G/min	19.8 + 19.8 -	~ 50.9 + 50.9
		m <sup>3</sup> /h		11.6 + 11.6
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
	Starting method	kW	Inverter	Inverter
	Motor output Case heater	kW	<u> </u>	<u>9.5</u> 0.045
	Lubricant	KVV	MEL32	MEL32
xternal finish	Eubhoum		Galvanized steel sheets	Galvanized steel sheets
xternal dimension H	x W x D	in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
		mm	1,450 x 880 x 550	1,450 x 880 x 550
Protection devices	High pressure protectio	n	High pressure sensor, High pressure switch at 4.15 MPa (601	
	- ingli procoaro prococa		psi)	psi)
	Inverter circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 13 lbs + 4 oz (6.0 kg)	R410A x 13 lbs + 4 oz (6.0 kg)
lot woight	Control	lbo (km)		HIC circuit
let weight leat exchanger		lbs (kg)	499 (226)	499 (226)
cal chonanyer	Water volume in plate	G	plate type 1.22	plate type 1.22
	trate. volume in plate	Ĭ	4.6	4.6
	Water pressure Max.	psi	290	290
		MPa	2.0	2.0
IC circuit (HIC: Heat			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and		in. (mm)	5/8 (15.88) Brazed	5/8 (15.88) Brazed
istributor	Gas pipe	in. (mm)	1-1/8 (28.58) Brazed	1-1/8 (28.58) Brazed
	External			C7PT
Drawing	Wiring		KE94L345	KE94L345
-				on Manual o External Drw
Standard	Document			g kit: CMY-Y200CBK2
Standard ttachment	Document Accessory			
Standard			joint: CMY-Y102SS-G2, CMY-Y102LS	-G2, CMY-Y202S-G2, CMY-Y302S-G2
itandard ttachment			joint: CMY-Y102SS-G2, CMY-Y102LS	-G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G
Standard ttachment			joint: CMY-Y102SS-G2, CMY-Y102LS	04, 108, 1010C-G
Standard ttachment Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual.	04, 108, 1010C-G cal wiring, power source switch, and other items shall be re
Standard ttachment Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual. Due to continuing improvement, above specifications may be	04, 108, 1010C-G cal wiring, power source switch, and other items shall be re subject to change without notice.
Standard ttachment Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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	04, 108, 1010C-G cal wiring, power source switch, and other items shall be re subject to change without notice. e kept below 104°F D.B. (40°C D.B.)
Standard ttachment Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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	04, 108, 1010C-G cal wiring, power source switch, and other items shall be re subject to change without notice. e kept below 104°F D.B. (40°C D.B.)
Standard ttachment Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wa	04, 108, 1010C-G cal wiring, power source switch, and other items shall be re subject to change without notice. e kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit.
Standard ttachment Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 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	04, 108, 1010C-G cal wiring, power source switch, and other items shall be re subject to change without notice. e kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit. er circuit.
Standard ttachment Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 The mather telative 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 Install the supplied insulation material to the unused drain-soo	04, 108, 1010C-G cal wiring, power source switch, and other items shall be re subject to change without notice. a kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit. er circuit. cket.
itandard ttachment Optional parts			joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 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 around both water and refi	04, 108, 1010C-G cal wiring, power source switch, and other items shall be re subject to change without notice. e kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit. er circuit. cket. igerant piping, follow the installation manual.
tandard ttachment ptional parts			joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 The mather telative 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 Install the supplied insulation material to the unused drain-soo	04, 108, 1010C-G cal wiring, power source switch, and other items shall be re subject to change without notice. e kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit. er circuit. cket. igerant piping, follow the installation manual.

 1. Nominal cooling conditions (Test conditions are based on AHRI 1230)
 BTU/h
 =kW x 3,412

 Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)
 cfm
 =m<sup>3</sup>/min x 35.31

 Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)
 lbs
 =kg/0.4536

 3. The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).
 Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)
 \*Above specification data is subject to rounding variation.

	e Model			PQHY-P33	6ZSLMU-B		
Indoor Mode				Non-Ducted		ucted	
Power sourc				3-phase 3-wire 5			
Cooling capa	acity	*1		336,000			
(Nominal)		-	kW	98			
		Power input	kW	26			
т		Current input	А	29			
	(Rated)		BTU/h	320			
			kW	93			
		Power input	kW	25.14		7.11	
		Current input	A	28.0		30.2	
Temp. range	e of	Indoor	W.B.	59~75°F (			
cooling		Inlet water	°F	50~113°F			
Heating capacity (Nominal)		*2			378,000		
		kW		110.8			
		Power input Current input	kW	20.77 23.1			
ī		Current input	A				
	(Rated)		BTU/h kW	360			
		Device input	kW			0.10	
	(575)	Power input		18.49		9.10	
		Current input	A	20.6		21.3	
Femp. range neating	= 01	Indoor Inlet water	D.B. ⁰F	59~81°F (			
ndoor unit		Inlet water	I T	50~113°F			
		Total capacity		50~130% of heatsource unit capacity			
connectable		Model/Maximum quantity		P04~P96/50			
	i ievei (measi	ured in anechoic room) *3		73.0 3/4 (19.05) Brazed			
Refrigerant	otor	Liquid pipe	in. (mm) in. (mm)				
piping diame Set Model	elei	Gas pipe	_ n.i. (mmi)	1-5/8 (41.2	oj blazeu		
Set Model Model				PQHY-P168ZLMU-B		168ZLMU-B	
	rcuit Ampacity	1	А	21	PQRI-P	21	
	vercurrent Pr		A	35		35	
Circulating w		Water flow rate	G/h	35 1,902 -	1 002	35	
	valei	water now rate	G/min	31.7 -			
			m <sup>3</sup> /h	7.20 -			
			L/min				
			-	120 -			
		Dressure dren	cfm	4.2 -		s 29	
		Pressure drop	psi kPa	6.38		6.38	
		On and the second second		44	0.054 + 0.054	44	
		Operating volume	G/h		$1,189 + 1,189 \sim 3,054 + 3,054$ $19.8 + 19.8 \sim 50.9 + 50.9$		
		range	G/min				
<u></u>		m <sup>3</sup> /h		4.5 + 4.5 ~ 11.6 + 11.6			
Compressor	f	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1		
		Starting method		Inverter	<u>Inverter</u> 11.0		
		Motor output kW Case heater kW Lubricant V x D in. mm		<u>11.0</u> 0.045		0.045	
External finis	ah			MEL32 Galvanized steel sheets	MEL32 Galvanized steel sheets		
	sn 1ension H x W			57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16		
External uni				1,450 x 880 x 550		( 880 x 550	
			•	High pressure sensor, High pressure switch at 4.15 MPa (601			
Protection de	evices	High pressure protection		psi)	High pressure sensor, High pressure switch at 4.15 psi) Over-heat protection, Over-current protect		
				Over-heat protection, Over-current protection			
Defrigerent		Compressor		Over-heat protection R410A x 13 lbs + 4 oz (6.0 kg)		at protection	
Refrigerant		Type x original charge		R410A X 13 IDS + 4 0Z (6.0 Kg) LEV and I		os + 4 oz (6.0 kg)	
Net weight		Control	lbs (kg)	499 (226)		9 (226)	
	ager		lbs (kg)				
Heat exchan	iyei	Water volume in plate	G	plate type 1.22		te type 1.22	
		water volume in plate	1	4.6		4.6	
		Water pressure Max.	psi	4.0		4.6 290	
		water pressure Max.	psi MPa	290		290 2.0	
HC circuit /	HIC: Heat Inte		IVIF a	2.0 Copper pipe, tube-in-tube structure		2.0 be-in-tube structure	
Pipe betwee		Liquid pipe	in. (mm)	5/8 (15.88) Brazed		88) Brazed	
distributor	an unit ai lu	Gas pipe	in. (mm)	1-1/8 (28.58) Brazed		8.58) Brazed	
Drawing		External	()				
		Wiring		KB94C7PT KE94L345 KE94L345		94L345	
Standard		Document					
		Accessory		Installation Manual Details refer to External Drw			
Optional parts				Heat Source Twinning kit: CMY-Y200CBK2			
- paona pai				joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2			
					04, 108, 1010C-G		
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.				
				When installing insulation material around both water and refr The cooling tower and the water circuit must be a closed circu			
						Unit converter	
Notes:							

1.N /**T** Ы

1.Nominal cooling conditions (Test conditions are based on AHRI 1230)	BTU/h	=kW x 3,412
Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)	cfm	=m <sup>3</sup> /min x 35.31
2.Nominal heating conditions (Test conditions are based on AHRI 1230)	onn	111 /1111 × 00.01
Indoor: 68°F D.B. (20°C D.B.), Inlet water temperature: 68°F (20°C)	lbs	=kg/0.4536
3.The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).	1	
Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)	1	
	* 4 hours	anagification data is

Spectron         NV         32.3           (Pack)         Data         32.3           (Pack)         Data         32.3           (Pack)         Data         32.4           (Pack)         Data         32.4           (Pack)         Data         32.4           (Pack)         Data         32.4           (Pack)         Careat insul         A           (Pack)         A         Careat insul           (Pack)         Careat insul         A           (Pack)         Careat insul         A           (Pack)         Careat insul         A           (Pack)         Careat in	Heat Source M	lodel				0ZSLMU-B	
ording overlay         1         2000           (123)         Description         NA							
Normal         NV         1055           (Pacer Input (PS)         NV         224.5           (PS)         (PS)         (PS)		tv	*1	BTU/h			
(b)         Construment         A.         State           (c)         Description         MM         22.28         (00.0         20.11           (c)         Description         MM         30.4         30.4         22.21         (00.0           (c)         Description         MM         30.4         30.4         30.2         (00.0           (c)         Description         MM         30.4         30.4         30.7         (00.0	Nominal)	,					
Partial         STUD.         Status         Status<							
W         U			Current input				
Image: Description of the second se	(Ra	ated)					
International A         384         0.22           International A         384         0.22           International A         0.81         0.91           International A         0.81         0.91           International A         0.91         0.91           Internato			Power input				
catego capacity         PF         09-113F [F0-45°C)           sering capacity         30 M         10.0           Sering capacity         30 M         10.0           (50)         Cancer treat         A           (50)         Cancer treat         Cancer treat           (50)         Cancer treat <td></td> <td>(575)</td> <td></td> <td></td> <td></td> <td></td>		(575)					
entrop         2         B1Uh         405.000           immedia         Poster team         MV         22.85           immedia         AV         22.9           immedia         AV         24.9	Гетр. range of	f	Indoor		59~75°F	(15~24°C)	
Image         Image         Image         Image           152         Carse Impd         A	cooling						
Image lipid         WW         22.85           Provide lipid         A.         368.00           (PR)         A.         368.00           (PR)         A.         20.5           (PR)         Control lipid         A.           (PR)		ty	*2				
LCD3         Content mund.         A         224           Protect prod.         Tab.         20.01           Protect prod.         A         20.01           rem.         113.1         20.01           constraint         A         20.00           constraint         A         20.00           constraint         F         0.00           constraint         F         0.00         0.00           constraint         F         0.00         0.00         0.00           constraint         F         0.00         0.00         0.00         0.00           constraint         F         0.00         0.00         0.00         0.00           constraint         F	nominal)	1	Power input		22.85		
With         Output         With         Output		(575)					
Instrum         Event page         NM         20.56         20.71           energ, rung of the content and contential         bdoor         0.8	(Ra	ated)	•	BTU/h	386	,000	
Intro         23.1           index         Display         Construction         23.1           index         Display         Separation         Separation         Separation           index water         P         Separation         Separation         Separation           construction         Display         Display         Separation         Separation           construction         Display         Display         Display         Separation           construction         Display         Display         Display         Display           co		1					
Index value         Index value         D.B.         0.9-817 (15-27C)           odor unit         Total capacity         30-1307 vf. fhestbource and capacity           odor unit         Total capacity         72.5           and graver free! (measured in an ethole room) '3 (de Arch)         72.5           and graver free! (measured in an ethole room) '3 (de Arch)         72.5           and graver free! (measured in an ethole room) '3 (de Arch)         72.5           and graver free! (measured in an ethole room) '3 (de Arch)         72.5           and graver free! (measured in an ethole room) '3 (de Arch)         72.5           and graver free!         A         72.5           and graver free!         A         72.5           and graver free!         A         72.5           and graver free?         A         73.5           and graver free?         A         73.5           and graver free         A		(575)					
andmode         Instruction         FF         0.9-113F (DI-45CO)           order Unit         Total capabity         0.9-113F (DI-45CO)         0.9-113F (DI-45CO)           oncedabitie         Model Maximum quantify         0.9-113F (DI-45CO)         0.9-113F (DI-45CO)           oncedabitie         Model Maximum quantify         0.9-113F (DI-45CO)         0.9-113F (DI-45CO)           oncedabitie         Linki size         in (cm)         0.9-113F (DI-45CO)           officerant         Linki size         in (cm)         0.9-113F (DI-45CO)           officerant         Linki size         0.9-113F (DI-45CO)         0.9-113F (DI-45CO)           officerant         A         4.5         3.5         0.9-113F (DI-45CO)           officerant         A         4.5         0.9-113F (DI-45CO)         0.9-113F (DI-45CO)           officerant         Miner A-         4.5         4.5         4.5         4.5           officerant         A         4.5         4.5         4.5	Form range of						
doc unit         Tate capacity         Sec 33% of heatsoca unit causaly           conscieble         Model/Maxmurg unity         PO-P0650           conscieble         Nodel/Maxmurg unity         PO-P0650           conscieble         in (mm)         A1100010000000000000000000000000000000							
Interface         Model Maximum quantity         P04-P98250           offgerant         Load Size         II. (mm)         34 (19.05) [Strate           offgerant         Load Size         II. (mm)         1-86 (42.01) [Strate           offgerant         Load Size         II. (mm)         1-86 (42.01) [Strate           adminum Cozu Algonia         A         45         35           aimum Cozu Algonia         A         45         35           insulant Cozu Algonia         A         45         35           incluints         Cozu Algonia         1.102 - 102         10           offgerant         1.102 - 102         10         44           Operating volume         Gh         1.102 - 102         6.38           offgerant         1.108 - 1.198 - 3.054 + 3.054         44         44           ompressor         Size         6.38         42 + 12         10           offgerant         Taze X Quantity         Inverter scral hemolic compressor x1         10 + 116         10           offgerant         Taze X Quantity         Inverter scral hemolic compressor x1         10 + 10         10 + 10           offgerant         Taze X Quantity         Inverter scral hemolic compressor x1         Inverter scral hemolic compressor x1	ndoor unit						
effersont         Luad Date         In. (mm)         341 (19 0.5) Brazed           et Model	onnectable		Model/Maximum quantit				
Disc Stanter         Gas gope         In, (mm)         1-56 (41.28) Brazed           codel         POHY-P102ZLMU-8         POHY-P102ZLMU-8         POHY-P102ZLMU-9           codel         POHY-P102ZLMU-8         POHY-P102ZLMU-9         21           codel         A         25         35           codel         State frame         31         31         35           cole         Comm         31         31         35           cole         Comm         31         32         35           cole         Comm         31         32         35           cole         Comm         32         42         42           Pressure drop         pig         6.33         6.33         4           compressor         Coperating volume         Con         1.189 + 1189 - 50.09         4.4           Mode codpo         MW         0.2.4         1.049.5           commercisor X         Inverter scroll hermetic compressor X 1         Inverter scroll hermetic compressor X 1         Inverter scroll hermetic compressor X 1           Mode codpo         MW         0.2.4         10.42.2         Media           comm         Codpo         1.450 x 8.4107 (x 2.111616         1.510 x 4.1101 (x 2.11167		vel (measu		1			
et Model         POHY-P192ZUMU-B         POHY-P192ZUMU-B         POHY-P192ZUMU-B           Inimum Ovecaner Protection         A         26         21           Inimum Ovecaner Protection         A         45         1002 + 1002           Inimum Ovecaner Protection         A         45         1002 + 1002           Initiality water         Water flow rate         Initiality water         1002 + 1002           Initiality water         Initiality water         Initiality water         63           Initiality water         Initiality water         63         44         44           Operating volume         Grain         1138 + 1189 - 503 + 509         45         45           Initiality water         Initiality water         Initiality water         45 + 45 - 118 + 11.8         46           Operating volume         Grain         Initiality water         100 + 1189 - 503 + 509         45 + 45 - 118 + 11.8           Initiality water         Grain         Initiality water         Initiality water         100 + 1110 - 100 + 1110 + 110 +	Refrigerant						
odd         POHY-P1922/MU8         POHY-P1922/MU8         POHY-P1922/MU8           aximum Circul Angeachy         A         26         21           aximum Circul Angeachy         A         45         35           incluiding water         Quert flow rate         Quert Angeachy         31         73           Pressure drop         Quert Angeachy         43         42         6.38           Operating volume         Quert Angeachy         44         43         44           Operating volume         Quert Angeachy         43         43         43           Operating volume         Quert Angeachy         43         44         44           Operating volume         Quert Angeachy         45         44         110           Case header         MV         118         118         118         118         118         116         110 </td <td></td> <td>ſ</td> <td>Gas pipe</td> <td>in. (mm)</td> <td>1-5/8 (41.</td> <td>20) Brazed</td>		ſ	Gas pipe	in. (mm)	1-5/8 (41.	20) Brazed	
Internal Grant Ampeanty         A         20         21           internal dimensional system         A         92         32           incubiting water         Mater flow rate         Grant         1,002 + 1.002         32           incubiting water         Mater flow rate         Grant         32         32           incubiting water         Mater flow rate         Grant         32         32           incubiting water         Mater flow rate         Grant         32         32           incubiting water         Immediation and rate rate of the rat	Set Model Nodel				POHY-P1927I MI I-B	POHY-P1687I MIL-B	
admum Overcurrent Protection         A         45         35           including water         Water flow rate         Grim         31.7         37.7         31.7           including water         Grim         31.7         31.7         31.7         31.7         31.7           Including water         Imm         10.0         13.7         31.7         31.7         31.7           Including water         Imm         6.38         42.44.2         6.38         44.4         45         44         44         45         44         44         45         44         44         45         44         45         44         45         44         45         44         45         44         45         44         45         45         44		it Ampacitv		A			
Image: Continue of the second secon					45	35	
m²n         T20 + 120           cfm         42 + 42           Pressure drop         pii           Age         6.33           Correling volume         Ch           arge         Ch           Christian         118 + 1189 - 3.054 + 3.054           198 + 1189 - 3.054 + 3.054         108 + 148 - 3.05 + 50.9           Correling volume         Christian           Correling volume         Christian           Starting method         Inverter scroll hermelic compressor x 1           Midro output         WW           Case heater         WW           Case heater         WW           Case heater         MM2           Case heater         WW           Case heater         Case heater           Metrical         Metrical           Case heater         NW           Case heater         Case heater           Metrical         Case heater           Metrical         Case heater           Case heater         NW           mm         1.450.450.4116 x 21.116 x 21.	Circulating wate	er	Water flow rate	G/h			
Imm         120 + 100           Arr         42 + 42           Pressure drop         jeit         6.38         6.38           Operating volume         Grim         11,189 + 1180 - 3.054 + 3.054           Targe Arrive         11,189 + 1180 - 5.05 + 3.054         4.5 + 4.5 - 11.6 + 11.6           ompressor         Trace A Quantity         Inverter scoll hemetic compressor X 1         Inverter scoll hemetic compressor X 1           Stating method         Inverter         Inverter scoll hemetic compressor X 1         Inverter scoll hemetic compressor X 1           Stating method         Inverter         Galvanized steel heets         Galvanized steel heets           Kernal finish         Galvanized steel heets         Galvanized steel heets         Galvanized steel heets           ternal dimetion H XW XD         in         57.148.34.1145 x 21.111/16 x 21.							
Image: constraint of the second sec							
Pressure drop         bits         6.38         6.38           Operating volume         Ch         1.189 + 1189 - 3.054 + 3.054           ange         Ch         1.189 + 1198 - 5.09 + 5.0.8           ompressor         Type x Quantity         Inverter scroll hermetic compressor x 1           Starting method         Inverter scroll hermetic compressor x 1           Motor output         KW         12.4           Case heater         KW         0.045           Lubricant         Galvanized steel sheets         Galvanized steel sheets           Case heater         KW         0.045         0.045           ternal finish         Galvanized steel sheets         Galvanized steel sheets         Galvanized steel sheets           concording term         Fn         57.18 x 34.1116 x 21.111/6         57.18 x 34.1116 x 21.111/6           rotacion devices         High pressure sensor, High pre							
Image         Image         Pa         44         44           Operating volume range         Operating volume (2nn)         Operating volume (2nn)         1/189 + 1189 - 3.054 + 3.054           ompressor         Type X Quantity         Inverter scoil hermetic compressor x 1           Mater output         KW         12.4         11.0           Case heater         KW         0.045         0.045           Lubricant         Galvanized steel heets         Galvanized steel heets         Galvanized steel heets           xternal finish         mm         1.45 x 41.11/6 x 21.11/16         57.118 x 34.11/16 x 21.11/16           rotection devices         High pressure protection         High pressure sensor, High pressesensor, Highe pressure sensor, Highe pressure sensor, Highe press			Pressure drop				
inge         Grmin         19.8 + 10.8 - 50.9 + 50.9           ompressor         Type x Quantity         Inverter scroll hermelic compressor x 1         Inverter           Starting method         Inverter         Inverter         Inverter           Starting method         Inverter         Inverter         Inverter           Gase heater         KW         12.4         11.0           Case heater         KW         0.45         0.045           Lubricant         Galvanized steel sheets         Galvanized steel sheets           Atternal finish         Galvanized steel sheets         Galvanized steel sheets           Inverter circuit         Over-heat protection         Ver-heat protection         Ver-heat protection           Compressor         Over-heat protection         Over-heat protection         Over-heat protection           Control         Lbb 16 (a)         496 (220)         496 (220)           et weight         Ibs (kg)         46 (b)         46           Vater volume in plate <t< td=""><td></td><td></td><td>r roodaro arop</td><td></td><td></td><td></td></t<>			r roodaro arop				
more sor         more more sor 1         1.5 + 4.5 - 11.6 + 11.6           ompressor         Type x Counity         Inverter scol hermetic compressor x 1         Inverter scol hermetic compressor x 1           Starting method         Inverter         Inverter         11.0           Case heater         KW         0.045         0.045           Lubricant         Galvanized steel sheets         Galvanized steel sheets         Galvanized steel sheets           viternal dimension H x W x D         in         57.18.3 × 11.116 x 21.116         57.14.83 × 1.116 x 21.116           mm         1.450 x 800 x 550         1.450 x 800 x 550         1.450 x 800 x 550           rotection devices         High pressure protection         High pressure sensor, High pressure			Operating volume				
Type x Quantity         Inverter         Inverter         Inverter         Inverter           Starting method         Inverter         Inverter         Inverter         Inverter           Addro cutput         kW         12.4         11.0           Case heater         kW         0.045         0.045           Lubricant         Galvanized steal sheats         Galvanized steal sheats         Galvanized steal sheats           Atternal dimension H x W x D         in         57-108 x 34-11/16 x 21-11/16         57-108 x 34-11/16 x 21-11/16           Atternal dimension H x W x D         in         1.450 x 800 x 550         1.450 x 800 x 550           Inverter circuit         Over-heat protection         Verternat protection         Verternat protection           Compressor         Over-heat protection         Over-heat protection         Over-heat protection           Control         Lave x (Galva)         490 (226)         490 (226)           Vater volume in plate         G         1.22         1.22           Inverter scrighal charge         Palat (type         plate type         plate type           Vater volume in plate         G         1.22         1.22           Inverter scrighal charge         200         200           Circuit (HIC:Heat Inter-Chanee) <td></td> <td></td> <td>range</td> <td></td> <td>19.8 + 19.8 -</td> <td>~ 50.9 + 50.9</td>			range		19.8 + 19.8 -	~ 50.9 + 50.9	
Starting method         Inverter         Inverter           Motor output         WW         12.4         11.0           Case heater         WW         0.045         0.045           Lubricant         Galvanized steel sheets         Galvanized steel sheets         Galvanized steel sheets           Xternal dimension H x W x D         in         57-18 x 34-11/16 x 21-11/16         57-18 x 34-11/16 x 21-11/16           Total Composition         In         57-18 x 34-11/16 x 21-11/16         1.450 x 800 x 550           rotextion         In         57-18 x 34-11/16 x 21-11/16         1.450 x 800 x 550           rotextion         In         1.450 x 800 x 550         1.450 x 800 x 550           rotextion         In         1.450 x 800 x 550         1.150 MPa (50)           rotextion         Palvesure protection         palv         palve           Inverter circuit         Over-heat protection         Over-heat protection         Over-heat protection           Compressor         Over-heat protection         Over-heat protection         Over-heat protection           Control         External         1.99 (220)         499 (220)         499 (220)           eat exchanger         palet type         palet type         2.0         2.0           Cortrol <t< td=""><td>-</td><td></td><td colspan="2">• •</td><td colspan="3"></td></t<>	-		• •				
Motor output         WW         12.4         11.0           Case heater         WW         0.045         0.045           Lubricant         Galvanized steel sheets         Galvanized steel sheets           Kernal dimension H x W x D         in.         57-1/8 x 34-11/16 x 21-11/16         57-1/8 x 34-11/16 x 21-11/16           firmal dimension H x W x D         in.         57-1/8 x 34-11/16 x 21-11/16         57-1/8 x 34-11/16 x 21-11/16           rotection devices         High pressure protection         1.450 x 880 x 550         1.450 x 880 x 550           Invest opiand charge         Ref opiand charge         Compressore service 14-15 MP; pisi)         pisi)           Invest opiand charge         R410A x 13 lbs + 4 oz (6.0 kg)         Control         Over-heat protection, Over-current protection           Control         Ibs (kg)         499 (226)         EV and HIC circuit         402 (6.0 kg)           Water volume in plate         0         1.22         1.22         1.22           Vater opiand charge         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           De between unit and         Liquid pipe         1.16 (8.58) Brazed         1.16 (8.26) Brazed           Circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         2.00 <td>Compressor</td> <td></td> <td colspan="2"></td> <td></td> <td></td>	Compressor						
Case heater         W/         0.045         0.045           Lubricant         ME132         ME132         ME132           stemal dimension H x W x D         In         57-1/8 x 34-11/16 x 21-11/16         57-1/8 x 34-11/16 x 21-11/16           xtemal dimension H x W x D         In         1.450 x 804 x 500         1.450 x 800 x 500           rotection devices         High pressure protection         High pressure sensor, High pressure switch at 15 MPa (601         High pressure sensor, High pressure switch at 15 MPa (601         Part 17 (200 x 800 x 500 x							
Lubricant         ME1.32         ME1.32           kternal finish         Galvanized steel sheats         Galvanized steel sheats           kternal dimension H x W x D         in         57-1/8 x 34-11/16 x 21-11/16         57-1/8 x 34-11/16 x 21-11/16           mm         1.450 x 880 x 550         1.450 x 880 x 550         1.450 x 880 x 550           inverter circuit         New Formation H x W x D         in         1.450 x 880 x 550           inverter circuit         Over-heat protection         Paily pressure sensor, High pressure switch at 4.15 MPa (601         High pressure sensor, High pressure switch at 4.15 MPa (601         High pressure switch at 4.15 MPa (601         High pressure switch at 4.15 MPa (601         Messure protection         Over-heat protecion         Intel word         Intel word			Case heater kW				
In         57-1/8 x34-11/16         57-1/8 x34-11/16 x21-11/16           mm         1,450 x880 x550         1,450 x880 x550           rotection devices         High pressure protection         High pressure sensor, High Pressure High High Pressure Sensor, High Pressure, High Pressur							
Imm         1.450 x 880 x 550         1.450 x 880 x 550           protection devices         High pressure protection         High pressure sensor, How Pressure Sensor, How Pressor,	External finish						
High pressure protection         High pressure sensor, High pressure switch at 4.15 MPa (601 psi)         High pressure switch at 4.15 MPa (601 psi)           Inverter circuit         Over-heat protection         Over-heat protection         Over-heat protection           Compressor         Over-heat protection         Over-heat protection         Over-heat protection           Control         Control         Over-heat protection         Over-heat protection           Control         LEV and HIC circuit         499 (226)         499 (226)           et weight         plate type         plate type         plate type           Vere ressure Max.         psi         200         200           Circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           pipe deveen unit and structure         Liquid pipe         in. (mm)         518 (15.88) Brazed         518 (15.88) Brazed           rawing         External         KB94C7PT         KB94C7PT           Wring         KE94L345         KE94L345         KE94L345           tachment         Accessory         Details on foundation work, duct work, insulation work, electrical wring, power source switch, and other items shall be fred to the installed at outdoor.           eranded         Document.         Extern	External dimens	sion H x W	x D				
Interference         Interference         psil         psil           Inverter circuit         Over-heat protection         Over-heat protection         Over-heat protection           Compressor         Over-heat protection         Over-heat protection         Over-heat protection           effigerant         Type x original charge         R410A x 13 lbs + 4 oz (6.0 kg)         R410A x 13 lbs + 4 oz (6.0 kg)           et weight         Ibs (kg)         499 (226)         LEV and HIC circuit           et weight         Ibs (kg)         palate type         palate type           et exchanger         palate type         palate type         palate type           Water volume in plate         G         1.22         1.22           Water pressure Max.         psi         200         20           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           ga between unit and         Liquid pipe         in. (mm)         5/8 (15.88) Brazed         1/18 (28.58) Brazed           rawing         External         KE94L345         KE94L345         KE94L345           tachment         Accessory         Details refer to External Drw         HeatSource Twining kit: CMY-Y200CH22           pion: CMY-Y1024-SC2, CMY-Y1024-SC2, CMY-Y2002-SC42, CMY-Y2002-SC4				mm			
Inverter circuit         Over-heat protection, Over-current protection         Over-heat protection, Over-current protection           Compressor         Over-heat protection         Over-heat protection         Over-heat protection           effigerant         Type x original charge         R410A X 13 lbs + 4 oz (6.0 kg)         R410A X 13 lbs + 4 oz (6.0 kg)           et weight         Ibs (kg)         499 (226)         499 (226)           eat exchanger         Ibs (kg)         122         1.22           Water volume in plate         I         4.6         4.6           Water pressure Max.         psi         290         290           IC circuit (HIC: Heat Inter-Changer)         Cooper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           pb ebtween unit and         Liquid pipe         in. (mm)         5/8 (15.88) Brazed         5/8 (15.88) Brazed           stibutor         Gas pipe         in. (mm)         1.16 (26.58) Brazed         1.18 (26.58) Brazed           point Arand         Document         KE94L345         KE94L345         KE94L345           tackment         Accessory         Details refor to Kread Drow         Heat Source Twinning kit: CMY-Y200CBK2           plonal parts         Joint: CMY-V102LS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y202S-G2, CMY-Y202S-G2, CMY-Y202S-G2, CMY-Y202S-G2, CMY-Y202S-G2, CMY-Y202	Protection device	ces	Inverter circuit				
Compressor         Over-heat protection         Over-heat protection           effigerant         Type x original charge         R410A x 13 lbs + 4 oz (6.0 kg)         R410A x 13 lbs + 4 oz (6.0 kg)           et weight         Ibs (kg)         499 (226)         LEV and HIC circuit           et weight         Ibs (kg)         499 (226)         499 (226)           eat exchanger         plate type         plate type         plate type           Water volume in plate         G         1.22         1.22           (Cricuit (HIC: Heat Inter-Changer)         Copper pise, tube-in-tube structure         Copper pise, tube-in-tube structure         Copper pise, tube-in-tube structure           (Cricuit (HIC: Heat Inter-Changer)         Copper pise, tube-in-tube structure         Copper pise, tube-in-tube structure         5/8 (15.88) Brazed         5/8 (15.88) Brazed           (Ring I)         S/8 (15.88) Brazed         1.18 (28.58) Brazed         1.18 (28.58) Brazed         1.18 (28.58) Brazed           (Wring         KE94L345         KE94L345         KE94L345           (Bachard)         Document         Installation Manual           tachment         Accessory         Heat Source Twinning kit: CMY-Y200CBK2           joint: CMY-Y102SS-G2, CMY-Y202S-G2, CMY-Y202S					. ,	. ,	
Type x original charge         R410A x 13 lbs + 4 oz (6.0 kg)         R410A x 13 lbs + 4 oz (6.0 kg)           Control         LEV and HIC circuit           et weight         lbs (kg)         499 (226)         499 (226)           eat exchanger         plate type         plate type         plate type           Water volume in plate         G         1.22         1.22           Water pressure Max.         psi         290         290           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           ga pipe         in. (mm)         5/8 (15.88) Brazed         5/8 (15.88) Brazed           rawing         External         KE94L345         KE94L345           tandard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           plonal parts         Freed to the Installation Manual         Duce continuing introvement, above specifications may be subject to change without notice.           The ambient temperature of the Heat Source Unining kit: CMY-Y102S-G2, CMY-Y1							
Control         LEV and HIC circuit           et weight         Ibs (kg)         499 (226)         499 (226)           eat exchanger         Ibs (kg)         122         122           Water volume in plate         G         1.22         1.22           Water volume in plate         G         1.22         1.22           Water volume in plate         Impa         2.0         2.0           Corcuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           ip between unit and         Liquid pipe         in. (mm)         5/8 (15.88) Brazed         5/8 (15.88) Brazed           stributor         Gas pipe         in. (mm)         1-1/8 (28.58) Brazed         1-1/8 (28.58) Brazed           rawing         External         KE94L345         KE94L345         KE94L345           tandard         Document         Installation Manual         Installation Manual           tachment         Accessory         Details refor to External Drw           plonal parts         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be fared to the installation Manual.           Due to confinuing improvement, above specifications may be subject to change without notice.         The amb	Refrigerant						
eat exchanger           eat exchanger         plate type         plate type           Water volume in plate         G         1.22         1.22           Water pressure Max.         psi         280         280           Vater pressure Max.         psi         20         2.0           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           ipe between unit and         Liquid pipe         in. (mm)         5/8 (15.88) Brazed         5/8 (15.88) Brazed           stributor         Gas pipe         in. (mm)         5/8 (15.88) Brazed         1.18 (28.56) Brazed           rawing         External         KE94L345         KE94L345           tandard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           ptional parts         Heat Source Twinning kit: CMY-Y200CBK2           pint: CMY-Y102KS-G2, CMY-Y102KS-G2, CMY-Y302S-G2         Heat Source Unit needs to be kept below 104*F D.B. (Adv°C D.B.)           emarks         Details on foundation work, duct work, insulation work, electrical wring, power source switch, and other items shall be fired to the Installation Manual.           Ducto continuing improvement, above specifications may be subject to change without notice.         The ambient relative humidithy of the Heat Source Unit needs to be ke							
Water volume in plate         G         1.22         1.22           Image: Inter-Changer         1         4.6         4.6           Water pressure Max.         psi         290         290           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         2.0         2.0           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         2.0         2.0           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         2.0         2.0           ipe between unit and         Liquid pipe         in. (mm)         5/8 (15.88) Brazed         1-1/8 (28.58) Brazed         1-1/8 (28.58) Brazed           rawing         External         KE94L345         KE94L345         KE94L345           tandard         Document         Instaliation Manual         Ke94L345         Ke94L345           tandard         Accessory         Details refer to External Drw         Heat Source Twinning kit: CMY-Y200CBK2         joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2         Header: CMY-Y104, 108, 1010C-G         Heat Source Unit should not work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred to the Installation Manual         Due to con	Net weight			lbs (kg)			
Image: Construct of the state of t	Heat exchanger	r					
Water pressure Max.         psi MPa         290         290           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           ipe between unit and stributor         Liquid pipe         in, (mm)         5/8 (15.88) Brazed         5/8 (15.88) Brazed           gas pipe         in, (mm)         11/8 (28.58) Brazed         5/8 (15.88) Brazed         11/8 (28.58) Brazed           rawing         External         KE94L345         KE94L345           Wiring         KE94L345         KE94L345           tandard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           ptional parts         Heat Source Twinning kit: CMY-Y200CBK2           joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2         Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred 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 of the unit. Be sure to provide interlocking of the unit. Be sure to provide inte			vvater volume in plate	G			
MPa         2.0           IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           ipe between unit and         Liquid pipe         in. (mm)         5/8 (15.88) Brazed         5/8 (15.88) Brazed           stibutor         Gas pipe         in. (mm)         11/8 (28.58) Brazed         1-1/8 (28.58) Brazed           rawing         External         KB94C7PT         KB94C7PT           Wring         KE94L345         KE94L345           tandard         Document         Installation Manual           tandard         Accessory         Details refer to External Drw           ptional parts         Pipe in: CMY-Y102LS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2           giont: CMY-Y102LS-G2, CMY-Y102LS-G2, CMY-Y302S-G2, CMY-Y302S-G2         Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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 80%.           The ambient temperature of the Heat Source Unit needs to be kept below 80%.           The aubient tempole insulation material to the unused drain-socket.           When installing insulation materi			Water pressure Max	nsi			
IC circuit (HIC: Heat Inter-Changer)         Copper pipe, tube-in-tube structure         Copper pipe, tube-in-tube structure           ipe between unit and stributor         Liquid pipe         in. (mm)         5/8 (15.88) Brazed         5/8 (15.88) Brazed           gas pipe         in. (mm)         1-1/8 (28.58) Brazed         1-1/8 (28.58) Brazed         1-1/8 (28.58) Brazed           rawing         External         KE94L345         KE94L345           tandard         Document         Installation Manual           tachment         Accessory         Details refer to External Drw           ptional parts         Head Source Twinning kit: CMY-Y2002BK2 joint: CMY-Y102S-G2, CMY-Y202S-G2, CMY-Y302S-G2           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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"F D.B. (40"C D.B.) The ambient 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 mount a strainer (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. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).							
stributor       Gas pipe       in. (mm)       1-1/8 (28.58) Brazed       1-1/8 (28.58) Brazed         rawing       External       KB94C7PT         Wiring       KE94L345       KE94L345         tandard       Document       Installation Manual         tackment       Accessory       Details refer to External Drw         ptional parts       Heat Source Twinning kit: CMY-Y200CBK2 joint: CMY-Y102LS-G2, CMY-Y102LS-G2, CMY-Y202S-G2         Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred 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°F D.B. (40°C D.B.) 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 round both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         otes:       Unit converter	HIC circuit (HIC	: Heat Inte	r-Changer)				
External       KB94C7PT         Wiring       KE94L345       KE94L345         tandard       Document       Installation Manual         tachment       Accessory       Details refer to External Drw         Heat Source Twinning Kit: CMY-Y200CBK2 joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2 Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred 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 80%. The Heat Source Unit should not be installed at outdoor. Be sure to movide 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. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         etes:       Unit converter	•	unit and					
Wiring         KE94L345         KE94L345           tandard         Document         Installation Manual           Accessory         Details refer to External Drw           ptional parts         Heat Source Twinning kit: CMY-Y200CBK2 joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to 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. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).				in. (mm)			
tandard         Document         Installation         Manual           tachment         Accessory         Details refer to External Drw           ptional parts         Heat Source Twinning kit: CMY-Y200CBK2 joint: CMY-Y102S-G2, CMY-Y202S-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).							
tachment         Details refer to External Drw           ptional parts         Heat Source Twinning kit: CMY-Y200CBK2 joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2 Header: CMY-Y104, 108, 1010C-G           emarks         Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).			vviring				
ptional parts       Heat Source Twinning kit: CMY-Y200CBK2         joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y302S-G2       Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.)         The ambient relative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed at outdoor.         Be sure to provide interlocking for the unit operation and water circuit.         Install the supplied insulation material around both water and refrigerant piping, follow the installation manual.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         ets:       Unit converter	Drawing		Document				
joint: CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2         Header: CMY-Y104, 108, 1010C-G         emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be ferred to the Installation Manual.         Due to continuing improvement, above specifications may be subject to change without notice.         The ambient trenter temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.)         The ambient relative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed at outdoor.         Be sure to 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.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         etes:       Unit converter	Drawing Standard						
emarks       Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be 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°F D.B. (40°C D.B.)         The ambient relative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed at outdoor.         Be sure to mount a strainer (more than 50 meshes) at the water circuit.         Install the supplied insulation material to the unitsed drain-socket.         When installing insulation material around both water and refrigerant piping, follow the installation manual.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	Drawing Standard ttachment				Heat Source Twinning		
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°F D.B. (40°C D.B.)         The ambient relative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed at outdoor.         Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit.         Be sure to provide interlocking for the unit operation and water circuit.         Install the supplied insulation material to the unused drain-socket.         When installing insulation material around both water and refrigerant piping, follow the installation manual.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	orawing standard ttachment				joint: CMY-Y102SS-G2, CMY-Y102LS	-G2, CMY-Y202S-G2, CMY-Y302S-G2	
Due to continuing improvement, above specifications may be subject to change without notice.         The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.)         The ambient relative humidity of the Heat Source Unit needs to be kept below 80%.         The Heat Source Unit should not be installed at outdoor.         Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit.         Be sure to provide interlocking for the unit operation and water circuit.         Install the supplied insulation material to the unused drain-socket.         When installing insulation material around both water and refrigerant piping, follow the installation manual.         The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).         Dates:	Drawing Standard Ittachment Dptional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1	-G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G	
The ambient temperature of the Heat Source Unit needs to be kept below 104°F D.B. (40°C D.B.) The ambient relative humidity of the Heat Source Unit needs to be kept below 80%. The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to mount a strainer (more than 50 meshes) at the 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. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). tes:	Drawing Standard attachment Dptional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 Details on foundation work, duct work, insulation work, electri	-G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G	
The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	Drawing Standard attachment Dptional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 Details on foundation work, duct work, insulation work, electri ferred to the Installation Manual.	-G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G cal wiring, power source switch, and other items shall be	
Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	Drawing Standard attachment Optional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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	G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G cal wiring, power source switch, and other items shall be subject to change without notice. e kept below 104°F D.B. (40°C D.B.)	
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. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	Drawing Standard attachment Optional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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	G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G cal wiring, power source switch, and other items shall be subject to change without notice. e kept below 104°F D.B. (40°C D.B.)	
Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	Drawing Standard attachment Optional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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.	-G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G cal wiring, power source switch, and other items shall be subject to change without notice. s kept below 104°F D.B. (40°C D.B.) to be kept below 80%.	
The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere).	distributor Drawing Standard attachment Optional parts Remarks				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 The Heat Source Unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the wa	-G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G cal wiring, power source switch, and other items shall be subject to change without notice. a kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit.	
betes: Unit converter	Drawing Standard attachment Dptional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 bu 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 Install the supplied insulation material to the unused drain-soo	G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G cal wiring, power source switch, and other items shall be subject to change without notice. a kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit. er circuit. sket.	
	Drawing Standard ttachment Dptional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 provide interlocking for the unit operation and wate Install the supplied insulation material around both water and refi	G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G cal wiring, power source switch, and other items shall be subject to change without notice. a kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit. r circuit. sket. igerant piping, follow the installation manual.	
	Drawing Standard <u>Stachment</u> Dptional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 provide interlocking for the unit operation and wate Install the supplied insulation material around both water and refi	G2, CMY-Y202S-G2, CMY-Y302S-G2 04, 108, 1010C-G cal wiring, power source switch, and other items shall be subject to change without notice. a kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit. r circuit. sket. igerant piping, follow the installation manual.	
	Drawing Standard attachment Dptional parts				joint: CMY-Y102SS-G2, CMY-Y102LS Header: CMY-Y1 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 provide interlocking for the unit operation and wate Install the supplied insulation material around both water and refi	G2, CMY-Y202S-G2, CMY-Y302S-G2 O4, 108, 1010C-G cal wiring, power source switch, and other items shall be subject to change without notice. e kept below 104°F D.B. (40°C D.B.) to be kept below 80%. ter inlet piping of the unit. rr circuit. sket. igerant piping, follow the installation manual. uit (water is not exposed to the atmosphere).	

 1.Nominal cooling conditions (Test conditions are based on AHRI 1230)
 BTU/h
 =kW x 3,412

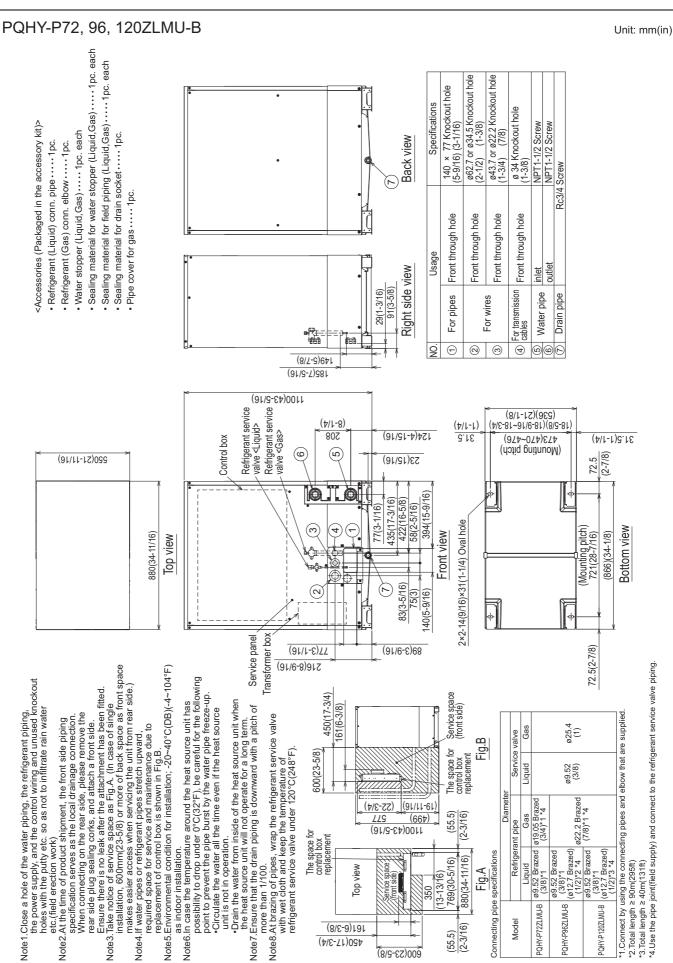
 Indoor: 81°F D.B./66°FW.B. (27°C D.B./19°C W.B.), Inlet water temperature: 86°F (30°C)
 cfm
 =m<sup>3</sup>/min x 35.31

 2.Nominal heating conditions (Test conditions are based on AHRI 1230)
 lbs
 =kg/0.4536

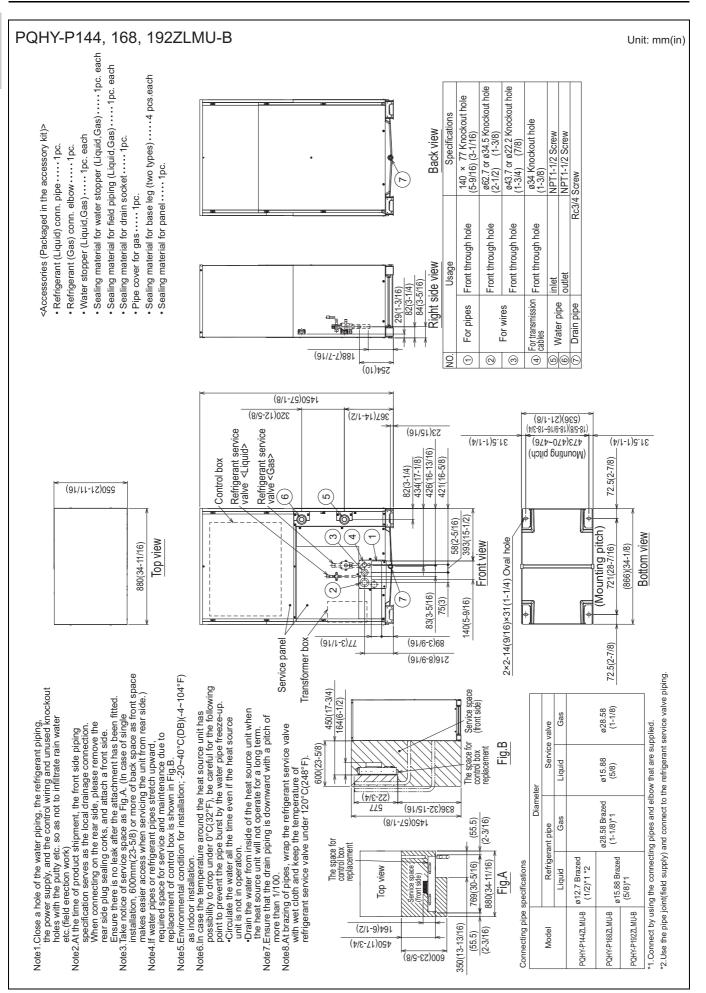
 1.Nomonial heating conditions (Test conditions are based on AHRI 1230)
 lbs
 =kg/0.4536

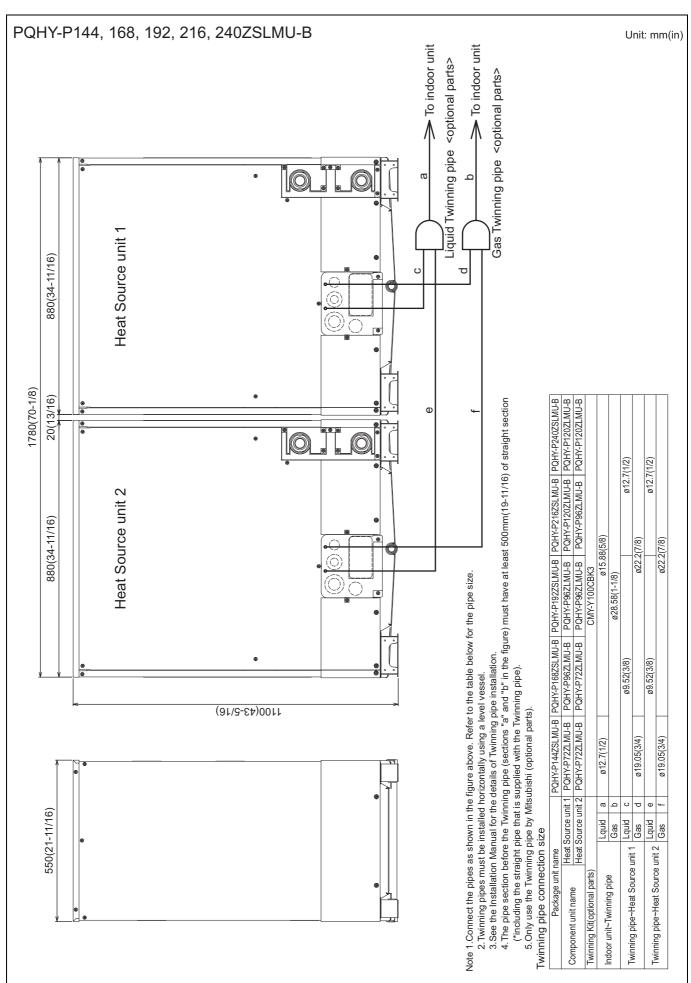
 3.The sound values are sound power level (PWL) based on ISO 3744:2010 (r=3.5m).
 Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)
 \*Above specification data is

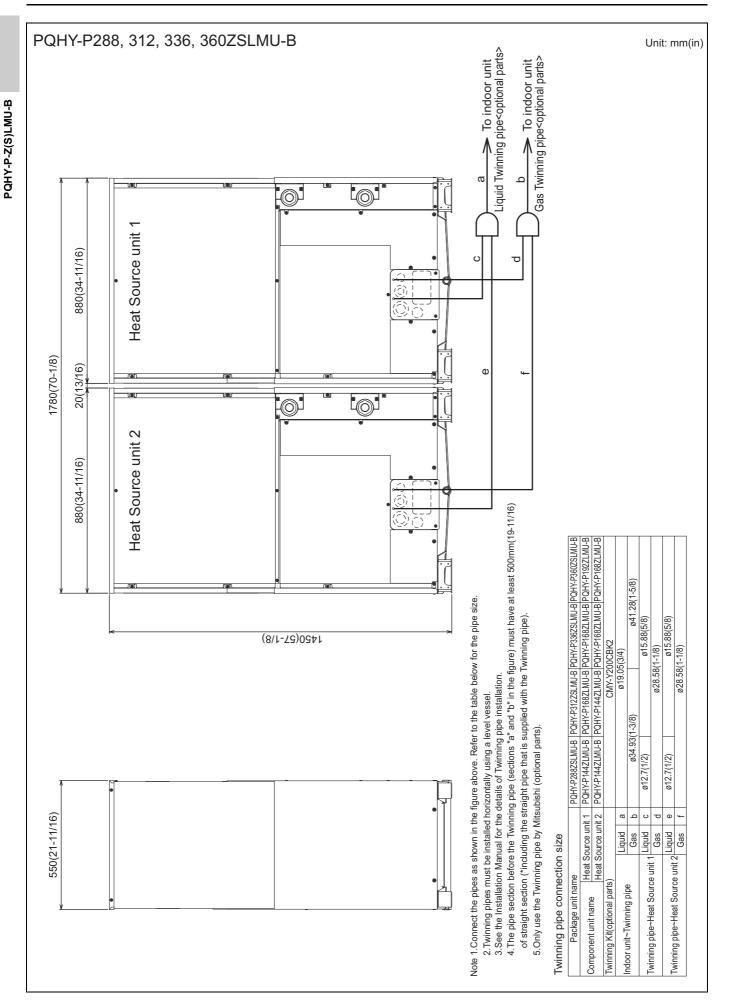
 \*Above specification.
 subject to rounding variation.

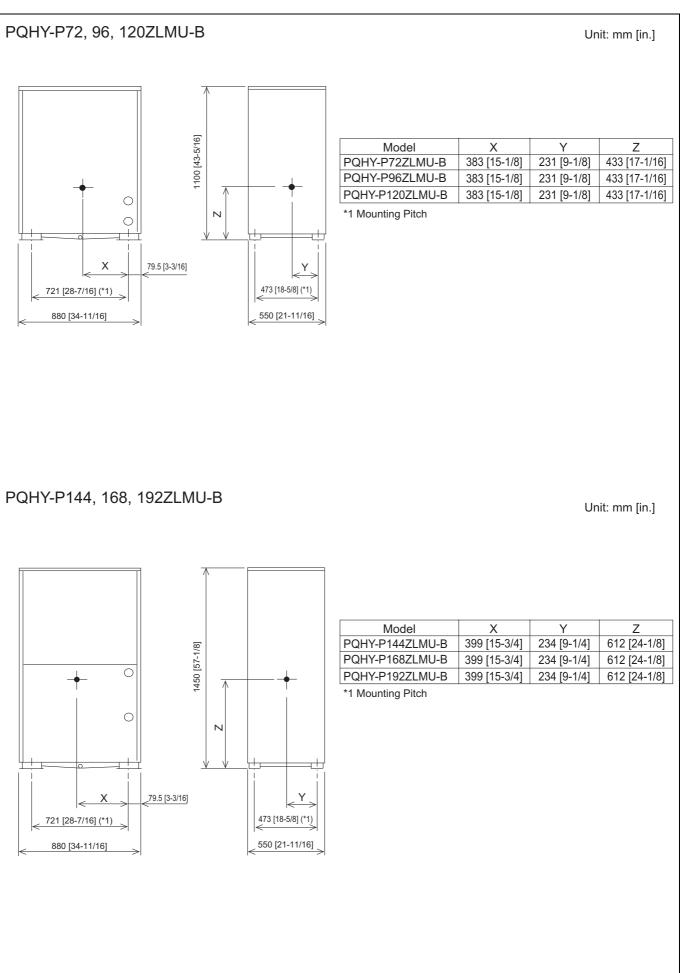


PQHY-P-Z(S)LMU-B

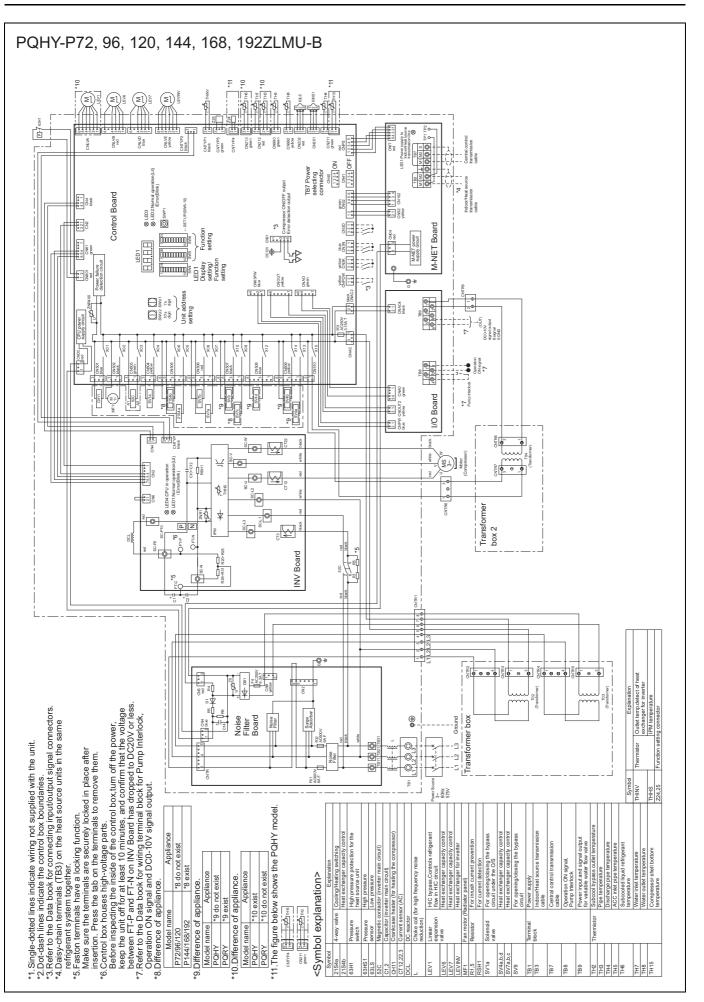




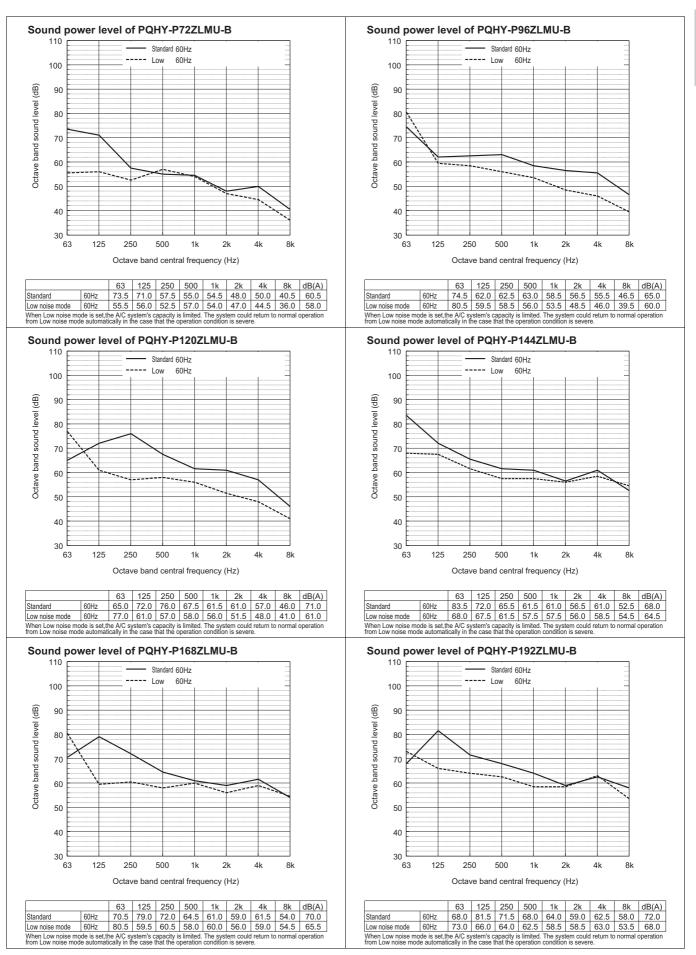






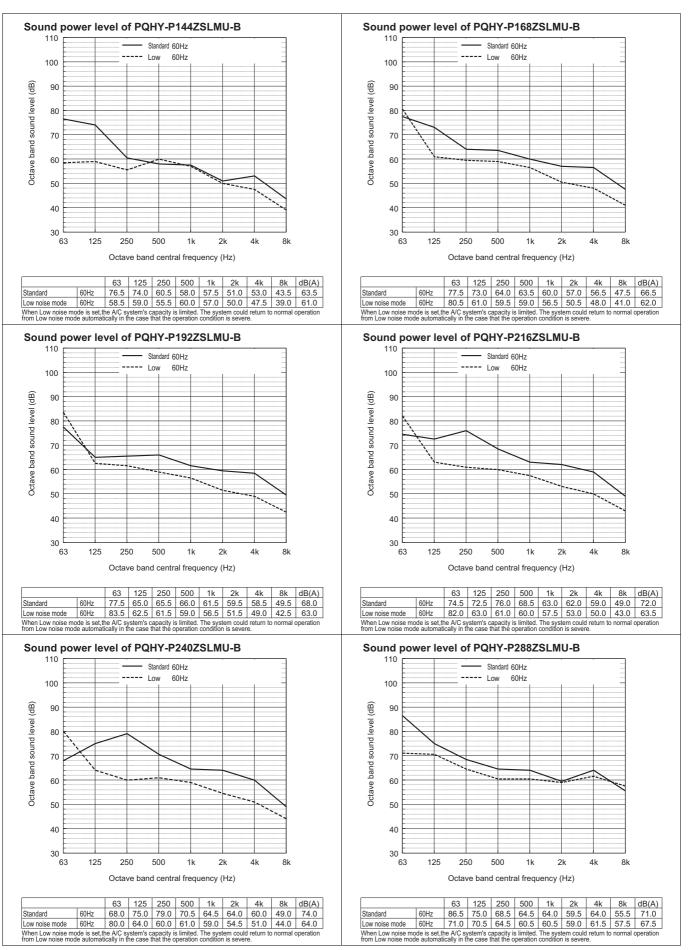


PQHY-P-Z(S)LMU-B



Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
The sound values are sound power level (PWL) based on ISO 3744:2010 (r = 3.5 m).

Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)

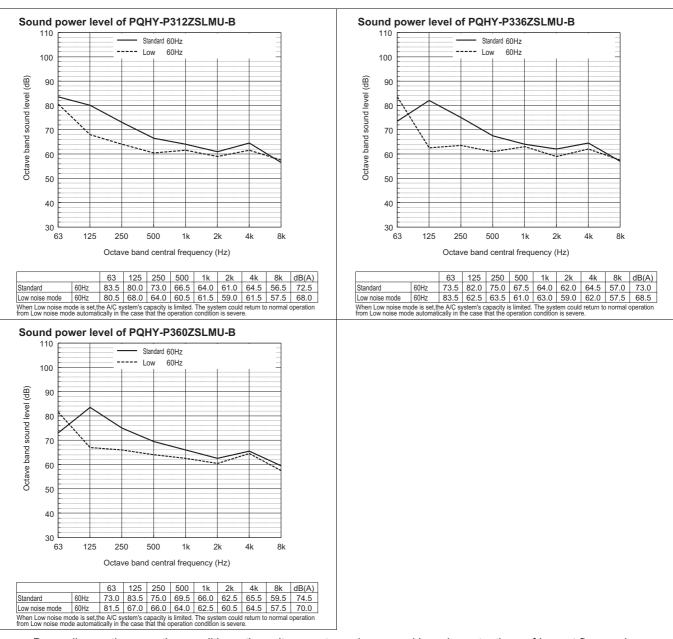


•Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

•The sound values are sound power level (PWL) based on ISO 3744:2010 (r = 3.5 m).

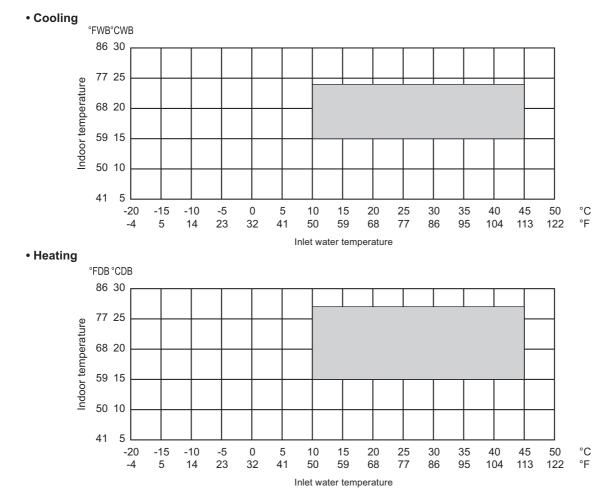
Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)

PQHY-P-Z(S)LMU-B



Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
The sound values are sound power level (PWL) based on ISO 3744:2010 (r = 3.5 m). Test conditions: Indoor: 81°FD.B./66°FW.B. (27°CD.B./19°CW.B.), Inlet water temperature: 86°F (30°C)

#### 6. OPERATION TEMPERATURE RANGE

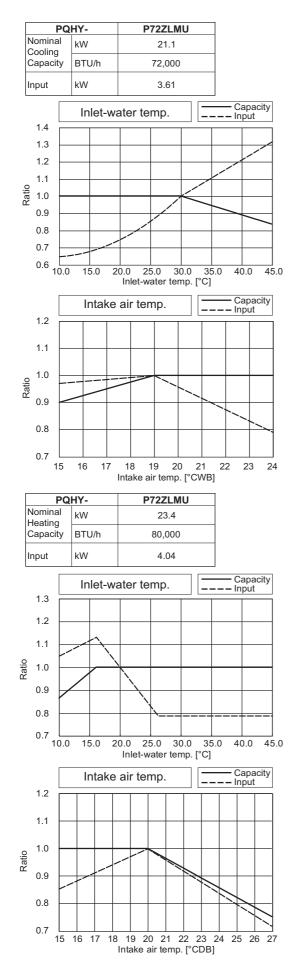


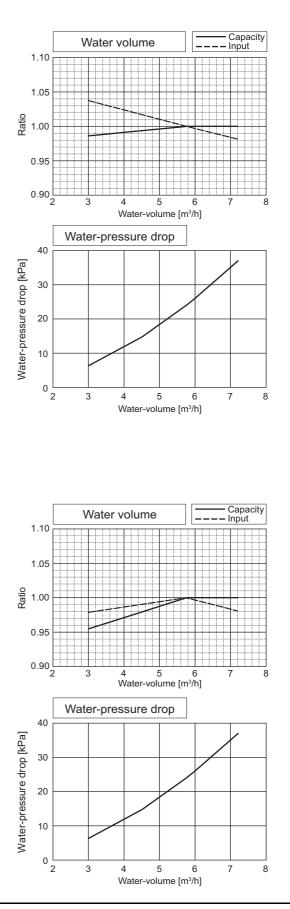
\* The upper limit of the outlet water temperature is approximately 70°C (158°F) when the circulating-water flow rate is within the normal range.

If the circulating-water flow rate goes outside the normal range, the outlet water temperature may exceed the above limit.

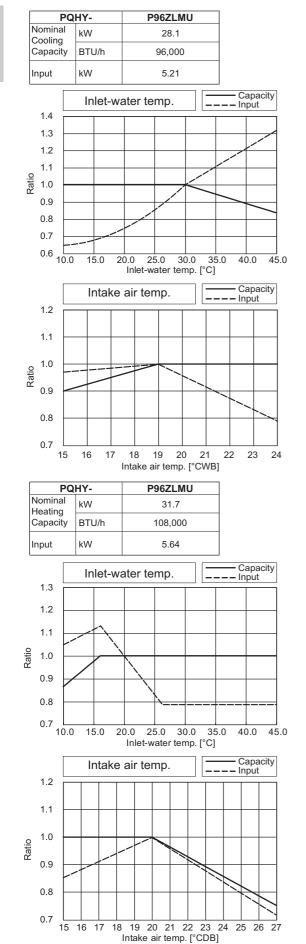
#### 7-1. Correction by temperature

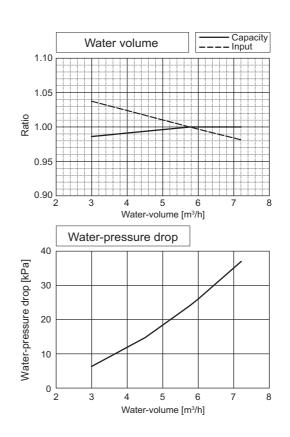
CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

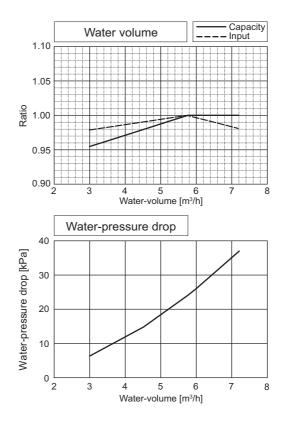


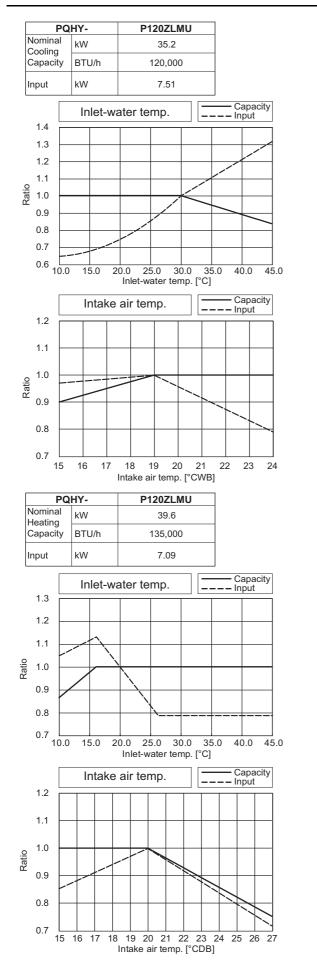


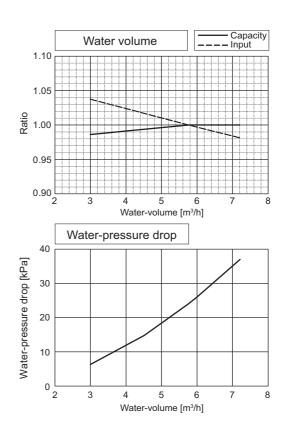
#### 7. CAPACITY TABLES

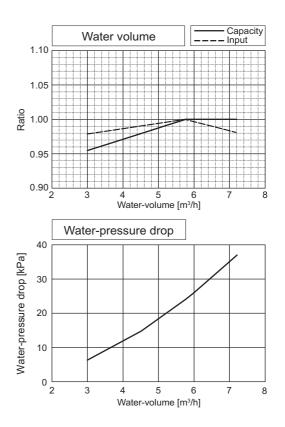




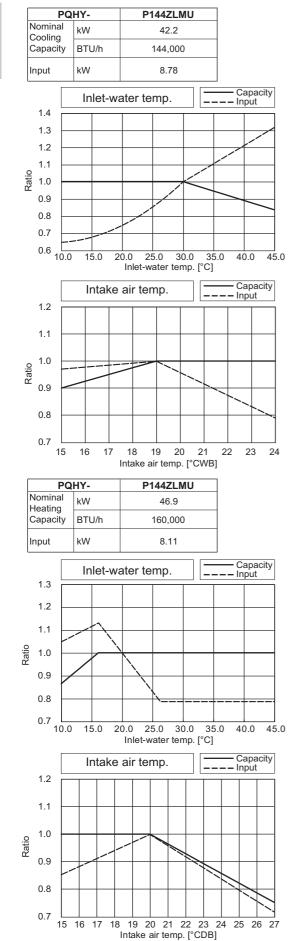


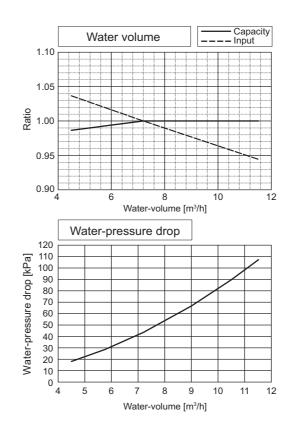


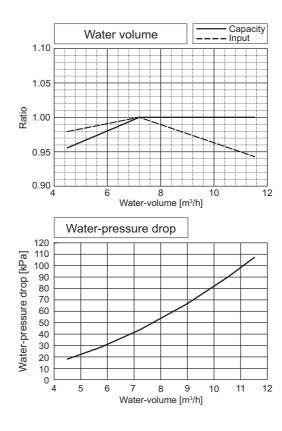


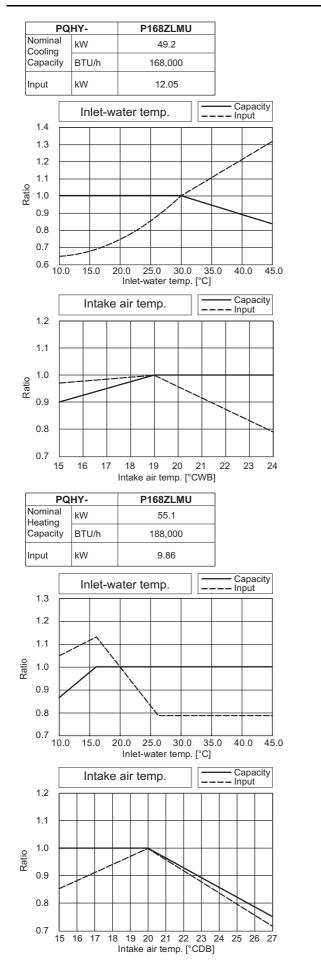


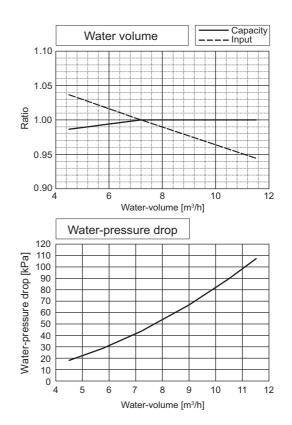
#### 7. CAPACITY TABLES

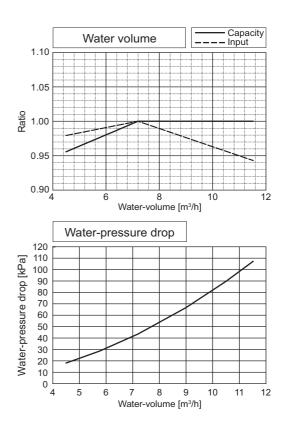




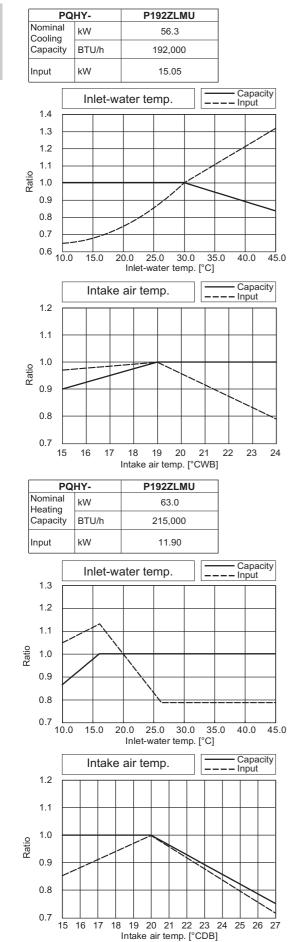


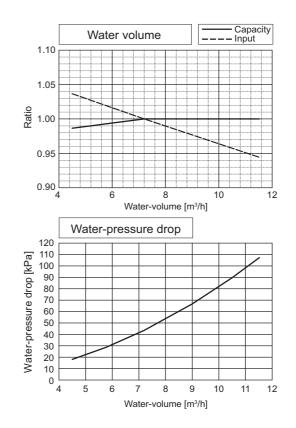


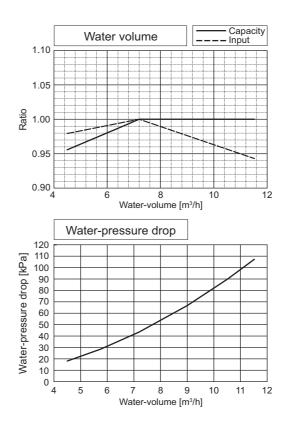


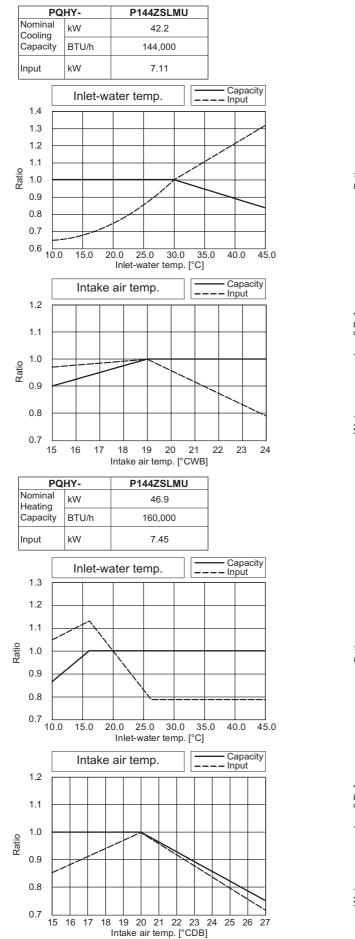


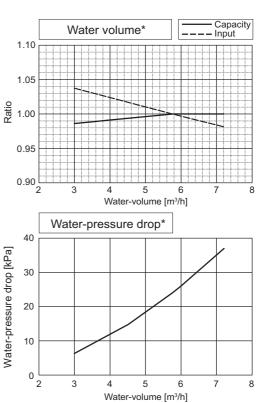
#### 7. CAPACITY TABLES



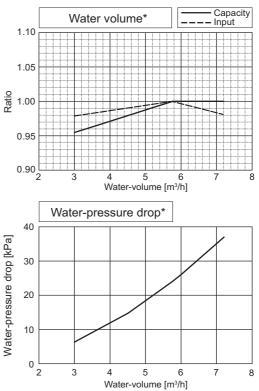




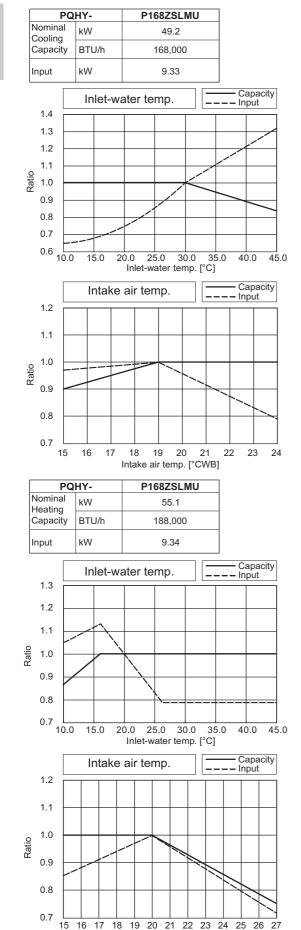




\*The drawing indicates characteristic per unit.

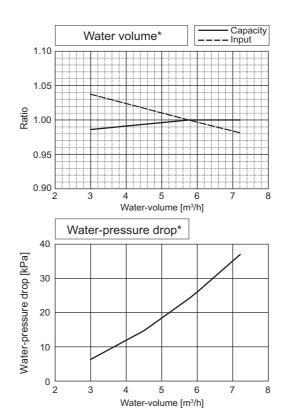


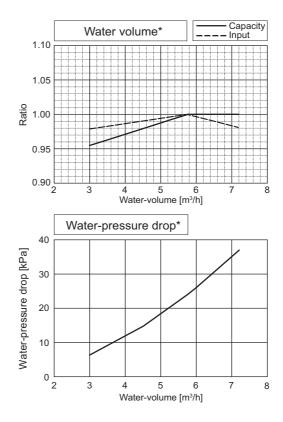
#### 7. CAPACITY TABLES

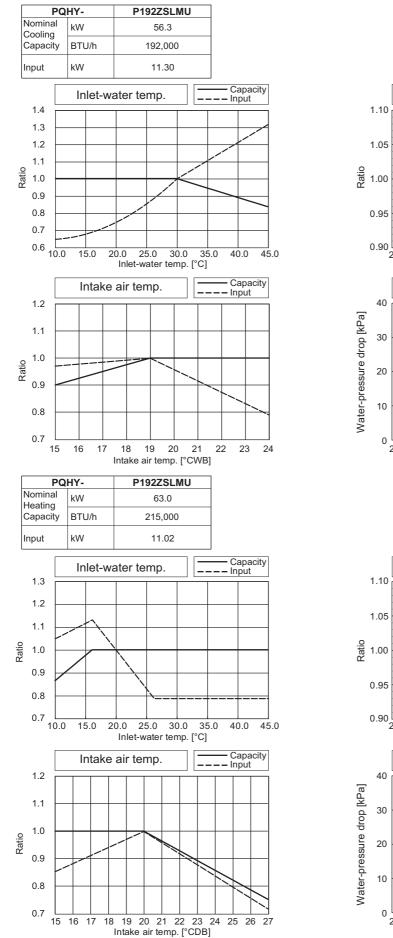


Intake air temp. [°CDB]

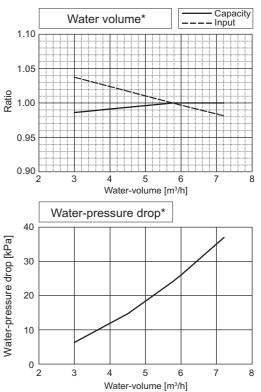
<sup>\*</sup>The drawing indicates characteristic per unit.

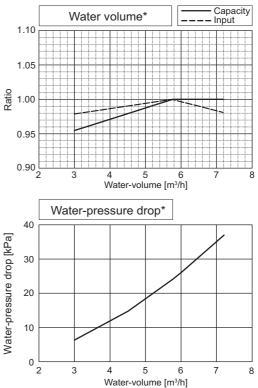


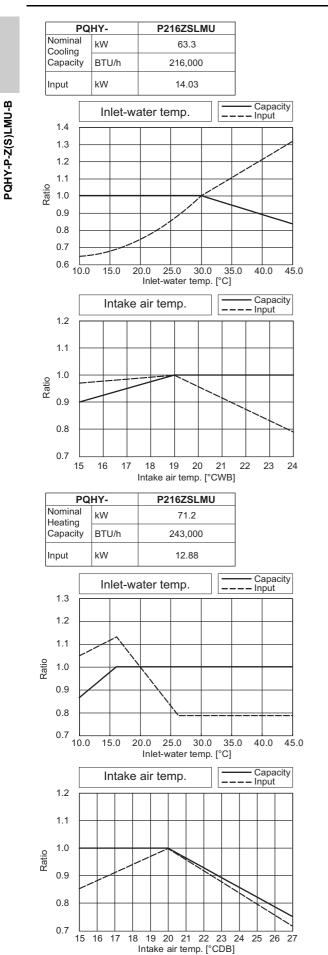




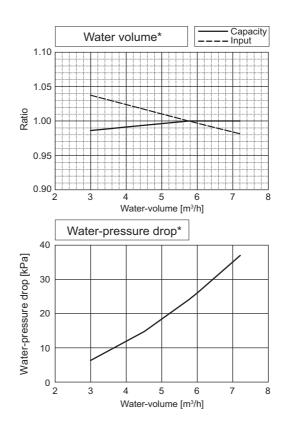


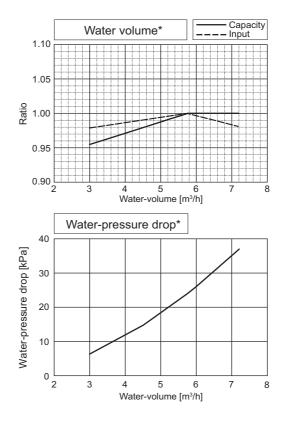






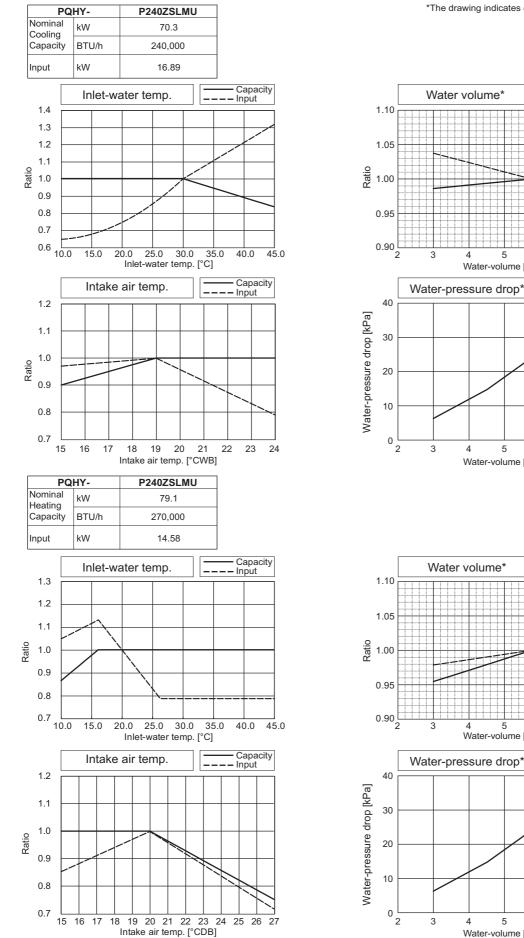
<sup>\*</sup>The drawing indicates characteristic per unit.

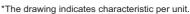




MEES24K112

36





4

5

Water-volume [m3/h]

5

Water-volume [m3/h]

5

Water-volume [m3/h]

4

5

Water-volume [m3/h]

6

7

8

6

6

4

6

7

7

Capacity
 Input

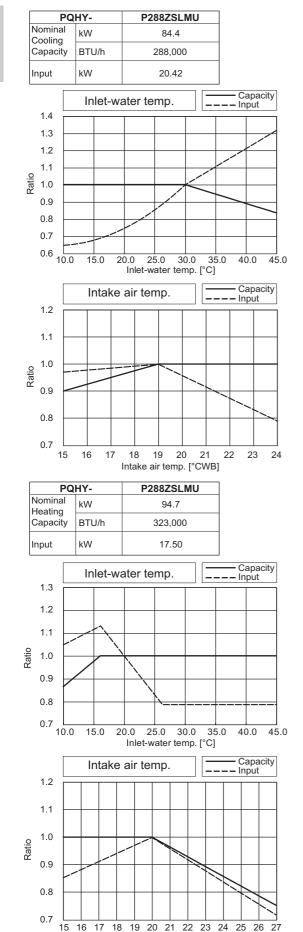
8

Capacity

8

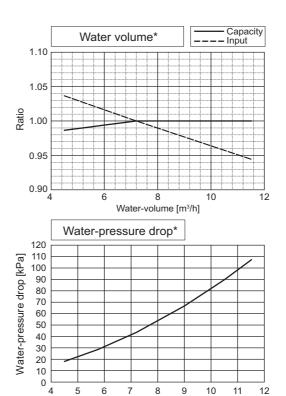
Input

PQHY-P-Z(S)LMU-B

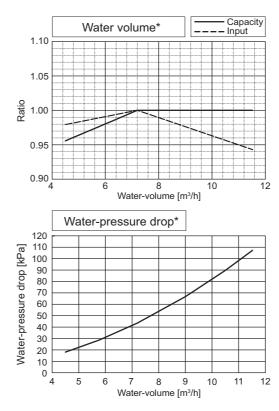


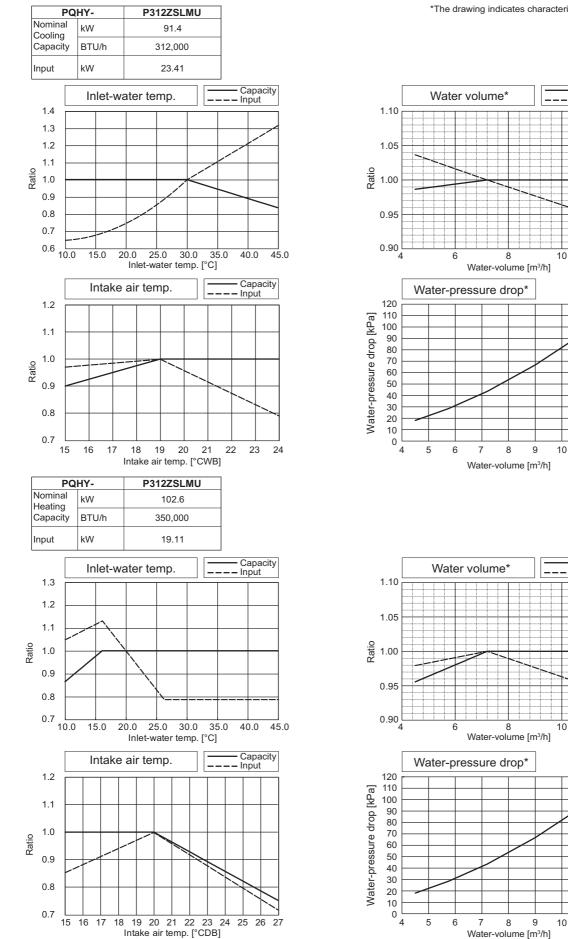
Intake air temp. [°CDB]

#### \*The drawing indicates characteristic per unit.



Water-volume [m3/h]





\*The drawing indicates characteristic per unit.

Capacity

12

12

12

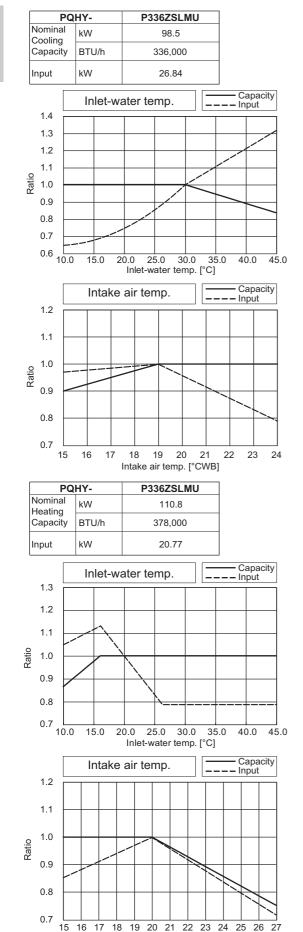
11 12

11

Capacity
 Input

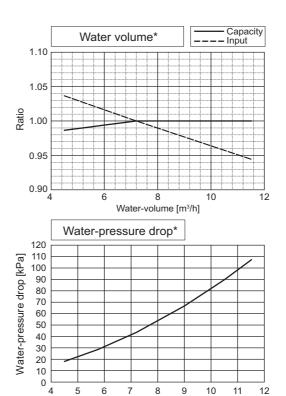
Input

PQHY-P-Z(S)LMU-B

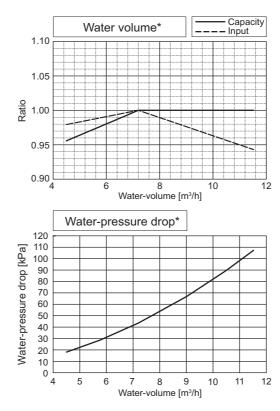


Intake air temp. [°CDB]

#### \*The drawing indicates characteristic per unit.



Water-volume [m3/h]



Capacity

12

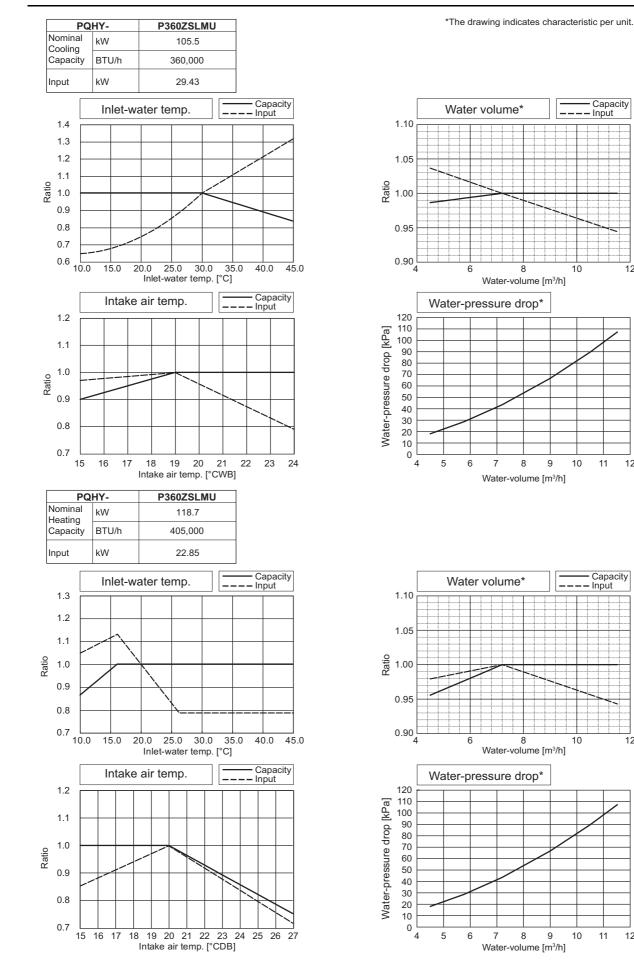
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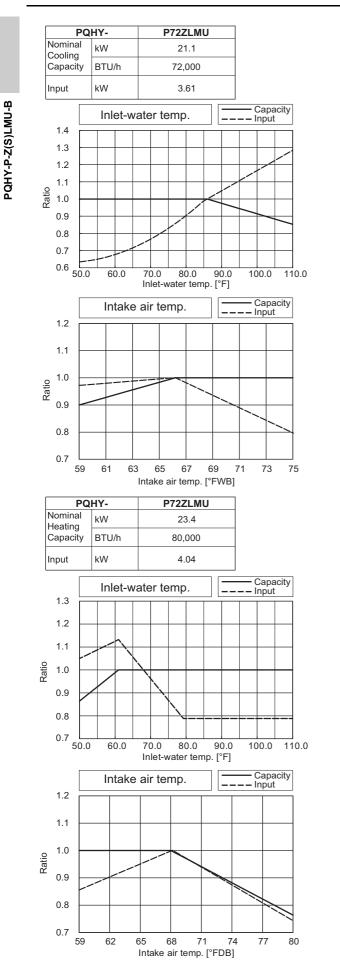
Capacity

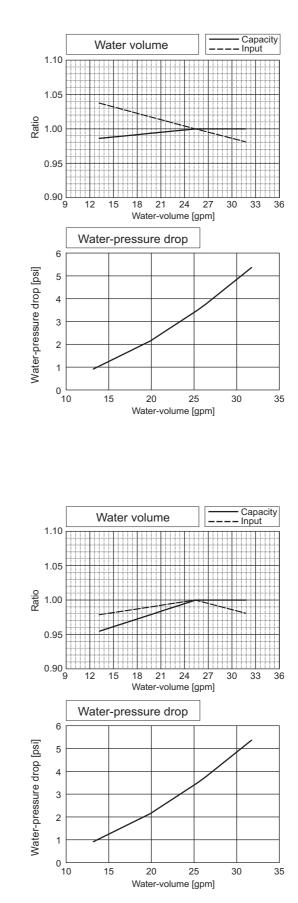
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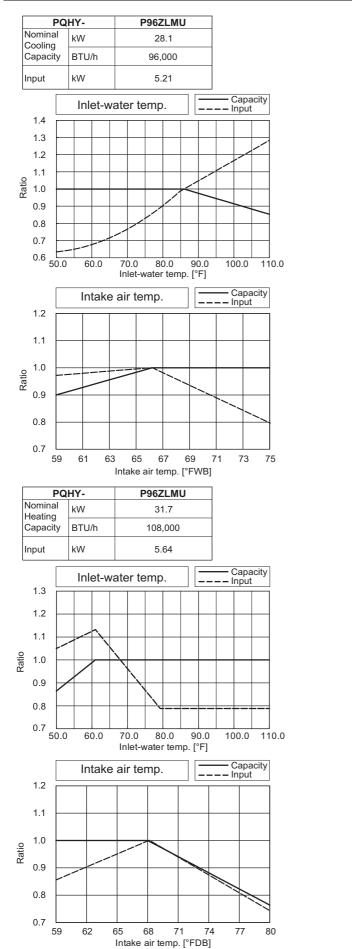
11 12

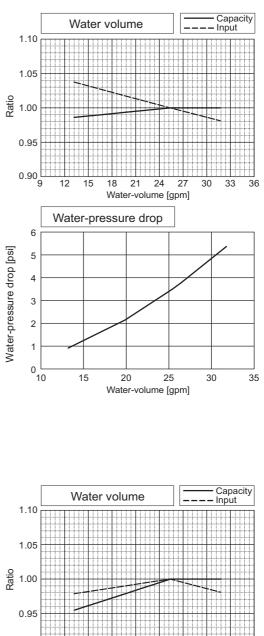
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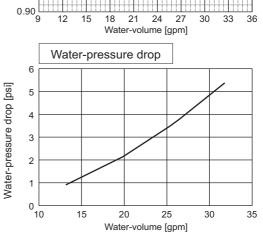


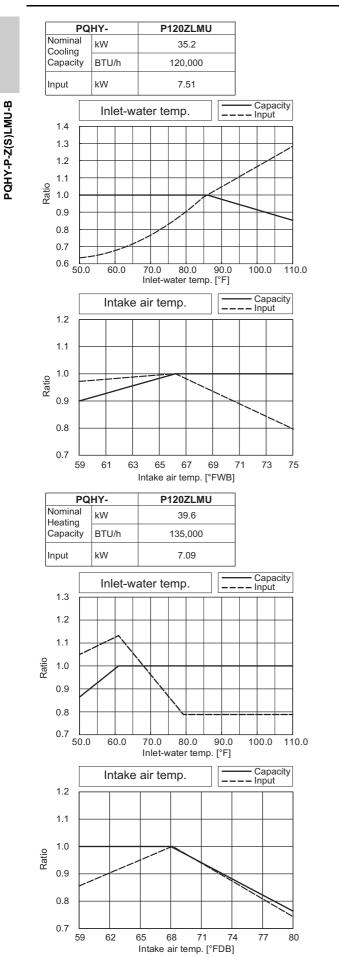


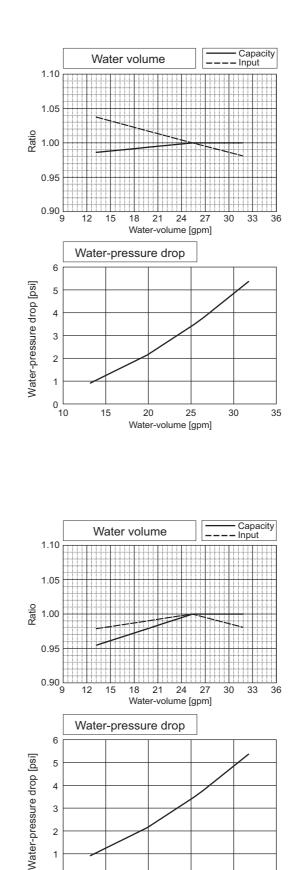












0 └ 10

15

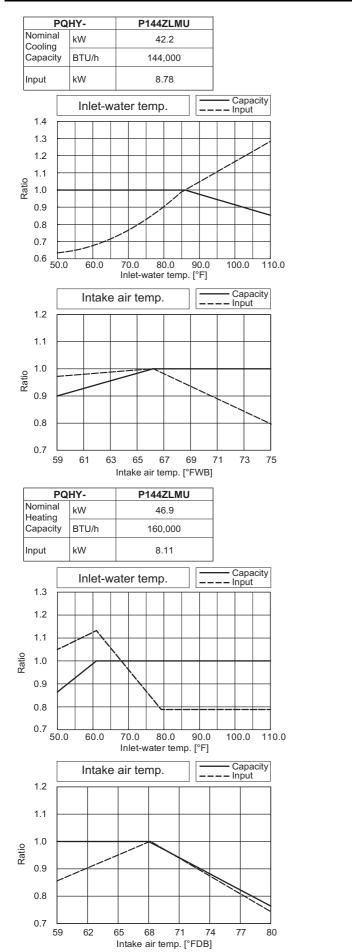
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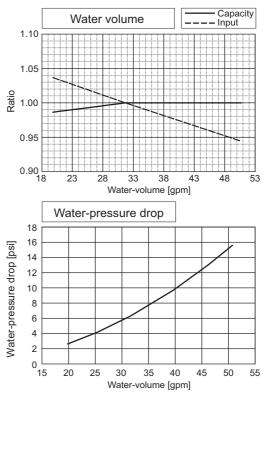
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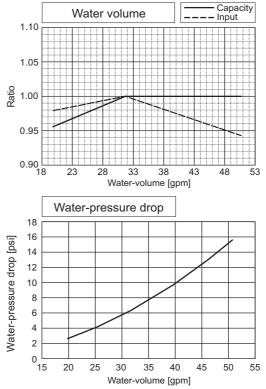
Water-volume [gpm]

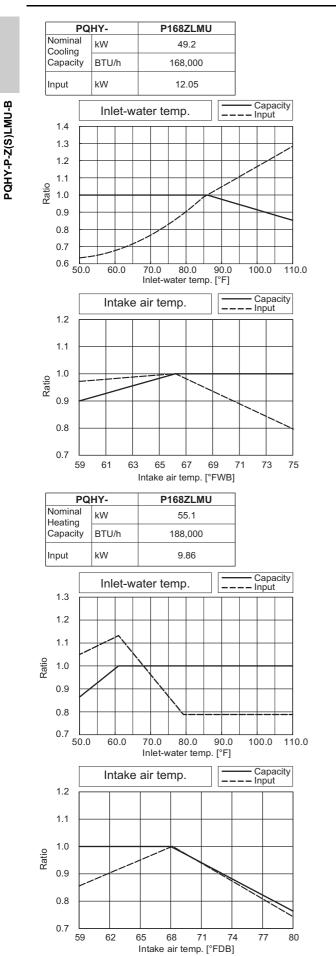
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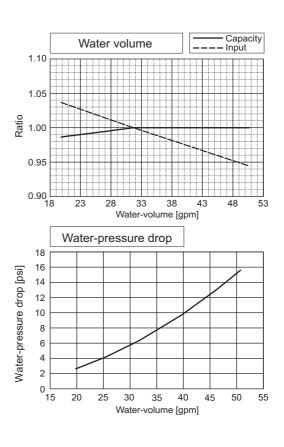
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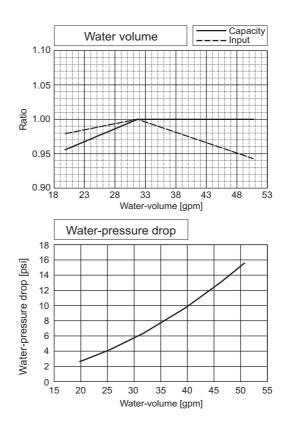






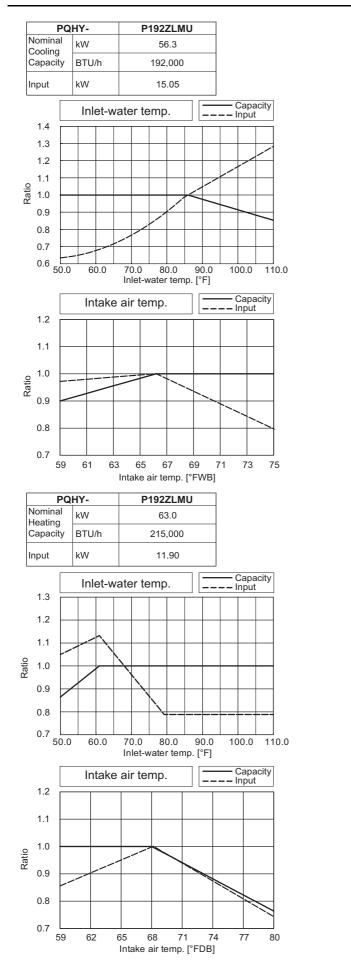


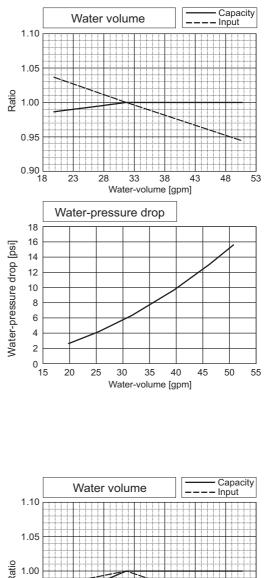


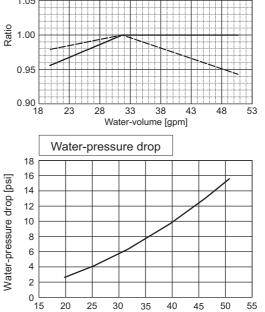


46

PQHY-P-Z(S)LMU-B

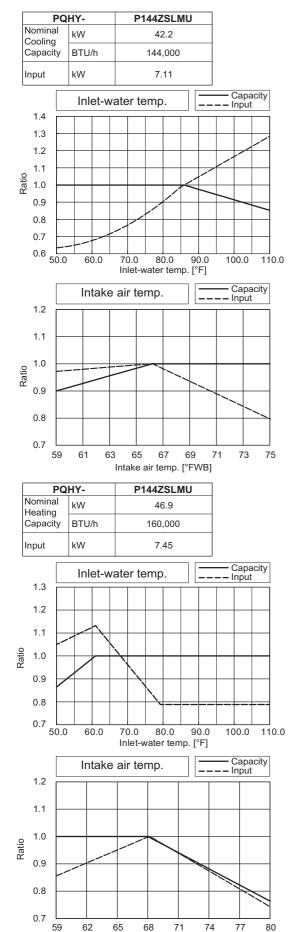






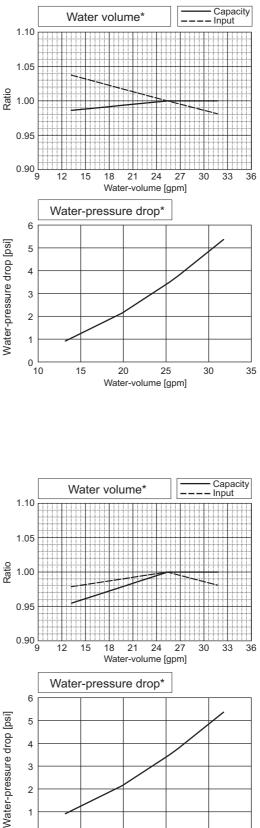
Water-volume [gpm]

PQHY-P-Z(S)LMU-B



Intake air temp. [°FDB]

#### \*The drawing indicates characteristic per unit.



25

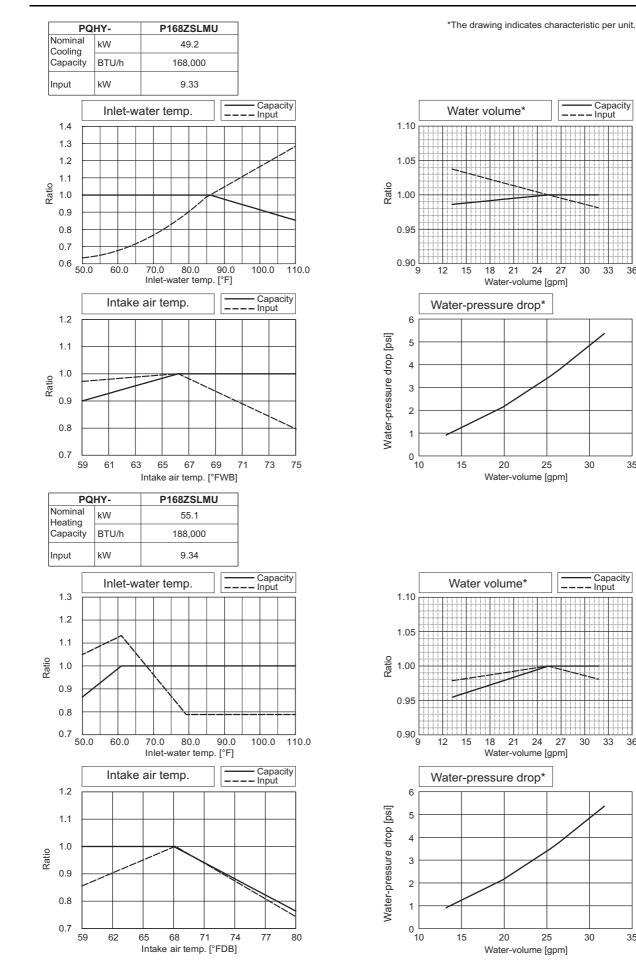
Water-volume [gpm]

20

30

35

80 Mater-blass



Capacity

30 33 36

30

Capacity

- – Input

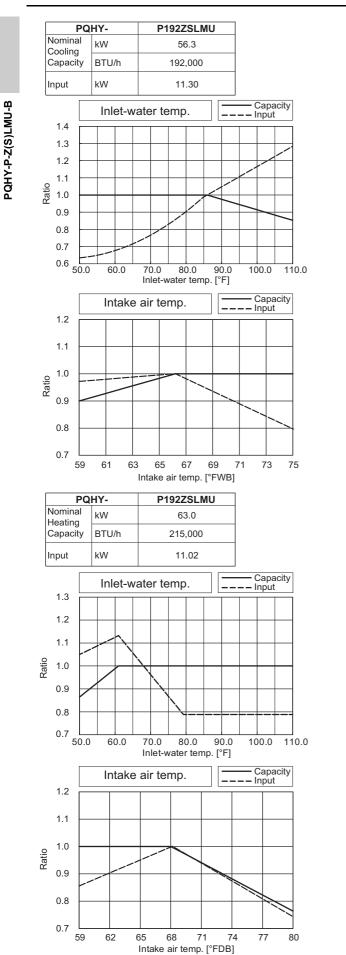
30 33 36

30

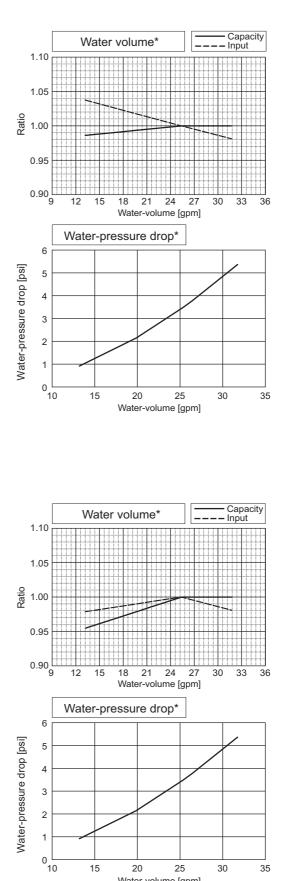
35

35

MEES24K112



<sup>\*</sup>The drawing indicates characteristic per unit.



15

20

25

Water-volume [gpm]

30

35

Capacity

30 33 36

30

Capacity

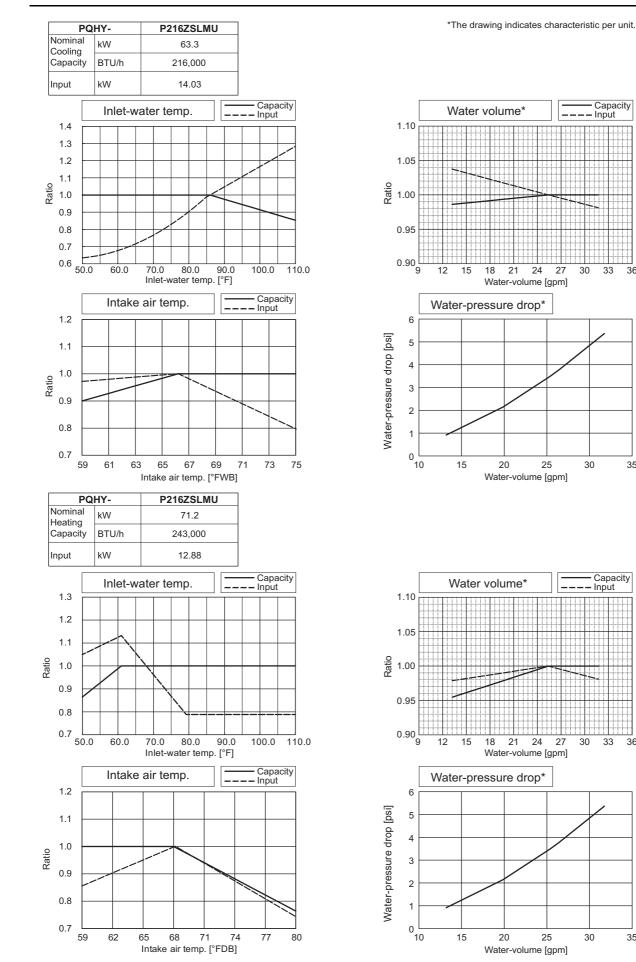
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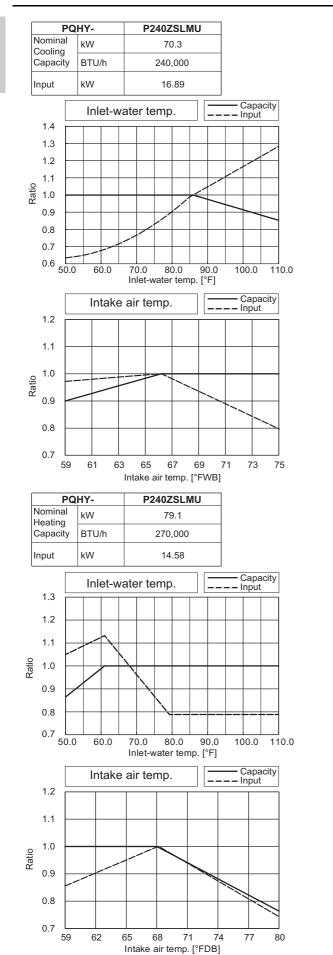
30 33 36

30

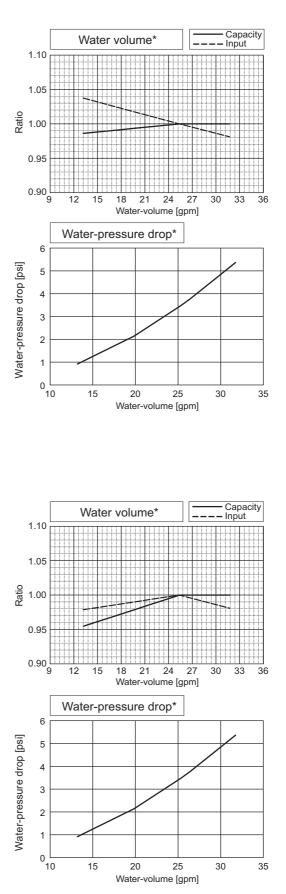
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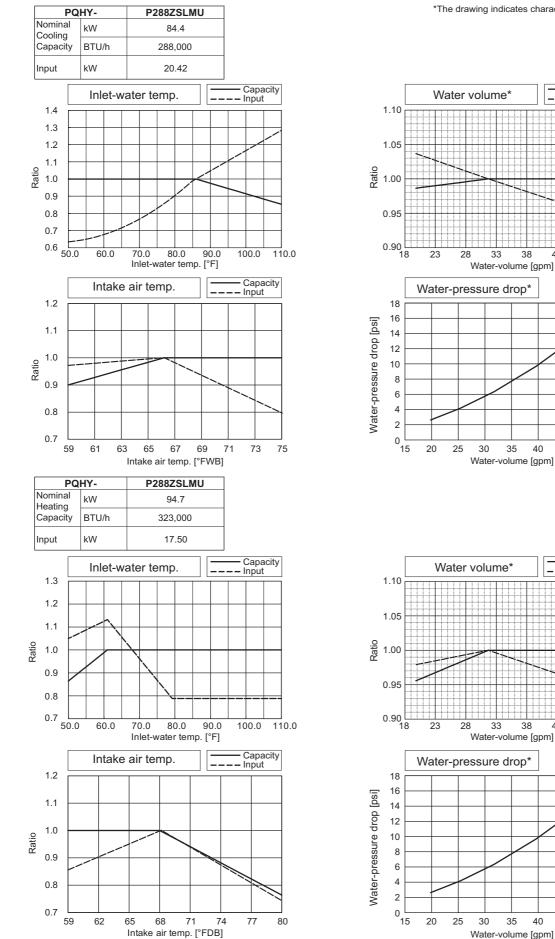
35





<sup>\*</sup>The drawing indicates characteristic per unit.





\*The drawing indicates characteristic per unit.

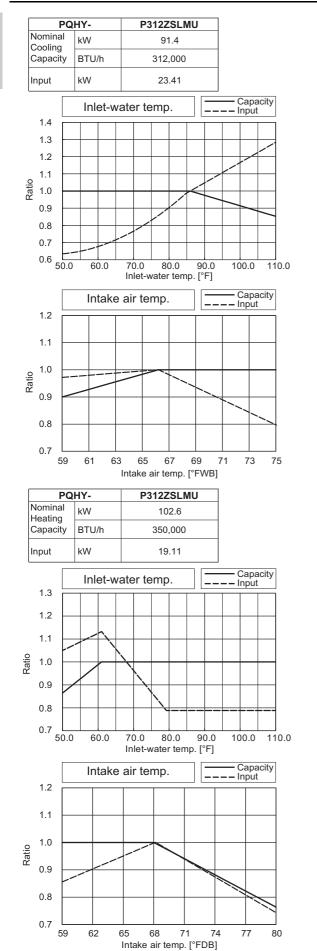
Water-volume [gpm]

Capacity

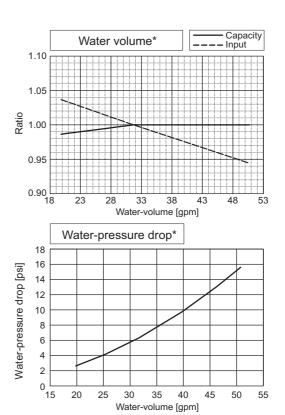
– Input

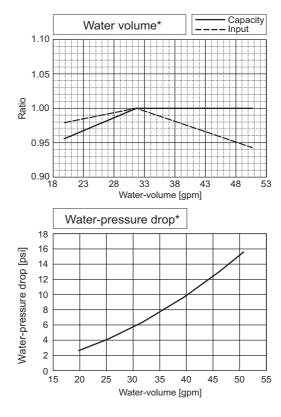
Capacity

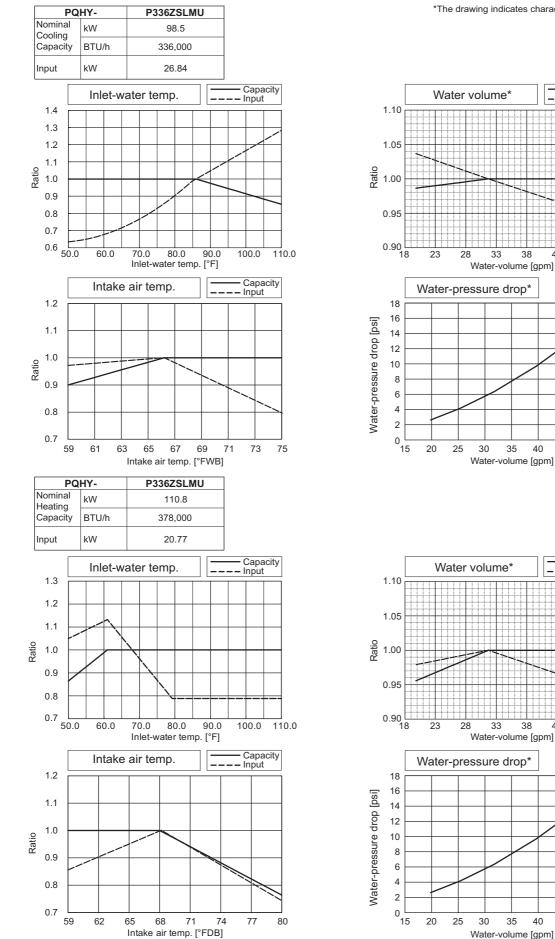
-- Input



#### \*The drawing indicates characteristic per unit.

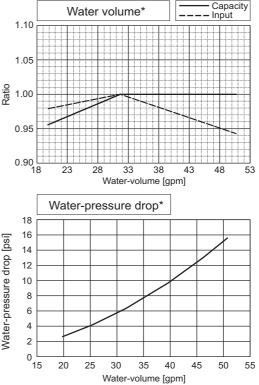


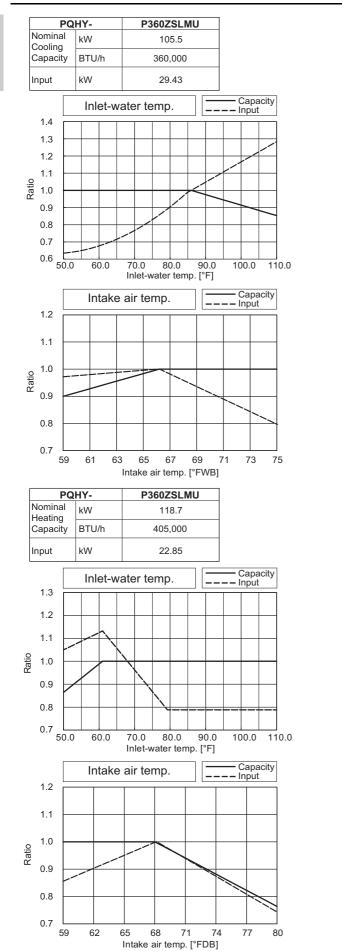




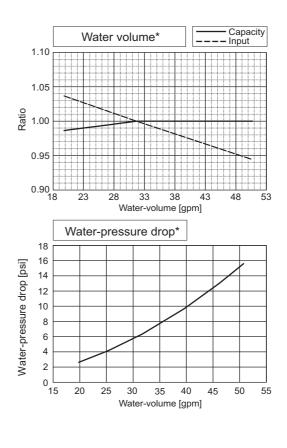
\*The drawing indicates characteristic per unit.

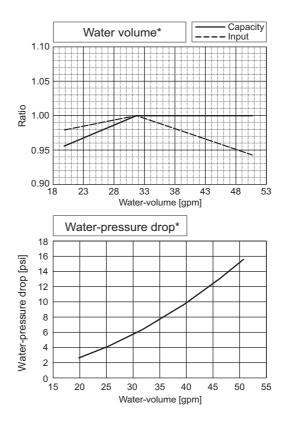
Capacity -- Input 33 38 43 48 53 Water-volume [gpm] Water-pressure drop\* 35 40 45 50 55





\*The drawing indicates characteristic per unit.

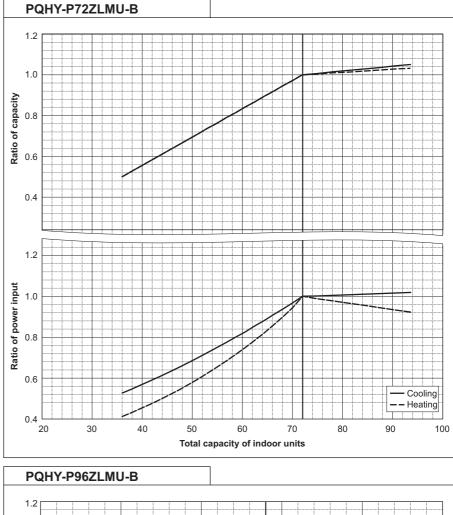




#### 7-2. Correction by total indoor

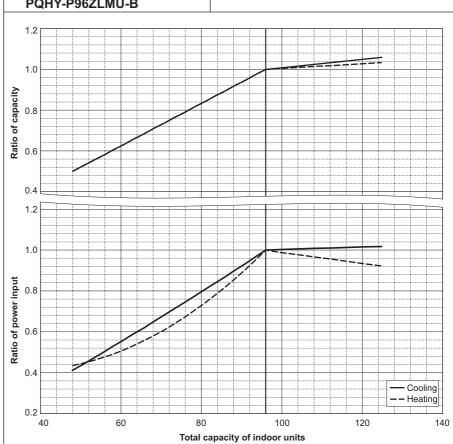
CITY MULTI system has different capacities and inputs when many combinations of indoor units with different total capacities are connected. Using following tables, the maximum capacity can be found to ensure the system is installed with enough capacity for a particular application.

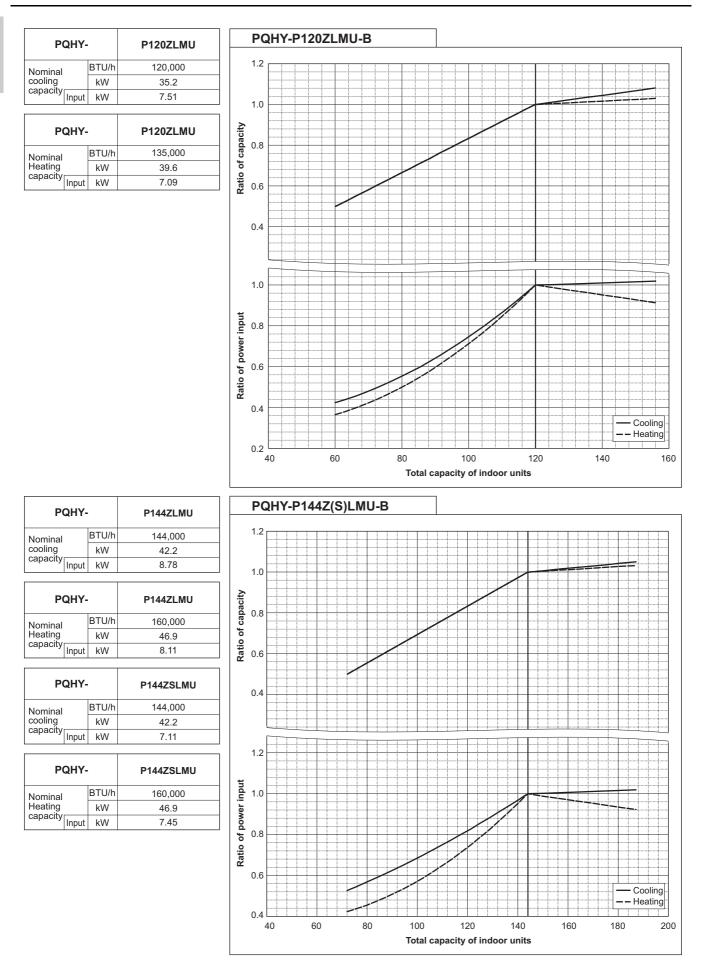
P	QHY-		P72ZLMU		
Nominal		BTU/h	72,000		
cooling		kW	21.1		
capacity	Input	kW	3.61		
P	QHY-		P72ZLMU		
Nominal		BTU/h	80,000		
Heating		kW	23.4		
capacity	Input	kW	4.04		



PQHY-			P96ZLMU	
Nominal		BTU/h	96,000	
cooling		kW	28.1	
capacity	Input	kW	5.21	
DOUV			DOGZI MU	

PQHY-			P96ZLMU
Nominal		BTU/h	108,000
Heating		kW	31.7
capacity	Input	kW	5.64
capacity	Input		





Nominal

Nominal Heating

Nominal

cooling

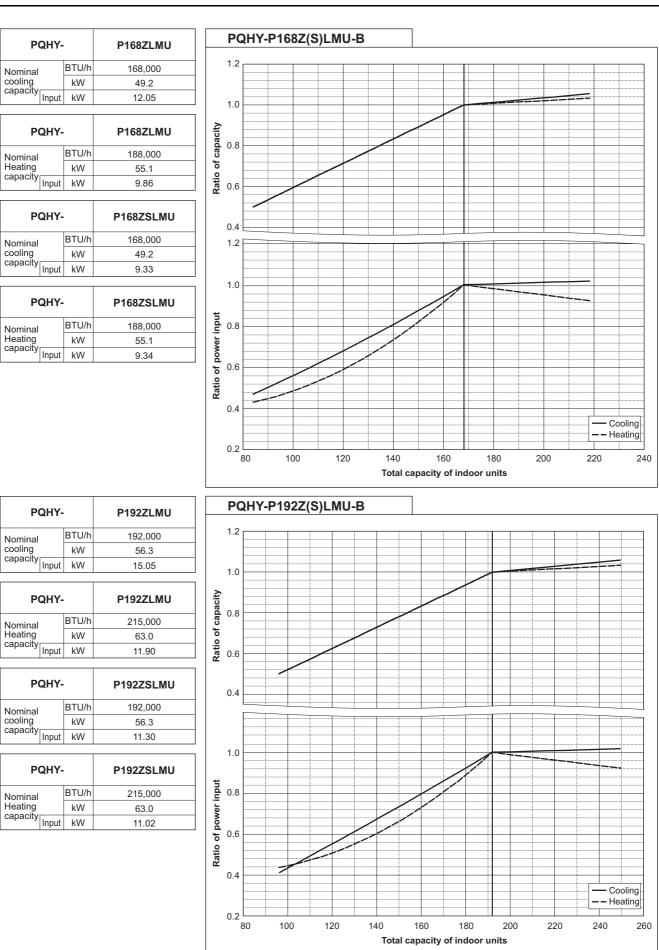
Nominal Heating capacity

Nominal cooling capacity

Nominal Heating

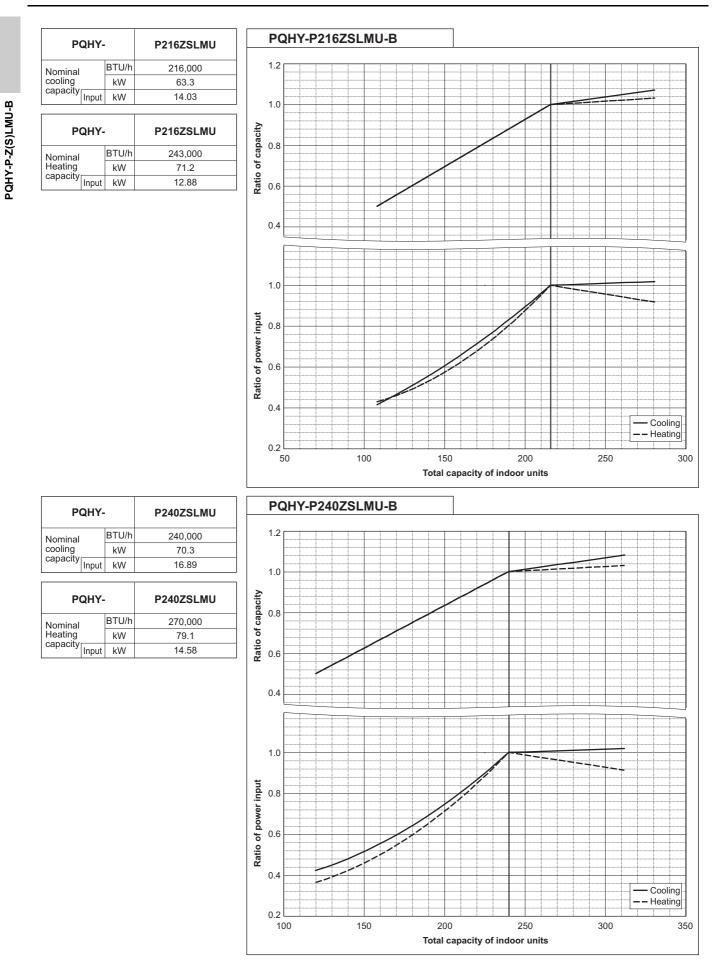
Nominal cooling

Nominal Heating

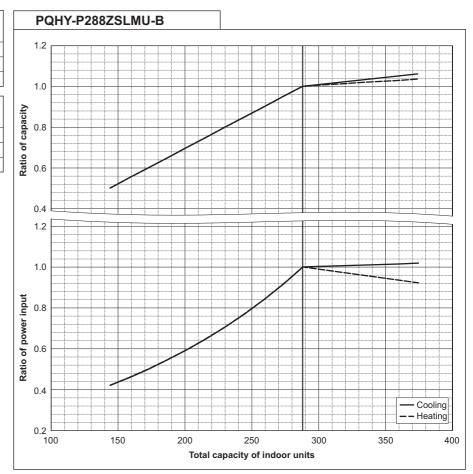


PQHY-P-Z(S)LMU-B

MEES24K112

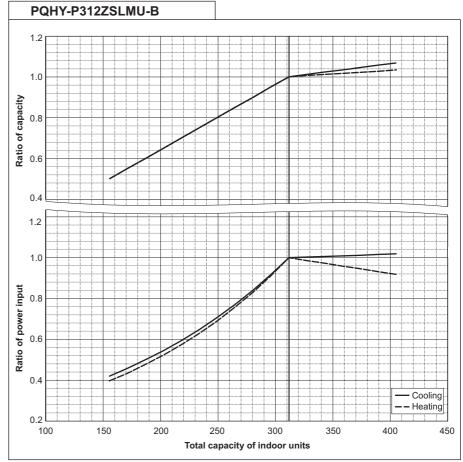


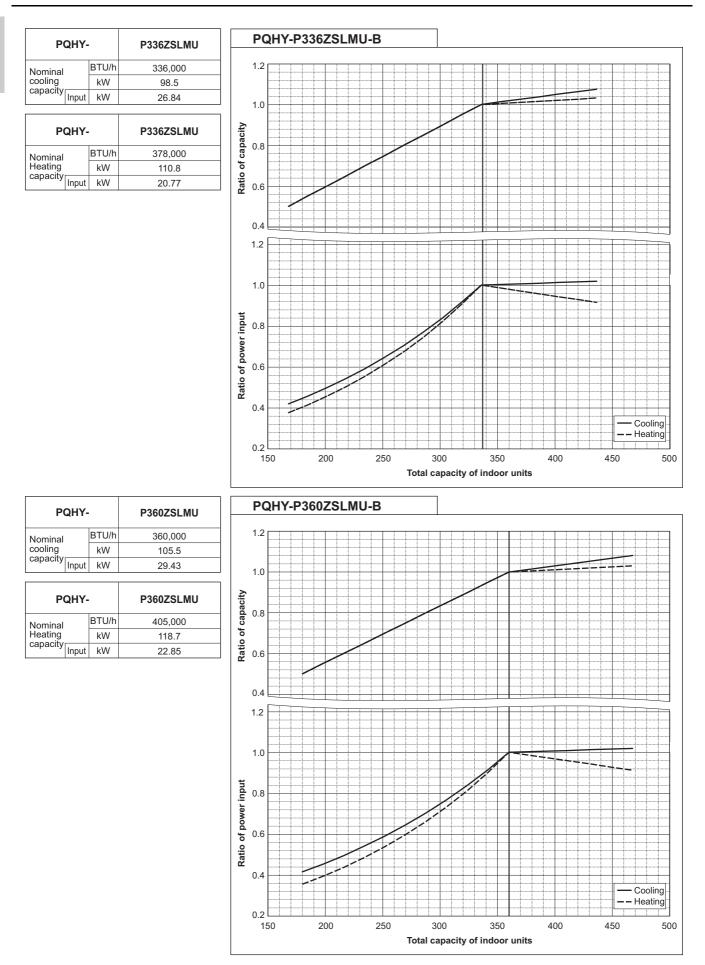
P	QHY-		P288ZSLMU
Nominal	Nominal		288,000
cooling		kW	84.4
capacity	Input	kW	20.42
P	QHY-		P288ZSLMU
Nominal		BTU/h	323,000
Heating		kW	94.7
capacity	Input	kW	17.50



PQHY-			P312ZSLMU
Nominal		BTU/h	312,000
cooling		kW	91.4
capacity	Input	kW	23.41

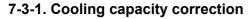
PQHY-			P312ZSLMU
Nominal		BTU/h	350,000
Heating		kW	102.6
capacity	Input	kW	19.11

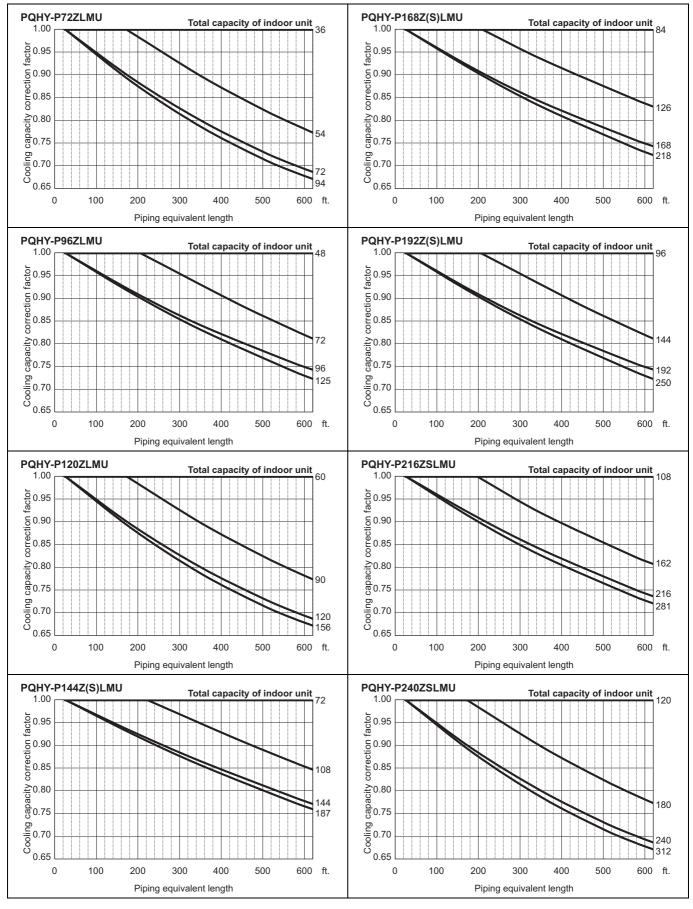


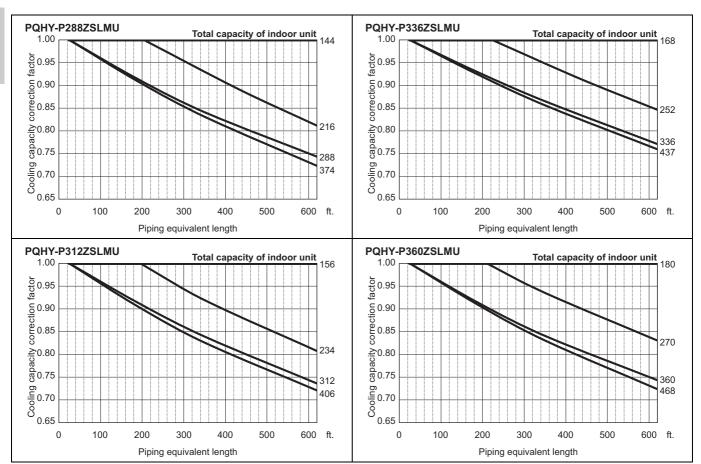


#### 7-3. Correction by refrigerant piping length

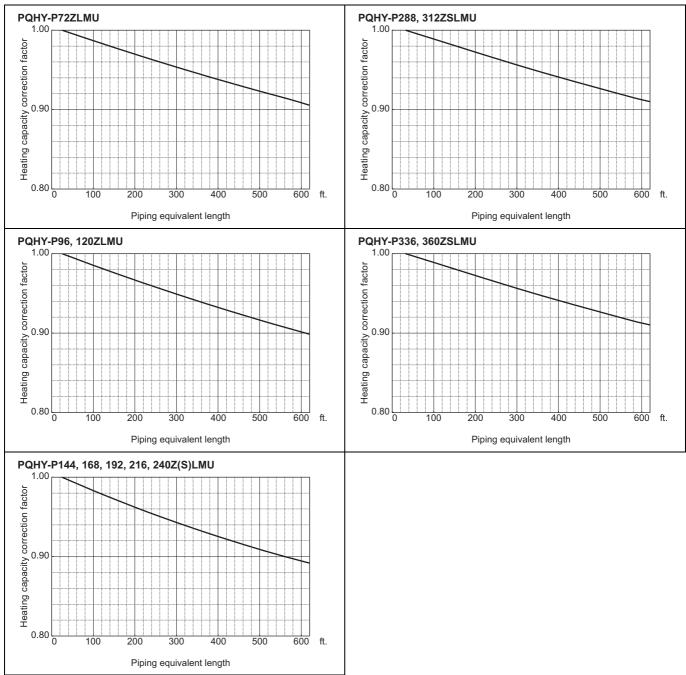
CITY MULTI system can extend the piping flexibly within its limitation for the actual situation. However, a decrease of cooling/ heating capacity could happen correspondently. Using following correction factor according to the equivalent length of the piping shown at 7-3-1 and 7-3-2, the capacity can be observed. 7-3-3 shows how to obtain the equivalent length of piping.







#### 7-3-2. Heating capacity correction



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

#### 1. PQHY-P72ZLMU

Equivalent length = (Actual piping length to the farthest indoor unit) +  $(1.15 \times \text{number of bent on the piping})$  [ft.] Equivalent length = (Actual piping length to the farthest indoor unit) +  $(0.35 \times \text{number of bent on the piping})$  [m]

- 2. PQHY-P96, 120ZLMU
   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. PQHY-P144, 168, 192, 216, 240Z(S)LMU
- Equivalent length = (Actual piping length to the farthest indoor unit) +  $(1.64 \times number of bent on the piping)$  [ft.] Equivalent length = (Actual piping length to the farthest indoor unit) +  $(0.50 \times number of bent on the piping)$  [m]

**4. PQHY-P288, 312ZSLMU** Equivalent length = (Actual piping length to the farthest indoor unit) + (2.30 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]

#### 5. PQHY-P336, 360ZSLMU

Equivalent length = (Actual piping length to the farthest indoor unit) + (2.63 x number of bent on the piping) [ft.] Equivalent length = (Actual piping length to the farthest indoor unit) + (0.80 x number of bent on the piping) [m]

#### 8-1. Designing of water circuit system

#### 1) Example of basic water circuit

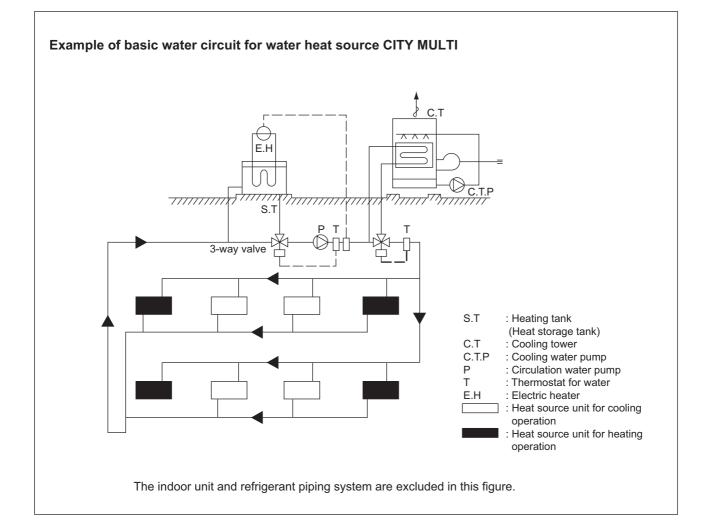
The water circuit of the water heat source CITY MULTI connects the heat source unit with the cooling tower/auxiliary heat source/heat storage tank/circulation pump with a single system water piping as shown in the figure below. The selector valve automatically controls to circulate water toward the cooling tower in the cooling season, while toward the heat storage tank in the heating season. If the inlet 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 inlet 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, a cooling tower should be a closed type that water is not exposed to the atmosphere.

\*10~45°C [50~113°F] : 50%~130% of indoor units can be connected



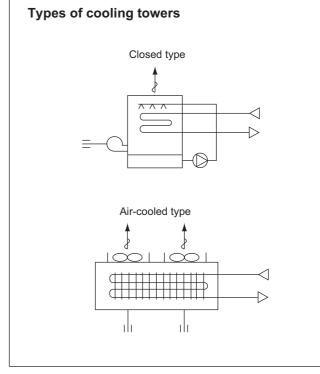
# 2) Cooling tower

#### a) Types of cooling tower

The cooling towers presently used include the open type cooling tower, open type cooling tower + heat exchanger, closed type cooling tower, and air-cooled type cooling tower. However, as the quality control of circulation water is essential, to preserve water quality, use the closed type of cooling tower for WY/WR2.

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.



#### 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 (10~45°C) [50~113°F]. 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)

Pw : Shaft power of circulation pumps (KW

# PQHY-P-Z(S)LMU-B

# 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 ( $10^{\circ}$ C [ $50^{\circ}$ F] or more) 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	CT $(1 - \frac{1}{COP_h}) - 1000 \times Vw \times \Delta T - 860 \times Pw$	
	QH HCT COPH Vw ∆T TwH TwL Pw	<ul> <li>Auxiliary heat source capacity</li> <li>Total heating capacity of each water heat source CITY MULTI</li> <li>COP of water heat source CITY MULTI at heating</li> <li>Holding water volume inside piping</li> <li>Allowable water temperature drop = TWH - TWL</li> <li>Heat source water temperature at high temperature side</li> <li>Heat source water temperature at low temperature side</li> <li>Heat source water pump shaft power</li> </ul>	(kcal/h) (kcal/h) (°C) (°C) (°C) (°C) (kW)
/		CT $(1 - \frac{1}{COP_h}) - 8.343 \times Vw \times \Delta T - 3412 \times Pw$	()
	QH HC⊤ COPH Vw ΔT TwH TwL Pw	<ul> <li>Auxiliary heat source capacity</li> <li>Total heating capacity of each water heat source CITY MULTI</li> <li>COP of water heat source CITY MULTI at heating</li> <li>Holding water volume inside piping</li> <li>Allowable water temperature drop = TWH - TWL</li> <li>Heat source water temperature at high temperature side</li> <li>Heat source water temperature at low temperature side</li> <li>Heat source water pump shaft power</li> </ul>	(BTU/h) (BTU/h) (°F) (°F) (°F) (°F) (kW)

$$HQ_{1T} \cdot \left(1 - \frac{1}{COP_{h}}\right) - 860 \times Pw \times T_{2}$$

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

$$QH_{1T} : Total of heating load on weekday including warming up (kcal/day)$$

$$T_{1} : Operating hour of auxiliary heat source (h)$$

$$T_{2} : Operating hour of heat source water pump (h)$$

K: Allowance factor (Heat storage tank, piping loss, etc.) $1.05 \sim 1.10$ HQ1T is calculated from the result of steady state load calculation similarly by using the equation below.

$$HQ_{1T} = 1.15 \times (\Sigma Q'a + \Sigma Q'b + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f) T_2 - \Psi (\Sigma Qe_1 + \Sigma Qe_2 + \Sigma Qe_3) (T2 - 1)$$

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
T2	: Air conditioning hour	

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

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

QH1T	: Total of heating load on weekday including warming up	(BTU/day)
<b>T</b> 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<sub>1T</sub> is calculated from the result of steady state load calculation similarly by using the equation below. HQ<sub>1T</sub> =  $1.15 \times (\Sigma Q'a + \Sigma Q'b + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f) T_2 - \psi (\Sigma Qe_1 + \Sigma Qe_2 + \Sigma Qe_3) (T_2 - 1)$ 

Q'a	: Thermal load from external wall/roof in each zone	(BTU/h)
Q'b	: Thermal load from glass window in each zone	(BTU/h)
Q'c	: Thermal load from partition/ceiling/floor in each zone	(BTU/h)
Q'd	: Thermal load by infiltration in each zone	(BTU/h)
Q'f	: Fresh outdoor air load in each zone	(BTU/h)
Q'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	

#### 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 should be used 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)

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

HQ<sub>2T</sub> : 1.3 × (
$$\Sigma$$
Q'a +  $\Sigma$ Q'c +  $\Sigma$ Q'd +  $\Sigma$ Q'f) T<sub>2</sub> -  $\Psi$  ( $\Sigma$ Qe2 +  $\Sigma$ Qe3) (T<sub>2</sub> - 1)

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

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

HQ<sub>2T</sub> : 1.3 × (
$$\Sigma$$
Q'a +  $\Sigma$ Q'c +  $\Sigma$ Q'd +  $\Sigma$ Q'f) T<sub>2</sub> -  $\Psi$  ( $\Sigma$ Qe2 +  $\Sigma$ Qe3) (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<sub>2T</sub> : 1.3 × (
$$\Sigma$$
Q'a +  $\Sigma$ Q'c +  $\Sigma$ Q'd +  $\Sigma$ Q'f) T<sub>2</sub> -  $\psi$  ( $\Sigma$ Qe2 +  $\Sigma$ Qe3) (T<sub>2</sub> - 1)

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

HQ2T: 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 efficiencyHQ2T: 1.3 × ( $\Sigma Q$ 'a +  $\Sigma Q$ 'c +  $\Sigma Q$ 'd +  $\Sigma Q$ 'f) T<sub>2</sub> -  $\psi$  ( $\Sigma Qe2 + \Sigma Qe3$ ) (T2 - 1)

m

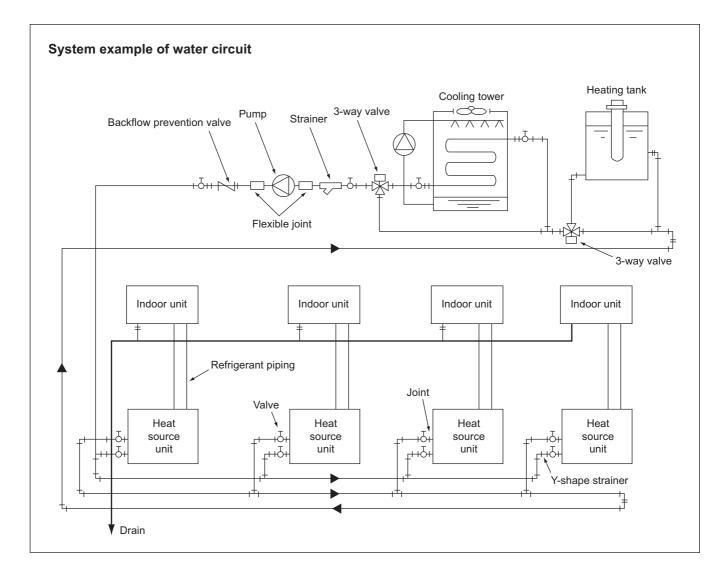
#### 4) Piping system

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: 30°C [86°F], winter: 20°C [68°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.



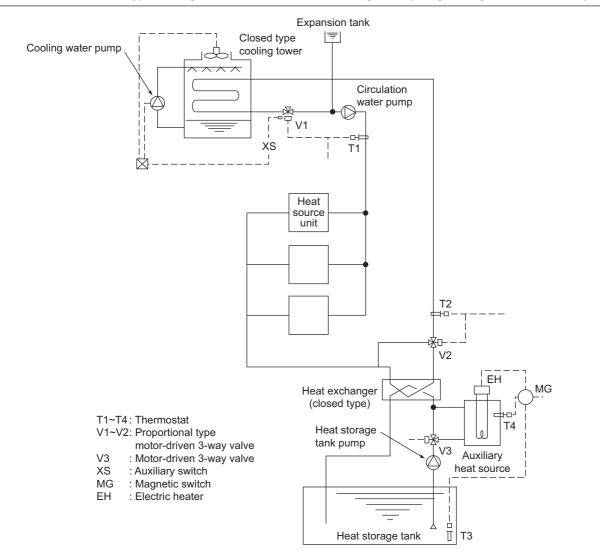
## 5) Practical System Examples and Circulation Water Control

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 inlet water temperature of the water heat source CITY MULTI stays within a range of 10~45°C [50~113°F]. However, the inlet water temperature near 30°C [86°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)

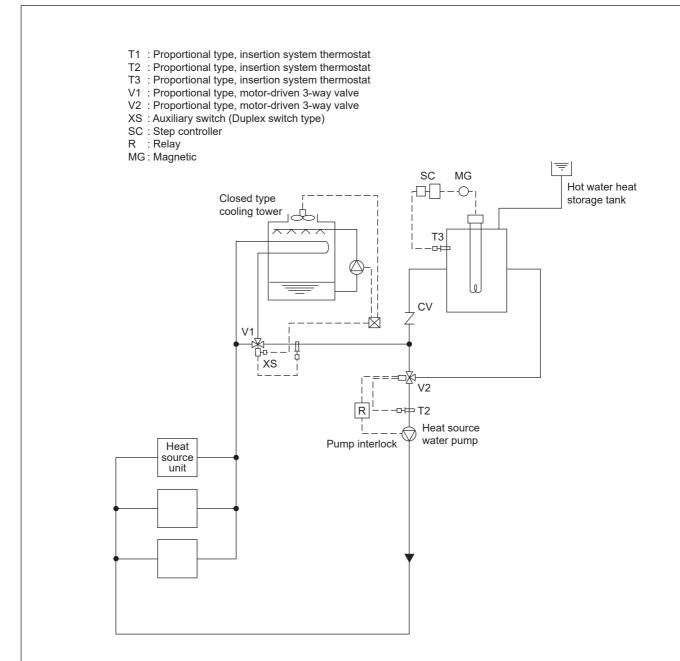


By detecting the inlet water temperature of the water heat source CITY MULTI system with T1 (around 30°C [86°F]) and T2 (around 20°C [68°F]), the temperature will be controlled by opening/closing V1 in the summer and V2 in the winter.

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



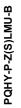
In the summer, as the inlet water temperature rises exceeding the set temperature of T1, the bypass port of V1 will open to lower the inlet water temperature. In the winter, if the inlet water temperature stays below 25°C [77°F], V2 will open/close by the command of T2 to keep the inlet water temperature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

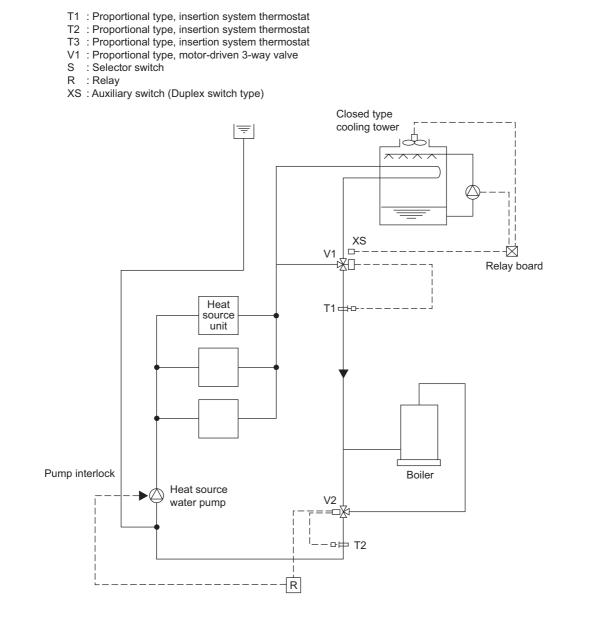
The temperature of the hot water inside the heat storage tank will be controlled through the step control of the electric heater by step controller operation following the command of T3.

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



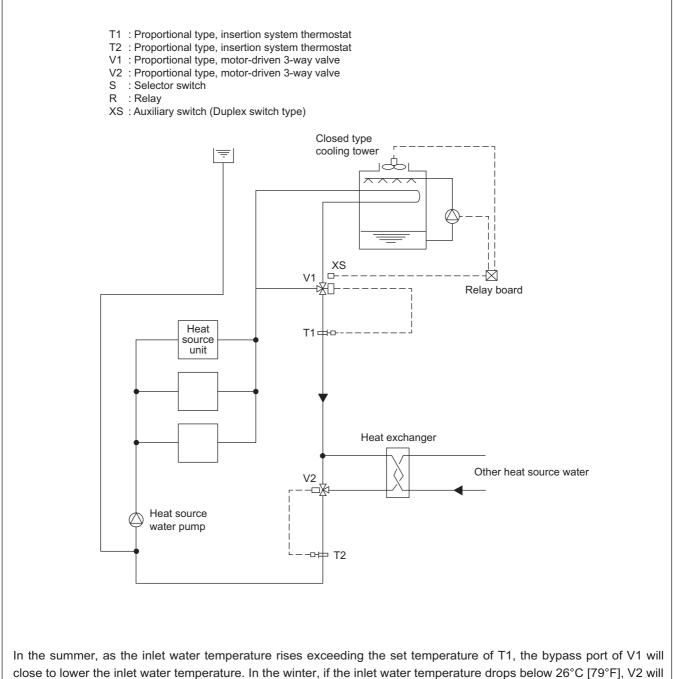


In the summer, as the inlet water temperature rises exceeding the set temperature of T1, the bypass port of V1 will close to lower the inlet water temperature. In the winter, if the inlet water temperature drops below 25°C [77°F], V2 will conduct water temperature control to keep the inlet water temperature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

During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking.

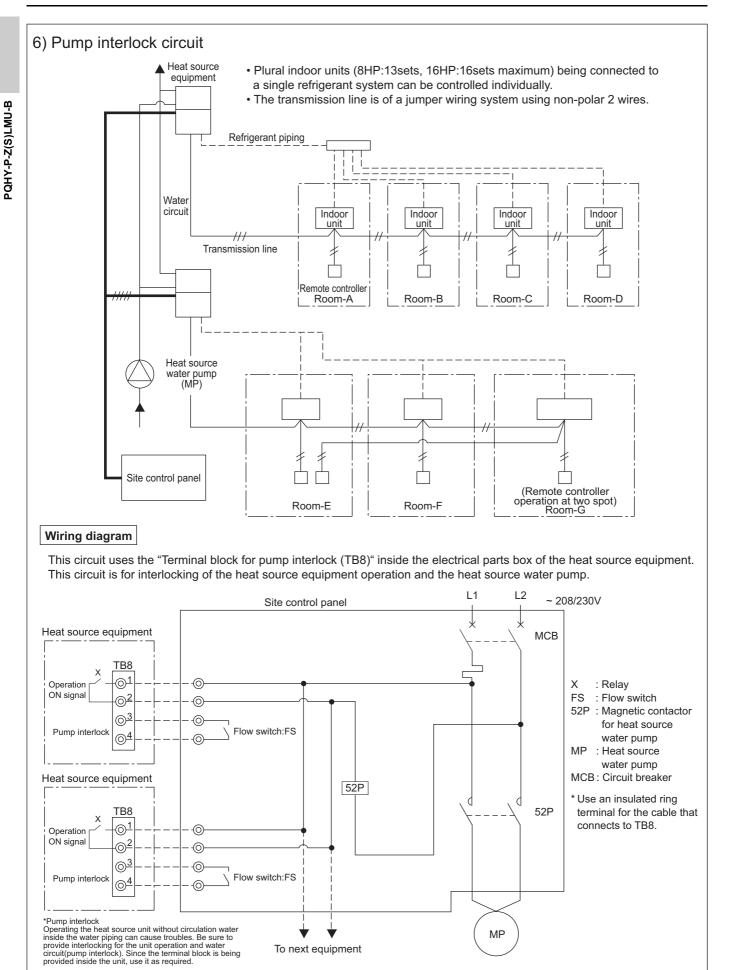
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control following the command of the auxiliary switch XS of V1, thus controlling water temperature and saving motor power.

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



conduct water temperature control to keep the inlet 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.



Use the flow switch (FS)

PQHY-P-Z(S)LMU-B

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
	<ul> <li>When setting No.917 for Dip switch 4 (Dip switch 6-10 is ON) is ON.</li> <li>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).)</li> </ul>
p Interlock	
<b>p Interlock</b> Terminal No.	TB8-3, 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 irrent 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		Operation according to the switch setting           OFF (LED3: Unlit)         ON (LED3: Lit)		Switch setting timing	Linit (Nata 2)		
				ON (LED3: Lit)	Switch setting tinning	Unit (Note 2)	
SW4 1-10 [0: OFF; 1: ON] (Note 1) SW6-10: <b>ON</b>	No. 810	0101010011	•	0 V: Fully open 10 V: Fully closed [Default]	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. Inlet 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.

Model		Water flow rate range
P72-P120	7.5-12.5HP	3.0-7.2 m <sup>3</sup> /h (50-120 L/min)
P144-P192	15-20HP	4.5-11.6 m <sup>3</sup> /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
  - 1. 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

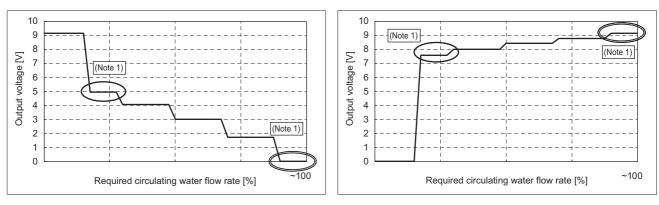
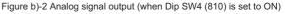


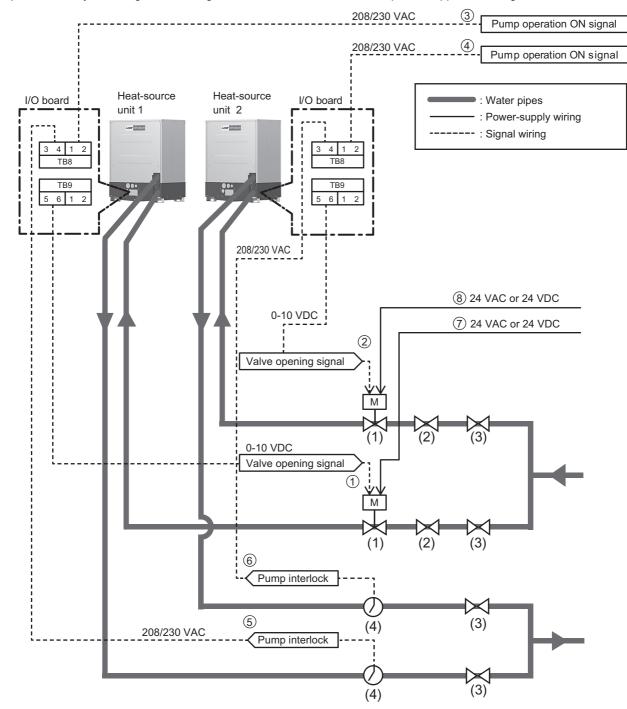
Figure b)-1 Analog signal output (when Dip SW4 (810) is set to OFF)



- (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 flow rate control valve 1	Power supply
8	Power supply for water flow rate control valve (Unit 2)	24 VAC or 24 VDC	Control board - Water flow rate control valve 2	Power supply

# 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.

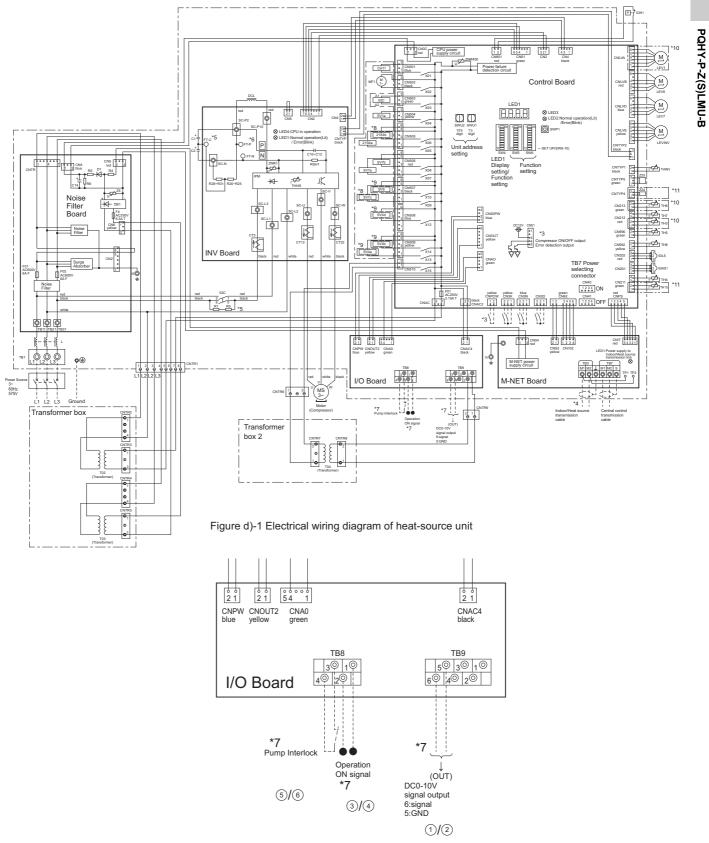


Figure d)-2 I/O board wiring diagram

(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 inlet 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.)

#### 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.)

Switch		Eunction	Function Operation according to the		Switch setting timing	Linit (Noto 2)	
	Switch		OFF (LED3: Unlit)		ON (LED3: Lit)	Switch setting tinning	Unit (Note 2)
SW4 1-10 [0: OFF; 1: ON] (Note 1) SW6-10: <b>ON</b>	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: <b>ON</b>	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	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.

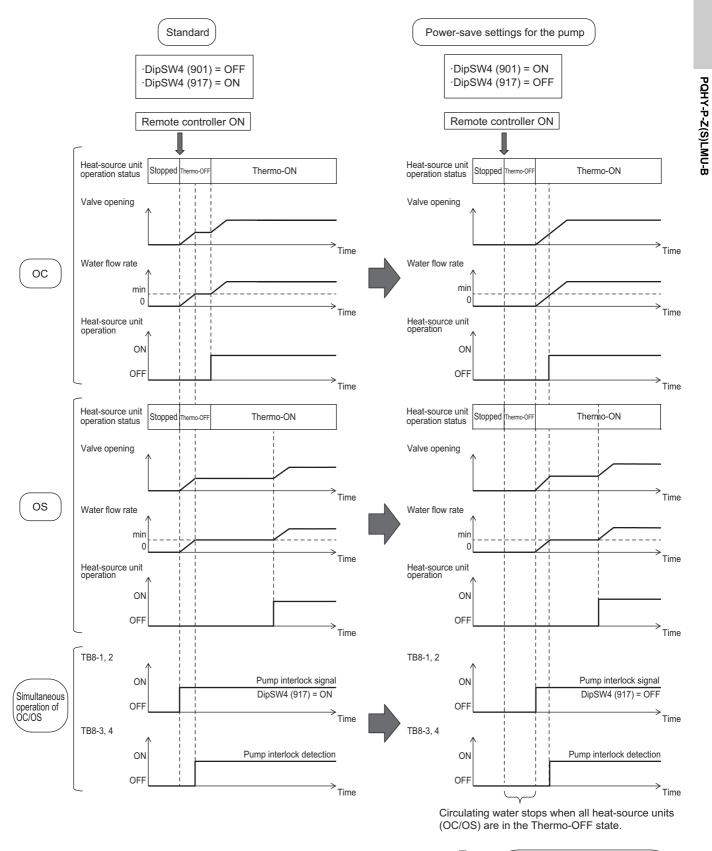
The switch needs to be re-set at the replacement of the control board.

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.

(Note 3) To use the functions above, be sure to set the switches in the following combinations.

- $\cdot$  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.



Power required by the pump is reduced compared to the standard settings.

## 8-2. Water piping work

Although the water piping for the CITY MULTI WY 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

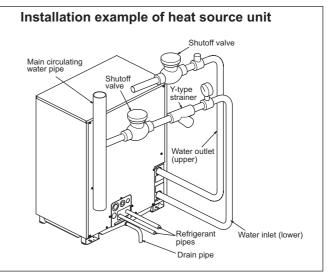
- The water pressure resistance of the water pipes in the heat source unit is 2.0MPa [290psi].
- In order to equalize piping resistance for each unit, adapt the reverse return system.
- Mount a joint and a valve onto the water outlet/inlet of the unit to allow for maintenance, inspection and replacement 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.
- a) Wrap the joint with sealing tape in the direction of the
- threads (clockwise), and do not let the tape run over the edge. b) 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.
- c) 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.
- Consider the circulating-water temperature and the water pressure range when deciding on the piping specifications.

## 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 WY system if the operating temperature range of inlet water stays within the temperature near the normal (summer :30°C [86°F], winter : 20°C [68°F]).

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

Use of well water for heat source water



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

## 3) Water treatment and water quality control

- To preserve water quality, use the closed type of cooling tower for WY/WR2. 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.

				iid-range water system	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	0
	Chloride ion	(mg Cŀ/ 🦉 )	50 or less	50 or less	0	
Standard	Sulfate ion	50 or less	50 or less	0		
items	Acid consumption	50 or less	50 or less		0	
	Total hardness	(mg CaCO₃/ ∉ )	70 or less	70 or less		0
	Calcium hardness	(mg CaCO <sub>3</sub> / 🦉 )	50 or less	50 or less		0
	Ionic silica	(mg SiO <sub>2</sub> / (/ )	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 dioxid	le (mg CO <sub>2</sub> / (/ )	0.4 or less	4.0 or less	0	
	Ryzner stability inc	lex	-	-	0	0

Reference : Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994) In order to keep the water quality within such standards, you are kindly requested to conduct bleeding-off by overflow and periodical water quality tests, and use inhibitors to suppress condensation or corrosion. Since piping may be corroded by some kinds of inhibitor, consult an appropriate water treatment expert for proper water treatment.

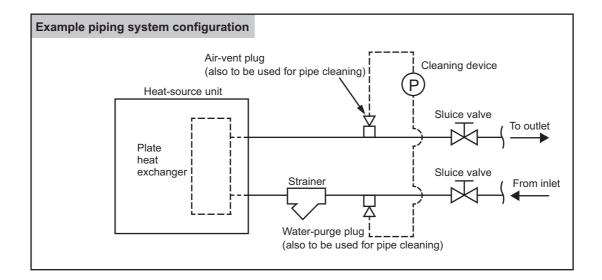
#### 4) Pump interlock

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

## 5) Handling plate heat exchangers for heat-source units

#### <Designing the piping system>

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



#### <Test run>

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

#### <Daily maintenance>

Controlling the water quality

Plate heat exchangers cannot be disassembled for cleaning and have no replaceable parts. Watch the water quality to prevent corrosion and scale formation. The quality of the water to be used for plate heat exchangers must meet the water quality guidelines JRA GL-02-1994 specified by Japan Refrigeration and Air conditioning Industry Association (JRAIA). (Refer to 3) Water treatment and water quality control.)

Controlling the circulation water flow rate
 Insufficient water rate will cause freeze damage to plate heat exchangers. Check for insufficient water flow caused by
 clogged strainer, trapped air in the system, or malfunction of the circulation water pump. Flow rate can also be checked
 by measuring the temperature or pressure difference between the inlet and outlet of plate heat exchangers.
 If the temperature or pressure difference goes outside of the specified range, stop the operation, remove the cause of
 the problem, and resume operation.

• What to do when the freeze protection trips If the freeze protection trips during operation, be sure to remove its cause before resuming operation. Tripped freeze protection indicates that the system is partially frozen, and resuming operation without removing the cause of the problem will result in freeze damage to plate heat exchangers and/or pipes as well as resultant refrigerant leaks and infiltration of water into the refrigerant circuit.

#### <Maintaining plate heat exchangers>

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

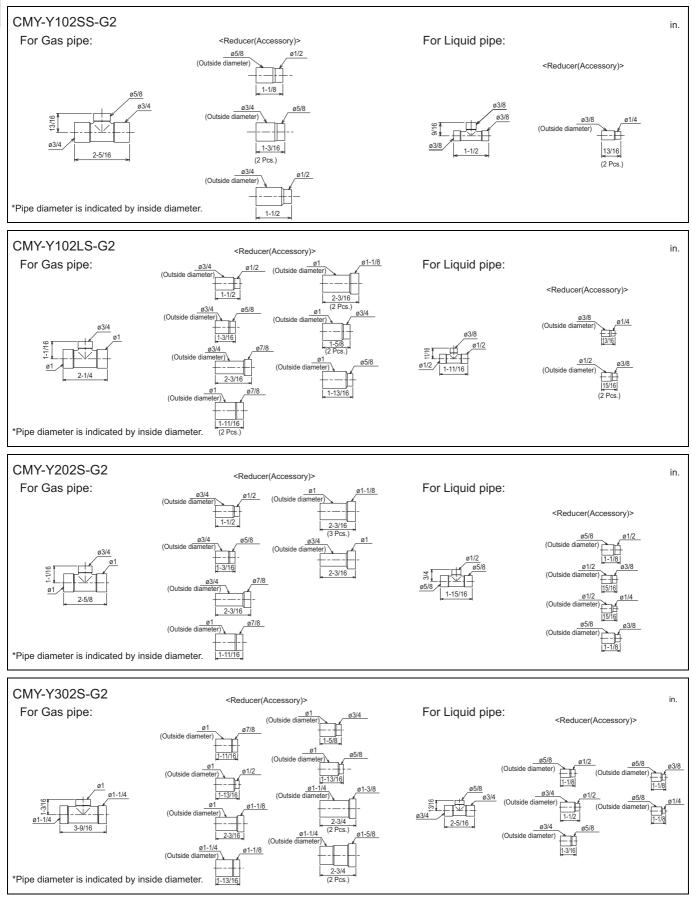
- · Check the following items before the operating season.
  - 1. Check that the water quality meets the specified water quality.
  - 2. Clean the strainers.
  - 3. Check that the water flow rate is adequate.
  - 4. Check for proper operation (e.g., pressure, flow rate, inlet/outlet temperatures).
- Plate heat exchangers cannot be disassembled for cleaning. Clean them in the following way.
  - 1. Make sure that there is a pipe connection port on the water inlet pipe.
    - Use formic acid, citric acid, oxalic acid, acetic acid, or phosphoric acid diluted to 5% to clean plate heat exchangers. Do not use highly corrosive acids, such as hydrochloric acid, sulfuric acid, or nitric acid.
  - 2. Make sure that valves are installed before the inlet connection port and after the outlet connection port.
  - 3. Connect a pipe for circulating cleaning solution to the inlet/outlet pipes of the plate heat exchanger, fill the plate heat exchanger with cleaning solution at a temperature between 50 and 60°C, and circulate the cleaning solution with a pump for 2 to 5 hours. The cleaning time will depend on the temperature of the cleaning solution and the degree of scale formation. Use the color of the cleaning solution as a guide to determine how long the system needs to be cleaned.
  - 4. When done, discharge the cleaning solution out of the plate heat exchanger, fill it with sodium hydrate (NaOH) or sodium bicarbonate (NaHCO<sub>3</sub>) 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. OPTIONAL PARTS

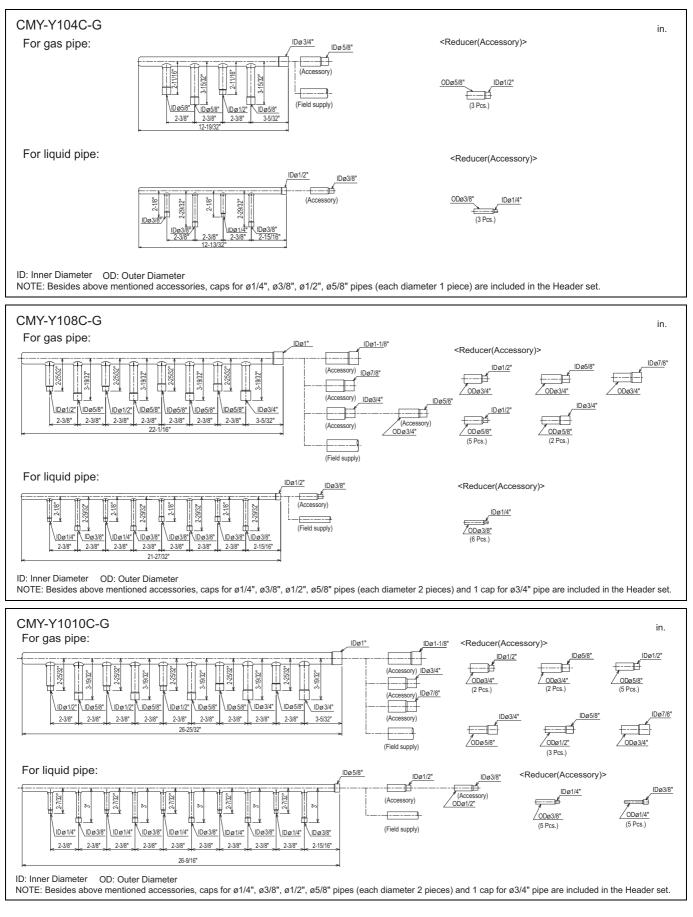
## 9-1. JOINT

CITY MULTI units can be easily connected by using Joint sets and Header sets provided by Mitsubishi Electric. Refer to section "Piping Design" or the Installation Manual that comes with the Joint set for how to install the Joint set.



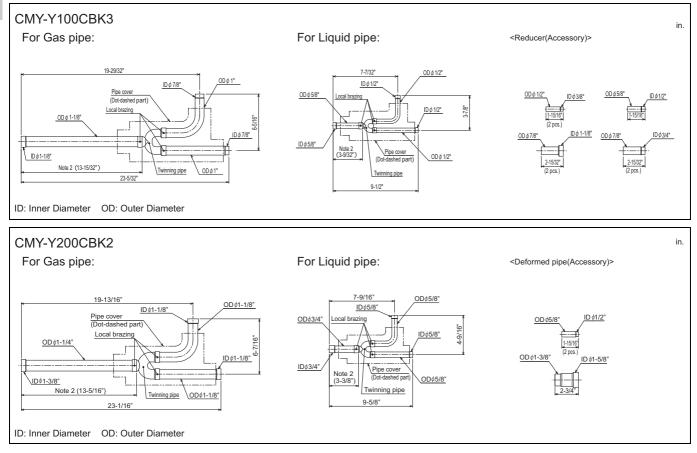
## 9-2. HEADER

CITY MULTI units can be easily connected by using Joint sets and Header sets provided by Mitsubishi Electric. Refer to section "Piping Design" or the Installation Manual that comes with the Header set for how to install the Header set.



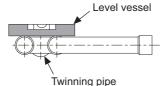
## 9-3. HEAT SOURCE TWINNING KIT

The following optional Heat Source 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. Refer to the figure below for the installation position of the twinning pipe.

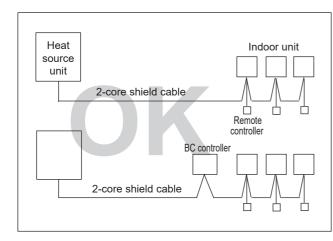
The Twinning pipe must be installed horizontally using a level vessel to avoid unit damage.

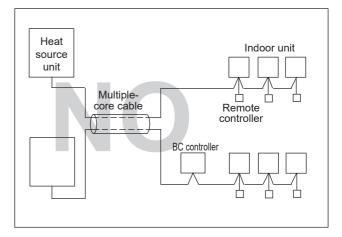


- 2. Use the attached pipe to braze the port-opening of the twinning pipe.
- 3. Pipe diameter is indicated by inside diameter.
- 4. Only use the twinning pipe by Mitsubishi (optional parts).

## 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.
- ⑤ Never connect 100V, 208-230V, 575V power source to terminal block of transmission cable. If connected, electrical parts will be damaged.
- Is Use 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.





PQHY-P-Z(S)LMU-B

## 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 MOP: Maximum Overcurrent Protection

Madal	Unit Combination		Compressor				
Model	Unit Combination	Hz	Volts	Voltage range	MCA (A)	MOP (A)	Output (kW)
PQHY-P72ZLMU	-		6	15	4.3		
PQHY-P96ZLMU	-				9	15	6.0
PQHY-P120ZLMU	-				13	20	7.7
PQHY-P144ZLMU	-				15	25	9.5
PQHY-P168ZLMU	-				21	35	11.0
PQHY-P192ZLMU	-				26	45	12.4
PQHY-P144ZSLMU	PQHY-P72ZLMU				6	15	4.3
	PQHY-P72ZLMU				6	15	4.3
PQHY-P168ZSLMU	PQHY-P72ZLMU				6	15	4.3
	PQHY-P96ZLMU				9	15	6.0
PQHY-P192ZSLMU	PQHY-P96ZLMU				9	15	6.0
	PQHY-P96ZLMU	60Hz	575V	518 to 633V	9	15	6.0
PQHY-P216ZSLMU	PQHY-P96ZLMU	0002	5750	516100550	9	15	6.0
	PQHY-P120ZLMU				13	20	7.7
PQHY-P240ZSLMU	PQHY-P120ZLMU				13	20	7.7
	PQHY-P120ZLMU				13	20	7.7
PQHY-P288ZSLMU	PQHY-P144ZLMU				15	25	9.5
	PQHY-P144ZLMU				15	25	9.5
PQHY-P312ZSLMU	PQHY-P144ZLMU				15	25	9.5
	PQHY-P168ZLMU				21	35	11.0
PQHY-P336ZSLMU	PQHY-P168ZLMU				21	35	11.0
	PQHY-P168ZLMU				21	35	11.0
PQHY-P360ZSLMU	PQHY-P168ZLMU				21	35	11.0
	PQHY-P192ZLMU				26	45	12.4

## 10-3. Power cable specifications

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

	Model	Minimum wire thick	ness [mm <sup>2</sup> (AWG)]	Breaker for current leakage
	WOUEI	Main cable	Ground	bleaker for current leakage
	P72ZLMU	2.1 (14)	2.1 (14)	15 A 30 mA or 100 mA 0.1 sec. or less
	P96ZLMU	2.1 (14)	2.1 (14)	15 A 30 mA or 100 mA 0.1 sec. or less
Heat source unit	P120ZLMU	2.1 (14)	2.1 (14)	15 A 30 mA or 100 mA 0.1 sec. or less
Heat Source unit	P144ZLMU	3.3 (12)	3.3 (12)	20 A 30 mA or 100 mA 0.1 sec. or less
	P168ZLMU	5.3 (10)	5.3 (10)	25 A 30 mA or 100 mA 0.1 sec. or less
	P192ZLMU	5.3 (10)	5.3 (10)	30 A 30 mA or 100 mA 0.1 sec. or less

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

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

3. The wire size is the minimum value for metal conduit wiring. If the voltage drops, use a wire that is one rank thicker in diameter. Make sure the power-supply voltage does not drop more than 10%. Make sure that the voltage imbalance between the phases is 2% or less.

4. Specific wiring requirements should adhere to the wiring regulations of the region.

5. Power supply cords of parts of appliances for heat source use shall not be lighter than polychloroprene sheathed flexible cord (design 245 IEC57). For example, use wiring such as YZW.

6. A switch with at least 3 mm [1/8 in.] contact separation in each pole shall be provided by the Air Conditioner installer.

#### 

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

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

#### 

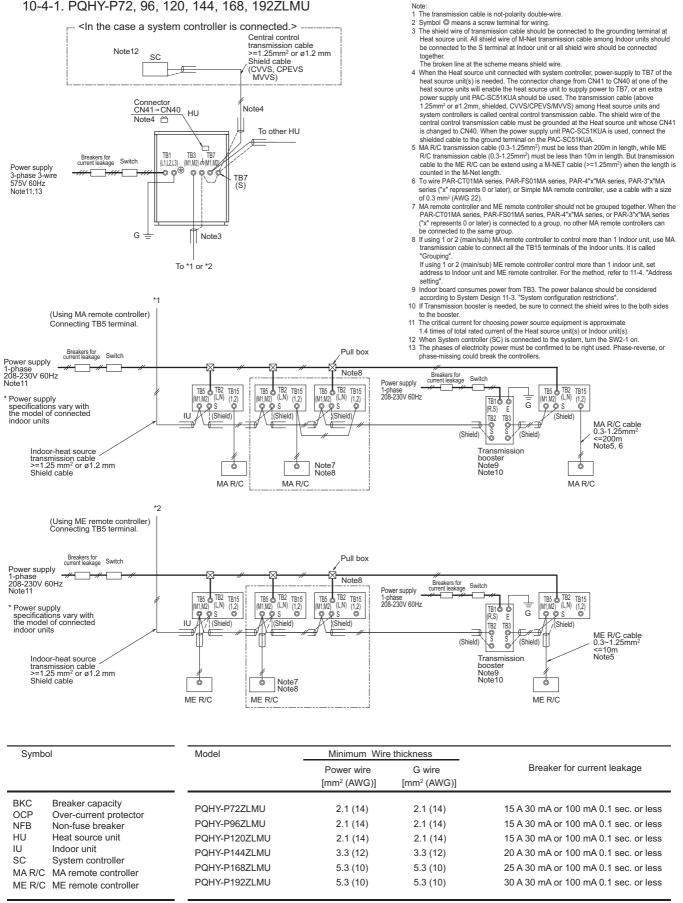
- The breakers for current leakage should support Inverter circuit. (e.g. Mitsubishi Electric's NV-C series or equivalent). If no earth leakage breaker is installed, it may cause an electric shock.
- Breakers for current leakage should combine using of switch.
- Do not use anything other than a breaker 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.

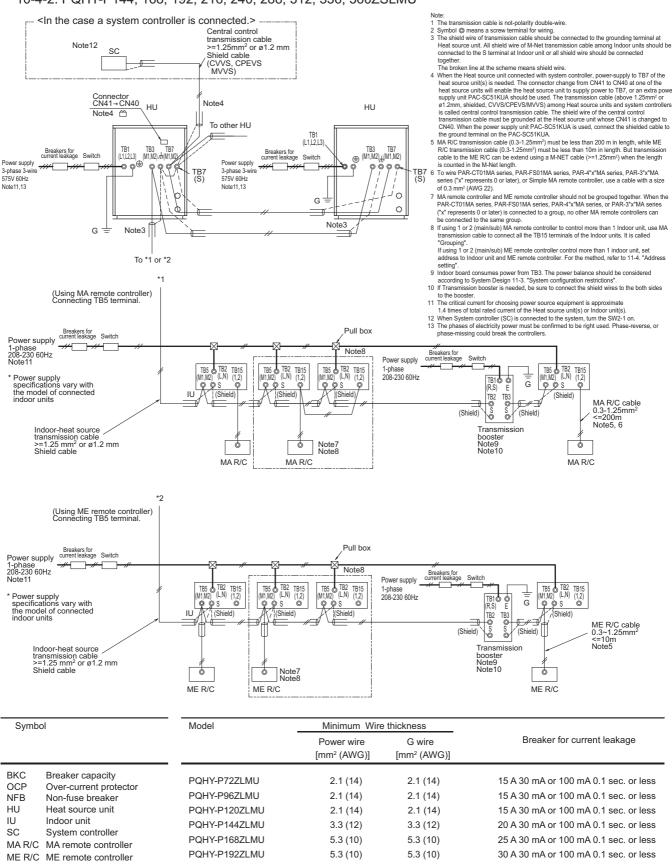
PQHY-P-Z(S)LMU-B

#### 10-4. Power supply examples

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



The local standards and/or regulations is applicable at a higher priority. 10-4-2. PQHY-P144, 168, 192, 216, 240, 288, 312, 336, 360ZSLMU



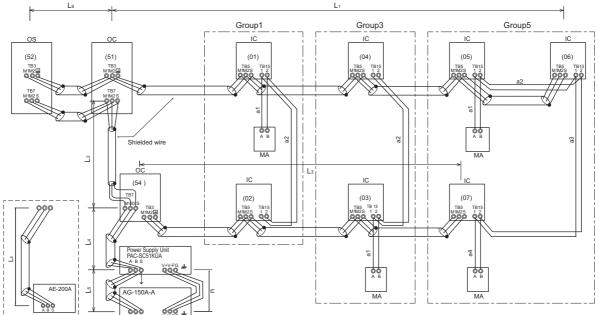
## 11-1. Transmission cable length limitation

#### 11-1-1. Using MA Remote controller

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

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

Max. length via Heat source (M-NET cable)	L1+L2+L3, L1+L2+L4+L5, L3+L4+L5, L6+L2+L3, L6+L2+L4+L5	<=500m[1640ft.]	Larger than 1.25 mm <sup>2</sup> [AWG16], or ø1.2 mm or above
Max. length to Heat source (M-NET cable)	L1+L6, L3, L2+L4+L6, L5	<=200m[656ft.]	Larger than 1.25 mm <sup>2</sup> [AWG16], or ø1.2 mm or above
Max. length from MA to Indoor for each group	a1+a2, a1+a2+a3+a4	<=200m[656ft.]	0.3-1.25 mm <sup>2</sup> [AWG22-16]
24VDC to AG-150A-A	n	<=50m[164ft.]	0.75-2.0 mm <sup>2</sup> [AWG18-14]



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

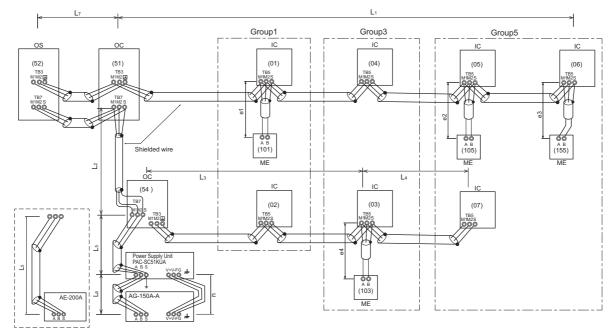
#### 11-1-2. Using ME Remote controller

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+L5+L6, L3+L4+L5+L6,	<=500m[1640ft.]	Larger than 1.05 mm <sup>2</sup> [AWC16], or g1.0 mm or above
	L7+L2+L3+L4, L7+L2+L5+L6, L3+L5+L6	<-500m[1640it.]	Larger than 1.25 mm <sup>2</sup> [AWG16], or ø1.2 mm or above
Max. length to Heat source (M-NET cable)	L1+L7, L3+L4, L2+L5+L7, L6	<=200m[656ft.]	Larger than 1.25 mm <sup>2</sup> [AWG16], or ø1.2 mm or above
Max. length from ME to Indoor	e1, e2, e3, e4	<=10m[32ft.]*1	0.3-1.25 mm <sup>2</sup> [AWG22-16] *1
24VDC to AG-150A-A	n	<=50m[164ft.]	0.75-2.0 mm <sup>2</sup> [AWG18-14]
1			

\*1. If the length from ME to Indoor exceed 10m, use 1.25 mm<sup>2</sup> [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

PQHY-P-Z(S)LMU-B

## 11-2. Transmission cable specifications

	Transmission cables (Li)	MA Remote controller cables	ME Remote controller cables	
Type of cable Shielded cables (2-core) CVVS, CPEVS, and MVVS		VCTF, VCTFK, CVV, VVR, VVF, VCT	Shielded cables (2-core) CVVS, CPEVS, and MVVS	
Cable size	Larger than 1.25 mm <sup>2</sup> [AWG16], or ø1.2 mm or above	0.3 to 1.25 mm <sup>2</sup> [AWG22 to 16] *1 *5	0.3 to 1.25 mm <sup>2</sup> [AWG22 to 16] *1 *6	
Maximum overall line length Refer to 11-1.		200 m [656 ft] *3 *4	10 m [32 ft] *2	
*1 The use of cables that are smaller than 0.75 mm <sup>2</sup> (AWG18) is		CVVS, MVVS: PVC insulated PVC sheathed shielded control cable		

recommended for easy handling.

\*2 The section of the cable that exceeds 10 m [32 ft] must be included in the maximum indoor-outdoor transmission line distance.

\*3 Max. 70 m [229 ft] for PAR-CT01MA series

\*4 Max. 150 m [492 ft] for PAR-FS01MA series

\*5 To wire PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, PAR-3"x"MA series ("x" represents 0 or later), or Simple MA remote controller, use a cable with a size of 0.3 mm<sup>2</sup> (AWG 22).

\*6 When connected to the terminal block on the Simple remote controller, use a cable with a size of 0.75 to 1.25 mm<sup>2</sup> (AWG18 to 16).

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 the PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, or PAR-3"x"MA series ("x" represents 0 or later) is connected to a group, no other MA remote controllers can be connected to the same group.

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)]  $\leq$  [40]

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

Category Model		The equivalent power consumption	The equivalent number of units
la da an conte	Sized P04-P96, PEFY-AF1200CFM-E	1	1
Indoor unit	PEFY-AF1200CFMR-E	2	2
BC controller	СМВ	2	1
HBC controller	CMB-WP	2	1
	P36NMU-E-BU	6	1
PWFY *1	P36NMU-E2-AU	1	1
	P72NMU-E2-AU	5	1
MA remote controller/LOSSNAY MA rem		0	0
ME remote controller	emote controller PAR-U01MEDU		1
	AE-C400A/EW-C50A 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

\*1 PWFY cannot be connected to PUMY model.

#### Table 2 The equivalent power supply

Category	Model The equivalent power supply				
Transmission Booster	PAC-SF46EPA-G		25 *1		
Power supply unit	PAC-SC51KUA		5		
Expansion controller	PAC-YG50ECA		6		
BM ADAPTER	BAC-HD150	6			
	AE-C400A/EW-C50A	0.75			
0	AE-200A/AE-50A	0.75			
System controller	EW-50A	1.5			
	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	6	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.

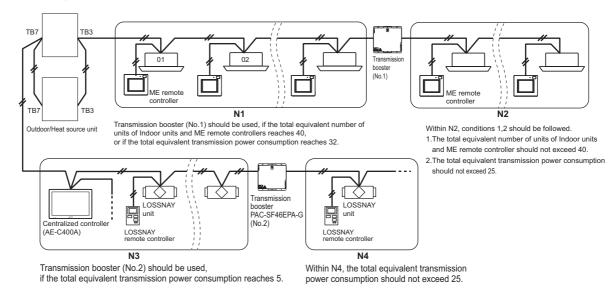
#### Table 3

Category	Model	
	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.

With the equivalent power consumption values and the equivalent number of units in Table 1 and Table 2, PAC-SF46EPA-G 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-G 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-G should be set. Yet, if a PAC-SC51KUA or another controller with a built-in power supply, such as AE-C400A/EW-C50A, 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-G 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-G 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



MEES24K112

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

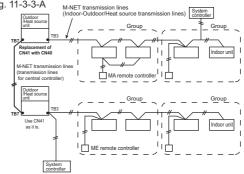
The power to System controller (excluding AE-C400A, EW-C50A) is supplied via M-NET transmission line. M-NET transmission line at TB7 side is called Centralized control transmission line while one at TB3 side is called Indoor-Outdoor/Heat source transmission line. There are 3 ways to supply power to the 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)
- C) Connecting to TB7 of the Outdoor/Heat source unit but receiving power from power supply unit PAC-SC51KUA. \* System controllers (AE-C400A, EW-C50A) 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.

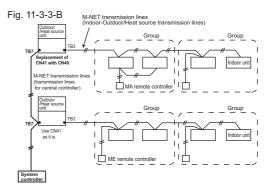


11-3-3-B. When connecting to TB7 of the Outdoor/Heat source unit and receiving power from the Outdoor/Heat source unit. (Not applicable to the PUMY model)

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

(Not applicable to the PUMY model)

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

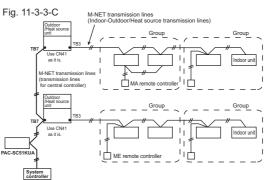


11-3-3-C. When connecting to TB7 of the Outdoor/Heat source unit but receiving power from PAC-SC51KUA.

When feeding power to the system controller from the power-supply unit PAC-SC51KUA, leave the power jumper connected to the CN41 of the outdoor/heat-source unit as it is (factory setting).

The equivalent power consumption of a controller that is connectable to a PAC-SC51KUA is "5" as shown in Table 2.

When connecting a system controller with an equivalent power consumption of greater than 5, use a transmission booster PAC-SF46EPA-G.



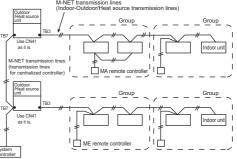
## 

How to connect system controllers (AE-C400A, EW-C50A) to a given system

System controllers (AE-C400A, EW-C50A) 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-C50A) to the low-level system controllers.





#### 11-3-4. 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)

## 11-3-5. Power supply to AE-C400A/EW-C50A

1-phase 100-240VAC power supply is needed. The power supply unit PAC-SC51KUA is not necessary when connecting only the AE-C400A/EW-C50A.

## 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.

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

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

- <sup>(2)</sup> 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".

PAR-4"x"MAA ("x" represents 0 or later), PAR-CT01MA The MA remote controller does not have the switches listed above. Refer to the installation manual for the function setting.

#### 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".

Rotary switch		
Branch No. setting Unit address No. setting		
173456 440368 68	$ \begin{array}{c}                                     $	

## 11-4-2. Rule of setting address

	Unit	Address setting	Example	Note
Sys (M/ A-N	oor unit stem control interface AC-333IF-E) A converter \C-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)
He	eat 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	$ \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 0 \\ 10 \end{bmatrix} $	Lowest address within the indoor units connected to the BC controller (Sub) plus 50.
e controller	ME, LOSSNAY Remote controller (Main)	101 ~ 150	$1_{\text{Fixed}}  1_{0}  1_{10} $	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	$1_{\text{Fixed}} \qquad \underbrace{\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 1 & 0 & 0 \end{bmatrix}}_{10} \underbrace{\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}}_{1}$	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.
n 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	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.
	PAC-YG60MCA	01 ~ 50	$ \begin{array}{c} \begin{array}{c} 0 \\ 0 \\ - \\ 0 \\ 0$	
PI, AI, DIDO	PAC-YG63MCA	01 ~ 50	$10 \begin{bmatrix} q & 0 & r \\ q & 0 & r \\$	
F	PAC-YG66DCA	01 ~ 50	$ \begin{array}{c}                                     $	
LC	DSSNAY	01 ~ 50	$10 \qquad \qquad$	After setting the addresses of all the indoor units, assign an arbitrary address.
PAC-IF01AHC-J 201		201 ~ 250	$\underset{\text{Fixed}}{2} \qquad \qquad \overbrace{10}^{0} \overbrace{\downarrow }_{0} \overbrace{J}_{0} \overbrace{J}_{I} \overbrace{J} \overbrace{J}_{I} \overbrace{J} \overbrace{J}_{I} \overbrace{J} \overbrace{J} \overbrace{J}_{I} \overbrace{J} \overbrace{J} \overbrace{J} \overbrace{J} \overbrace{J} \overbrace{J} \overbrace{J} J$	

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.

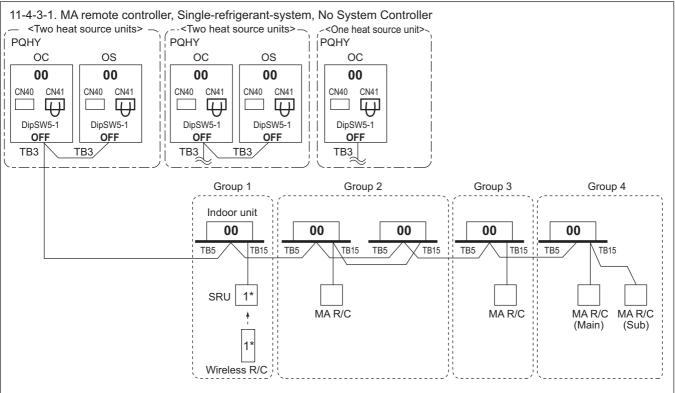
## 11-4-3. System examples

## Factory setting

Original switch setting of t	he heat sources, indoors, controllers, and BM ADAPTER at shipment is as follows.
<ul> <li>Heat source unit</li> </ul>	: Address: 00, CN41: ON (Jumper), DipSW5-1: OFF
<ul> <li>Indoor unit</li> </ul>	: Address: 00
<ul> <li>ME remote controller</li> </ul>	: Address: 101
<ul> <li>BM ADAPTER</li> </ul>	: Address: 000, CN41: ON (Jumper)
• AE-200A/AE-50A/EW-50A	x : Address: 000, CN21: ON (Jumper)

## Setting at the site

DipSW5-1(Heat source	) : When the System Controller is used, all the Dip SW5-1 at the heat source units should be set to "ON".
• 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 BM ADAPTER will activate transmission power supply to 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	A) : Activates the power supply to M-NET transmission line from AE-200A/AE-50A/EW-50A
	(CN21: ON (power supplied), OFF (power not supplied)



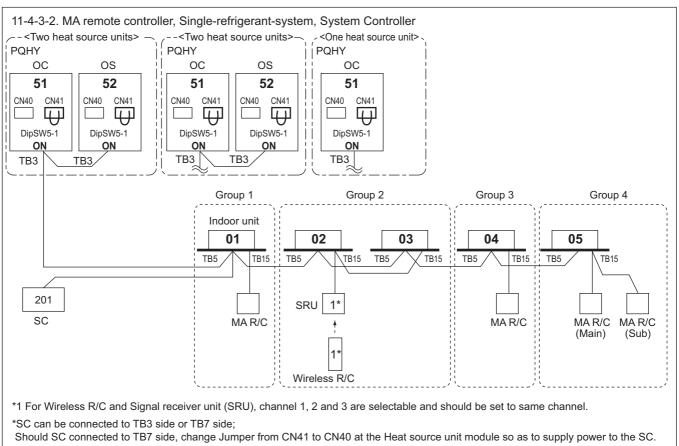
\*1 For Wireless R/C and Signal receiver unit (SRU), channel 1, 2 and 3 are selectable and should be set to same channel.

 Heat source units OC and OS in one refrigerant circuit system are automatically detected. OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

2. No address setting is needed.

- 3. For a system having more than 32 indoor unit, confirm the need of Booster at 11-3. "System configuration restrictions".
- 4. When the PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, or PAR-3"x"MA series ("x" represents 0 or later) is connected to a group, no other MA remote controllers can be connected to the same group.

NOTE:



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.

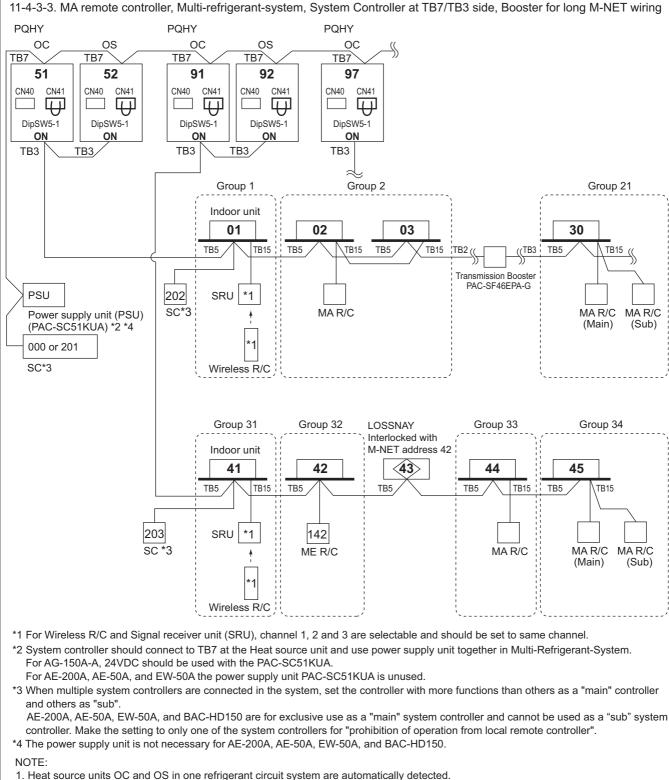
3. For a system having more than 32 indoor unit, confirm the need of Booster at 11-3. "System configuration restrictions".

4. When the PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, or PAR-3"x"MA series ("x" represents 0 or later) is connected to a group, no other MA remote controllers can be connected to the same group.

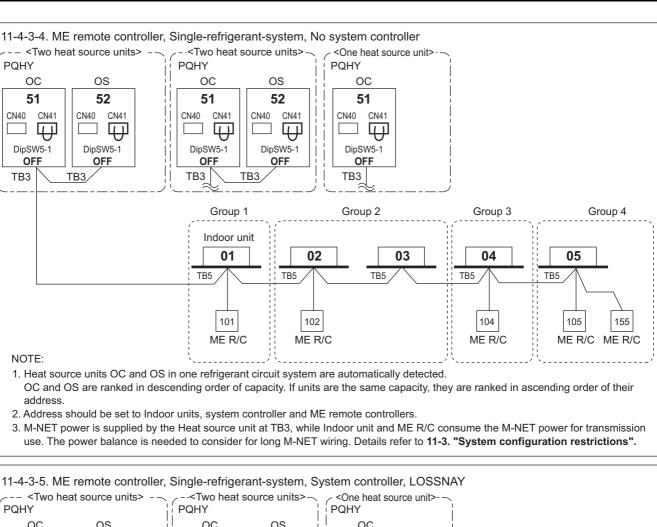
PQHY-P-Z(S)LMU-B

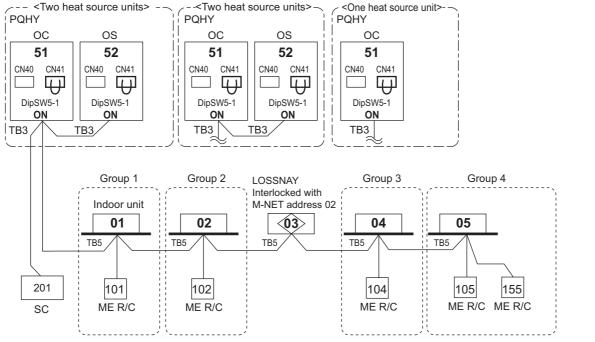
WY-Series-575V

## **11. M-NET CONTROL**



- 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 and system controller.
- 3. M-NET power is supplied by the Heat source unit at TB3, while Indoor unit and ME remote controller consume the M-NET power for transmission use. The power balance is needed to consider for long M-NET wiring. Details refer to **11-3**. "System configuration restrictions".
- 4. When the PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, or PAR-3"x"MA series ("x" represents 0 or later) is connected to a group, no other MA remote controllers can be connected to the same group.





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

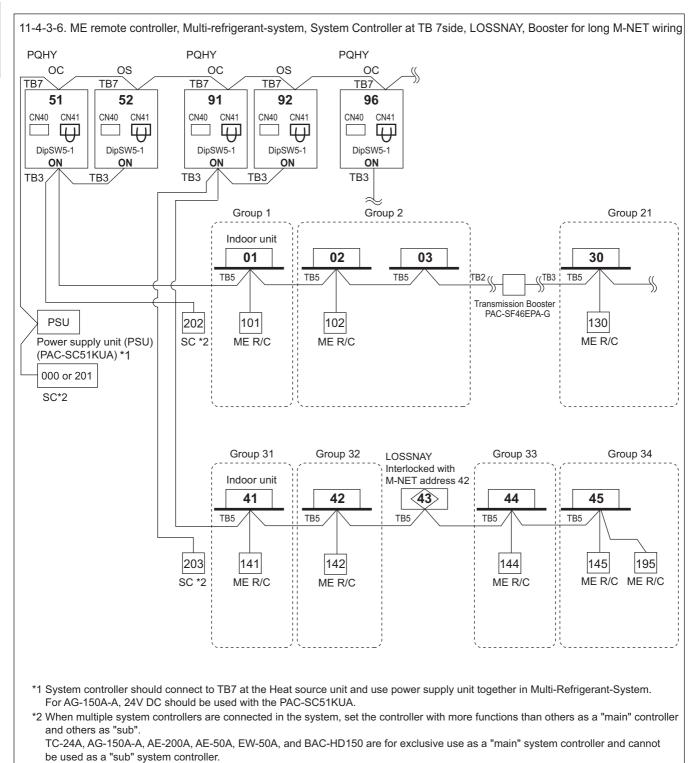
Should SC connected to TB7 side, change Jumper from CN41 to CN40 at the Heat source unit module so as to supply power to the SC. NOTE:

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, confirm the need of Booster at 11-3. "System configuration restrictions".

PQHY-P-Z(S)LMU-B





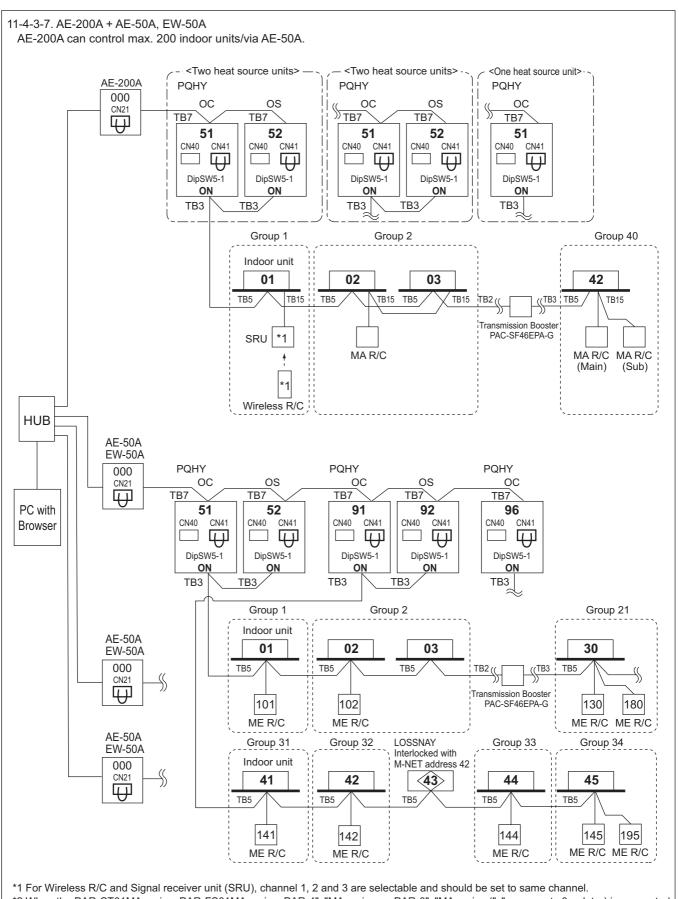
Make the setting to only one of the system controllers for "prohibition of operation from local remote controller".

NOTE:

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

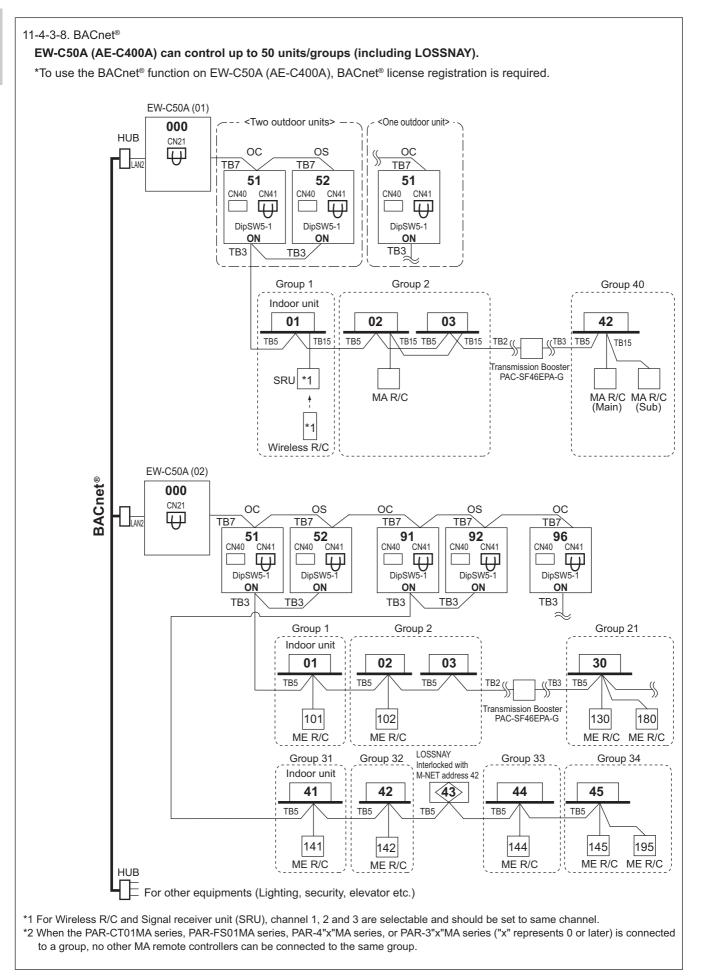
OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

2. M-NET power is supplied by the Heat source unit at TB3, while Indoor unit and ME remote controller consume the M-NET power for transmission use. The power balance is needed to consider for long M-NET wiring. Details refer to **11-3. "System configuration restrictions".** 



\*2 When the PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, or PAR-3"x"MA series ("x" represents 0 or later) is connected to a group, no other MA remote controllers can be connected to the same group.

WY-Series-575V

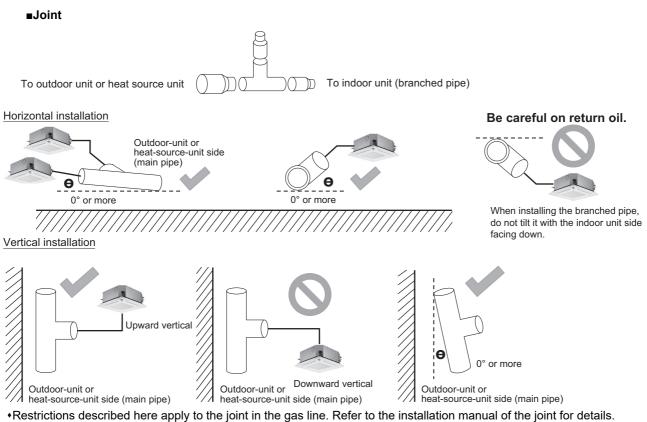


# 12-1. R410A Piping material

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

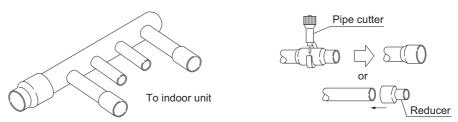
Refer to the instructions that came with the branched pipe kit (separately sold) for details. [1] Branches on the indoor-unit side



CMY-Y202S-G2 or 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

•Restrictions described here apply to the header in the gas line. Refer to the installation manual of the header for details on how to install the header.

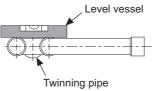
•If the size of the refrigerant pipe that is selected by following the instructions under "Piping Design" section does not match the size of the header, cut the pipe to an appropriate size using a pipe cutter, or use a reducer to connect them.

•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.

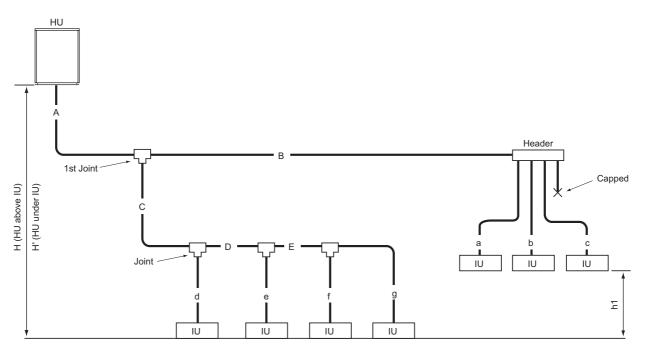
The Twinning pipe must be installed horizontally using a level vessel to avoid unit damage.



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

# 12-2. Piping Design

## Rule for piping size selection



IU: Indoor unit , HU: Heat source unit

#### 1. Selecting joints

Select joints from Table 4-1 [Selection criteria for joints] based on the total capacity of indoor units on the downstream side. When selecting the first joint for the system to which the heat source unit listed in Table 4-2 [See the table below for the first joint of the heat source unit described below.] is connected, select the first joint from Table 4-2.

2. Selecting headers

Select headers from Table 5 [Header selection rule] based on the number of indoor units to be connected. Refer to Table 5, which shows the total capacity limits, for the indoor units to be connected on the downstream side. When connecting a header directly to the heat source unit, select the header by referring to the notes in Table 5. \*The piping cannot be branched on the downstream of the header.

#### 3. Selecting refrigerant pipe sizes

(1) Between heat source unit and the 1st joint [A]

Select the appropriate size pipes for the selected heat source unit from Table 1 [Piping "A" size selection rule].

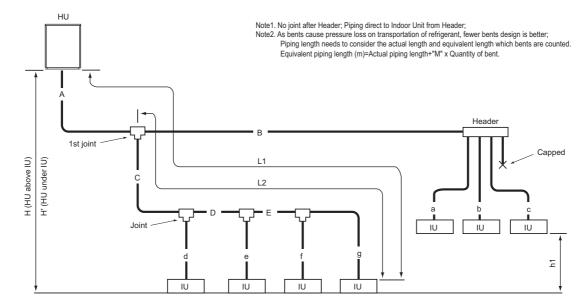
(2) Between joints [B, C, D, and E]

Select the appropriate size pipes from Table 2 [Piping "B", "C", "D", ... size selection rule] based on the total capacity of indoor units on the downstream side.

- (3) Between joints and indoor units [a, b, c, d, e, f, and g] Select the appropriate size pipes from Table 3 [Piping "a", "b", "c", "d", ... size selection rule] based on the capacity of indoor units.
- (4) After selecting the pipe sizes in accordance with steps (1) through (3) above, if the size of the pipes on the downstream is larger than that on the upstream, it is not necessary to be bigger than the upstream one.
- 4. Checking the refrigerant charge

Calculate the amount of refrigerant to be added based on the pipe sizes selected in Items 1 through 3 above, and make sure that the total amount of the initial charge and the additional charge combined will not exceed the maximum allowable refrigerant charge amount. If this amount exceeds the maximum allowable amount, redesign the system (i.e., piping length) so that the total refrigerant charge will not exceed the maximum allowable amount.

## 12-2-1. PQHY-P72-192ZLMU Piping



#### Fig. A Piping scheme

IU : Indoor unit , HU : Heat source unit

Piping length			(m [ft.])	Bent equivalent length	"M"
Item	Piping in the figure	Max. length	Max. 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	*1	-	PQHY-P72ZLMU	0.35 [1.15]
Farthest IU from HU (L1)	A+C+D+E+g / A+B+c	165 [541]	190 [623]	PQHY-P96ZLMU	0.42 [1.38]
Farthest IU from first joint (L2)	C+D+E+g / B+c	40 [131] *2	2 40 [131]	PQHY-P120ZLMU	0.42 [1.38]
Height between HU and IU (HU above IU)	Н	50 [164]	-	PQHY-P144ZLMU	0.50 [1.64]
Height between HU and IU (HU under IU)	H'	40 [131]	-	PQHY-P168ZLMU	0.50 [1.64]
Height between IU and IU	h1	15 [49]	-	PQHY-P192ZLMU	0.50 [1.64]
HU: Heat source Unit IU: Indoor Unit					

\*1 300 m [984 ft.] for PQHY-P72-120ZLMU, 500 [1640] for PQHY-P144-192ZLMU

\*2 90 m [295 ft.] is available. When the piping length exceeds 40 m [131 ft.], use one size larger liquid pipe starting with the section of piping where 40 m [131 ft.] is exceeded and all piping after that point. In the figure above, if the piping labeled "E" exceeds 40 m [131 ft.] (but does not exceed 90 m [295 ft.]), increase the size of the liquid piping labeled E, f, and g by one size.

#### Table1. Piping "A" size selection rule

(mm [in.]) Table4-1. Selection criteria for joints

the heat source unit described below.

heat source unit model

P96 to P120

	alo	(		
Heat source unit	Pipe(Liquid)	Pipe(Gas)	Total down-stream Indoor capacity	Joint
PQHY-P72ZLMU	ø9.52 [3/8]	ø19.05 [3/4]	~ P72	CMY-Y102SS-G2
PQHY-P96ZLMU	ø9.52 [3/8] *1	ø22.20 [7/8]	P73 ~ P144	CMY-Y102LS-G2
PQHY-P120ZLMU	ø9.52 [3/8] *2	ø22.20 [7/8]	P145 ~ P240	CMY-Y202S-G2
PQHY-P144ZLMU	ø12.70 [1/2]	ø28.58 [1-1/8]	P241 ~	CMY-Y302S-G2
PQHY-P168-192ZLMU	ø15.88 [5/8]	ø28.58 [1-1/8]	*Concerning detailed usage of joint parts, refer to its Installation Manual.	
*1 L1>=90 m [295 ft.], ø12.70 mm [1/2 in.]			Table4-2.	
*2 L1>=40 m [131 ft.]. ø12.70 mm [1/2 in.]			See the table below for the first joint of	

^2 L1>=40 m [131 ft.], ø12.70 mm [1/2 in.	1
---	---

Table2.	Piping"B","C","D","E"size selection rule	(mm [in.])

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
~ P54	ø9.52 [3/8]	ø15.88 [5/8]
P55 ~ P72	ø9.52 [3/8]	ø19.05 [3/4]
P73 ~ P108	ø9.52 [3/8]	ø22.20 [7/8]
P109~ P144	ø12.70 [1/2]	ø28.58 [1-1/8]
P145~ P240	ø15.88 [5/8]	ø28.58 [1-1/8]
P241~P308	ø19.05 [3/4]	ø34.93 [1-3/8]
P309~	ø19.05 [3/4]	ø41.28 [1-5/8]

P144 to P192 CMY-Y202S-G2 Table5. Header selection rule 4-branch Header 8-branch Header 10-branch Header

	CMY-Y104C-G	CMY-Y108C-G	CMY-Y1010C-G
otal down-stream Indoor capacity	<=P72	<=P144	<=P240

Joint model

CMY-Y102LS-G2

\* CMY-Y104C-G can directly connect PQHY-P72ZLMU, but can NOT directly connect PQHY-P96ZLMU or above; \* CMY-Y108C-G can directly connect PQHY-P72-144Z(S)LMU, but can NOT directly connect PQHY-P168Z(S)LMU or above; \* CMY-Y1010C-G can directly connect PQHY-P72-240Z(S)LMU;

\* CMY-Y104C-G can NOT connect P72~P96 Indoor, but CMY-Y108,Y1010C-G can do;

\* Concerning detailed usage of Header parts, refer to its Installation Manual.

#### Table3. Piping "a","b","c","d","e","f","g" size selection rule (mm [in.]) Note3

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)	– Note
P04,P05,P06,P08,P12,P15,P18	ø6.35 [1/4]	ø12.70 [1/2]	- 11010
P24,P27,P30,P36,P48,P54	ø9.52 [3/8]	ø15.88 [5/8]	Note
P72	ø9.52 [3/8]	ø19.05 [3/4]	-
P96	ø9.52 [3/8]	ø22.20 [7/8]	

Indoor capacity is described as its model size; For example, PEFY-P06NMAU-E\*\*, its capacity is P06; e4

Total down-stream Indoor capacity is the summary of the model size of Indoors downstream. For example, PEFY-P06NMAU-E\*\* + PEFY-P08NMAU-E\*\*: Total Indoor capacity = P06 + P08 = P14

e5. Piping sized determined by the Total down-stream indoor capacity is NOT necessary

to be bigger than the up-stream one. i.e. A>=B; A>=C>=D

PQHY-P-Z(S)LMU-B

# 12-2-2. PQHY-P144-360ZSLMU Piping

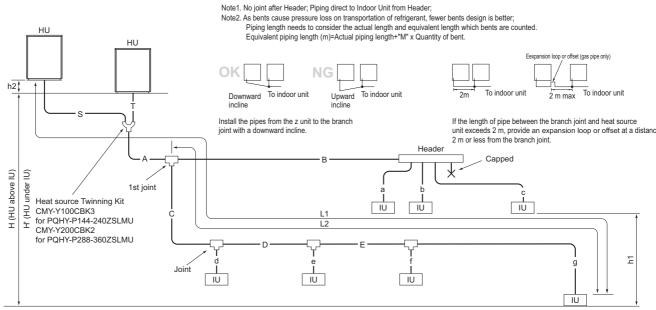


Fig. B Piping scheme

Piping length			(m [ft.])	Bends equivalent length	"M"
Item	Piping in the figure	Max. length	Max. equivalent length	Heat source Model	M (m/bent [ft./bent])
Total piping length	S+T+A+B+C+D+E+a+b+c+d+e+f+g	500 [1640]	-	PQHY-P144ZSLMU	0.50 [1.64]
Distance between HU and HU	S+T	10[32]	-	PQHY-P168ZSLMU	0.50 [1.64]
Height between HU and HU	h2	0.1[0.3]	-	PQHY-P192ZSLMU	0.50 [1.64]
Farthest IU from HU (L1)	S(T)+A+C+D+E+g / S(T)+A+B+	c 165 [541]	190 [623]	PQHY-P216ZSLMU	0.50 [1.64]
Farthest IU from the first joint (L2)	C+D+E+g / B+c	40 [131] *1	40 [131]	PQHY-P240ZSLMU	0.50 [1.64]
Height between HU and IU (HU above IU)	Н	50 [164]	-	PQHY-P288ZSLMU	0.70 [2.29]
Height between HU and IU (HU under IU)	H'	40 [131]	-	PQHY-P312ZSLMU	0.70 [2.29]
Height between IU and IU	h1	15 [49]	-	PQHY-P336ZSLMU	0.80 [2.62]
HU: Heat source Unit, IU: Indoor Unit				PQHY-P360ZSLMU	0.80 [2.62]

\*1 90 m [295 ft.] is available. When the piping length exceeds 40 m [131 ft.], use one size larger liquid pipe starting with the section of piping where 40 m [131 ft.] is exceeded and all piping after that point. In the figure above, if the piping labeled "E" exceeds 40 m [131 ft.] (but does not exceed 90 m [295 ft.]), increase the size of the liquid piping labeled E, f, and g by one size.

Table1. Piping "A" size selection rule		(mm [in.])
Heat source unit	Pipe(Liquid)	Pipe(Gas)
PQHY-P144ZSLMU	ø12.70 [1/2]	ø28.58 [1-1/8]
PQHY-P168-240ZSLMU	ø15.88 [5/8]	ø28.58 [1-1/8]
PQHY-P288-312ZSLMU	ø19.05 [3/4]	ø34.93 [1-3/8]
PQHY-P336-360ZSLMU	ø19.05 [3/4]	ø41.28 [1-5/8]

For Piping size "S", "T", please refer to specification of the Twinning kit CMY-Y100CBK3, CMY-Y200CBK2 at the Heat source unit's external drawing.

Table2. Piping"B","C","D","E" size	(mm [in.])	
Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
~ P54	ø9.52 [3/8]	ø15.88 [5/8]
P55 ~ P72	ø9.52 [3/8]	ø19.05 [3/4]
P73 ~ P108	ø9.52 [3/8]	ø22.20 [7/8]
P109~ P144	ø12.70 [1/2]	ø28.58 [1-1/8]
P145~ P240	ø15.88 [5/8]	ø28.58 [1-1/8]
P241~P308	ø19.05 [3/4]	ø34.93 [1-3/8]
P309~	ø19.05 [3/4]	ø41.28 [1-5/8]

Table3. Piping"a","b","c","d","e","f","g" size selection rule (mm [in.])

Pipe(Liquid)

ø6.35 [1/4]

ø9.52 [3/8]

ø9.52 [3/8]

ø9.52 [3/8

#### Table4-1. Selection criteria for joints

_		
	Total down-stream Indoor capacity	Joint
	~ P72	CMY-Y102SS-G2
	P73 ~ P144	CMY-Y102LS-G2
	P145 ~ P240	CMY-Y202S-G2
	P241 ~	CMY-Y302S-G2

IU: Indoor unit , HU: Heat source unit

\*Concerning detailed usage of joint parts, refer to its Installation Manual.

\*The total capacity of the units in the downstream of the branch joint on at least one of the piping lines that are connected to the branch joint should be 240 or below

If the total capacity of the units in the downstream of the branch joints on both lines is 240 or above use two branch joints (CMY-Y302S-G2)

#### Table4-2.

See the table below for the first joint of the heat source unit described below.			
heat source unit model	Joint model		

neat source unit model	Joint model
P144 to P240	CMY-Y202S-G2
P288 to P360	CMY-Y302S-G2

#### Table5. Header selection rule

	4-branch Header	8-branch Header	10-branch Header
	CMY-Y104C-G	CMY-Y108C-G	CMY-Y1010C-G
Total down-stream Indoor capacity	<=P72	<=P144	<=P240

\* CMY-Y104C-G can directly connect PQHY-P72ZLMU, but can NOT directly connect PQHY-P96ZLMU or above \* CMY-Y108C-G can directly connect PQHY-P72~144Z(S)LMU, but can NOT directly connect PQHY-P168Z(S)LMU or above;

\* CMY-Y1010C-G can directly connect PQHY-P72~240Z(S)LMU; \* CMY-Y104C-G can NOT connect P72~P96 Indoor, but CMY-Y108,Y1010C-G can do;

Note3

- Indoor capacity is described as its model size; For example, PEFY-P06NMAU-E\*\*, its capacity is P06;
- Total down-stream Indoor capacity is the summary of the model size of Indoors downstream. For example, PEFY-P06NMAU-E\*\* + PEFY-P08NMAU-E\*\*: Total Indoor capacity = P06 + P08 = P14 Note4 Piping sized determined by the Total down-stream indoor capacity is NOT necessary Note5 to be bigger than the up-stream one

i.e. A>=B; A>=C>=D

P72

P96

Indoor Unit size

P04,P05,P06,P08,P12,P15,P18

P24,P27,P30,P36,P48,P54

\_

Pipe(Gas)

ø12.70 [1/2]

ø15.88 [5/8]

ø19.05 [3/4]

ø22.20 [7/8]

<sup>\*</sup> Concerning detailed usage of Header parts, refer to its Installation Manual.

# 12-3. Refrigerant charging calculation

At the time of shipping, the heat source unit is charged with the refrigerant. As this charge does not include the amount needed for extended piping, additional charging for each refrigerant line will be required on site. In order that future servicing may be properly provided, always keep a record of the size and length of each refrigerant line and the amount of additional charge by writing it in the space provided on the heat source unit.

#### (1) Calculation of additional refrigerant charge

- Calculate the amount of additional charge based on the length of the piping extension and the size of the refrigerant line.
- Use the table to the below as a guide to calculating the amount of additional charging and charge the system accordingly.
  - \* If the following (1) and (2) are met, add 0.3 kg [11 oz] of refrigerant per indoor unit.
  - (1) When only PEFY-P18NMAU-E\*\*, PEFY-P24NMAU-E\*\*, or PEFY-P30NMAU-E\*\* are connected
  - (2) When the total number of connected indoor units is 6 or less
- \* When connecting PLFY-EP18NEMU\*\*-E\*\*, PLFY-EP24NEMU\*\*-E\*\*, or PLFY-EP36NEMU\*\*-E\*\*, add 0.4 kg [15 oz] of refrigerant per indoor unit.
- If the calculation results in a fraction of less than 0.1 kg [1 oz], round up to the next 0.1 kg [1 oz]. For example, if the result of the calculation was 11.89 kg [420.0 oz], round the result up to 11.9 kg [420 oz].

<Additional Charge>

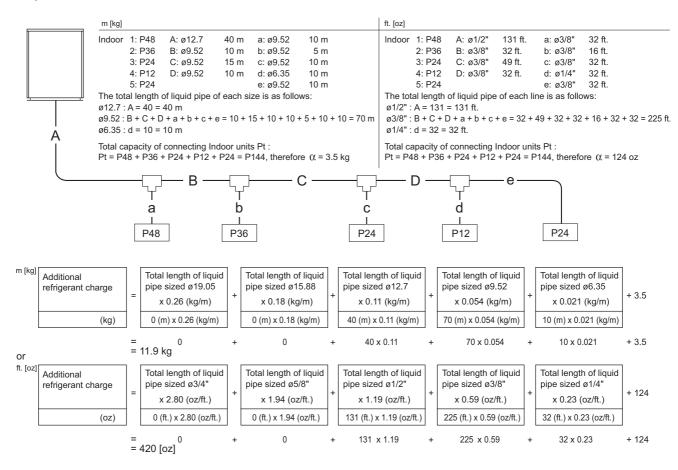
- Piping length from heat source unit to the farthest indoor unit ≤ 30.5 m [100 ft]: Use table [A].
- Piping length from heat source unit to the farthest indoor unit > 30.5 m [100 ft]: Use table [B].

	itional gerant charge	  _	Tot	uid Piping Size al length of 9.05mm [3/4in]	 _	Liquid Piping Size Total length of ø15.88mm [5/8in]		To	uid Piping Size tal length of 2.7mm [1/2in]	+	To	uid Piping Size tal length of .52mm [3/8in]	+	To	uid Piping Size tal length of .35mm [1/4in]	η+0
[A]	(kg) [oz]		[A]	(m) × 0.29 (kg/m) (ft) × 3.12 (oz/ft)		[A] $(m) \times 0.2 (kg/m)$ (ft) × 2.16 (oz/ft)	]	[A]	(m) × 0.12 (kg/m) (ft) × 1.30 (oz/ft)		[A]	(m) × 0.06 (kg/m) (ft) × 0.65 (oz/ft)			(m) × 0.024 (kg/m) (ft) × 0.26 (oz/ft)	
[B]	(kg) [oz]		[B]	(m) × 0.26 (kg/m) (ft) × 2.80 (oz/ft)		[B] (m) × 0.18 (kg/m) (ft) × 1.94 (oz/ft)		[B]	(m) × 0.11 (kg/m) (ft) × 1.19 (oz/ft)		[B]	(m) × 0.054 (kg/m) (ft) × 0.59 (oz/ft)		[B]	(m) × 0.021 (kg/m) (ft) × 0.23 (oz/ft)	

#### Value of $\boldsymbol{\alpha}$

Total capacity of connecting indoor units	(	χ
Models ~ 27	2.0 kg	[71 oz]
Models 28 ~ 54	2.5 kg	[89 oz]
Models 55 ~ 126	3.0 kg	[106 oz]
Models 127 ~ 144	3.5 kg	[124 oz]
Models 145 ~ 180	4.5 kg	[159 oz]
Models 181 ~ 234	5.0 kg	[177 oz]
Models 235 ~ 273	6.0 kg	[212 oz]
Models 274 ~ 307	8.0 kg	[283 oz]
Models 308 ~ 342	9.0 kg	[318 oz]
Models 343 ~ 411	10.0 kg	[353 oz]
Models 412 ~ 480	12.0 kg	[424 oz]
Models 481 ~	14.0 kg	[494 oz]

#### Example: PQHY-P144ZLMU



#### 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	5.0 kg	5.0 kg	5.0 kg	6.0 kg	6.0 kg	6.0 kg	10.0 kg	10.0 kg
	Charged on site	22.0 kg	28.5 kg	29.5 kg	42.0 kg	51.5 kg	53.5 kg	42.0 kg	51.5 kg
Maximum refrigerant charge	Total for system	27.0 kg	33.5 kg	34.5 kg	48.0 kg	57.5 kg	59.5 kg	52.0 kg	61.5 kg
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	48 lbs 9 oz	62 lbs 14 oz	65 lbs 1 oz	92 lbs 10 oz	113 lbs 9 oz	118 lbs 0 oz	92 lbs 10 oz	113 lbs 9 oz
	Total for system	59 lbs 9 oz	73 lbs 14 oz	76 lbs 1 oz	105 lbs 14 oz	126 lbs 13 oz	131 lbs 3 oz	114 lbs 11 oz	135 lbs 10 oz

Total index of the heat sour	rce units	P192 ZSLMU	P216 ZSLMU	P240 ZSLMU	P288 ZSLMU	P312 ZSLMU	P336 ZSLMU	P360 ZSLMU
	Factory charged	10.0 kg	10.0 kg	10.0 kg	12.0 kg	12.0 kg	12.0 kg	12.0 kg
	Charged on site	53.5 kg	55.0 kg	56.0 kg	67.5 kg	67.5 kg	67.5 kg	70.0 kg
Maximum refrigerant charge	Total for system	63.5 kg	65.0 kg	66.0 kg	79.5 kg	79.5 kg	79.5 kg	82.0 kg
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	26 lbs 8 oz
	Charged on site	118 lbs 0 oz	121 lbs 5 oz	123 lbs 8 oz	148 lbs 13 oz	148 lbs 13 oz	148 lbs 13 oz	154 lbs 6 oz
	Total for system	140 lbs 0 oz	143 lbs 5 oz	145 lbs 9 oz	175 lbs 5 oz	175 lbs 5 oz	175 lbs 5 oz	180 lbs 13 oz

Unit: mm (in.)

## 13-1. General requirements for installation

- 1. If possible, locate the unit to reduce the direct thermal radiation to the unit.
- 2. 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.

The space for 600(23-5/8) control box replacement 450(17-3/4) 450(17-3/4) Top view Service space 600(23-5/8) (front side) 350(13-13/16) Service space The space for 880(34-11/16) (front side) control box replacement

# 13-3. Caution on selecting heat source unit

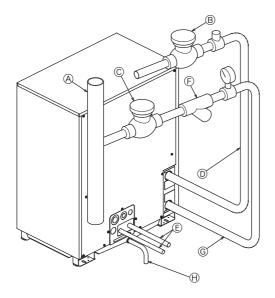
Consult your dealer when the following issues on WY-Series are the key concern.

 $\cdot$  Warm air may flow out from the indoor unit during heating Thermo-OFF.

· Refrigerant flow sound may occur in the rooms with low background noise such as hotel rooms, hospital rooms, bedrooms, or conference rooms.

To avoid the above issues on WY-Series, changing board settings on the indoor and heat source units is required. Ask AC&R Works for details.

## 13-4. Piping direction



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

1. Insulation installation

With City Multi WY/ WR2 Series piping, as long as the temperature range of the inlet water is kept to average temperatures year-round  $(30^{\circ}C[86^{\circ}F]$  in the summer,  $20^{\circ}C[68^{\circ}F]$  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  $1mg/\ell$ .

2 Water quality standard

			Lower m temperature	-	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	nS/m) (25°C)[77°F] IS/cm) (25°C)[77°F]		30 or less [300 or less]	0	0
	Chloride ion	,, ,, ,,	50 or less	50 or less	0	
<u>.</u>	Sulfate ion	(mg Cl <sup>-</sup> / ℓ ) (mg SO <sub>4</sub> <sup>2-</sup> / ℓ )	50 or less	50 or less	0	
Standard		( 0 )	50 or less	50 of less		
items	Acid consumption	(pH4.8) (mg CaCO₃/ ℓ )	50 or less	50 or less		0
	Total hardness	(mg CaCO₃/ℓ)	70 or less	70 or less		0
	Calcium hardness	(mg CaCO₃/ 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	Sulfide ion	(mg S <sup>2-</sup> / ℓ )	not to be detected	not to be detected	0	
	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 CO <sub>2</sub> / 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.
- <sup>④</sup> 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.

MEES24K112

# Installation information

1. Installation information	2
1-1. General precautions	2
1-2. Precautions for Indoor unit and BC controller	
1-3. Precautions for outdoor unit/heat source unit	5
1-4. Precautions for control-related items	6

\* Refer to the enclosed Installation Manual for details on installation. Arrange to have an expert install the system correctly.

# 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 to assist in the preservation of food, provide conditions to maintain plants or animals, or stabilize environments for the preservation of precision equipment or art objects. To prevent loss of quality, do not use the product for purposes other than those 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 an area where the voltage changes significantly, 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 environments.
- •Installation should not be performed in locations exposed to chlorine or other corrosive gases. Avoid installation near sewers.

•To reduce the risk of fire, do not install the unit in an area where flammable gas may leak or flammable material is present.

•This air-conditioning unit has a built-in microcomputer. The effects of noise should be taken into consideration when deciding on the installation position. It is recommended that the air-conditioning unit be installed in a position away from antennas or electronic devices.

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

## 1-1-3. Backup system

•In regions in which the malfunctioning of the air conditioner may have a critical effect, it is recommended to have two or more systems made up of single outdoor/heat source units and multiple indoor units.

## 1-1-4. Unit characteristics

•The heat pump efficiency of the outdoor unit depends on the outdoor temperature. In heating mode, performance drops as the outside air temperature drops. In cold climates, performance can be poor. Warm air will continue to be trapped near the ceiling and the floor level will remain cold. In such cases, heat pumps require a supplemental heating system or air circulator. Before purchasing, consult your local distributor for assistance in selecting the unit and system.

- •When the outdoor temperature is low and the humidity is high, the heat exchanger on the outdoor/heat source unit side tends to collect frost, which reduces its heating performance. The Auto-defrost function will be activated in order to remove the frost, and the heating mode will temporarily stop for 3-10 minutes. Heating mode will automatically resume upon completion of the defrost process.
- •An 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.
- •Sound levels were obtained in an anechoic room. 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" in the DATA BOOK for the measurement location.
- •Depending on the operating conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes even when operating normally. Try to avoid positioning the air conditioner in locations where quietness is required. With regard to the BC/HBC controller, it is recommended that the unit be installed in areas such as corridor ceilings, 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 the power comes on, i.e. after a power failure, it performs initial startup operation (capacity control operation) to prevent damage to the compressor. The initial startup operation requires a maximum of 90 minutes to complete, depending on the operating load.

## 1-1-5. Related 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 gualified technician when installing an earth leakage breaker.

•If the unit is an inverter type, select an earth leakage breaker able to respond to high harmonic waves and surges.

•Leakage current is generated not only through the air-conditioning unit but also through the power wires. The leakage current of the main power supply is therefore greater than the total leakage current of each unit. Take the capacity of the earth leakage breaker or leakage alarm into consideration 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 be accurate because the leakage current from other systems may be included in the measurement value.

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

•If a large current flows due to the malfunctioning of the product 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 that 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, power leakage, system breakdown, or fire.

•Some optional accessories may not be compatible for use with the air-conditioning unit or may not be suitable for the installation conditions. Check the compatibility when considering any accessories.

•Note that some optional accessories may affect the air conditioner's external form, appearance, weight, operating sound, and other characteristics.

#### 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 in the 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 leaks.
- •If the units operate in cooling mode at a humidity above 80%, condensation may collect and drip from the indoor units.
- •Regular checking and cleaning of the drain drainage paths, such as the drain pan or the drain pump, is recommended to prevent clogging. The neglect of a clogged drain pump may trigger the water-leakage protection function which stops operation of the entire system.

# 1-2-2. Unit characteristics

- •The return air temperature display on the remote controller may differ from the displays 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 measured by the built-in temperature sensor on the remote controller may differ from the actual room temperature due to the effect of the wall temperature.
- •Use the 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 areas 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 operating noise may increase.
- •The room temperature may increase above the preset temperature in environments in which the heating or air-conditioning load is small.

## 1-2-3. Unit installation

- •The insulation for the low-pressure pipe between the BC controller and the outdoor/heat source unit must be at least 20 mm (13/16 in.) 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 demand control is used, the unit may stop abnormally or damage may occur to the electromagnetic contactor. Consult your local distributor for details.
- •When indoor units employ fresh air intake, install a filter in the duct (locally procured) to remove dust from the air.
- •The 4-way 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.
- •Employing fresh air intake for the indoor unit may increase the sound pressure level.
- •Do not install the unit above the cooking or food processing area.

## 1-2-4. Noise level (Sound pressure level)

•The sound pressure level is a value measured in an anechoic room in accordance with the conventional method in JIS standard. The sound pressure level actually measured at the installation site is usually higher than the value indicated in this DATA BOOK due to the influence of ambient noise and echoes.

# 1-3. Precautions for outdoor unit/heat source unit

## 1-3-1. Installation environment

- •The outdoor unit with the salt-resistant specification is recommended for use in an area in which it will be exposed to salt air.
- Even when the unit with the salt-resistant specification is used, it is not completely protected against corrosion. Be sure to follow the directions or precautions described in the Instruction Book and Installation Manual for installation and maintenance. The salt-resistant specification is referred to in the guidelines published by JRAIA (JRA9002).
  Install the unit in an area where the flow of discharge air is not obstructed. If the flow of discharge air is obstructed, short-cycling of discharge air may occur.
- •Provide proper drainage around the base of the units; condensation may collect and drip from outdoor units. Provide water-proofing protection to the floor when installing the unit on the rooftop.
- •In regions where snowfall can be 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 (19-11/16 in.) 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 a SUS snow guard is used, refer to the Installation Manual that comes with the snow guard and be careful with 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 (32°F), take appropriate measures, such as the use of a unit base heater, to prevent ice forming on the unit base. (Not applicable to the PUMY-Series)
- •Install the snow guard so that the outlet/inlet faces away from the direction of the wind.
- •When approximately 50 cm (19-11/16 in.) or more of snow accumulates on the snow guard, remove the snow from the guard. Install a roof that is strong enough to withstand loads caused by snow in areas where snow accumulates.
- •Provide proper protection around the outdoor units in places such as schools to avoid the risk of injury.
- •A cooling tower and heat source water circuit should be a closed circuit so 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 to ensure that the oxygen dissolved in the water is 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 following to prevent the freezing and bursting of pipes when the heat source unit is installed in an area where the ambient temperature can be 0°C (32°F) or below.
- \*Keep the water circulating to prevent it from freezing when the ambient temperature is 0°C (32°F) or below.
- •Before a long period of non-use, be sure to purge the water from the unit.
- •The salt-resistant unit is resistant to salt corrosion, but not salt-proof.
- Please note the following when installing and maintaining outdoor units in a marine environment.
- 1. Install the salt-resistant unit in an area in which it is not directly exposed to sea breezes, and minimize 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.
- 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 an anti-rust agent and replace corroded parts as necessary.

### 1-3-2. Circulating water

•Regularly check the quality of the water in the heat source unit, following the guidelines published by JRAIA (JRA-GL02-1994).

•A cooling tower and heat source water circuit should be a closed circuit so 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 to ensure that the oxygen dissolved in the water is 1 mg/L or less.

### 1-3-3. Unit characteristics

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

### 1-3-4. Related equipment

•Provide grounding in accordance with the local regulations.

### 1-3-5. Noise level (Sound pressure level)

•The sound pressure level is a value measured in an anechoic room in accordance with the conventional method in JIS standard. The sound pressure level actually measured at the installation site is usually higher than the value indicated in this DATA BOOK due to the influence of ambient noise and echoes.

Valve operation noise and refrigerant flow noise may occur from inside the outdoor unit/heat-source unit.

# 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, 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 and EW-50A, separate watt-hour meters should be used for A-control units, K-control units, and CITY MULTI packaged air conditioners. It is recommended that an individual watt-hour meter should be used for large-capacity indoor units (with two or more addresses).

•When using the peak cut function on the AE-200A/AE-50A or EW-50A, 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 the AE-200A/AE-50A or EW-50A 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/PAC-YG66DCA or PAC-YG63MCA, do not use the control for fire prevention or security. (This function should never be used in a way that would put people's lives at risk.) Employ any methods or circuits that allow ON/OFF operation using an external switch in case of failure.

# 1-4-2. Installation environment

\*Surge protection may be required for the transmission line in areas where lightning strikes occur frequently.

•The 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 the receiver.

•When the auto-elevating panel is used and the system is operated using a wired remote controller, install the wired remote controller in a place where all the air conditioners being 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; be sure to use a wireless remote controller designed for use with the elevating panel (sold separately).

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

- •Where the installation surface is flat
- •Where the remote controller can detect an accurate room temperature

The temperature sensors that detect the room temperature are installed both in the remote controller and in the indoor unit.

When the room temperature is detected using the sensor in the remote controller, the main remote controller is used to detect the room temperature. In this case, follow the instructions below.

• Install the controller in a place where it is not affected by a heat source.

(If the remote controller faces direct sunlight or the direction of the supply air flow, the remote controller cannot detect the accurate room temperature.)

- Install the controller in a place where the 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 the AE-200A/AE-50A or EW-50A to the Internet.

1.	Caution for refrigerant leakage	Ub-1-2
	1-1. Refrigerant property	
	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/m <sup>3</sup>

```
(The weight of refrigeration gas per 1 m<sup>3</sup> 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.

Outdoor/Heat source unit (No.1) Outdoor/Heat source unit (No.1)

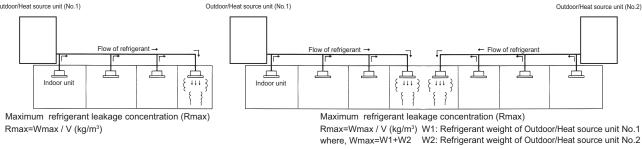


Fig. 1-1 The maximum refrigerant leakage concentration

#### 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/m<sup>3</sup>.

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.



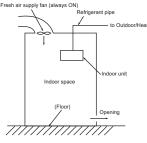


Fig.1-2.Fresh air supply always ON

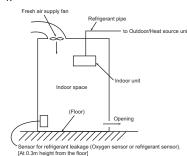


Fig.1-3.Fresh air supply upon sensor action

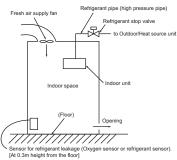


Fig.1-4.Fresh air supply and refrigerant shut-off upon sensor action

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

#### ∆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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