MITSUBISHI ELECTRIC

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AIR CONDITIONING SYSTEMS

HYBRID CITY MULTI

DATA BOOK

MODEL

PURY-P200-500YNW-A (-BS)
PURY-EP200-500YNW-A (-BS)

GENERAL LINE-UP

Heat Recovery R2-Series

PURY-P200YNW-A(-BS) PURY-P250YNW-A(-BS)
PURY-P300YNW-A(-BS)

8, 10, 12HP

PURY-P350YNW-A(-BS) PURY-P400YNW-A(-BS)
PURY-P450YNW-A(-BS)

14, 16, 18HP

PURY-P500YNW-A(-BS)

20HP

Heat Recovery High efficiency R2-Series

PURY-EP200YNW-A(-BS) PURY-EP250YNW-A(-BS)
PURY-EP300YNW-A(-BS)

8, 10, 12HP

PURY-EP350YNW-A(-BS) PURY-EP400YNW-A(-BS)
PURY-EP450YNW-A(-BS)

14, 16, 18HP

PURY-EP500YNW-A(-BS)

20HP

PURY-P-YNW-A, PURY-EP-YNW-A

Model			PURY-P200YNW-A (-BS)	PURY-P250YNW-A (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1	kW	22.4	28.0
		kcal/h	20,000	25,000
	*1	BTU/h	76,400	95,500
	Power input	kW	7.00	9.92
	Current input	A	11.8-11.2-10.8	16.7-15.9-15.3
	EER	kW/kW	3.20	2.82
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	-5.0~52.0°C (23~126°F)
Heating capacity (Nominal)	*2	kW	25.0	31.5
		kcal/h	21,500	27,100
	*2	BTU/h	85,300	107,500
	Power input	kW	7.08	10.06
	Current input	A	11.9-11.3-10.9	16.9-16.1-15.5
	COP	kW/kW	3.53	3.13
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	50~150% of outdoor unit capacity
	Model/Quantity		WP10~WP125/1~30	WP10~WP125/1~37
Sound pressure level (measured in anechoic room) *4		dB <A>	59.0/59.0	60.5/61.0
Sound power level (measured in anechoic room) *4		dB <A>	76.0/78.0	78.5/80.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed	19.05 (3/4) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1	Propeller fan x 1
	Air flow rate	m^3/min	170	185
		L/s	2,833	3,083
		cfm	6,003	6,532
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)	0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	5.6	7.0
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		-	-
	Fan motor		-	-
Refrigerant	Type x original charge		R410A x 5.2 kg (12 lbs)	R410A x 5.2 kg (12 lbs)
	Control		HBC controller	HBC controller
Net weight		kg (lbs)	229 (505)	229 (505)
Heat exchanger			Salt-resistant cross fin & copper tube	Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-	-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKS94T748	WKS94T748
	Wiring		WKE94G339	WKE94G339
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Refrigerant conn. pipe	Refrigerant conn. pipe
Optional parts			Main HBC controller: CMB-WP108,1016V-GA1 CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108,1016V-GB1 CMB-WM108,1016V-AB	Main HBC controller: CMB-WP108,1016V-GA1 CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108,1016V-GB1 CMB-WM108,1016V-AB
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.	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.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.) with cooling/heating mixed operation.

4.Cooling mode/Heating mode

5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

Model			PURY-P300YNW-A (-BS)	
Number of HBC controller			**Single HBC**	**Double HBC**
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity (Nominal)	*1	kW	33.5	
		kcal/h	28,800	
	*1	BTU/h	114,300	
	Power input	kW	13.34	11.31
	Current input	A	22.5-21.3-20.6	19.0-18.1-17.4
	EER	kW/kW	2.51	2.96
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity (Nominal)	*2	kW	37.5	
		kcal/h	32,300	
	*2	BTU/h	128,000	
	Power input	kW	12.71	11.94
	Current input	A	21.4-20.3-19.6	20.1-19.1-18.4
	COP	kW/kW	2.95	3.14
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	
	Model/Quantity		WP10~WP125/2~45	
Sound pressure level (measured in anechoic room) *4		dB <A>	61.0/67.0	
Sound power level (measured in anechoic room) *4		dB <A>	80.0/86.5	
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed	
	Low pressure	mm (in.)	22.2 (7/8) Brazed	
FAN	Type x Quantity		Propeller fan x 1	
	Air flow rate	m^3/min	240	
		L/s	4,000	
		cfm	8,474	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.92 x 1	
*5	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	7.9	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740	
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R410A x 5.2 kg (12 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	231 (510)	
Heat exchanger			Salt-resistant cross fin & copper tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	
Drawing	External		WKS94T748	
	Wiring		WKE94G339	
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Main HBC controller: CMB-WP108, 1016V-GA1/CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108, 1016V-GB1/CMB-WM108,1016V-AB	
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.	

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.) with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

Model				PURY-P350YNW-A (-BS)	
Number of HBC controller				Single HBC	Double HBC
Power source				3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity		*1	kW	40.0	
(Nominal)			kcal/h	34,400	
		*1	BTU/h	136,500	
	Power input		kW	17.93	14.59
	Current input		A	30.2-28.7-27.7	24.6-23.3-22.5
	EER		kW/kW	2.23	2.74
Temp. range of	Indoor		W.B.	15.0~24.0°C (59~75°F)	
cooling	*3 Outdoor		D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity		*2	kW	45.0	
(Nominal)			kcal/h	38,700	
		*2	BTU/h	153,500	
	Power input		kW	15.51	14.35
	Current input		A	26.1-24.8-23.9	24.2-23.0-22.1
	COP		kW/kW	2.90	3.13
Temp. range of	Indoor		D.B.	15.0~27.0°C (59~81°F)	
heating	*3 Outdoor		W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit	Total capacity			50~150% of outdoor unit capacity	
connectable	Model/Quantity			WP10~WP125/2~50	
Sound pressure level (measured in anechoic room) *4			dB <A>	62.5/64.0	
Sound power level (measured in anechoic room) *4			dB <A>	81.0/83.0	
Refrigerant	High pressure		mm (in.)	19.05 (3/4) Brazed	
piping diameter	Low pressure		mm (in.)	28.58 (1-1/8) Brazed	
FAN	Type x Quantity			Propeller fan x 1	
	Air flow rate		m^3/min	250	
			L/s	4,167	
			cfm	8,828	
	Control, Driving mechanism			Inverter-control, Direct-driven by motor	
	Motor output		kW	0.92 x 1	
	*5 External static press.			0 Pa (0 mmH_2O)	
Compressor	Type			Inverter scroll hermetic compressor	
	Manufacture			AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method			Inverter	
	Motor output		kW	10.5	
	Case heater		kW	-	
	Lubricant			MEL32	
External finish				Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D			mm	1,858 (1,798 without legs) x 1,240 x 740	
			in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16	
Protection devices	High pressure protection			High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)			Over-heat protection, Over-current protection	
	Compressor			-	
	Fan motor			-	
Refrigerant	Type x original charge			R410A x 8.0 kg (18 lbs)	
	Control			HBC controller	
Net weight			kg (lbs)	273 (602)	
Heat exchanger				Salt-resistant cross fin & copper tube	
HIC circuit (HIC: Heat Inter-Changer)				-	
Defrosting method				Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	
Drawing	External			WKS94T749	
	Wiring			WKE94G341	
Standard attachment	Document			Installation Manual	
	Accessory			Refrigerant conn. pipe	
Optional parts				Main HBC controller: CMB-WP108, 1016V-GA1/CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108, 1016V-GB1/CMB-WM108,1016V-AB	
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.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-P400YNW-A (-BS)	PURY-P450YNW-A (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1	kW	45.0	50.0
		kcal/h	40,000	45,000
	*1	BTU/h	153,500	170,600
	Power input	kW	16.65	17.92
	Current input	A	28.1-26.7-25.7	30.2-28.7-27.7
	EER	kW/kW	2.70	2.79
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	-5.0~52.0°C (23~126°F)
Heating capacity (Nominal)	*2	kW	45.0	56.0
		kcal/h	40,000	50,000
	*2	BTU/h	153,500	191,100
	Power input	kW	13.39	17.39
	Current input	A	22.6-21.4-20.6	29.3-27.8-26.8
	COP	kW/kW	3.36	3.22
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	50~150% of outdoor unit capacity
	Model/Quantity		WP10~WP125/2~50	WP10~WP125/2~50
Sound pressure level (measured in anechoic room) *4		dB <A>	65.0/69.0	65.5/70.0
Sound power level (measured in anechoic room) *4		dB <A>	83.0/88.0	83.0/89.0
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 1	Propeller fan x 2
	Air flow rate	m^3/min	315	315
		L/s	5,250	5,250
		cfm	11,123	11,123
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1	0.92 x 2
*5	External static press.		0 Pa (0 mmH_2O)	0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	10.9	12.4
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		-	-
	Fan motor		-	-
Refrigerant	Type x original charge		R410A x 8.0 kg (18 lbs)	R410A x 10.8 kg (24 lbs)
	Control		HBC controller	HBC controller
Net weight		kg (lbs)	273 (602)	293 (646)
Heat exchanger			Salt-resistant cross fin & copper tube	Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-	-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKS94T749	WKS94T749
	Wiring		WKE94G341	WKE94G341
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Refrigerant conn. pipe	Refrigerant conn. pipe
Optional parts			Main HBC controller: CMB-WP108,1016V-GA1 CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108,1016V-GB1 CMB-WM108,1016V-AB	Main HBC controller: CMB-WP108,1016V-GA1 CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108,1016V-GB1 CMB-WM108,1016V-AB
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.	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.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
   with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-P500YNW-A (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1	kW	56.0
		kcal/h	50,000
	*1	BTU/h	191,100
	Power input	kW	22.67
	Current input	A	38.2-36.3-35.0
	EER	kW/kW	2.47
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
*3	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity (Nominal)	*2	kW	58.0
		kcal/h	50,000
	*2	BTU/h	197,900
	Power input	kW	17.53
	Current input	A	29.5-28.1-27.0
	COP	kW/kW	3.30
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
*3	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		WP10~WP125/2~50
Sound pressure level (measured in anechoic room) *4		dB <A>	63.5/64.5
Sound power level (measured in anechoic room) *4		dB <A>	82.0/84.0
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	295
		L/s	4,917
		cfm	10,416
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 2
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	13.4
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,750 x 740
		in.	73-3/16 (70-13/16 without legs) x 68-15/16 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 10.8 kg (24 lbs)
	Control		HBC controller
Net weight		kg (lbs)	337 (743)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKS94T750
	Wiring		WKE94G342
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Main HBC controller: CMB-WP108, 1016V-GA1/CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108, 1016V-GB1/CMB-WM108,1016V-AB
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.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EP200YNW-A (-BS)	PURY-EP250YNW-A (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1	kW	22.4	28.0
		kcal/h	20,000	25,000
	*1	BTU/h	76,400	95,500
	Power input	kW	6.27	8.77
	Current input	A	10.5-10.0-9.6	14.8-14.0-13.5
	EER	kW/kW	3.57	3.19
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	-5.0~52.0°C (23~126°F)
Heating capacity (Nominal)	*2	kW	25.0	31.5
		kcal/h	21,500	27,100
	*2	BTU/h	85,300	107,500
	Power input	kW	6.92	9.84
	Current input	A	11.6-11.0-10.6	16.6-15.7-15.2
	COP	kW/kW	3.61	3.20
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	50~150% of outdoor unit capacity
	Model/Quantity		WP10~WP125/1~30	WP10~WP125/1~37
Sound pressure level (measured in anechoic room) *4		dB <A>	59.0/59.0	60.5/61.0
Sound power level (measured in anechoic room) *4		dB <A>	76.0/78.0	78.5/80.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed	19.05 (3/4) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1	Propeller fan x 1
	Air flow rate	m^3/min	170	185
		L/s	2,833	3,083
		cfm	6,003	6,532
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)	0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	5.6	7.0
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		-	-
	Fan motor		-	-
Refrigerant	Type x original charge		R410A x 5.2 kg (12 lbs)	R410A x 5.2 kg (12 lbs)
	Control		HBC controller	HBC controller
Net weight		kg (lbs)	234 (516)	234 (516)
Heat exchanger			Salt-resistant cross fin & aluminium tube	Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-	-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKS94T740	WKS94T740
	Wiring		WKE94G339	WKE94G339
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Refrigerant conn. pipe	Refrigerant conn. pipe
Optional parts			Main HBC controller: CMB-WP108,1016V-GA1 CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108,1016V-GB1 CMB-WM108,1016V-AB	Main HBC controller: CMB-WP108,1016V-GA1 CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108,1016V-GB1 CMB-WM108,1016V-AB
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.	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.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
   with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PURY-EP300YNW-A (-BS)	
Number of HBC controller				Single HBC	Double HBC
Power source				3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity		*1	kW	33.5	
(Nominal)			kcal/h	28,800	
		*1	BTU/h	114,300	
	Power input		kW	12.05	10.24
	Current input		A	20.3-19.3-18.6	17.2-16.4-15.8
	EER		kW/kW	2.78	3.27
Temp. range of	Indoor		W.B.	15.0~24.0°C (59~75°F)	
cooling	*3 Outdoor		D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity		*2	kW	37.5	
(Nominal)			kcal/h	32,300	
		*2	BTU/h	128,000	
	Power input		kW	11.71	11.12
	Current input		A	19.7-18.7-18.1	18.7-17.8-17.1
	COP		kW/kW	3.20	3.37
Temp. range of	Indoor		D.B.	15.0~27.0°C (59~81°F)	
heating	*3 Outdoor		W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit	Total capacity			50~150% of outdoor unit capacity	
connectable	Model/Quantity			WP10~WP125/2~45	
Sound pressure level (measured in anechoic room) *4			dB <A>	61.0/67.0	
Sound power level (measured in anechoic room) *4			dB <A>	80.0/86.5	
Refrigerant	High pressure		mm (in.)	19.05 (3/4) Brazed	
piping diameter	Low pressure		mm (in.)	22.2 (7/8) Brazed	
FAN	Type x Quantity			Propeller fan x 1	
	Air flow rate		m^3/min	240	
			L/s	4,000	
			cfm	8,474	
	Control, Driving mechanism			Inverter-control, Direct-driven by motor	
	Motor output		kW	0.92 x 1	
	*5 External static press.			0 Pa (0 mmH_2O)	
Compressor	Type			Inverter scroll hermetic compressor	
	Manufacture			AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method			Inverter	
	Motor output		kW	8.1	
	Case heater		kW	-	
	Lubricant			MEL32	
External finish				Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D			mm	1,858 (1,798 without legs) x 920 x 740	
			in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	
Protection devices	High pressure protection			High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)			Over-heat protection, Over-current protection	
	Compressor			-	
	Fan motor			-	
Refrigerant	Type x original charge			R410A x 5.2 kg (12 lbs)	
	Control			HBC controller	
Net weight			kg (lbs)	236 (521)	
Heat exchanger				Salt-resistant cross fin & aluminium tube	
HIC circuit (HIC: Heat Inter-Changer)				-	
Defrosting method				Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	
Drawing	External			WKS94T740	
	Wiring			WKE94G339	
Standard attachment	Document			Installation Manual	
	Accessory			Refrigerant conn. pipe	
Optional parts				Main HBC controller: CMB-WP108, 1016V-GA1/CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108, 1016V-GB1/CMB-WM108,1016V-AB	
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.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

Model			PURY-EP350YNW-A (-BS)	
Number of HBC controller			**Single HBC**	**Double HBC**
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	40.0	
(Nominal)		kcal/h	34,400	
*1		BTU/h	136,500	
	Power input	kW	17.16	13.98
	Current input	A	28.9-27.5-26.5	23.6-22.4-21.6
	EER	kW/kW	2.33	2.86
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	
cooling *3	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2		kW	45.0	
(Nominal)		kcal/h	38,700	
*2		BTU/h	153,500	
	Power input	kW	15.38	14.28
	Current input	A	25.9-24.6-23.7	24.1-22.9-22.0
	COP	kW/kW	2.92	3.15
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	
heating *3	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit	Total capacity		50~150% of outdoor unit capacity	
connectable	Model/Quantity		WP10~WP125/2~50	
Sound pressure level (measured in anechoic room) *4		dB <A>	62.5/64.0	
Sound power level (measured in anechoic room) *4		dB <A>	81.0/83.0	
Refrigerant	High pressure	mm (in.)	19.05 (3/4) Brazed	
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	
FAN	Type x Quantity		Propeller fan x 1	
	Air flow rate	m^3/min	250	
		L/s	4,167	
		cfm	8,828	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.92 x 1	
*5	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	10.5	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740	
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R410A x 8.0 kg (18 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	279 (616)	
Heat exchanger			Salt-resistant cross fin & aluminium tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)	
Drawing	External		WKS94T741	
	Wiring		WKE94G341	
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Main HBC controller: CMB-WP108, 1016V-GA1/CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108, 1016V-GB1/CMB-WM108,1016V-AB	
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.	

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
   with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EP400YNW-A (-BS)	PURY-EP450YNW-A (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	45.0	50.0
(Nominal)		kcal/h	40,000	45,000
*1		BTU/h	153,500	170,600
	Power input	kW	13.88	16.83
	Current input	A	23.4-22.2-21.4	28.4-26.9-26.0
	EER	kW/kW	3.24	2.97
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	15.0~24.0°C (59~75°F)
cooling *3	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	50.0	56.0
(Nominal)		kcal/h	43,000	50,000
*2		BTU/h	170,600	191,100
	Power input	kW	14.12	16.86
	Current input	A	23.8-22.6-21.8	28.4-27.0-26.0
	COP	kW/kW	3.54	3.32
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	15.0~27.0°C (59~81°F)
heating *3	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	-20.0~15.5°C (-4~60°F)
Indoor unit	Total capacity		50~150% of outdoor unit capacity	50~150% of outdoor unit capacity
connectable	Model/Quantity		WP10~WP125/2~50	WP10~WP125/2~50
Sound pressure level (measured in anechoic room) *4		dB <A>	65.0/69.0	65.5/70.0
Sound power level (measured in anechoic room) *4		dB <A>	83.0/88.0	83.0/89.0
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2	Propeller fan x 2
	Air flow rate	m^3/min	315	315
		L/s	5,250	5,250
		cfm	11,123	11,123
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 2	0.92 x 2
*5	External static press.		0 Pa (0 mmH_2O)	0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	10.9	12.4
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		-	-
	Fan motor		-	-
Refrigerant	Type x original charge		R410A x 8.0 kg (18 lbs)	R410A x 10.8 kg (24 lbs)
	Control		HBC controller	HBC controller
Net weight		kg (lbs)	282 (622)	306 (675)
Heat exchanger			Salt-resistant cross fin & aluminium tube	Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-	-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKS94T741	WKS94T741
	Wiring		WKE94G341	WKE94G341
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Refrigerant conn. pipe	Refrigerant conn. pipe
Optional parts			Main HBC controller: CMB-WP108,1016V-GA1 CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108,1016V-GB1 CMB-WM108,1016V-AB	Main HBC controller: CMB-WP108,1016V-GA1 CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108,1016V-GB1 CMB-WM108,1016V-AB
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.	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.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PURY-EP500YNW-A (-BS)
Power source				3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)		*1	kW	56.0
			kcal/h	50,000
		*1	BTU/h	191,100
	Power input		kW	21.22
	Current input		A	35.8-34.0-32.8
	EER		kW/kW	2.63
Temp. range of cooling	Indoor	*3	W.B.	15.0~24.0°C (59~75°F)
	Outdoor		D.B.	-5.0~52.0°C (23~126°F)
Heating capacity (Nominal)		*2	kW	63.0
			kcal/h	54,200
		*2	BTU/h	215,000
	Power input		kW	21.67
	Current input		A	36.5-34.7-33.4
	COP		kW/kW	2.90
Temp. range of heating	Indoor	*3	D.B.	15.0~27.0°C (59~81°F)
	Outdoor		W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity			50~150% of outdoor unit capacity
	Model/Quantity			WP10~WP125/2~50
Sound pressure level (measured in anechoic room)		*4	dB <A>	63.5/64.5
Sound power level (measured in anechoic room)		*4	dB <A>	82.0/84.0
Refrigerant piping diameter	High pressure		mm (in.)	22.2 (7/8) Brazed
	Low pressure		mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity			Propeller fan x 2
	Air flow rate		m^3/min	295
			L/s	4,917
			cfm	10,416
	Control, Driving mechanism			Inverter-control, Direct-driven by motor
	Motor output		kW	0.92 x 2
	External static press.	*5		0 Pa (0 mmH_2O)
Compressor	Type			Inverter scroll hermetic compressor
	Manufacture			AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method			Inverter
	Motor output		kW	13.4
	Case heater		kW	0.045 (240V)
	Lubricant			MEL32
External finish				Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D			mm	1,858 (1,798 without legs) x 1,750 x 740
			in.	73-3/16 (70-13/16 without legs) x 68-15/16 x 29-3/16
Protection devices	High pressure protection			High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)			Over-heat protection, Over-current protection
	Compressor			-
	Fan motor			-
Refrigerant	Type x original charge			R410A x 10.8 kg (24 lbs)
	Control			HBC controller
Net weight			kg (lbs)	345 (761)
Heat exchanger				Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)				-
Defrosting method				Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External			WKS94T742
	Wiring			WKE94G342
Standard attachment	Document			Installation Manual
	Accessory			Refrigerant conn. pipe
Optional parts				Main HBC controller: CMB-WP108, 1016V-GA1/CMB-WM108,1016V-AA Sub HBC controller: CMB-WP108, 1016V-GB1/CMB-WM108,1016V-AB
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.

Notes:

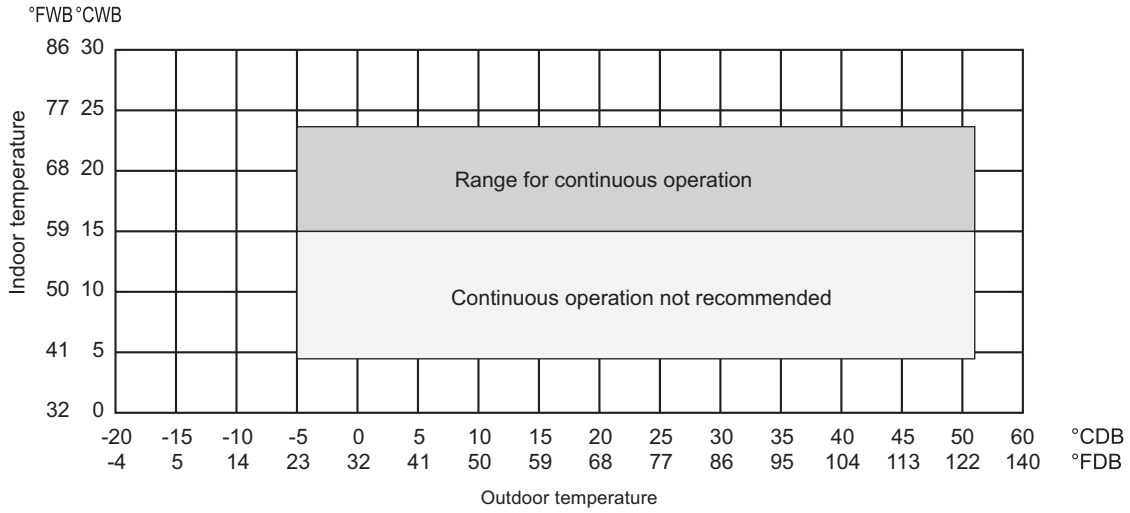
1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

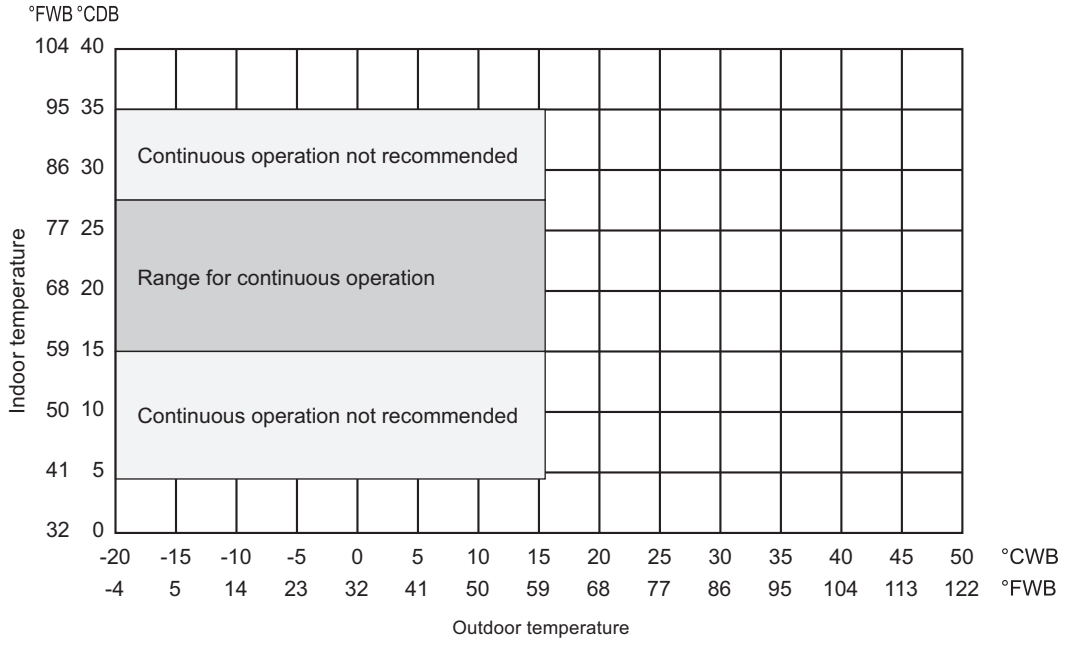
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

• **Cooling only**



• **Heating only**



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

Outdoor temperature	Indoor temperature	
	Cooling	Heating
-10 to 21˚CDB (14 to 70˚FDB)	——	15 to 27˚CDB (59 to 81˚FDB)
-11 to 15.5˚CWB (12.2 to 60˚FWB)	15 to 24˚CWB (59 to 75˚FWB)	——

Section 3-1.
Shows an example of how to select the indoor and outdoor units according to the required heating/cooling load.

Section 3-2. through 3-5.
Show the actual correction data of indoor and outdoor units.

3-1. Correction by temperature

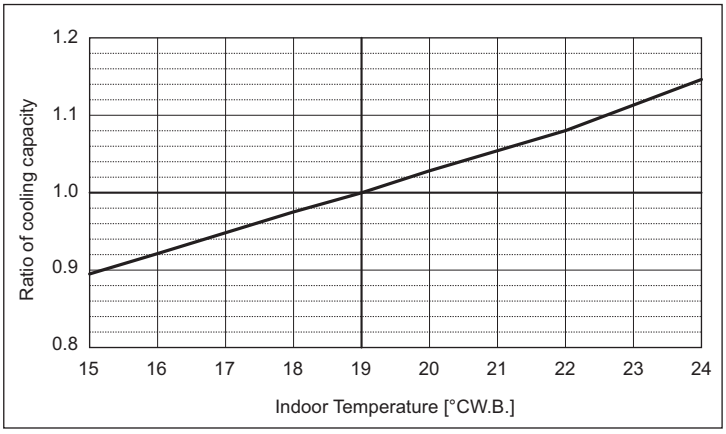
HYBRID CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

PURY-		P200YNW-A	P250YNW-A
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	7.00	9.92

PURY-		EP200YNW-A	EP250YNW-A
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	6.27	8.77

Indoor unit temperature correction

To be used to correct indoor unit capacity only

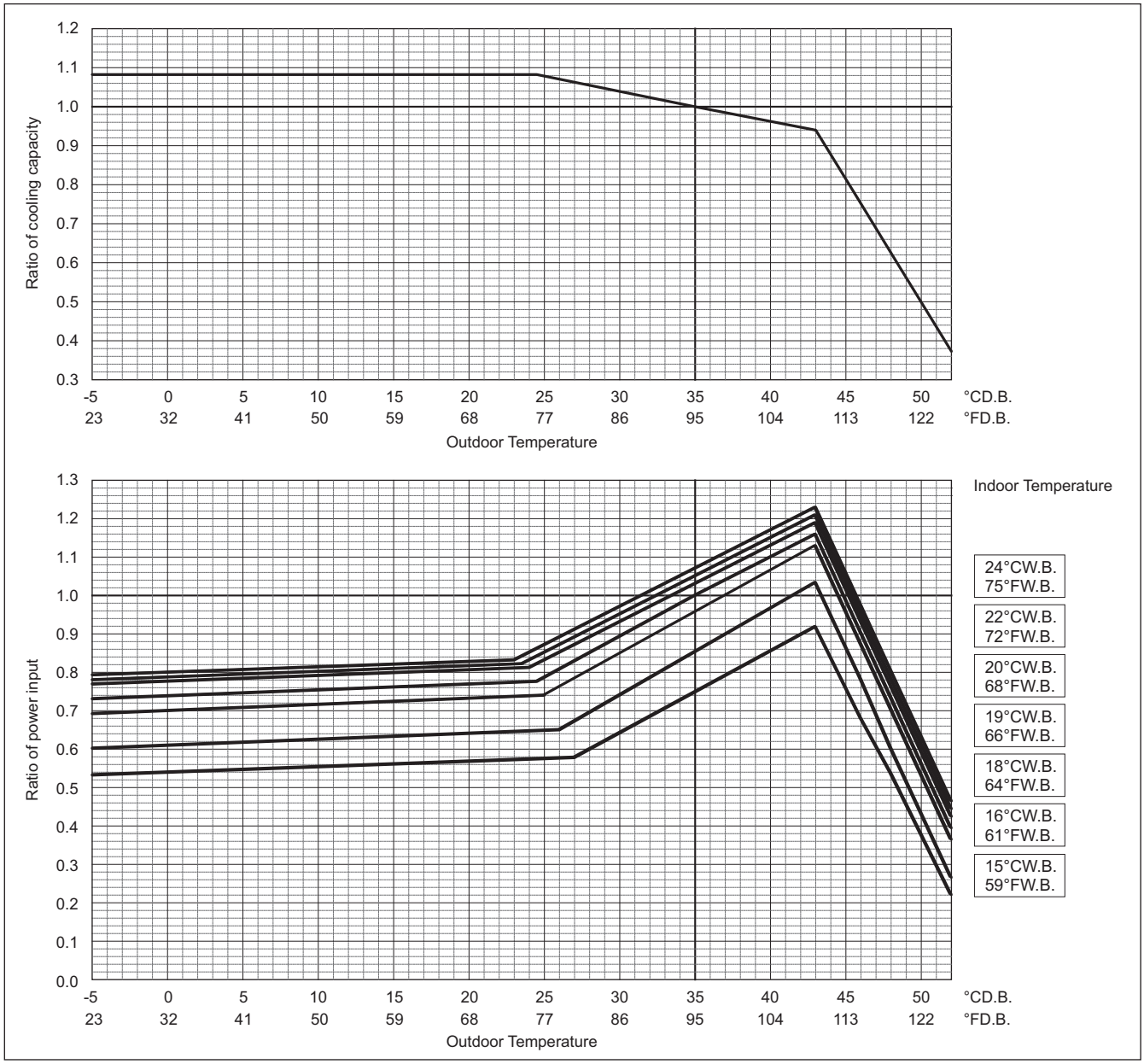


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

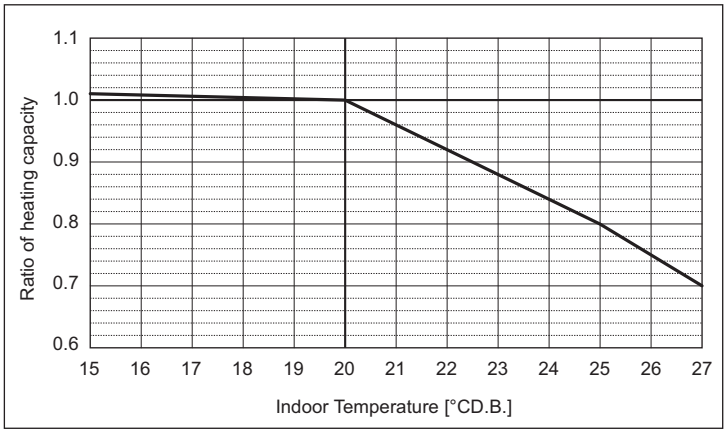


PURY-		P200YNW-A	P250YNW-A
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	7.08	10.06

PURY-		EP200YNW-A	EP250YNW-A
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.92	9.84

Indoor unit temperature correction

To be used to correct indoor unit capacity only

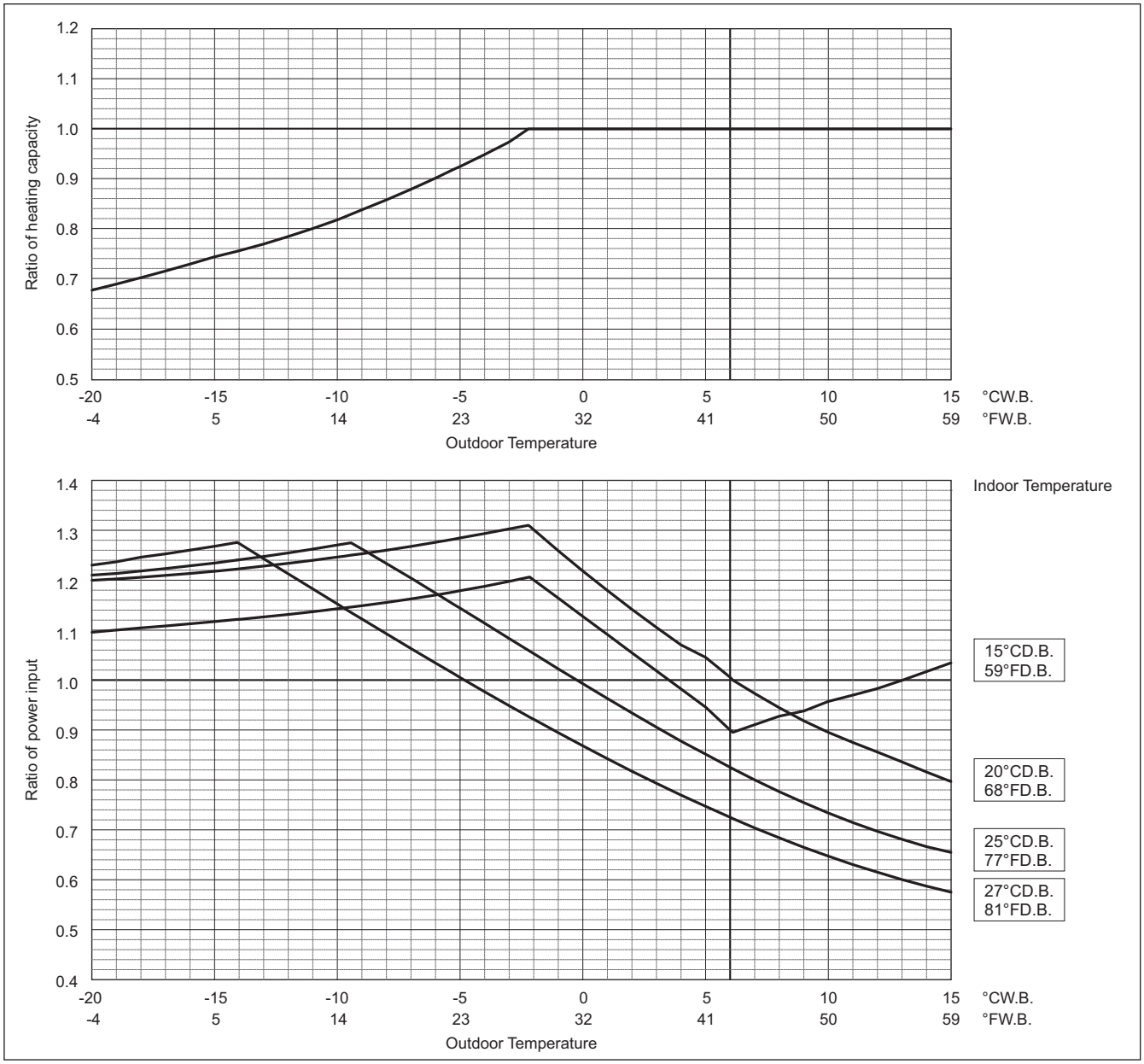


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

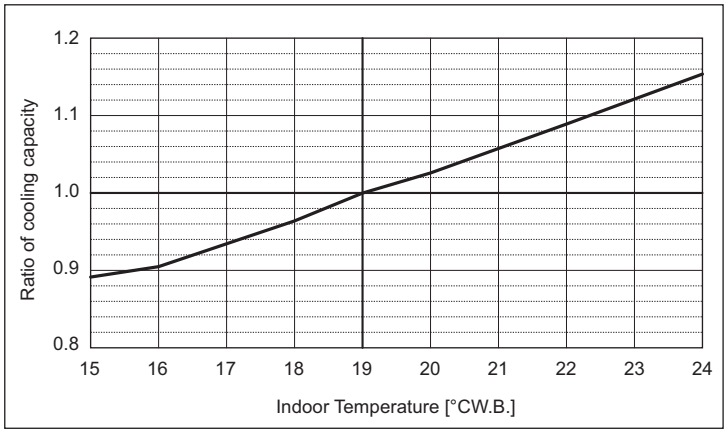


PURY-		P300YNW-A	P350YNW-A	P400YNW-A
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	13.34	17.93	16.65

PURY-		EP300YNW-A	EP350YNW-A	EP400YNW-A
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	12.05	17.16	13.88

Indoor unit temperature correction

To be used to correct indoor unit capacity only

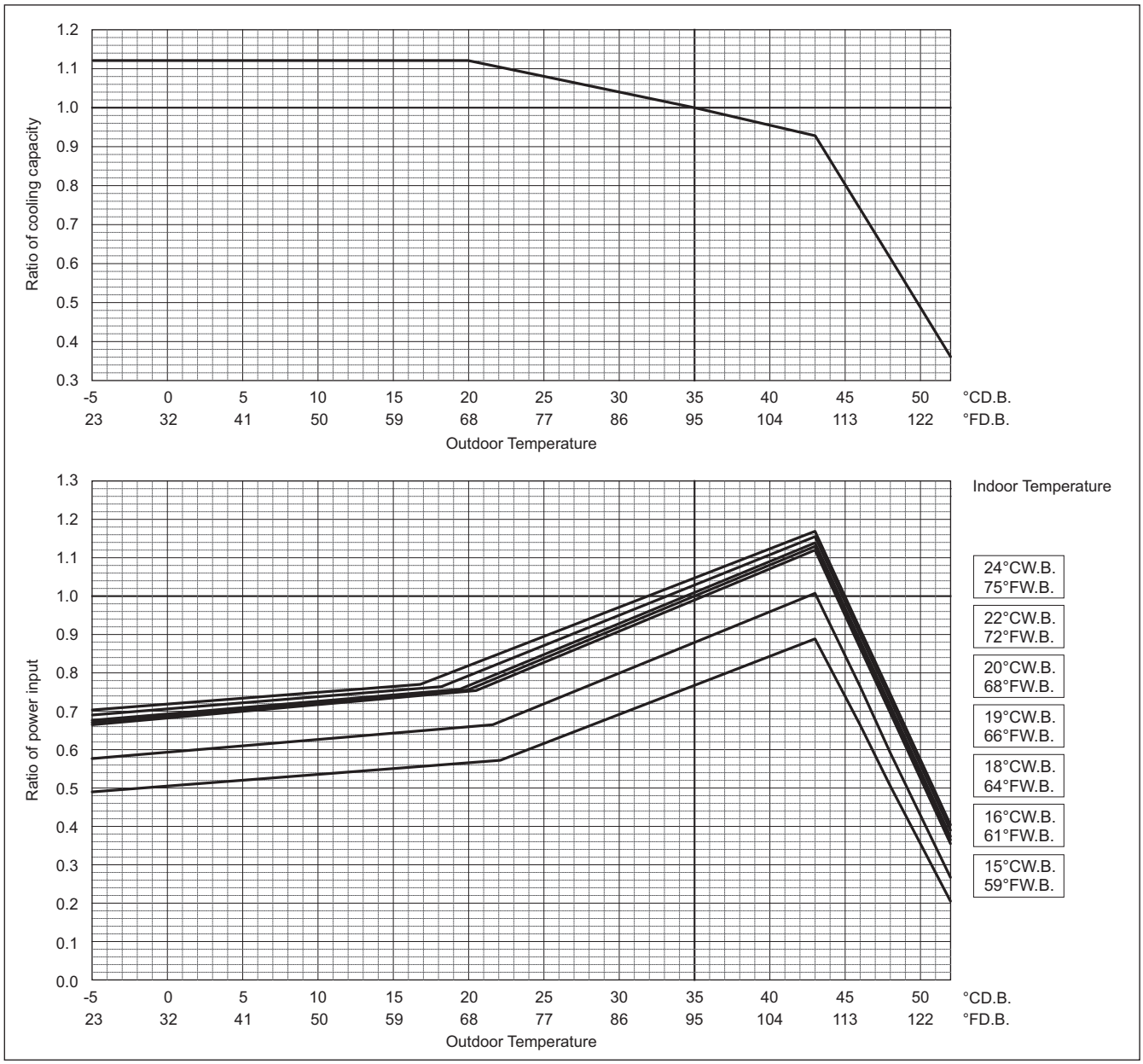


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

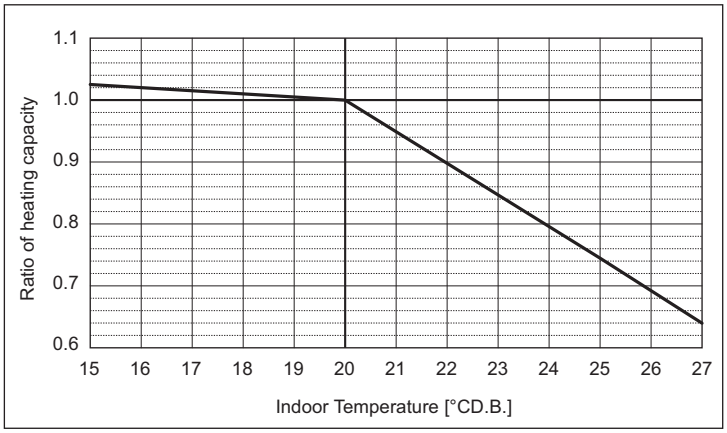


PURY-		P300YNW-A	P350YNW-A	P400YNW-A
Nominal Heating Capacity	kW	37.5	45.0	45.0
	BTU/h	128,000	153,500	153,500
Input	kW	12.71	15.51	13.39

PURY-		EP300YNW-A	EP350YNW-A	EP400YNW-A
Nominal Heating Capacity	kW	37.5	45.0	50.0
	BTU/h	128,000	153,500	170,600
Input	kW	11.71	15.38	14.12

Indoor unit temperature correction

To be used to correct indoor unit capacity only

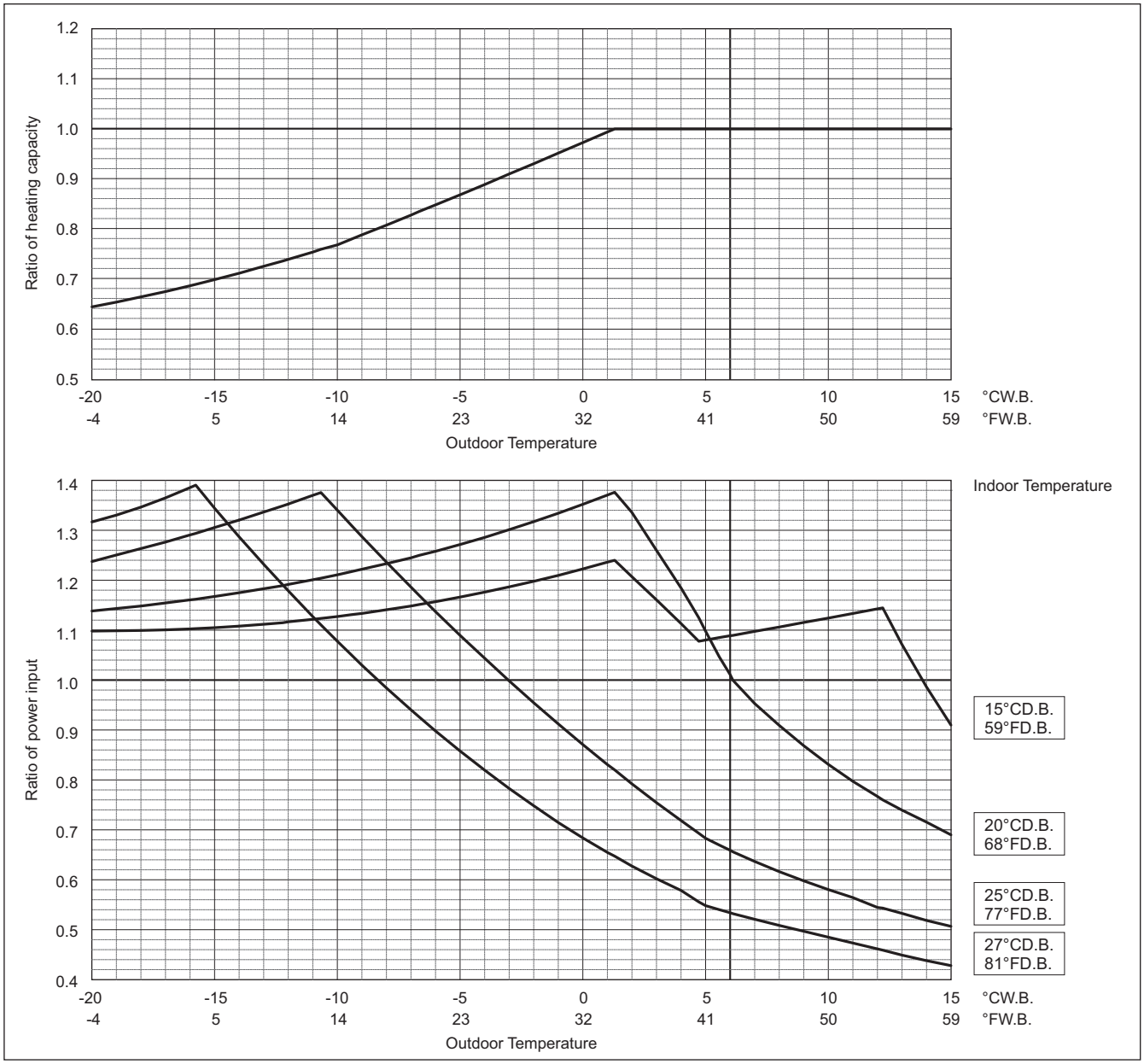


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

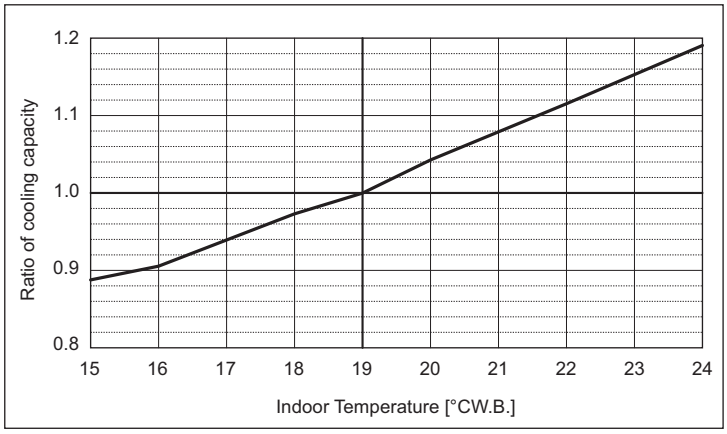


PURY-		P450YNW-A	P500YNW-A
Nominal Cooling Capacity	kW	50.0	56.0
	BTU/h	170,600	191,100
Input	kW	17.92	22.67

PURY-		EP450YNW-A	EP500YNW-A
Nominal Cooling Capacity	kW	50.0	56.0
	BTU/h	170,600	191,100
Input	kW	16.83	21.22

Indoor unit temperature correction

To be used to correct indoor unit capacity only

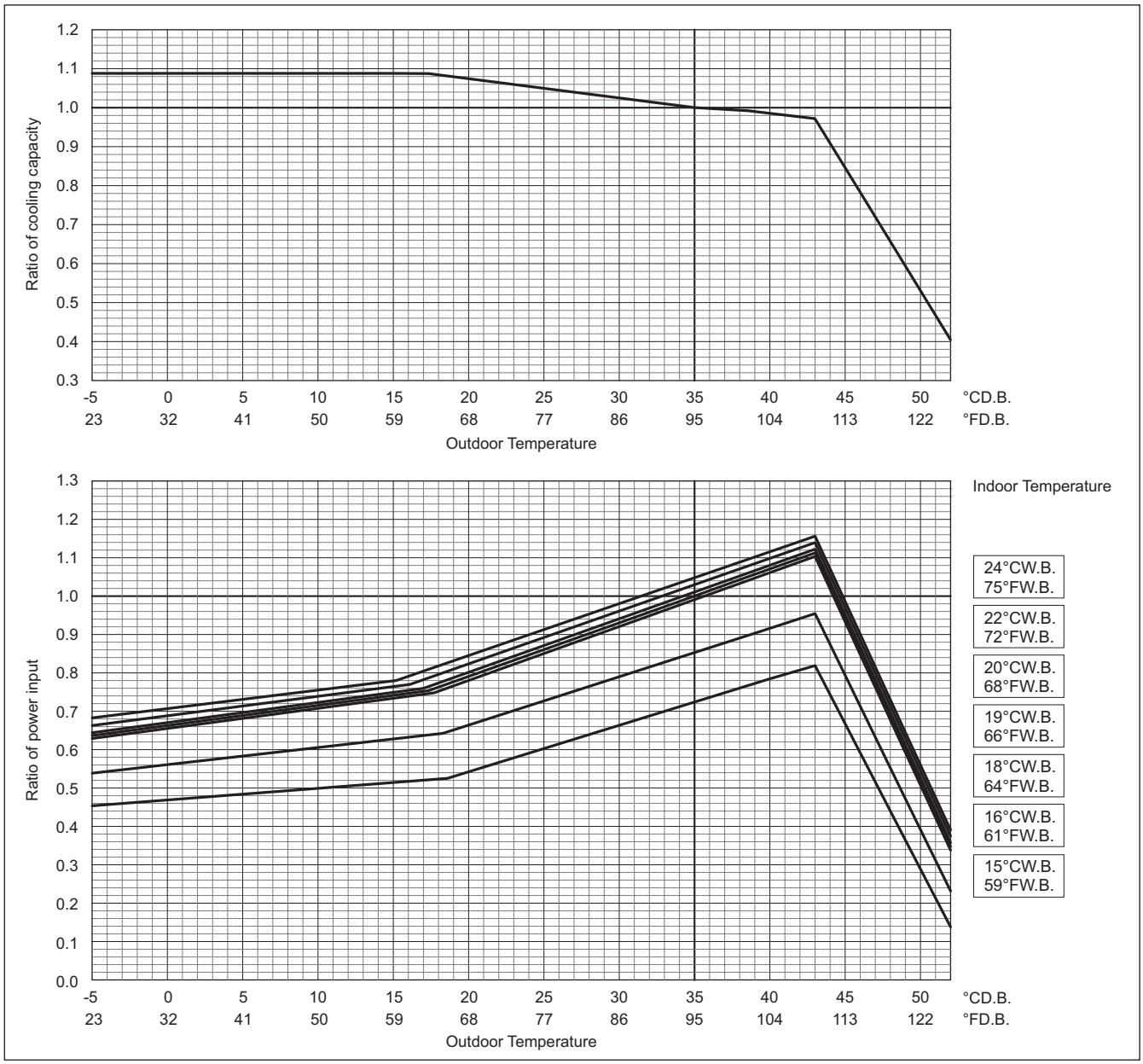


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

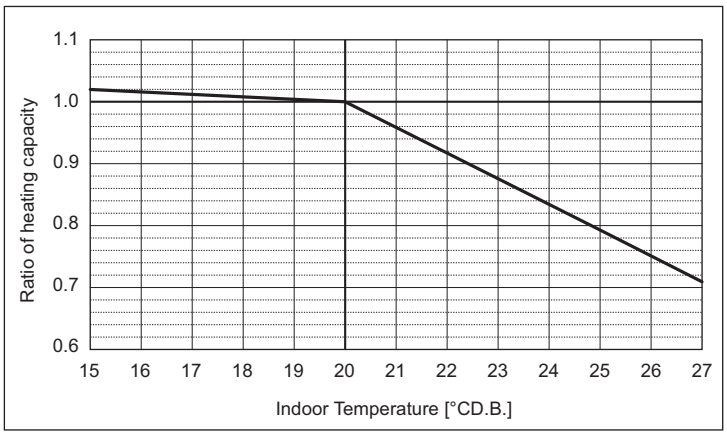


PURY-		P450YNW-A	P500YNW-A
Nominal Heating Capacity	kW	56.0	58.0
	BTU/h	191,100	197,900
Input	kW	17.39	17.53

PURY-		EP450YNW-A	EP500YNW-A
Nominal Heating Capacity	kW	56.0	63.0
	BTU/h	191,100	215,000
Input	kW	16.86	21.67

Indoor unit temperature correction

To be used to correct indoor unit capacity only

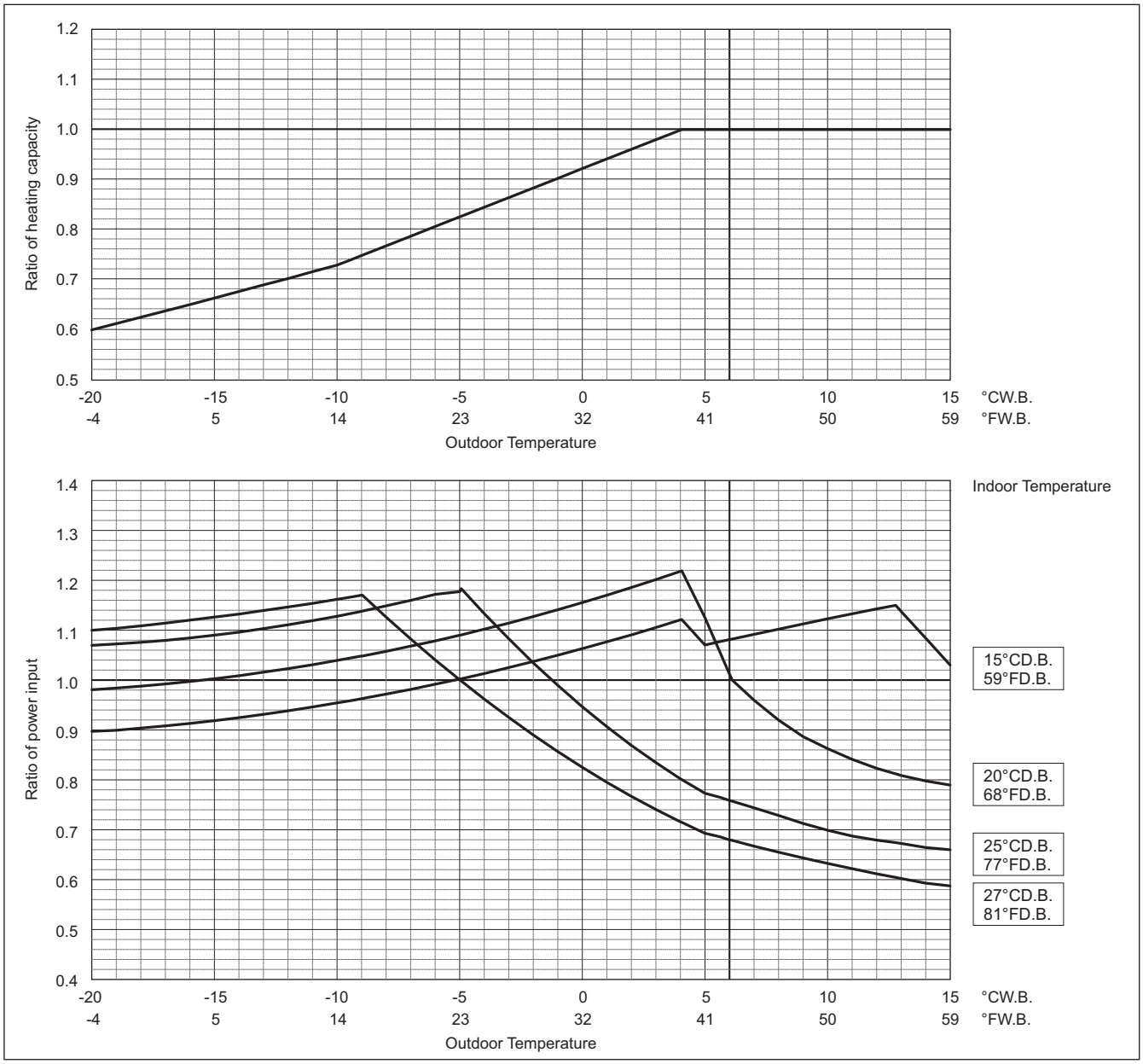


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



Correction by temperature (COP Priority Mode)

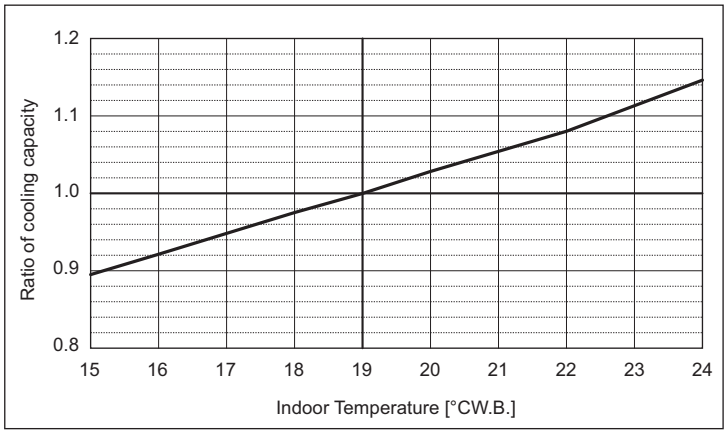
HYBRID CITY MULTI could have various capacities at different designing temperatures. Using the nominal cooling/heating capacity values and the ratios below, the capacity can be found for various temperatures.
To select COP priority mode, SW4 (935) must be set to ON.

PURY-		P200YNW-A	P250YNW-A
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	7.00	9.92

PURY-		EP200YNW-A	EP250YNW-A
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	6.27	8.77

Indoor unit temperature correction

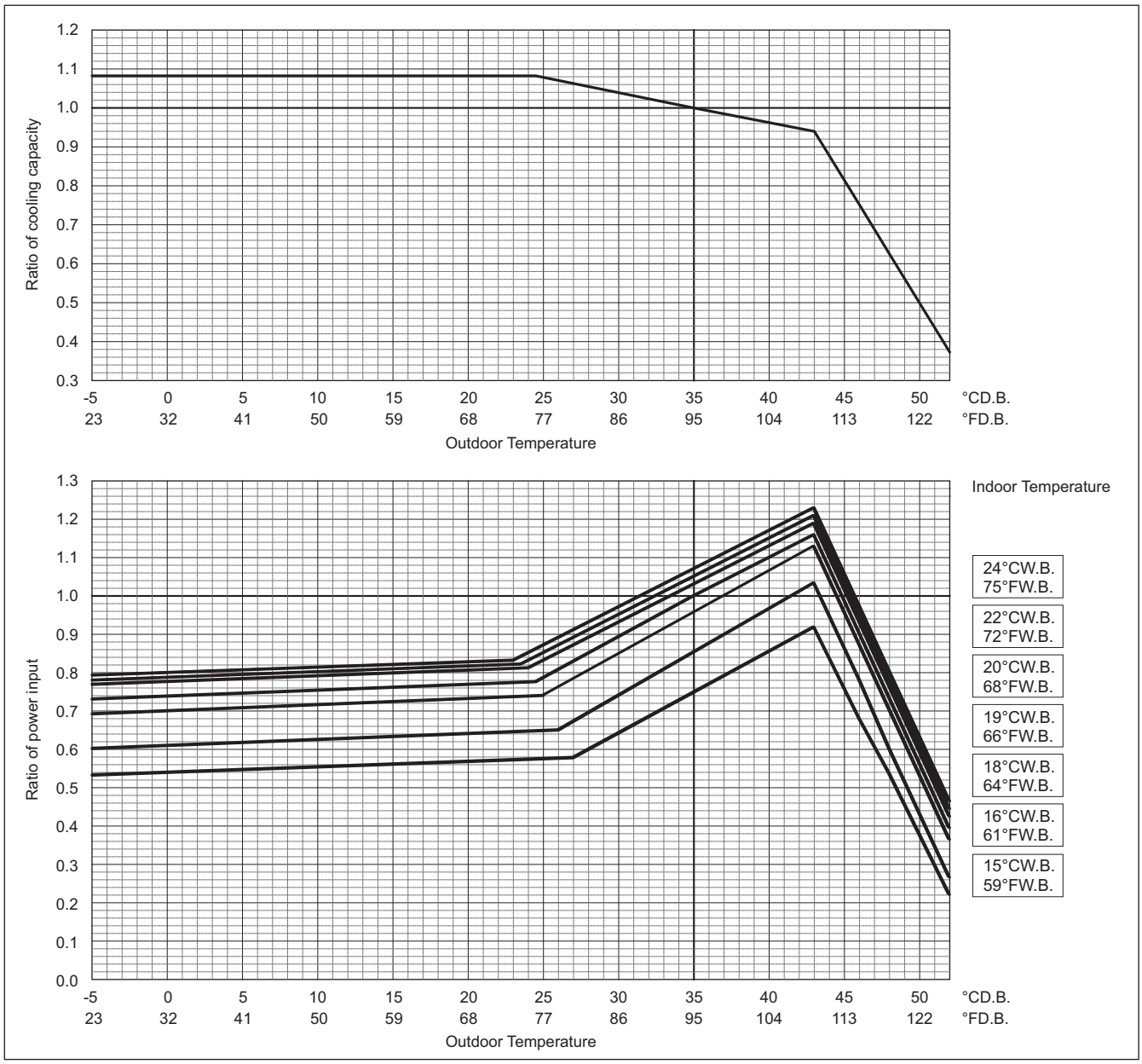
To be used to correct indoor unit capacity only



Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.
Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



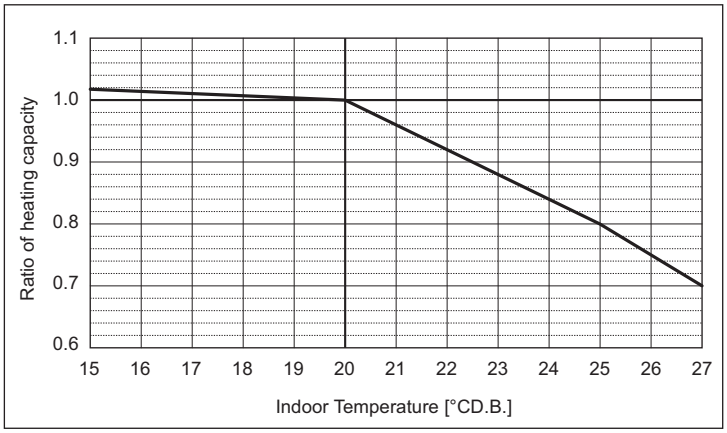
COP Priority Mode

PURY-		P200YNW-A	P250YNW-A
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	7.08	10.06

PURY-		EP200YNW-A	EP250YNW-A
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.92	9.84

Indoor unit temperature correction

To be used to correct indoor unit capacity only

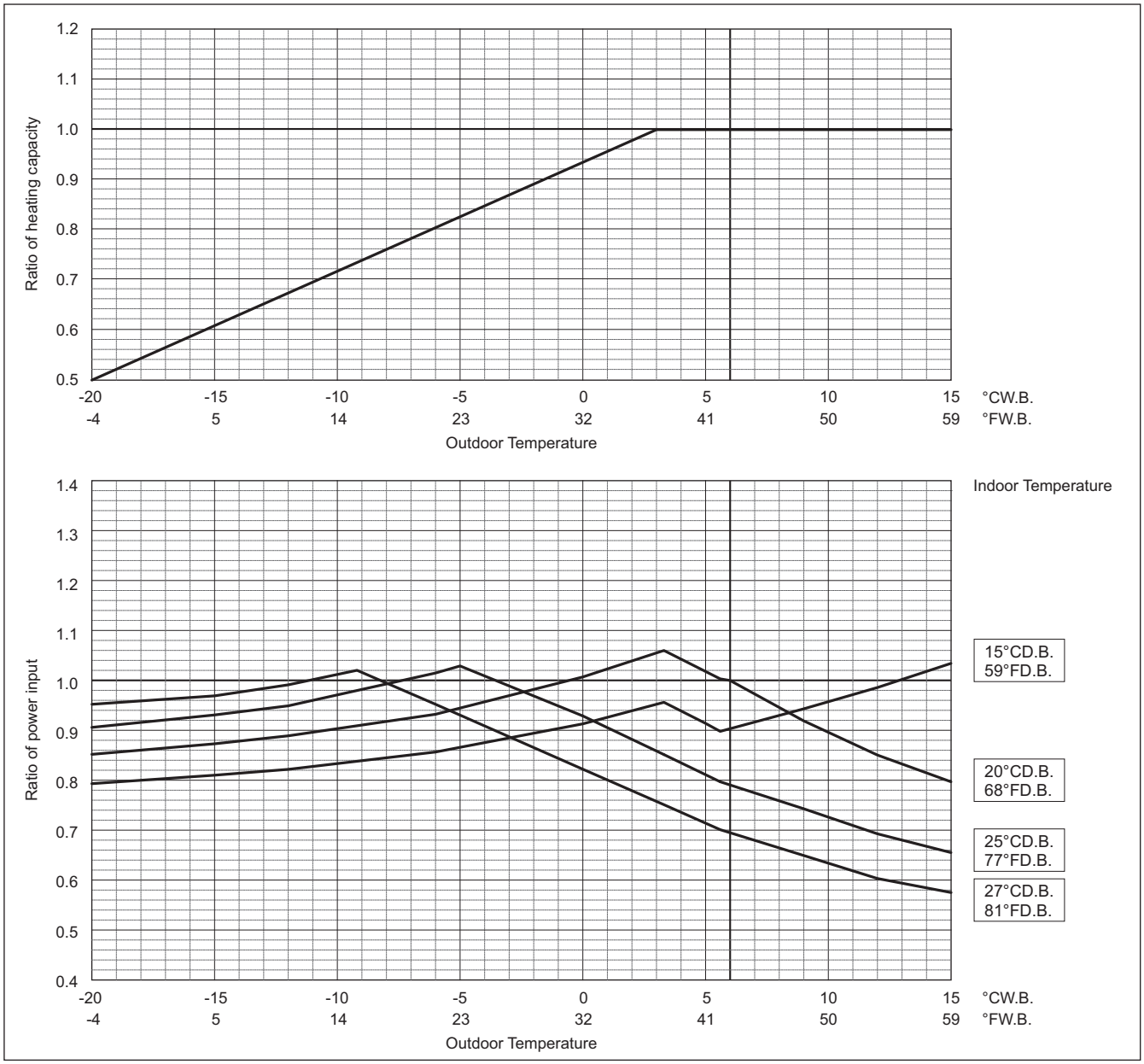


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

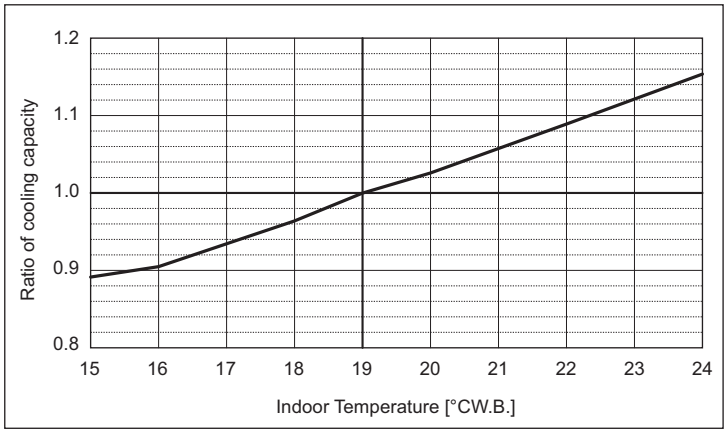


PURY-		P300YNW-A	P350YNW-A	P400YNW-A
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	13.34	17.93	16.65

PURY-		EP300YNW-A	EP350YNW-A	EP400YNW-A
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	12.05	17.16	13.88

Indoor unit temperature correction

To be used to correct indoor unit capacity only

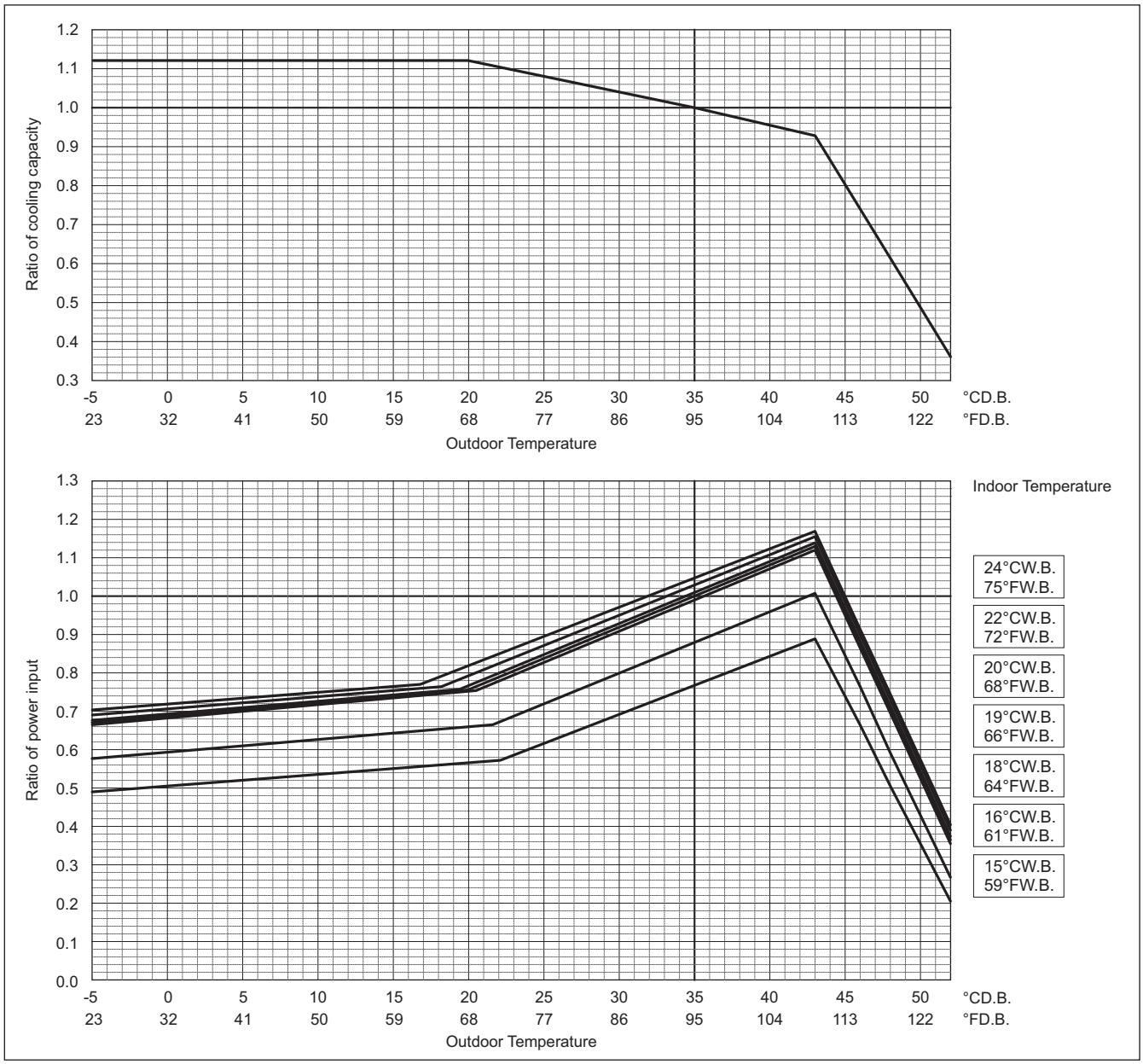


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



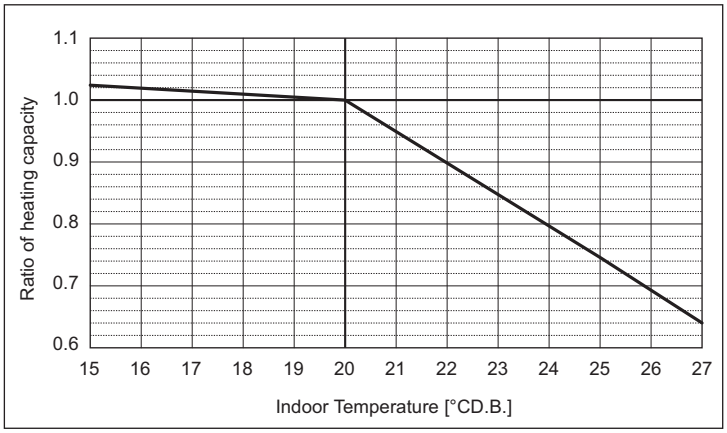
COP Priority Mode

PURY-		P300YNW-A	P350YNW-A	P400YNW-A
Nominal Heating Capacity	kW	37.5	45.0	45.0
	BTU/h	128,000	153,500	153,500
Input	kW	12.71	15.51	13.39

PURY-		EP300YNW-A	EP350YNW-A	EP400YNW-A
Nominal Heating Capacity	kW	37.5	45.0	50.0
	BTU/h	128,000	153,500	170,600
Input	kW	11.71	15.38	14.12

Indoor unit temperature correction

To be used to correct indoor unit capacity only

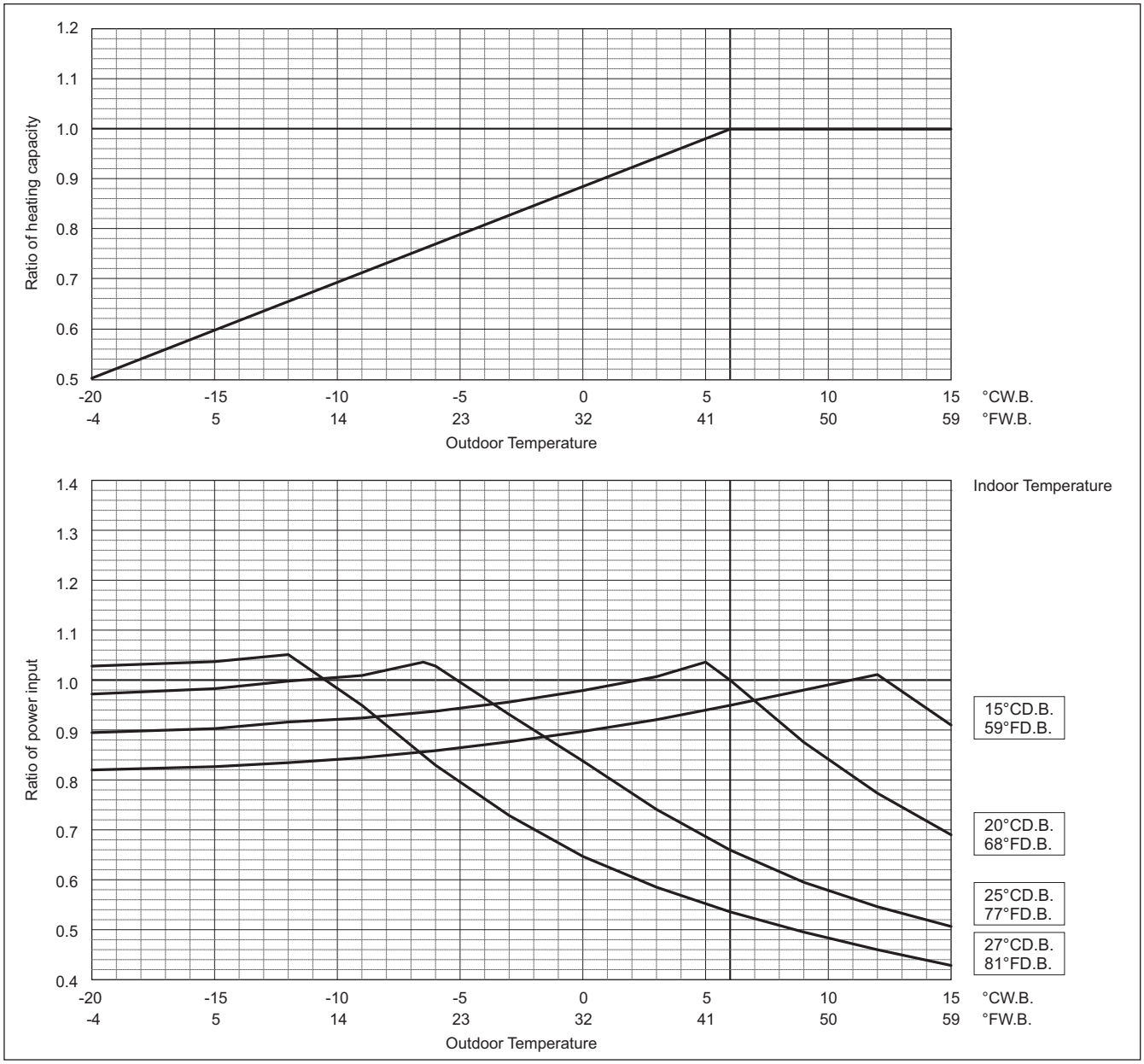


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

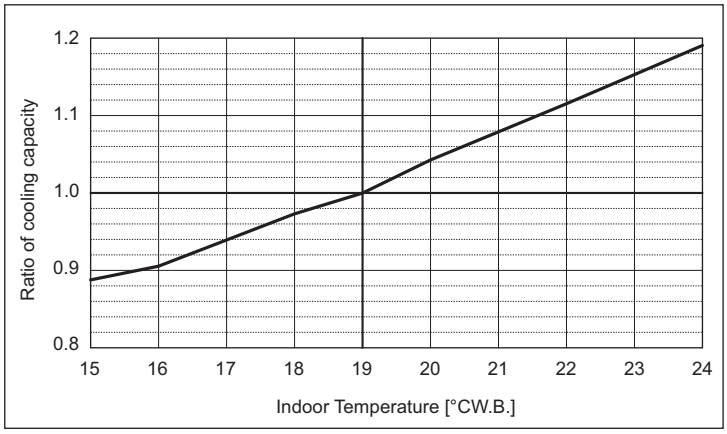


PURY-		P450YNW-A	P500YNW-A
Nominal Cooling Capacity	kW	50.0	56.0
	BTU/h	170,600	191,100
Input	kW	17.92	22.67

PURY-		EP450YNW-A	EP500YNW-A
Nominal Cooling Capacity	kW	50.0	56.0
	BTU/h	170,600	191,100
Input	kW	16.83	21.22

Indoor unit temperature correction

To be used to correct indoor unit capacity only

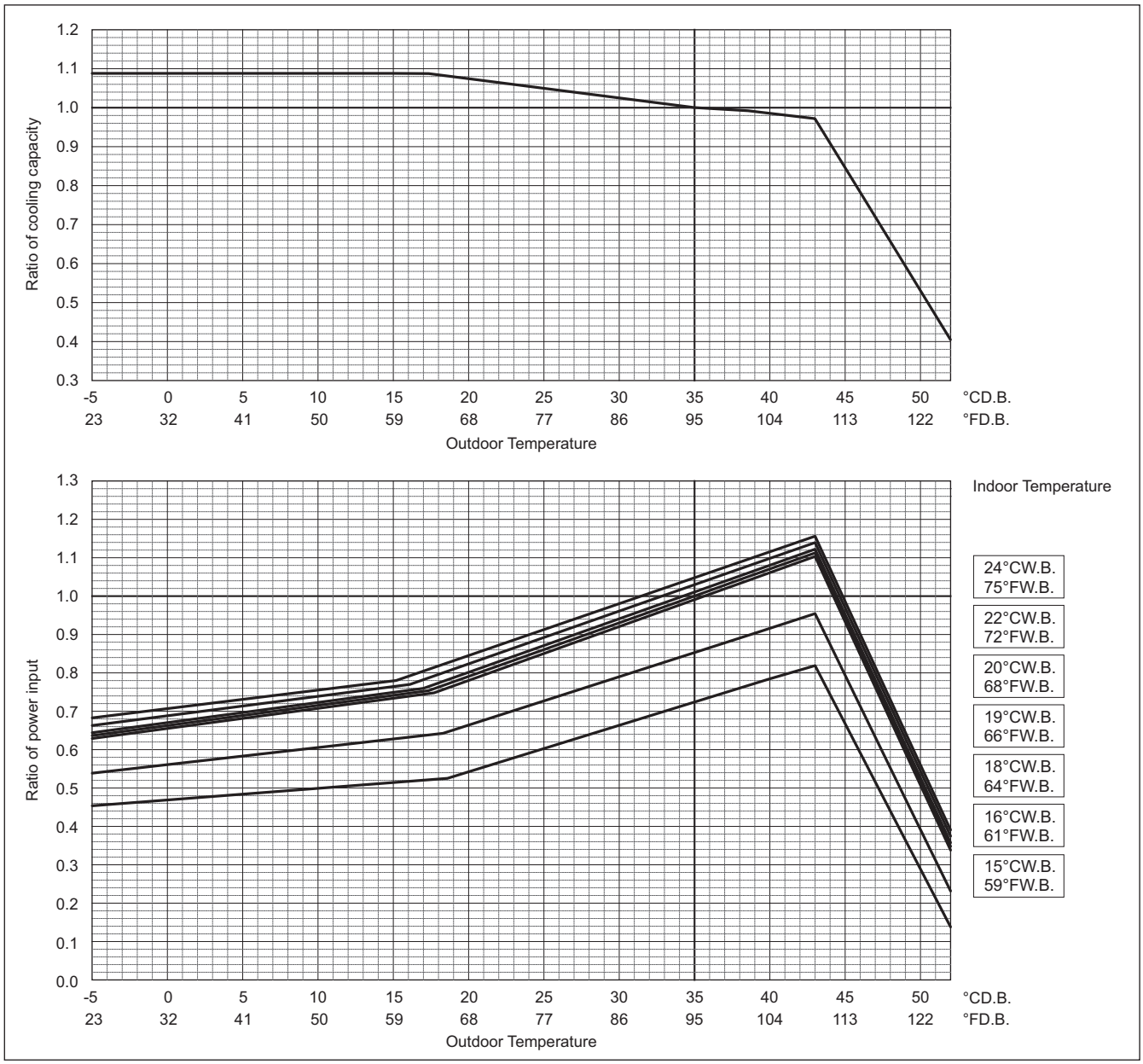


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



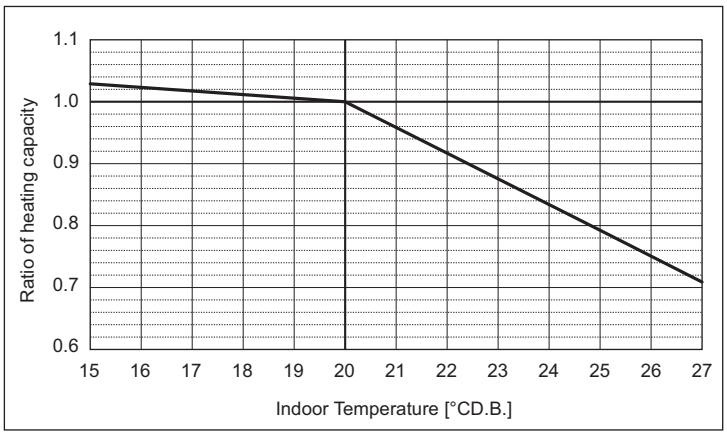
COP Priority Mode

PURY-		P450YNW-A	P500YNW-A
Nominal Heating Capacity	kW	56.0	58.0
	BTU/h	191,100	197,900
Input	kW	17.39	17.53

PURY-		EP450YNW-A	EP500YNW-A
Nominal Heating Capacity	kW	56.0	63.0
	BTU/h	191,100	215,000
Input	kW	16.86	21.67

Indoor unit temperature correction

To be used to correct indoor unit capacity only

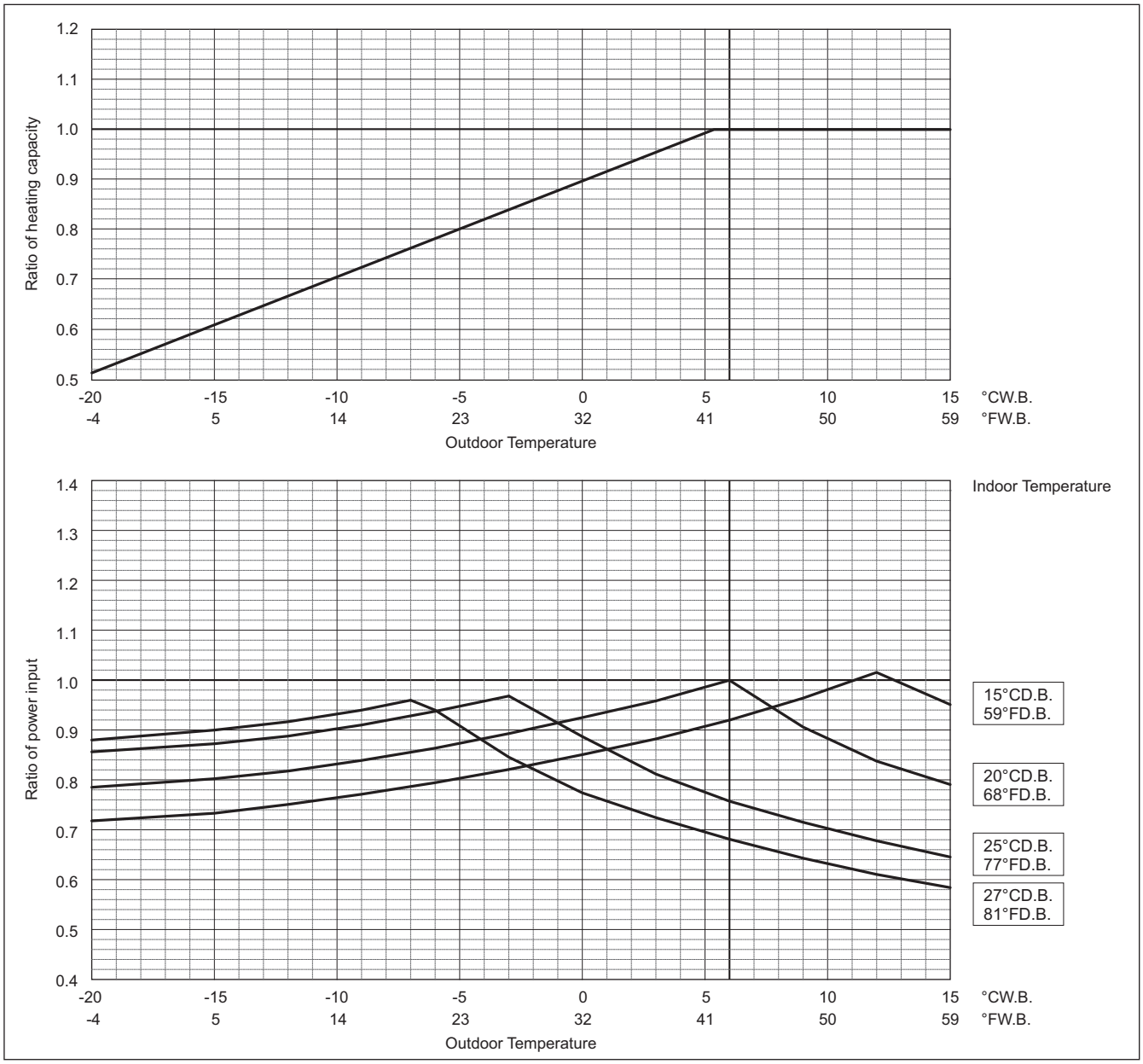


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



3-2. Correction by total indoor

HYBRID 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.

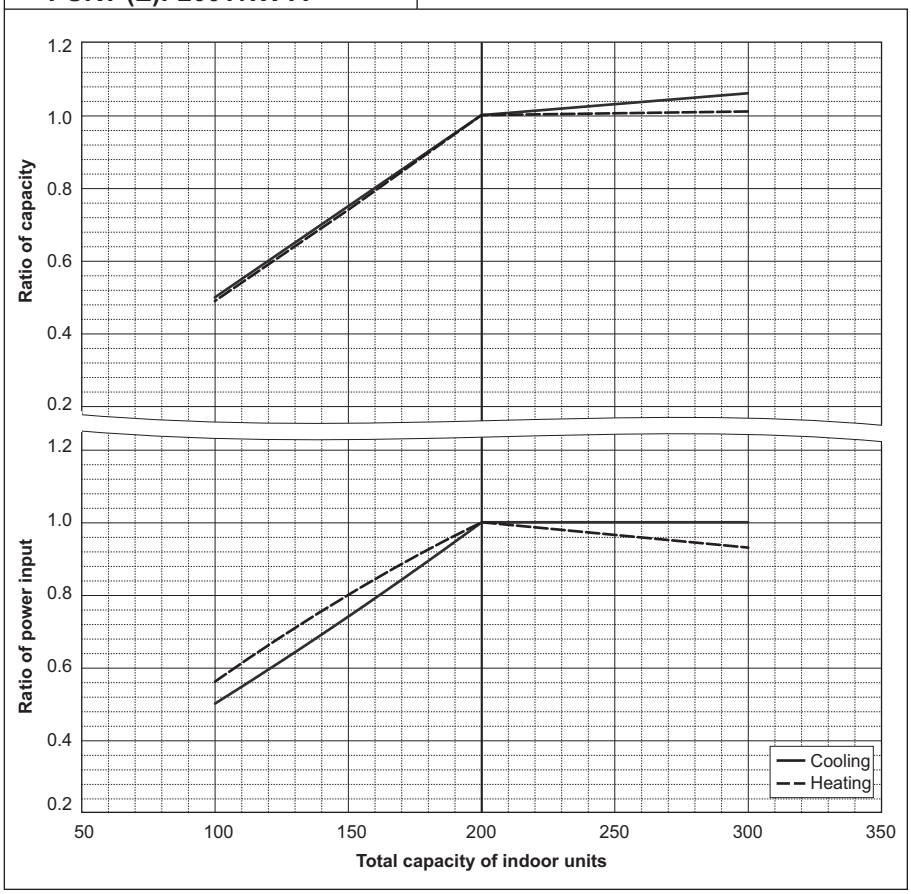
PURY-P200YNW-A		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	7.00

PURY-P200YNW-A		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	7.08

PURY-EP200YNW-A		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	6.27

PURY-EP200YNW-A		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	6.92

PURY-(E)P200YNW-A



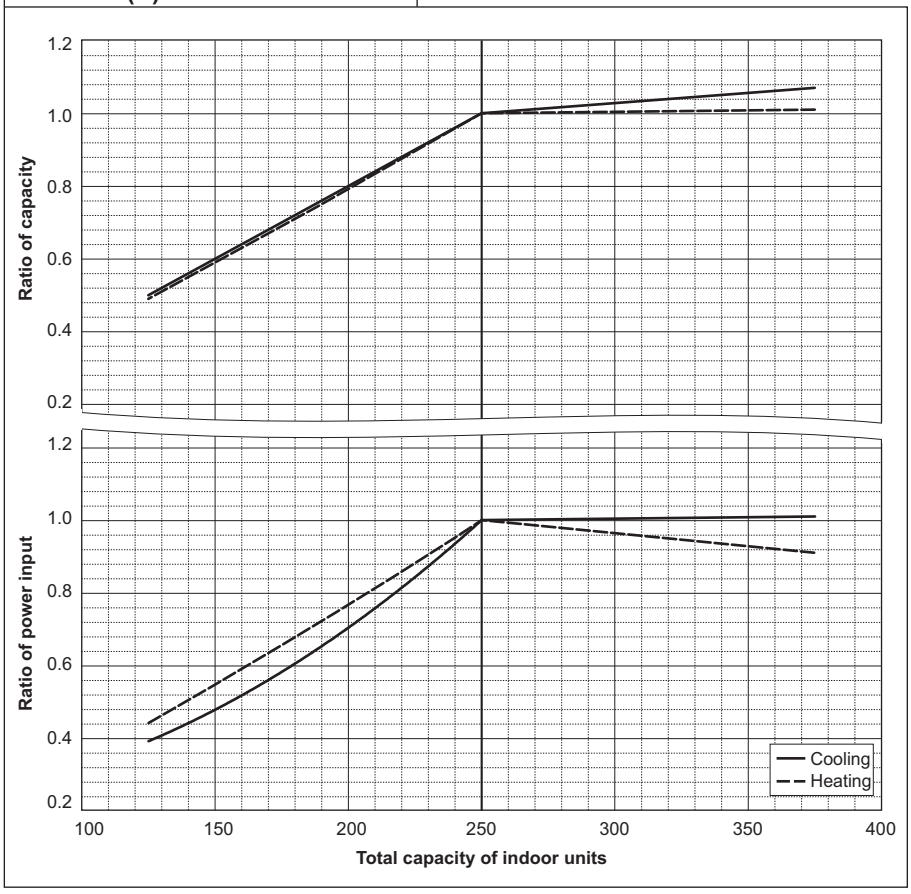
PURY-P250YNW-A		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	9.92

PURY-P250YNW-A		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	8.77

PURY-EP250YNW-A		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	10.06

PURY-EP250YNW-A		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	9.84

PURY-(E)P250YNW-A



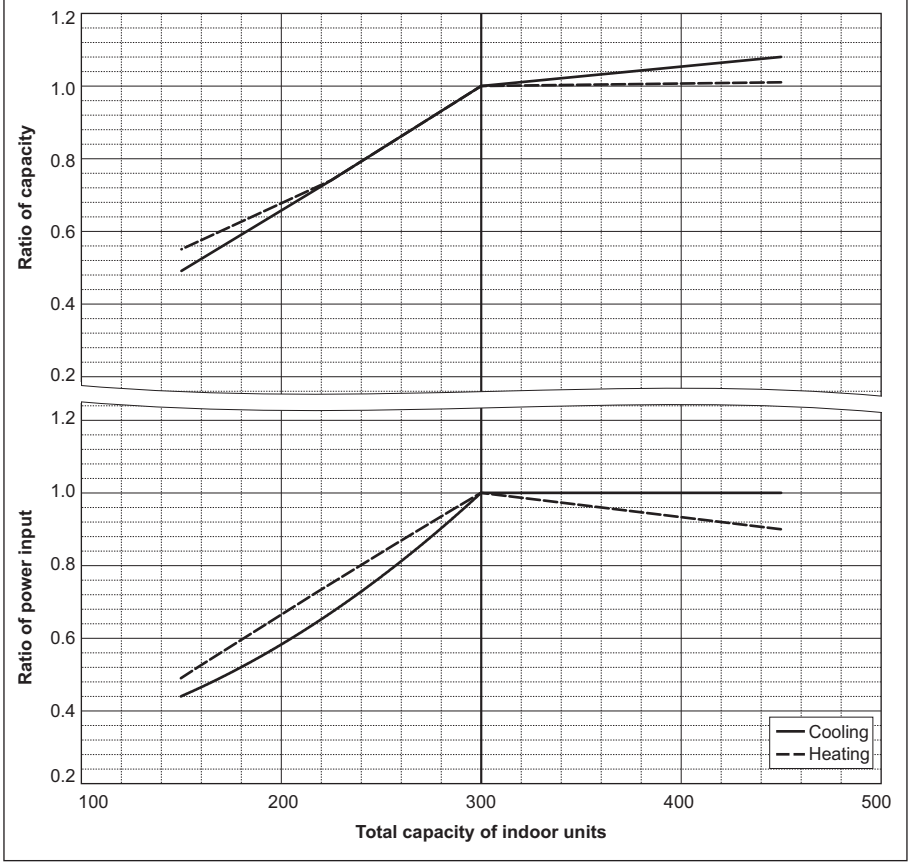
PURY-P300YNW-A		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	13.34

PURY-P300YNW-A		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	12.71

PURY-EP300YNW-A		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	12.05

PURY-EP300YNW-A		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	11.71

PURY-(E)P300YNW-A



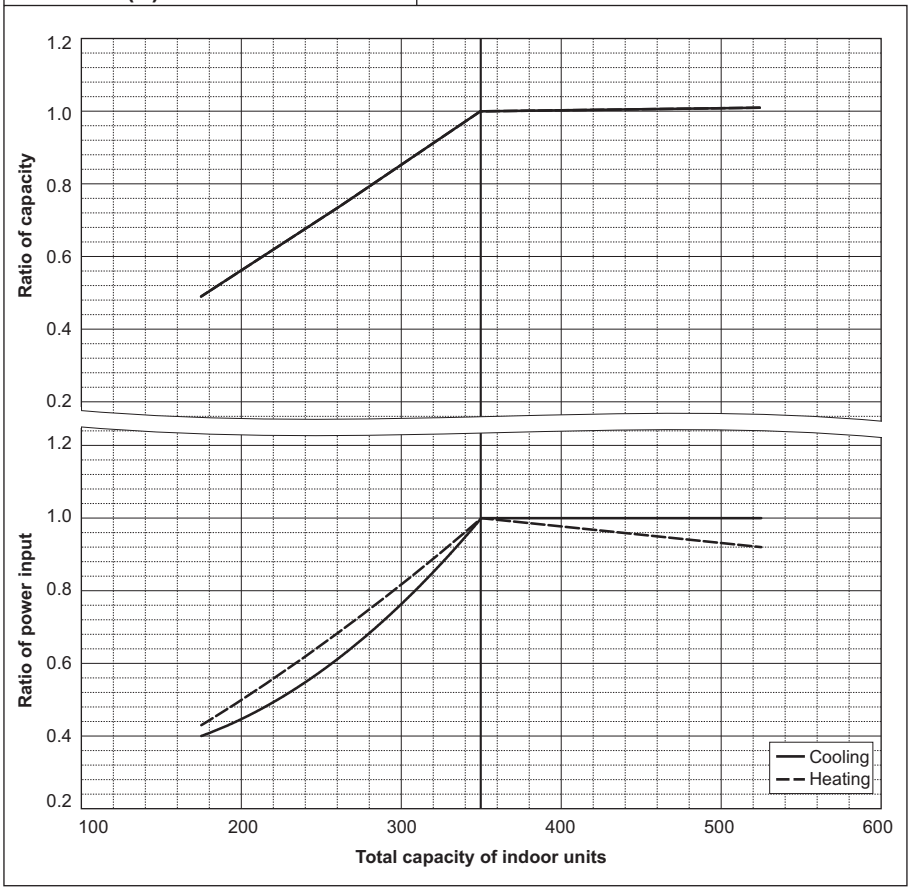
PURY-P350YNW-A		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	17.93

PURY-P350YNW-A		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	15.51

PURY-EP350YNW-A		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	17.16

PURY-EP350YNW-A		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	15.38

PURY-(E)P350YNW-A



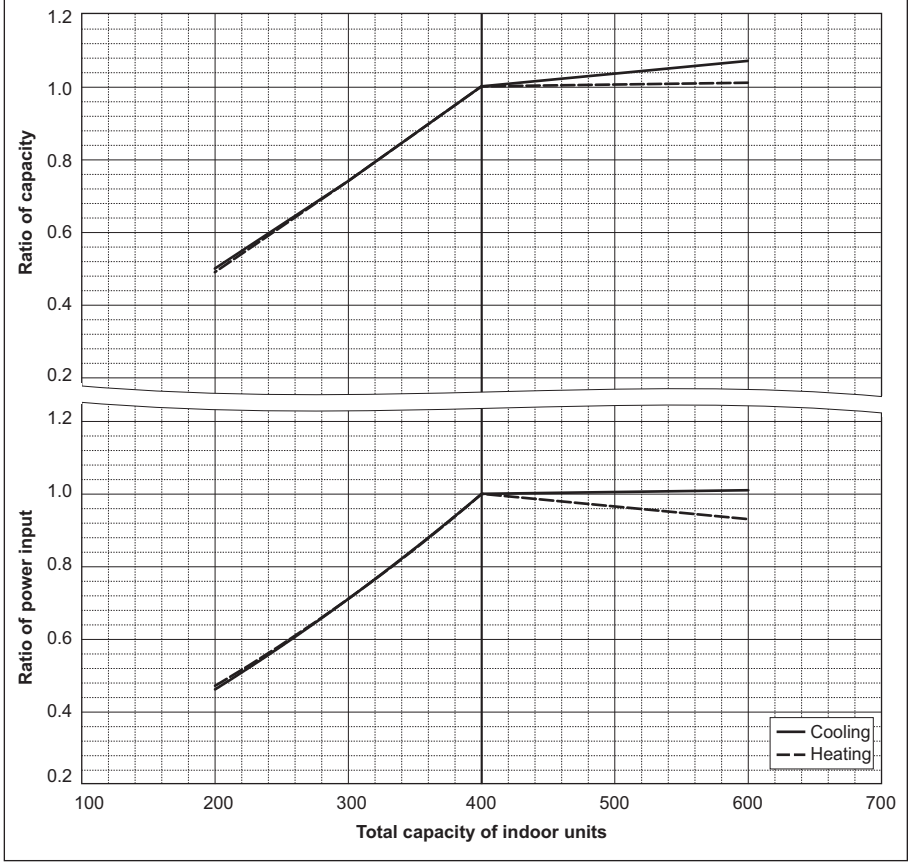
PURY-P400YNW-A		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	16.65

PURY-P400YNW-A		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	13.39

PURY-EP400YNW-A		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	13.88

PURY-EP400YNW-A		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	14.12

PURY-(E)P400YNW-A



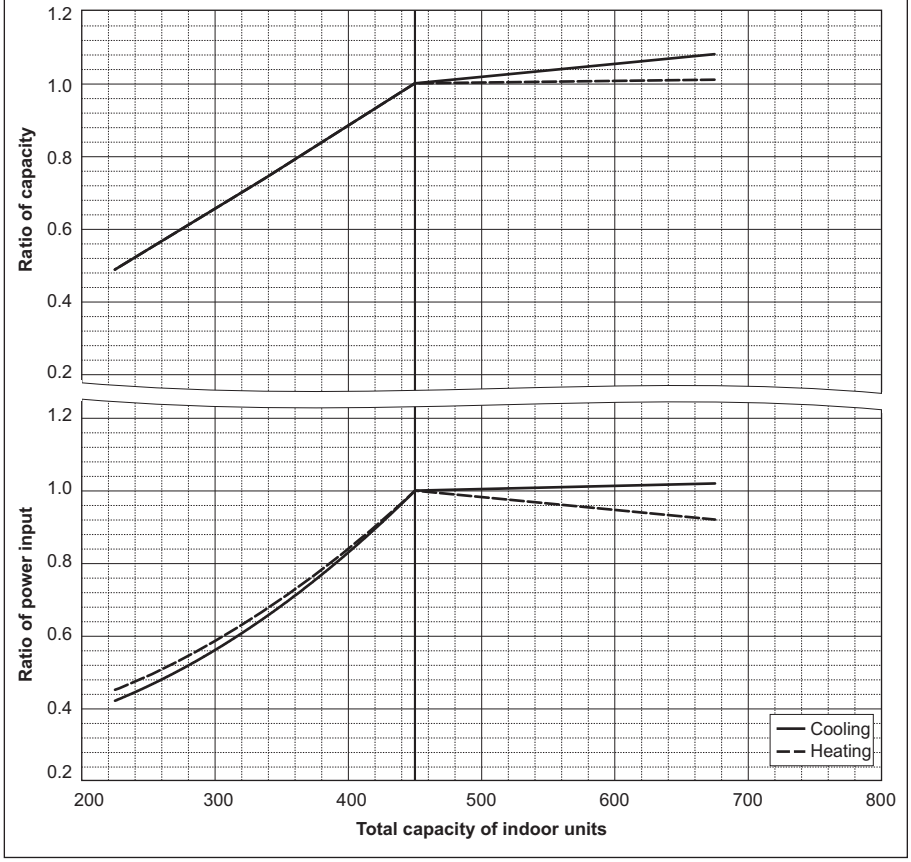
PURY-P450YNW-A		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	17.92

PURY-P450YNW-A		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	17.39

PURY-EP450YNW-A		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	16.83

PURY-EP450YNW-A		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	16.86

PURY-(E)P450YNW-A



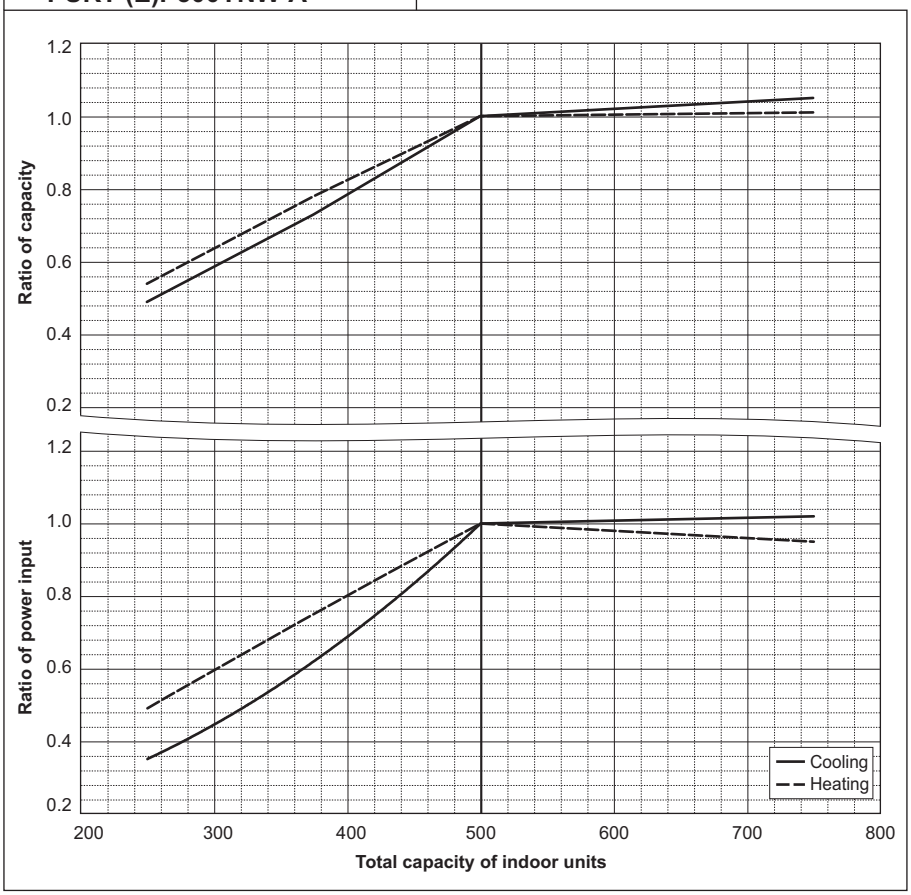
PURY-P500YNW-A		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	22.67

PURY-P500YNW-A		
Nominal Heating Capacity	kW	58.0
	BTU/h	197,900
Input	kW	17.53

PURY-EP500YNW-A		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	21.22

PURY-EP500YNW-A		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	21.67

PURY-(E)P500YNW-A

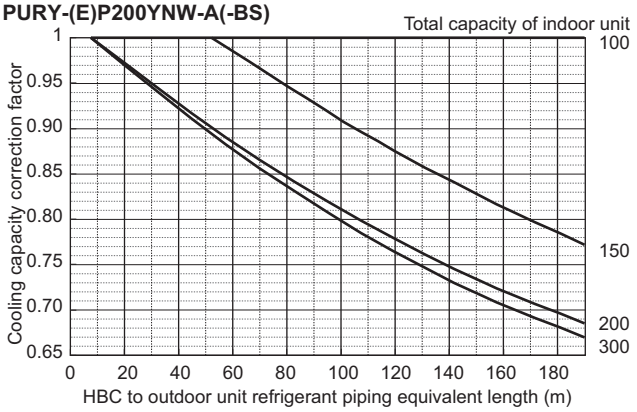


3-3. Correction by piping length

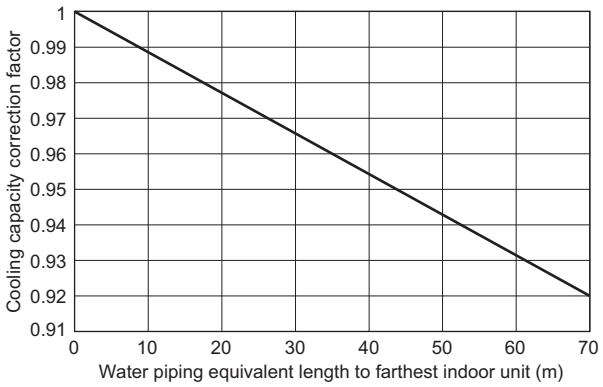
A decrease in cooling/heating capacity will occur due to piping length increase. Using the following correction factors according to the equivalent length of the piping shown at 3-3-1 and 3-3-2 the capacity can be calculated. 3-3-3 shows how to obtain the equivalent length of piping. Refrigerant piping and water piping have separate correction factors.

3-3-1. Cooling capacity correction

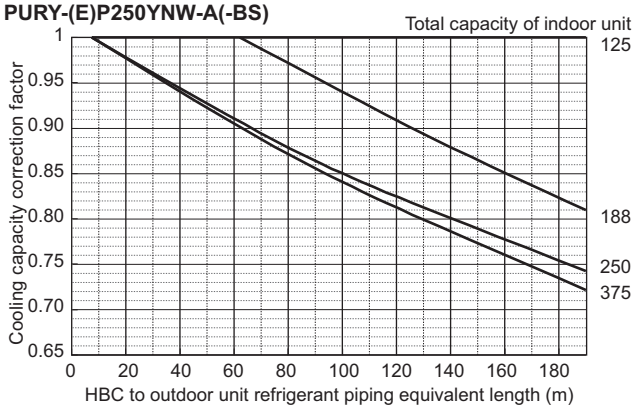
PURY-(E)P200YNW-A(-BS)



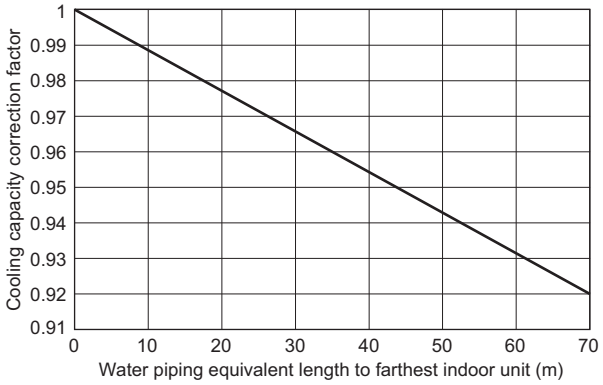
PURY-(E)P200YNW-A(-BS)



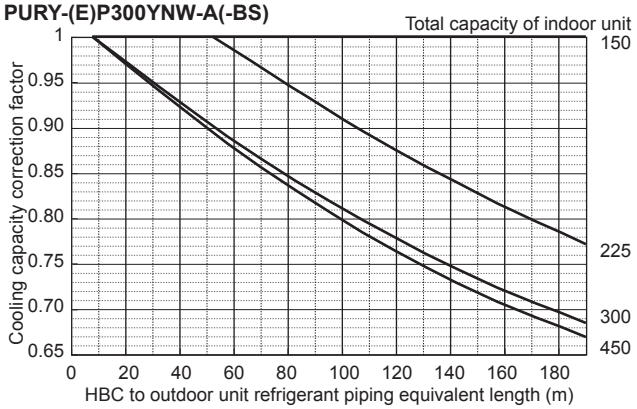
PURY-(E)P250YNW-A(-BS)



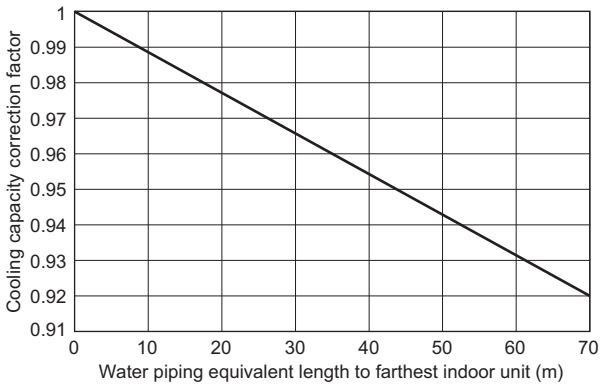
PURY-(E)P250YNW-A(-BS)



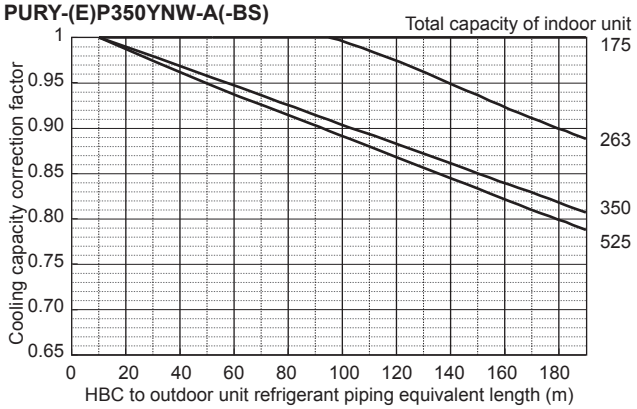
PURY-(E)P300YNW-A(-BS)



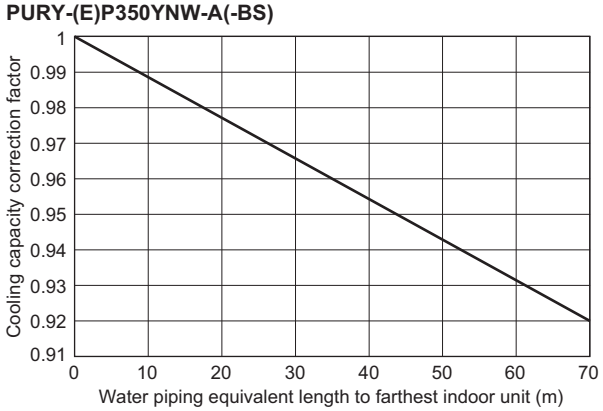
PURY-(E)P300YNW-A(-BS)



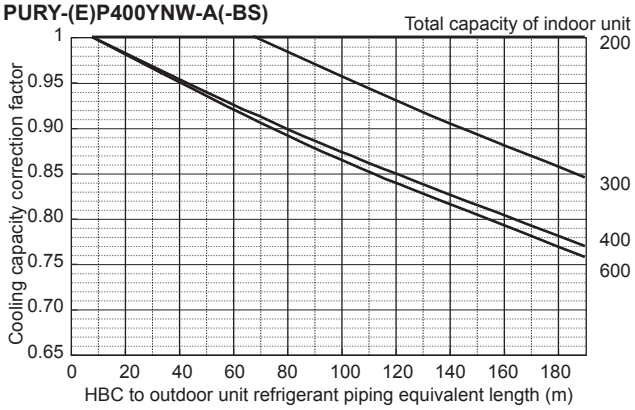
PURY-(E)P350YNW-A(-BS)



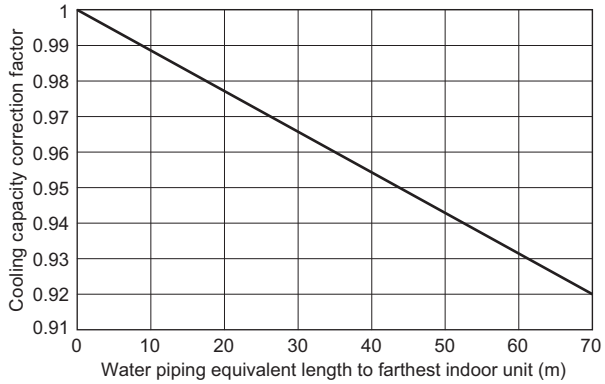
PURY-(E)P350YNW-A(-BS)



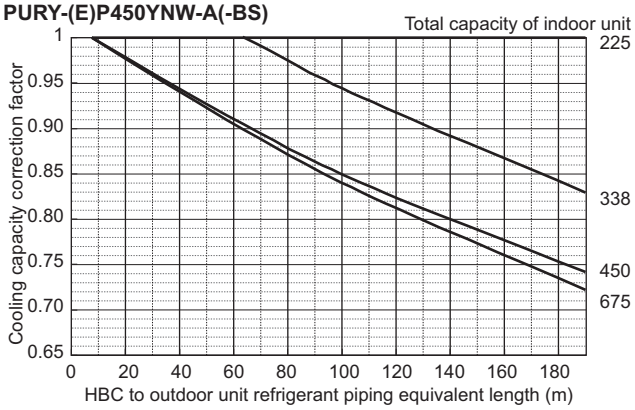
PURY-(E)P400YNW-A(-BS)



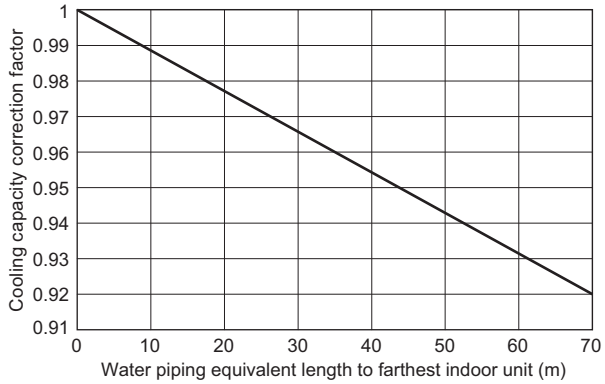
PURY-(E)P400YNW-A(-BS)



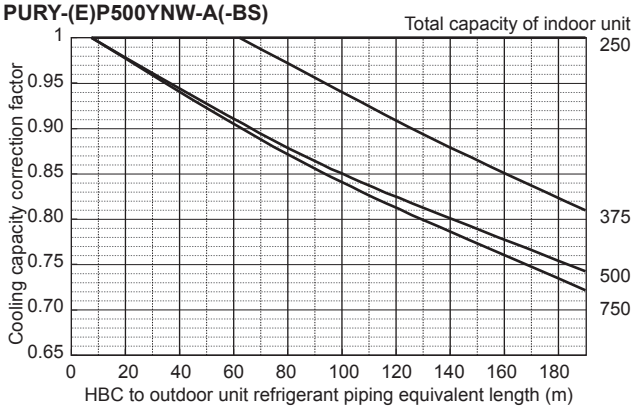
PURY-(E)P450YNW-A(-BS)



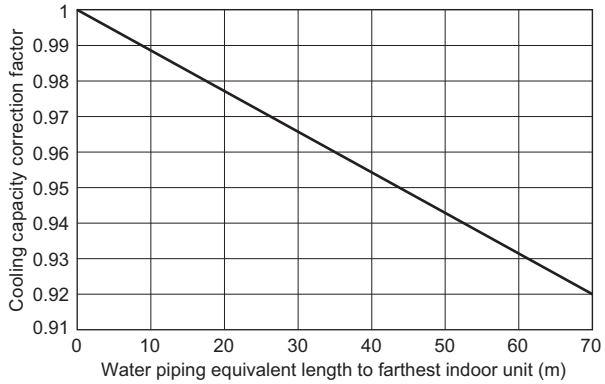
PURY-(E)P450YNW-A(-BS)



PURY-(E)P500YNW-A(-BS)

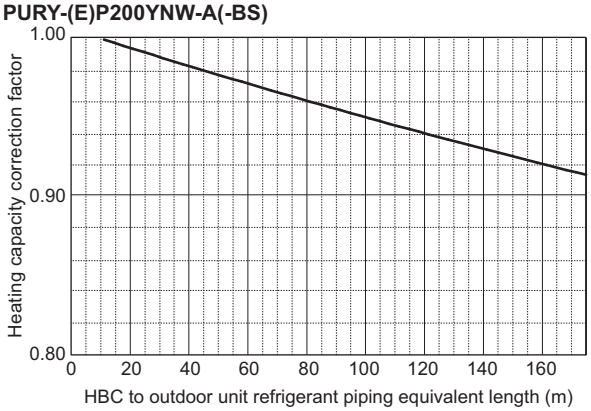


PURY-(E)P500YNW-A(-BS)

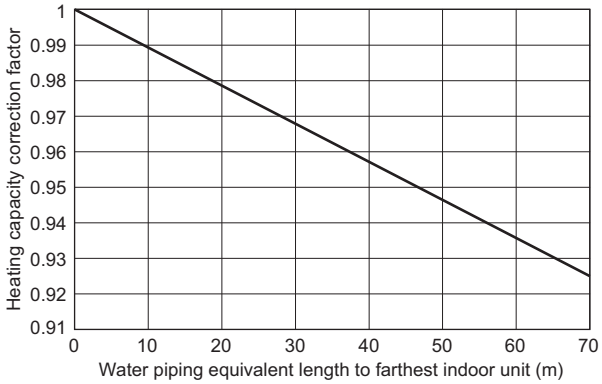


3-3-2. Heating capacity correction

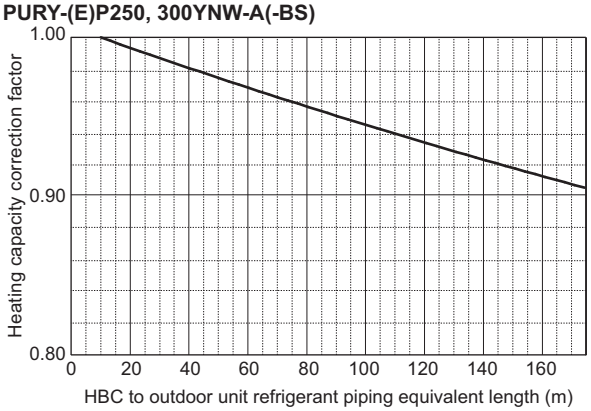
PURY-(E)P200YNW-A(-BS)



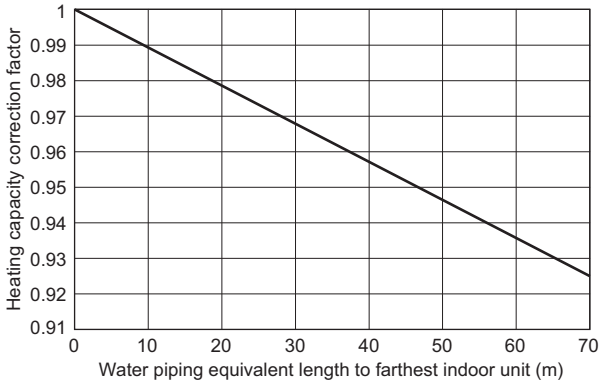
PURY-(E)P200YNW-A(-BS)



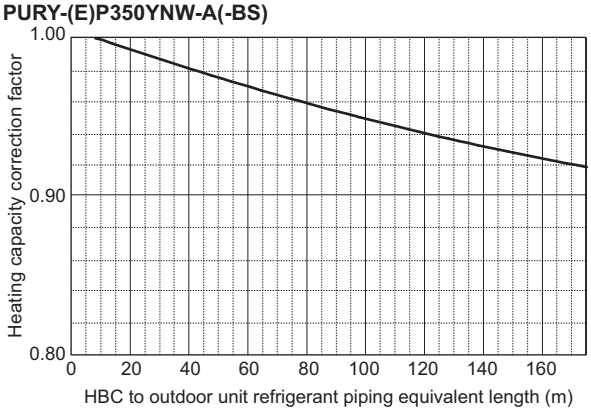
PURY-(E)P250, 300YNW-A(-BS)



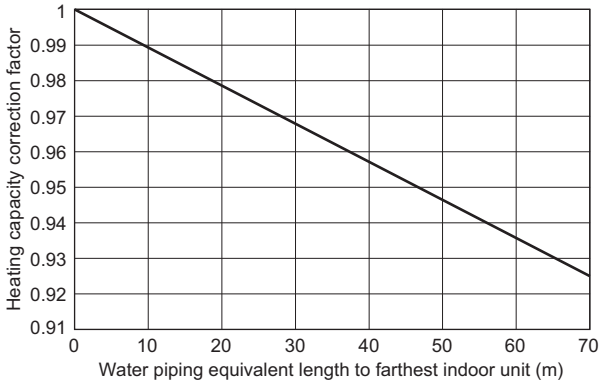
PURY-(E)P250, 300YNW-A(-BS)



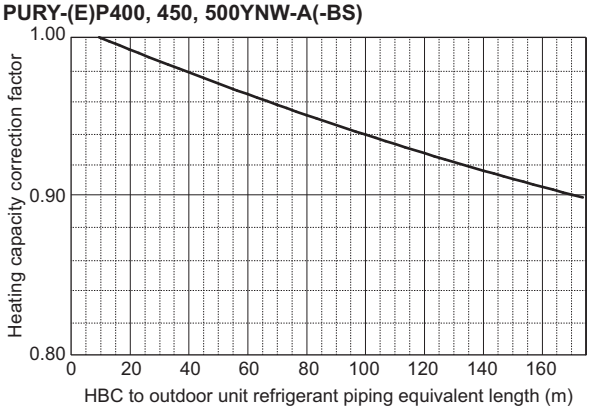
PURY-(E)P350YNW-A(-BS)



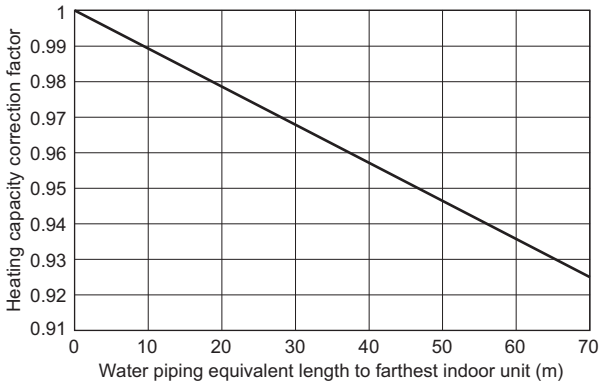
PURY-(E)P350YNW-A(-BS)



PURY-(E)P400, 450, 500YNW-A(-BS)



PURY-(E)P400, 450, 500YNW-A(-BS)



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

Refrigerant pipe

1. PURY-(E)P200YNW(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 × number of bends in the piping) [m]

2. PURY-(E)P250, 300YNW(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 × number of bends in the piping) [m]

3. PURY-(E)P350YNW(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.47 × number of bends in the piping) [m]

4. PURY-(E)P400, 450, 500YNW(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 × number of bends in the piping) [m]

Water pipe

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.55 × number of bends in the piping) [m]

3-4. Correction at frost and defrost

Due to frost at the outdoor heat exchanger and the automatic defrost operation, the heating capacity of the outdoor unit can be calculated by multiplying the correction factor shown in the table below.

Table of correction factor at frost and defrost

Outdoor inlet air temp. °CWB	6	4	2	1	0	-2	-4	-6	-8	-10	-20
Outdoor inlet air temp. °FWB	43	39	36	34	32	28	25	21	18	14	-4
PURY-(E)P200YNW-A(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)P250YNW-A(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)P300YNW-A(-BS)	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95
PURY-(E)P350YNW-A(-BS)	1.00	0.93	0.85	0.83	0.84	0.86	0.90	0.90	0.95	0.95	0.95
PURY-(E)P400YNW-A(-BS)	1.00	0.95	0.90	0.87	0.88	0.89	0.90	0.95	0.95	0.95	0.95
PURY-(E)P450YNW-A(-BS)	1.00	0.98	0.89	0.87	0.89	0.90	0.92	0.95	0.95	0.95	0.95
PURY-(E)P500YNW-A(-BS)	1.00	0.98	0.89	0.86	0.89	0.90	0.92	0.95	0.95	0.95	0.95

3-5. Correction by antifreeze solution concentration

In HYBRID CITY MULTI system, antifreeze solution should be used to prevent the system from freezing. Refer to the following graphs for the capacity correction by antifreeze solution. Refer to 3-5-1 for antifreeze solution concentration, 3-5-2 and 3-5-3 for capacity correction by antifreeze solution concentration.

3-5-1. Antifreeze solution concentration

Use propylene glycol solution for antifreeze.
Refer to the following graph to estimate the antifreeze solution concentration required for freeze protection.
DipSW setting (SW5-4 and 5-5) is required in HBC unit depending on the antifreeze solution concentration.
Refer the table A for the setting.

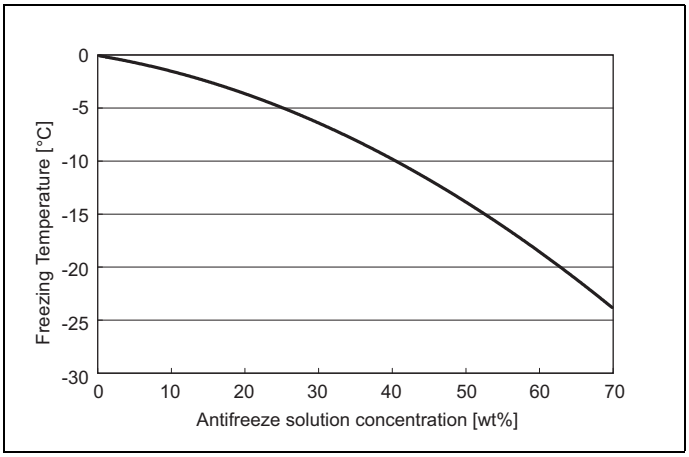
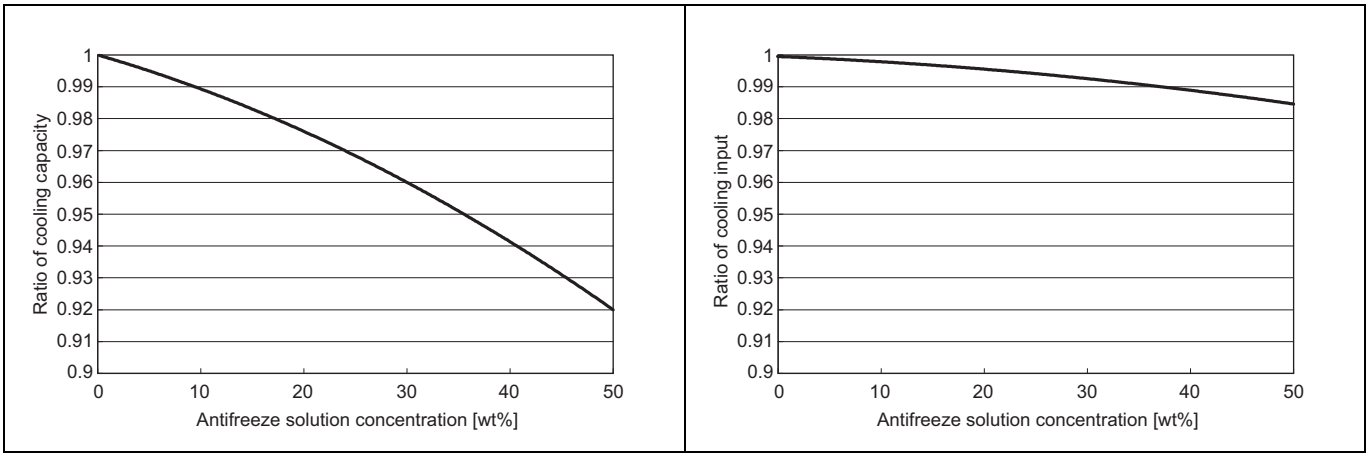


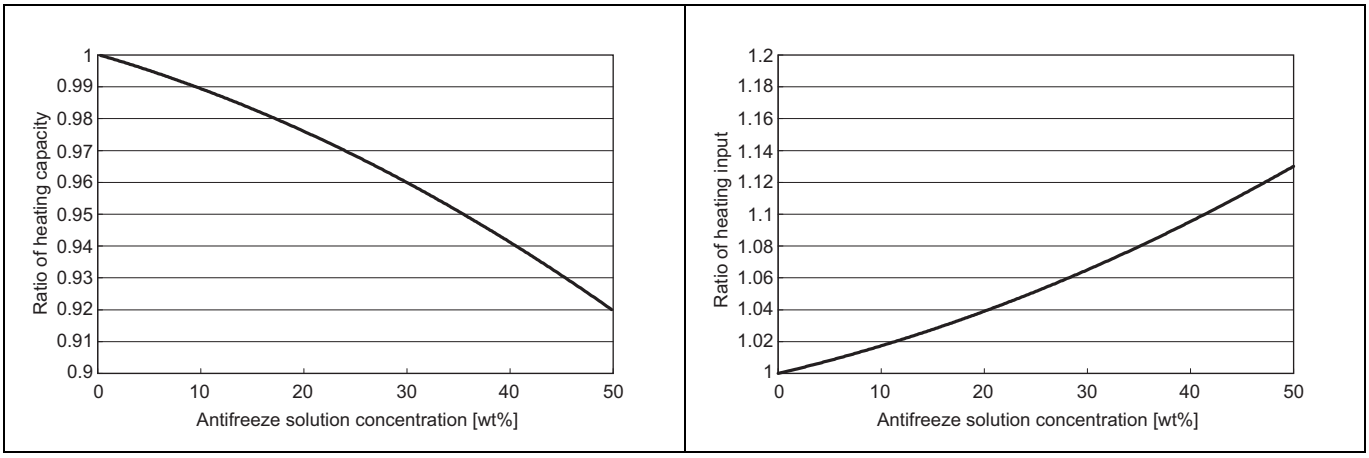
Table A

Brine concentration [%]		0 to 29%	30 to 49%	50 to 59%	60 to 70%
DipSW5-4		OFF	OFF	ON	ON
DipSW5-5		OFF	ON	OFF	ON
7seg LED	LD2	OFF	OFF	1	1
	LD3	OFF	1	OFF	1

3-5-2. Capacity correction by antifreeze solution concentration (cooling)



3-5-3. Capacity correction by antifreeze solution concentration (heating)



4-1. Power supply for Outdoor unit

4-1-1. Electrical characteristics of the outdoor unit in cooling mode

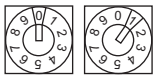
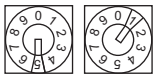
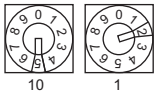
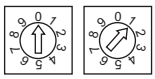
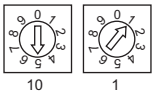
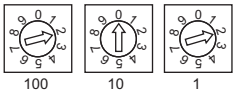
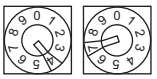
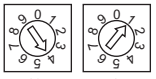
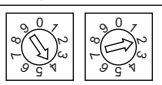
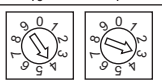
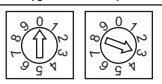
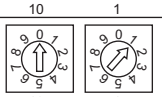
Symbols: MCA: Max Circuit Amps
RLA: Rated Load Amps SC: Starting Current

PURY-P-YNW-A	Unit Combination	Units			Power supply	Compressor		FAN	RLA(A)(50/60Hz)	
		Hz	Volts	Voltage range	MCA(A)	Output (kW)	SC(A)	Output(kW)	Cooling	Heating
PURY-P200YNW-A(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	5.6	8	0.92	7.4/7.1/6.8	7.9/7.5/7.2
PURY-P250YNW-A(-BS)	-				17.8	7.0	8	0.92	10.0/9.5/9.2	10.2/9.7/9.3
PURY-P300YNW-A(-BS)	-				22.7	7.9	8	0.92	12.7/12.0/11.6	14.1/13.4/12.9
PURY-P350YNW-A(-BS)	-				27.6	10.2	8	0.46+0.46	16.9/16.1/15.5	18.0/17.1/16.5
PURY-P400YNW-A(-BS)	-				35.1	10.9	8	0.46+0.46	19.5/18.5/17.9	23.0/21.8/21.0
PURY-P450YNW-A(-BS)	-				37.1	12.4	8	0.46+0.46	20.8/19.8/19.1	22.7/21.6/20.8
PURY-P500YNW-A(-BS)	-				43.2	13.0	8	0.92+0.92	21.4/20.3/19.6	25.7/24.5/23.6

PURY-EP-YNW-A	Unit Combination	Units			Power supply	Compressor		FAN	RLA(A)(50/60Hz)	
		Hz	Volts	Voltage range	MCA(A)	Output (kW)	SC(A)	Output(kW)	Cooling	Heating
PURY-EP200YNW-A(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	5.6	8	0.92	7.1/6.7/6.5	7.7/7.3/7.0
PURY-EP250YNW-A(-BS)	-				17.0	7.0	8	0.92	9.4/9.0/8.6	10.0/9.5/9.2
PURY-EP300YNW-A(-BS)	-				20.3	7.9	8	0.92	12.4/11.8/11.4	14.1/13.4/12.9
PURY-EP350YNW-A(-BS)	-				24.4	10.2	8	0.46+0.46	14.8/14.1/13.6	17.2/16.4/15.8
PURY-EP400YNW-A(-BS)	-				30.7	10.9	8	0.46+0.46	19.1/18.1/17.5	21.9/20.8/20.0
PURY-EP450YNW-A(-BS)	-				34.6	12.4	8	0.46+0.46	18.0/17.1/16.5	22.1/21.0/20.3
PURY-EP500YNW-A(-BS)	-				40.3	13.0	8	0.92+0.92	21.4/20.3/19.6	23.9/22.7/21.9

5-1. Address setting

5-1-1. Rule of setting address

Unit		Address setting	Example	Note
Indoor unit		01 ~ 50		Use the most recent address within the same group of indoor units.
Outdoor unit		51 ~ 99, 100 (Note1)		The smallest address of indoor unit in same refrigerant system + 50 Assign sequential address numbers to the outdoor units in one refrigerant circuit system. OC, OS1 and OS2 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"
HBC controller		52 ~ 99, 100		The address of the smallest address of indoor unit connected to the HBC controller +50 * 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"
Local remote controller	ME Remote controller (Main)	101 ~ 150	1 Fixed 	The smallest address of indoor unit in the group + 100 * The place of "100" is fixed to "1"
	ME Remote controller (Sub)	151 ~ 199, 200	1 Fixed 	The address of main remote controller + 50 * The address automatically becomes "200" if it is set as "00"
System controller	ON/OFF remote controller	201 ~ 250		The smallest group No. to be managed + 200 * The smallest group No. to be managed is changeable.
	AE-200E/AE-50E AG-150A EW-50E AT-50B	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* AT-50B cannot be set to "000".
	PAC-YG50ECA	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made on the initial screen of AG-150A.
	BAC-HD150	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made with setting tool of BM ADAPTER.
	LMAP04-E	201 ~ 250	2 Fixed 	
PI, AI, DIDO	PAC-YG60MCA	01 ~ 50		
	PAC-YG63MCA	01 ~ 50		
	PAC-YG66DCA	01 ~ 50		
Lossnay, OA processing unit		01 ~ 50		After setting the addresses of all the indoor units, assign an arbitrary address.
PAC-IF01AHC		201 ~ 250	2 Fixed 	

Note1: To set the address to "100", set it to "50"
Note2: Outdoor units OC, OS1 and OS2 in one refrigerant circuit system are automatically detected. OC, OS1 and OS2 are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

6-1. R410A Piping material

Refrigerant pipe for HYBRID CITY MULTI shall be made of phosphorus deoxidized copper, and has two types.
A. Type-O: Soft copper pipe (annealed copper pipe), can be easily bent with human's hand.
B. Type-1/2H pipe: Hard copper pipe (Straight pipe), being stronger than Type-O pipe of the same radical thickness.

The maximum operation pressure of R410A air conditioner is 4.30 MPa [623psi]. The refrigerant piping should ensure the safety under the maximum operation pressure. MITSUBISHI ELECTRIC recommends pipe size as Table 1, or You shall follow the local industrial standard. Pipes of radical thickness 0.7mm or less shall not be used.

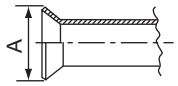
Table 1. Copper pipe size and radial thickness for R410A HYBRID CITY MULTI.

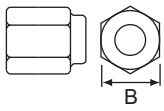
Size (mm)	Size (inch)	Radial thickness (mm)	Radial thickness (mil)	Pipe type
ø6.35	ø1/4"	0.8	[32]	Type-O
ø9.52	ø3/8"	0.8	[32]	Type-O
ø12.7	ø1/2"	0.8	[32]	Type-O
ø15.88	ø5/8"	1.0	[40]	Type-O
ø19.05	ø3/4"	1.2	[48]	Type-O
ø19.05	ø3/4"	1.0	[40]	Type-1/2H or H
ø22.2	ø7/8"	1.0	[40]	Type-1/2H or H
ø25.4	ø1"	1.0	[40]	Type-1/2H or H
ø28.58	ø1-1/8"	1.0	[40]	Type-1/2H or H
ø31.75	ø1-1/4"	1.1	[44]	Type-1/2H or H
ø34.93	ø1-3/8"	1.2	[48]	Type-1/2H or H
ø41.28	ø1-5/8"	1.4	[56]	Type-1/2H or H

* For pipe sized ø19.05 (3/4") for R410A air conditioner, choice of pipe type is up to you.
* The figures in the radial thickness column are based on the Japanese standards and provided only as a reference. Use pipes that meet the local standards.

Flare

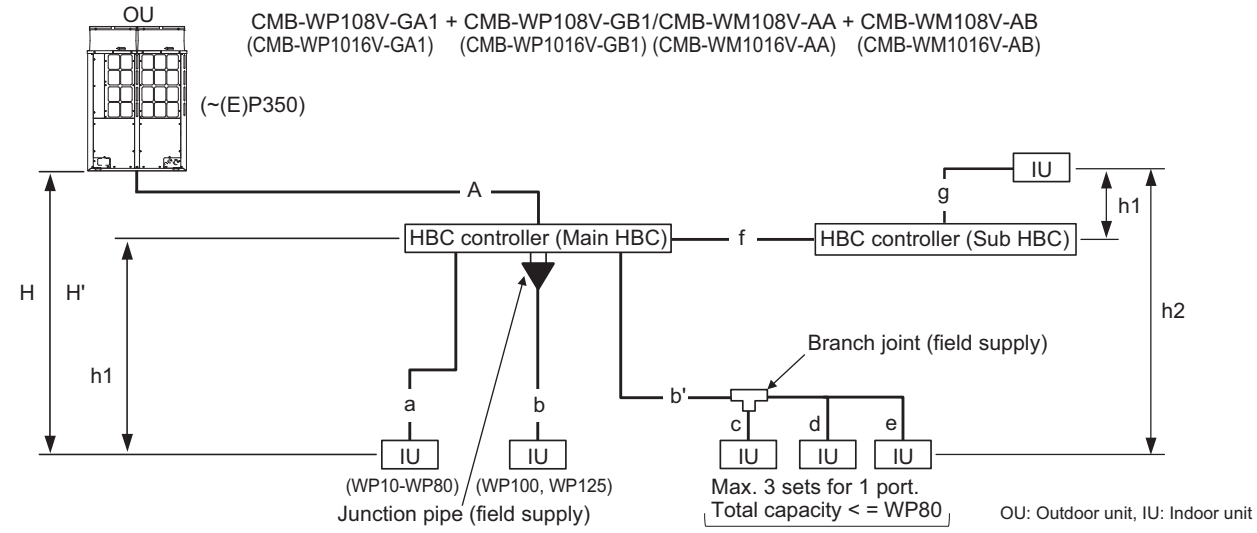
Due to the relative higher operation pressure of R410A compared to R22, the flare connection should follow dimensions mentioned below so as to achieve enough the air-tightness.

Flare pipe	Pipe size	A (For R410A) (mm[in.])
	ø6.35 [1/4"]	9.1
	ø9.52 [3/8"]	13.2
	ø12.70 [1/2"]	16.6
	ø15.88 [5/8"]	19.7
	ø19.05 [3/4"]	24.0

Flare nut	Pipe size	B (For R410A) (mm[in.])
	ø6.35 [1/4"]	17.0
	ø9.52 [3/8"]	22.0
	ø12.70 [1/2"]	26.0
	ø15.88 [5/8"]	29.0
	ø19.05 [3/4"]	36.0

6-2. Piping Design

6-2-1. Restrictions on pipe length



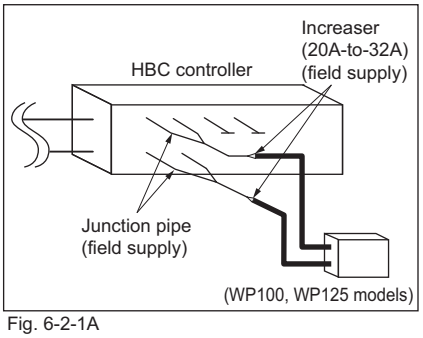
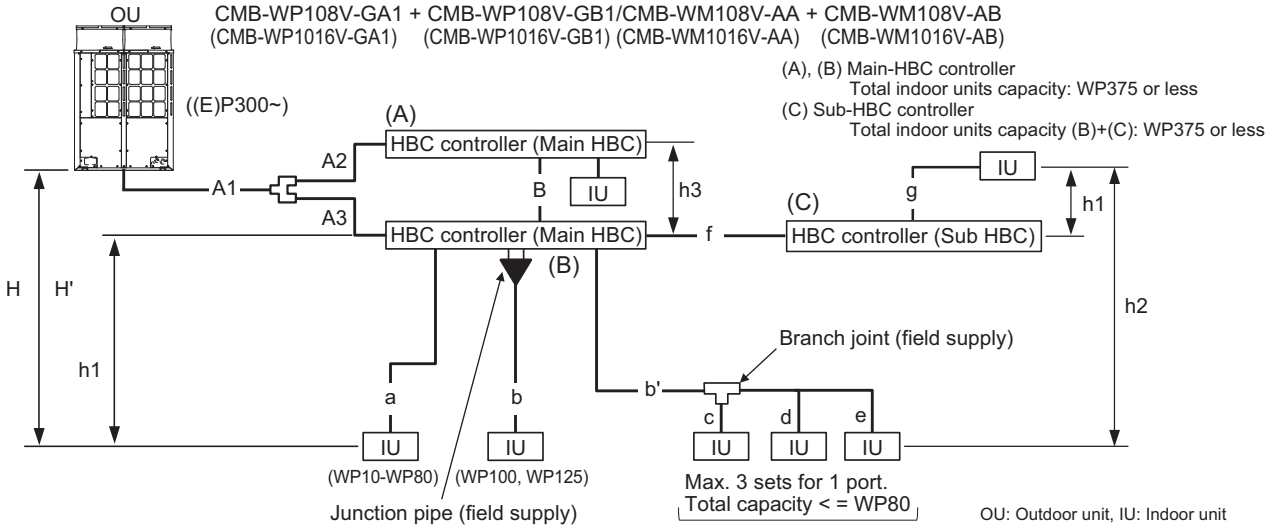


Fig. 6-2-1A

(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between outdoor unit and HBC controller (refrigerant pipework)		A	110 or less
	Water pipework between indoor units and HBC controller		f + g	60 or less
Difference of elevation	Between HBC and outdoor units	Outdoor unit above HBC	H	50 or less
		Outdoor unit below HBC	H'	40 or less
	Between indoor units and HBC controller		h1	15(10) or less*1
	Between indoor units		h2	15(10) or less*1

*1. Values in ( ) are applied when indoor total capacity exceeds 130% of outdoor unit capacity



(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between outdoor unit and HBC controller (refrigerant pipework)		A1 + A2 + A3	110 or less
	Water pipework between indoor units and HBC controller		f + g	60 or less
	Between HBC controllers		B	40 or less
Difference of elevation	Between HBC and outdoor units	Outdoor unit above HBC	H	50 or less
		Outdoor unit below HBC	H'	40 or less
	Between indoor units and HBC controller		h1	15(10) or less*1
	Between indoor units		h2	15(10) or less*1
	Between HBC controllers		h3	15(10) or less*1

*1. Values in ( ) are applied when indoor total capacity exceeds 130% of outdoor unit capacity

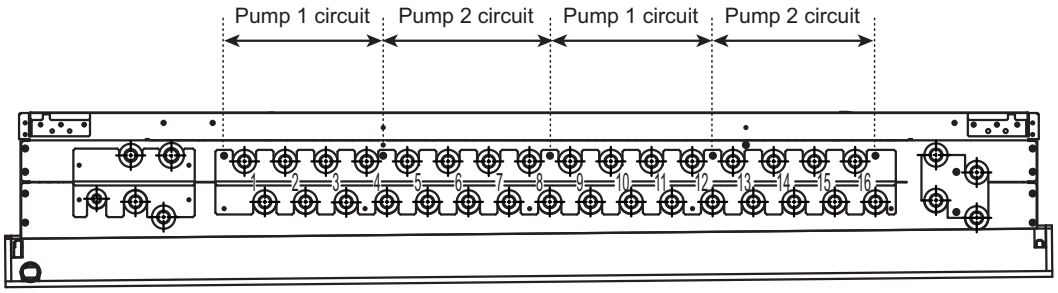


Fig. 6-2-1B

Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: WP80 or below
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
  All the indoor units that are connected to the same port must be in the same group and Thermo-ON/OFF operation simultaneously. For all the indoor units in the group, the room temperature needs to be monitored via the connected remote controller.
- When connecting a WP71 through 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- When connecting multiple indoor units including a WP63 unit to the same set of HBC ports, use a size 32A pipe in the section indicated as "b' and c" and connect the WP63 unit to the pipe indicated as "c" in the figure.
  To the branch joint to which a WP63 is connected, either a WP10 or a WP15 unit is connectable.

Note: 2

Connecting WP100 or 125 indoor units to an HBC controller

- When connecting WP100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two Junction pipes (Y-joints). (See Fig. 6-2-1A.)
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. 6-2-1A.)
- When connecting junction pipes to HBC ports, the branched sides of the junction pipes cannot be connected to combinations of ports "4 and 5," "8 and 9," or "12 and 13." (See Fig. 6-2-1B.)
- When connecting a WP100 or a 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.

Note: 3

Maximum connectable capacity of indoor units to HBC

- HBC has two pumps. Each pump can accommodate the capacity of indoor units equivalent to P175.
  Make sure that the total capacity of the indoor units connected to "ports 1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed P175. (See Fig. 6-2-1B.)

1. Refrigerant and water pipe size

(1) Refrigerant pipe between outdoor unit and HBC controller (Part A, A1, A2, and A3)

Use of one HBC controller

		HBC CONTROLLER		
Unit model		Model name	High pressure side	Low pressure side
Outdoor unit side	PURY-(E)P200	(HBC CONTROLLER) CMB-WP108V-GA1 CMB-WP1016V-GA1 CMB-WM108V-AA CMB-WM1016V-AA *1	ø15.88 (Brazing)	ø19.05 (Brazing)
	PURY-(E)P250		ø19.05 (Brazing)	ø22.2 (Brazing)
	PURY-(E)P300		ø19.05 (Brazing)	ø22.2 (Brazing)
	PURY-(E)P350		ø19.05 (Brazing)	ø28.58 (Brazing)

Use of two HBC controllers

		HBC CONTROLLER			
Unit model		Model name	Between outdoor unit and twining pipe		Between twining pipe and HBC	
			High pressure side	Low pressure side	High pressure side	Low pressure side
Outdoor unit side	PURY-(E)P300	(HBC CONTROLLER) CMB-WP108V-GA1 CMB-WP1016V-GA1 CMB-WM108V-AA CMB-WM1016V-AA *1	ø19.05 (Brazing)	ø22.2 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC
	PURY-(E)P350		ø19.05 (Brazing)	ø28.58 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC
	PURY-(E)P400		ø22.2 (Brazing)	ø28.58 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC
	PURY-(E)P450		ø22.2 (Brazing)	ø28.58 (Brazing)	ø19.05 (Brazing) for each HBC	ø22.2 (Brazing) for each HBC
	PURY-(E)P500		ø22.2 (Brazing)	ø28.58 (Brazing)	ø19.05 (Brazing) for each HBC	ø22.2 (Brazing) for each HBC

***1. PURY-(E)P400YNW model or larger requires a connection of two main-HBC controllers in parallel.**

(2) Water pipe between HBC controller and indoor units (Sections a, b, c, d, e, and g)

Indoor unit	Inlet pipe size	Outlet pipe size
WP10 - WP50	20A	20A
WP63 - WP125	32A	32A

***The diameter of HBC ports is 20A.**
20A-to-32A increasers are required to connect the models of indoor units between WP63 and WP125 to HBC controller ports.

(3) Water pipe between HBC controller and Sub-HBC

	Inlet pipe size	Outlet pipe size
Cold-water side	20A	20A
Hot-water side	20A	20A

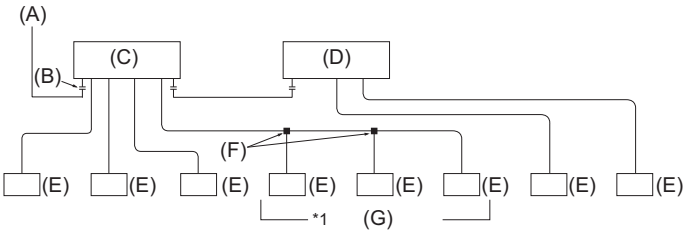
(4) Refrigerant pipe between HBC controller and HBC controller

Unit: mm [inch]

ø15.88 [5/8"] (Brazed connection)

2. Connecting the HBC controller

(1) Size of the pipe that fits the standard HBC controller ports



(A) To outdoor unit
(B) End connection (brazing)
(C) Main-HBC controller
(D) Sub-HBC controller
(E) Indoor unit
(F) Twinning pipe (field supply)
(G) Up to three units for 1 branch hole; total capacity: below 80 (but same in cooling/heating mode)

Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: WP80 or below
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
  All the indoor units that are connected to the same port must be in the same group and Thermo-ON/OFF operation simultaneously. For all the indoor units in the group, the room temperature needs to be monitored via the connected remote controller.
- When connecting a WP71 through 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- When connecting multiple indoor units including a WP63 unit to the same set of HBC ports, use a size 32A pipe in the section indicated as "b' and c" and connect the WP63 unit to the pipe indicated as "c" in the figure.
  (See page 38.)

Note: 2

Connecting WP100 or 125 indoor units to an HBC controller

- When connecting WP100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two Junction pipes (Y-joints). (See Fig. 6-2-1A.)
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. 6-2-1A.)
- When connecting junction pipes to HBC ports, the branched sides of the junction pipes cannot be connected to combinations of ports "4 and 5," "8 and 9," or "12 and 13." (See Fig. 6-2-1B.)
- When connecting a WP100 or a 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.

Note: 3

Maximum connectable capacity of indoor units to HBC

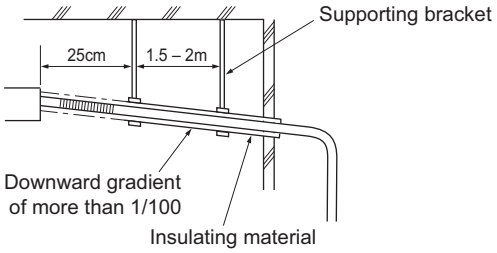
- HBC has two pumps. Each pump can accommodate the capacity of indoor units equivalent to P175.
  Make sure that the total capacity of the indoor units connected to "ports 1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed P175. (See Fig. 6-2-1B.)

6-2-2. Drain piping work

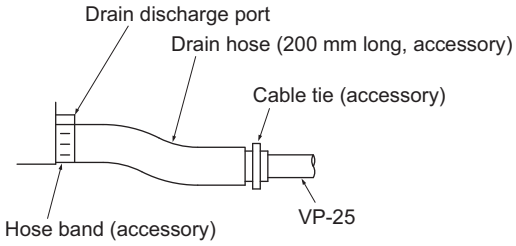
1. Drain piping work

- Ensure that the drain piping is sloped downward (sloped gradient of more than 1/100) toward the discharge side. If it is impossible to take any downward pitch, use an optionally available drain pump to obtain a downward pitch of more than 1/100.
- Ensure that any horizontal drain piping sections that are longer than 20 m are supported with metal brackets to prevent it from bending, warping, or vibrating.
- Connect the supplied drain hose to the discharge port on the unit. Use hardvinyl chloride pipes VP-25 (ø32) for drain piping (2). Tighten the supplied drain hose onto the discharge port using the supplied hose band. (For this, do not use any adhesive because the drain hose will need to be removed for servicing at a later date.)
- Do not use any odor trap around the discharge port.

1

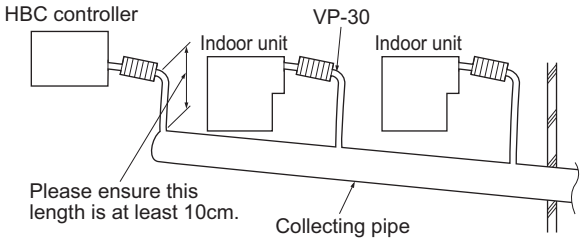


2



- As shown in 3, install a collecting pipe about 10 cm below the drain ports and give it a downward pitch of more than 1/100. This collecting pipe should be of VP-30.
- Set the end of drain piping in a place without any risk of odor generation.
- Do not put the end of the drain piping into any drain where ionic gases are generated.
- Drain piping may be installed in any direction. However, please be sure to observe the above instructions.

3



2. Discharge test

After completing drain piping work, open the HBC controller panel, and test drain discharge using a small amount of water. Also, check to see that there is no water leakage from the connections.

3. Insulating drain pipes

Provide sufficient insulation to the drain pipes just as for refrigerant pipes.

⚠CAUTION

Be sure to provide drain piping with heat insulation in order to prevent excess condensation. Without drain piping, water may leak from the unit causing damage to your property.

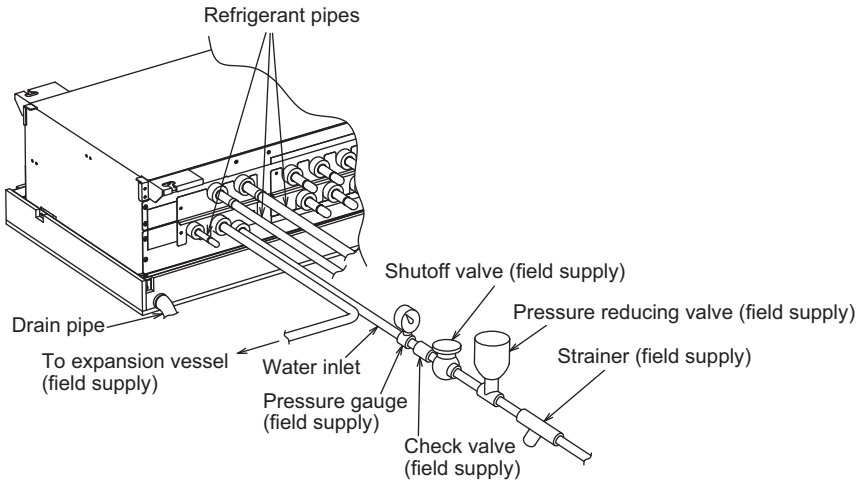
6-2-3. Connecting water pipe work

Please observe the following precautions during installation.

6-2-3-1 Important notes on water pipework installation

- The design pressure of the HBC water system is 0.6MPa.
- Use water pipe-work with a design pressure of at least 1.0MPa.
- When performing a water leak check, please do not allow the water pressure to go above 0.3MPa.
- Please connect the water pipework of each indoor unit to the correct port on the HBC. Failure to do so will result in incorrect running.
- Please list the indoor units on the naming plate in the HBC unit with addresses and end connection numbers.
- If the number of indoor units are less than the number of ports on the HBC, the unused ports must be capped. Without a cap, water will leak.
- Use the reverse-return method to insure proper pipe resistance to each unit.
- Provide some joints and valves around inlet/outlet of each unit for easy maintenance, checkup, and replacement.
- Install a suitable air vent on the water pipe. After flowing water through the pipe, vent any excess air.
- Secure the pipes with metal fittings, positioning them in locations to protect pipes against breakage and bending.
- Do not confuse the water intake and outlet piping. (Error code 5102 will appear on the remote controller if a test run is performed with the pipe-work installed incorrectly (inlet connected to outlet and vice versa).)
- This unit doesn't include a heater to prevent freezing within the pipe work. If the system is stopped for an extended period during low ambient conditions, 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.
- Install water pipe so that the water flow rate will be maintained.
- Wrap sealing tape as follows.
  1. Wrap the joint with sealing tape following the direction of the threads (clockwise), do not wrap the tape over the edge.
  2. Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is tight against each thread.
  3. Do not wrap the 1.5th through 2nd farthest threads away from the pipe end.
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 40 N·m.
- If there is a risk of freezing, take precautions to prevent this happening.
- When connecting the HBC unit water piping and on site water piping, apply liquid sealing material for water piping over the sealing tape before connection.
- Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work, use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.

Example of heat source unit installation (using left piping)



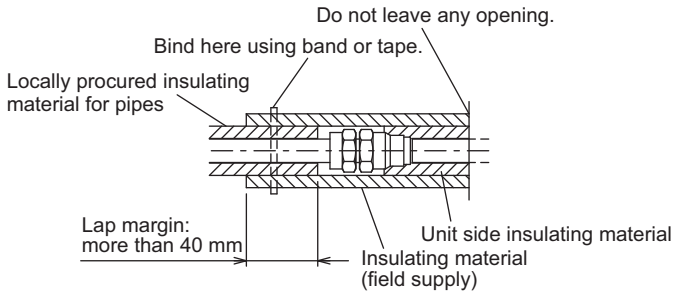
HBC controller sample installation (*1)

*1. Connect the pipes to the water pipes according to the local regulations.

- **The HBC system must be serviced at least once a year.**

6-2-3-2 Water pipe insulation

1. Connect the water pipes of each indoor unit to the same (correct) end connection numbers as indicated on the indoor unit connection section of each HBC controller. If connected to wrong end connection numbers, there will be no normal operation.
2. List indoor unit model names in the name plate on the HBC controller control box (for identification purposes), and HBC controller end connection numbers and address numbers in the name plate on the indoor unit side.
   Seal unused end connections using cover caps (field supply, dezincification resistant brass (DZR) or bronze only). Not replacing the rubber end caps will lead to water leakage.
3. Be sure to add insulation work to water piping by covering water pipework separately with enough thickness heat-resistant polyethylene, so that no gap is observed in the joint between indoor unit and insulating material, and insulating materials themselves. When insulation work is insufficient, there is a possibility of condensation, etc. Pay special attention to insulation work in the ceiling plenum.



- Insulation materials for the pipes to be added on site must meet the following specifications:

HBC controller -indoor unit	20 mm or more

- This specification is based on copper for water piping. When using plastic pipework, choose a thickness based on the plastic pipe performance.
- Installation of pipes in a high-temperature high-humidity environment, such as the top floor of a building, may require the use of insulation materials thicker than the ones specified in the chart above.
- When certain specifications presented by the client must be met, ensure that they also meet the specifications on the chart above.

4. Expansion vessel
- Install an expansion tank to accommodate expanded water.

  Expansion vessel selection criteria:
  - The water containment volume of the HBC, the indoor units, and pipe work.

(Unit: L)

Unit model	Water volume
CMB-WP108V-GA1	10
CMB-WP1016V-GA1	13
CMB-WP108V-GB1	5
CMB-WP1016V-GB1	9
CMB-WM108V-AA	10
CMB-WM1016V-AA	13
CMB-WM108V-AB	5
CMB-WM1016V-AB	9
PEFY-WP10VMS1-E	0.4
PEFY-WP15VMS1-E	0.7
PEFY-WP20VMS1-E	0.9
PEFY-WP25VMS1-E	
PEFY-WP32VMS1-E	1.0
PEFY-WP40VMS1-E	
PEFY-WP50VMS1-E	1.7
PEFY-WP20VMA-E	0.7
PEFY-WP25VMA-E	1.0
PEFY-WP32VMA-E	
PEFY-WP40VMA-E	1.8
PEFY-WP50VMA-E	
PEFY-WP63VMA-E	2.0
PEFY-WP71VMA-E	2.6
PEFY-WP80VMA-E	
PEFY-WP100VMA-E	
PEFY-WP125VMA-E	3.0
PLFY-WP32VBM-E	1.5
PLFY-WP40VBM-E	
PLFY-WP50VBM-E	

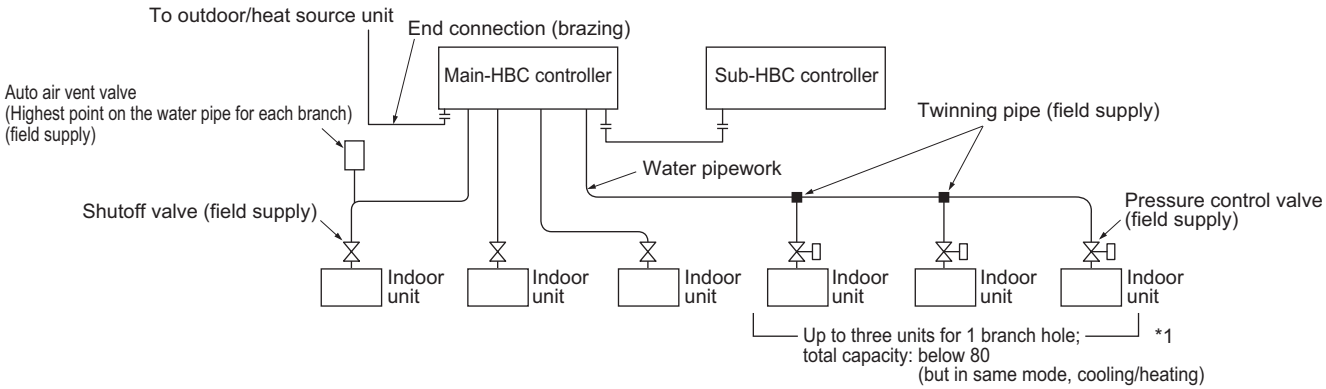
(Unit: L)

Unit model	Water volume
PLFY-WP10VFM-E	0.5
PLFY-WP15VFM-E	0.5
PLFY-WP20VFM-E	0.9
PLFY-WP25VFM-E	0.9
PLFY-WP32VFM-E	0.9
PFFY-WP20VLRMM-E	0.9
PFFY-WP25VLRMM-E	1.3
PFFY-WP32VLRMM-E	
PFFY-WP40VLRMM-E	1.5
PFFY-WP50VLRMM-E	

- The maximum water temperature is 60°C.
- The minimum water temperature is 5°C.
- The circuit protection valve set pressure is 370-490kPa.
- The circulation pump head pressure is 0.24MPa.

5. Leakproof the water pipework, valves and drain pipework. Leakproof all the way to, and include pipe ends so that condensation cannot enter the insulated pipework.
6. Apply caulking around the ends of the insulation to prevent condensation getting between the pipework and insulation.
7. Add a drain valve so that the unit and pipework can be drained.
8. Ensure there are no gaps in the pipework insulation. Insulate the pipework right up to the unit.
9. Ensure that the gradient of the drain pan pipework is such that discharge can only flow out.
10. HBC water pipe connection sizes and pipe sizes.

	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
Indoor unit (WP10-WP50)	Rc 3/4 screw	Rc 3/4 screw	I.D. 20 mm	I.D. 20 mm
Indoor unit (WP63-WP125)	Rc 1-1/4 screw	Rc 1-1/4 screw	I.D. 35 mm	I.D. 35 mm



Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: WP80 or below
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
  All the indoor units that are connected to the same port must be in the same group and Thermo-ON/OFF operation simultaneously. For all the indoor units in the group, the room temperature needs to be monitored via the connected remote controller.
- When connecting a WP71 through 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- When connecting multiple indoor units including a WP63 unit to the same set of HBC ports, use a size 32A pipe in the section indicated as "b' and c" and connect the WP63 unit to the pipe indicated as "c" in the figure.
  (See page 38.)

Note: 2

Connecting WP100 or 125 indoor units to an HBC controller

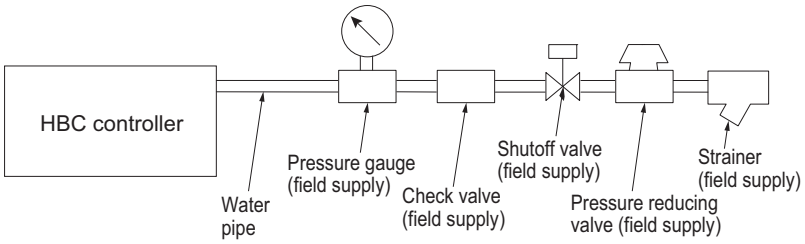
- When connecting WP100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two Junction pipes (Y-joints). (See Fig. 6-2-1A.)
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. 6-2-1A.)
- When connecting junction pipes to HBC ports, the branched sides of the junction pipes cannot be connected to combinations of ports "4 and 5," "8 and 9," or "12 and 13." (See Fig. 6-2-1B.)
- When connecting a WP100 or a 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.

Note: 3

Maximum connectable capacity of indoor units to HBC

- HBC has two pumps. Each pump can accommodate the capacity of indoor units equivalent to P175.
  Make sure that the total capacity of the indoor units connected to "ports 1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed P175. (See Fig. 6-2-1B.)

11. Please refer to the figure below when connecting the water supply.



12. Use formula 0.1 ≤ 0.01 + 0.01 × A ≤ 0.16 for the supply pressure range to be used.
    (A: Head pressure (m) between the HBC and the highest indoor unit)
    If the supply pressure is greater than 0.16 MPa, use a pressure reducing valve to keep the pressure within the range.
    If the head pressure is unknown, set it to 0.16 MPa.
13. Install a shut off valve and strainer in a place that is easy to operate and makes maintenance work easy.
14. Apply insulation to the indoor unit pipework, strainer, shut off valve, and pressure reducing valve.
15. Please do not use a corrosion inhibitor in the water system.
16. When installing the HBC unit in an environment which may drop below 0°C, please add antifreeze (Propylene Glycol only) to the circulating water. For the brine selection, refer to 3-5. "Correction by antifreeze solution concentration".

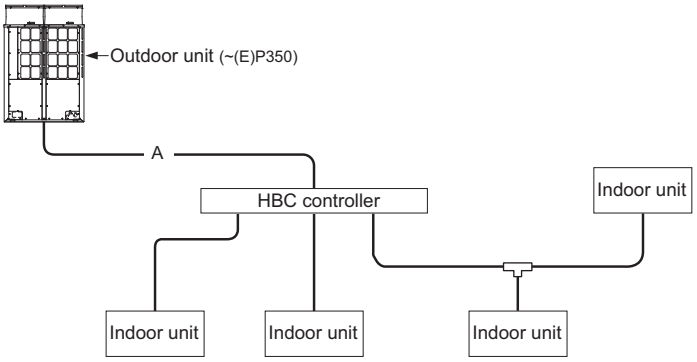
6-2-3-3 Water treatment and quality control

To preserve water quality, use the closed type of water circuit. When the circulating water quality is poor, the water heat exchanger can develop scale, leading to a reduction in heat-exchange power and possible corrosion. Pay careful attention to water processing and water quality control when installing the water circulation system.

- Removing of foreign objects or impurities within the pipes.
  During installation, make sure 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 airconditioner, the copper piping of the heat exchanger may corrode. Regular water quality processing is recommended. If a water supply tank is installed, keep air contact to a minimum, and keep the level of dissolved oxygen in the water no higher than 1mg/ℓ.

6-3. Refrigerant charging calculation

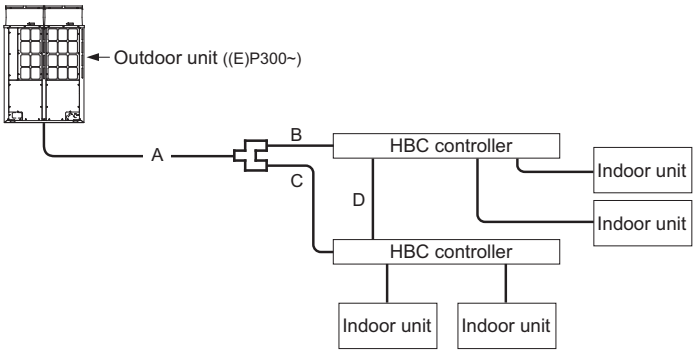
Example



■ Sample calculation

Indoor 1: 50 A: ø19.05 42 m
2: 50
3: 50
4: 40
Outdoor P250

The total length of each liquid line is as follows:
ø19.05: A = 42 m, α_1 = 3.0
Therefore,
<Calculation example>
Additional refrigerant charge
= 42 × 0.14 + 3.0
= 8.88 kg
≒ 8.9 kg
* All pipe work except A is water pipe work.



Indoor 1: 50 A:ø22.20 18 m
2: 50 B:ø15.88 5 m
3: 50 C:ø15.88 10 m
4: 50 D:ø15.88 8 m
Outdoor P400

The total length of each liquid line is as follows:
ø22.20: A = 18 m, ø15.88: B + C + D = 23m, α_1 = 3.0 × 2
Therefore,
<Calculation example>
Additional refrigerant charge
= 18 × 0.23+ (5 + 10 + 8) × 0.11 + 3.0 × 2
= 12.67 kg
≒ 12.7 kg
* All pipe work except A, B, C, D is water pipe work.

<Amount of refrigerant to be added>

The amount of refrigerant that is shown in the table below is factory-charged to the outdoor units.
The amount necessary for extended pipe (field piping) is not included and must be added on site.

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)	Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
P200YNW	5.2	P400YNW	8.0
P250YNW	5.2	P450YNW	10.8
P300YNW	5.2	P500YNW	10.8
P350YNW	8.0		

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
EP200YNW	5.2
EP250YNW	5.2
EP300YNW	5.2
EP350YNW	8.0
EP400YNW	8.0
EP450YNW	10.8
EP500YNW	10.8

■ Calculation formula

The amount of refrigerant to be added depends on the size and the length of field piping. (unit in m[ft])

1) When the distance between HBC and outdoor unit is longer than 30.5m:
Amount of added refrigerant (kg) = $(0.21 \times L_1)+(0.14 \times L_2)+(0.1 \times L_3)+\alpha_1$
2) When the distance between HBC and outdoor unit is 30.5m or shorter:
Amount of added refrigerant (kg) = $(0.23 \times L_1)+(0.16 \times L_2)+(0.11 \times L_3)+\alpha_1$

L_1 : Length of ø22.20 [7/8"] high pressure pipe (m)
L_2 : Length of ø19.05 [3/4"] high pressure pipe (m)
L_3 : Length of ø15.88 [5/8"] high pressure pip (m)
α_1 : Refer to the table below.

Use of one HBC controller

Outdoor unit index	Diameter of high-pressure pipe
(E)P200	ø15.88
(E)P250	ø19.05
(E)P300	ø19.05
(E)P350	ø19.05

Amount for the HBC controller
α_1 (kg)
3.0

Use of two HBC controllers

Outdoor unit index	Diameter of high-pressure pipe
(E)P300	ø19.05
(E)P350	ø19.05
(E)P400	ø22.20
(E)P450	ø22.20
(E)P500	ø22.20

Amount for the HBC controller
α_1 (kg)
3.0

× 2

Round up the calculation result to the nearest 0.1kg. (Example: 18.04kg to 18.1kg)

6-4. Water piping

6-4-1. Precautions for water piping

Consider the following when installing a water piping system.

1. Design pressure of the water piping
   Use a water pipe that is strong enough to withstand the design pressure (1.0 MPa).
2. Water pipe type
   Use of plastic pipe is recommended.
   When using copper pipes, be sure to braze the pipes under a nitrogen purge. (Oxidation during may shorten the life of the pump.)
3. Expansion vessel
   Install an expansion vessel to accommodate expanded water.
4. Drain piping
   Install the drain pipe with a downward inclination of between 1/100 and 1/200. To prevent drain water from freezing in winter, install the drain pipe as steep an angle as practically possible and minimize the straight line. For cold climate installation, take an appropriate measure (e.g., drain heater) to prevent the drain water from freezing.
5. Insulation
   Cover the water pipe with insulating materials with the specified thickness or more to prevent thermal loss or condensation from collecting.
6. Air vent valve
   Install air vent valves to the highest places where air can accumulate.
7. Maintenance valve
   It is recommended to install valves on the inlet/outlet for each HBC controller branch for maintenance.
8. Water pressure gauge
   Install a water pressure gauge to check the charged pressure.

6-4-2. Notes on corrosion

1. Water quality
   It is important to check the water quality beforehand. See table below (Circulating water/Makeup Water Quality Standards).

Items			Lower mid-range temperature water system		Tendency	
			Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C[77°F])		7.0 ~ 8.0	7.0 ~ 8.0	○	○
	Electric conductivity (mS/m) (25°C[77°F]) (μS/cm) (25°C[77°F])		30 or less [300 or less]	30 or less [300 or less]	○	○
	Chloride ion	(mg Cl^-/ ℓ)	50 or less	50 or less	○	
	Sulfate ion	(mg SO_4^{2-}/ ℓ)	50 or less	50 or less	○	
	Acid consumption (pH4.8)	(mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Total hardness	(mg $CaCO_3$/ ℓ)	70 or less	70 or less		○
	Calcium hardness	(mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Ionic silica	(mg SiO_2/ ℓ)	30 or less	30 or less		○
Reference items	Iron	(mg Fe/ ℓ)	1.0 or less	0.3 or less	○	○
	Copper	(mg Cu/ ℓ)	1.0 or less	0.1 or less	○	
	Sulfide ion	(mg S^{2-}/ ℓ)	not to be detected	not to be detected	○	
	Ammonium ion	(mg NH_4^+/ ℓ)	0.3 or less	0.1 or less	○	
	Residual chlorine	(mg Cl/ ℓ)	0.25 or less	0.3 or less	○	
	Free carbon dioxide	(mg CO_2/ ℓ)	0.4 or less	4.0 or less	○	
	Ryzner stability index		–	–	○	○

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

2. Debris in the water
   Sand, pebbles, suspended solids, and corrosion products in water can damage the metal pipe and heat exchanger on the HBC controller and may cause corrosion. When installing, prevent debris from entering the water. If there is debris in the water, perform debris removal operation after test run by cleaning the strainers inside the HBC controller. (Refer to other sections for how to perform a test run.)
3. Connecting pipes made of different materials
   Connecting pipes used for HBC controller and indoor unit are copper alloy pipes. If steel pipes are connected to the pipes, the contact surface will corrode. Do not use steel pipes to avoid corrosion.
4. Residual air
   Residual air in the pipe results in water pump malfunction, noise, or water pipe corrosion in the water circuit. Ensure air is purged before use. (Refer to other sections for how to perform air vent operation.)

INSTALLATION INFORMATION

1. Installation information

1-1. General precautions

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

1-1-1. Usage

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

1-1-2. Installation environment

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

1-1-3. Backup system

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

1-1-4. Unit characteristics

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

1-1-5. Relevant equipment

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

1-1-6. Unit installation

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

1-1-7. Optional accessories

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

1-1-8. Operation/Maintenance

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

1-2. Precautions for Indoor unit and HBC controller

1-2-1. Operating environment

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

1-2-2. Unit characteristics

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

1-2-3. Unit installation

- The insulation for low pressure pipe between the HBC controller and outdoor/heat source unit shall be at least 20 mm thick. If the unit is installed on the top floor or in a high-temperature, high-humidity environment, thicker insulation may be necessary.
- Do not have any branching points on the downstream of the refrigerant pipe header.
- When a field-supplied external thermistor is installed or when a device for the demand control is used, abnormal stop of the unit or damage of the electromagnetic contactor may occur. Consult your local distributor for details.

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

1-3-1. Installation environment

- Outdoor unit with salt-resistant specification is recommended to use in a place where it is subject to salt air.
- Even when the unit with salt-resistant specification is used, it is not completely protected against corrosion. Be sure to follow the directions or precautions described in Instructions Book and Installation Manual for installation and maintenance. The salt-resistant specification is referred to the guidelines published by JRAIA (JRA9002).
- Install the unit in a place where the flow of discharge air is not obstructed. If not, the short-cycling of discharge air may occur.
- Provide proper drainage around the unit base, because the condensation may collect and drip from the outdoor units. Provide water-proof protection to the floor when installing the units on the rooftop.
- In a region where snowfall is expected, install the unit so that the outlet faces away from the direction of the wind, and install a snow guard to protect the unit from snow. Install the unit on a base approximately 50 cm higher than the expected snowfall. Close the openings for pipes and wiring, because the ingress of water and small animals may cause equipment damage. If SUS snow guard is used, refer to the Installation Manual that comes with the snow guard and take caution for the installation to avoid the risk of corrosion.
- When the unit is expected to operate continuously for a long period of time at outside air temperatures of below 0ºC, take appropriate measures, such as the use of a unit base heater, to prevent icing 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 the snow accumulates approximately 50 cm or more on the snow guard, remove the snow from the guard. Install a roof that is strong enough to withstand snow loads in a place where snow accumulates.
- Provide proper protection around the outdoor units in places such as schools to avoid the risk of injury.
- A cooling tower and heat source water circuit should be a closed circuit that water is not exposed to the atmosphere. When a tank is installed to ensure that the circuit has enough water, minimize the contact with outside air so that the oxygen from being dissolved in the water should be 1 mg/L or less.
- Install a strainer (50 mesh or more recommended) on the water pipe inlet on the heat source unit.
- Interlock the heat source unit and water circuit pump.
- Note the followings to prevent the freeze bursting of pipe when the heat source unit is installed in a place where the ambient temperature can be 0ºC or below.
  - Keep the water circulating to prevent it from freezing when the ambient temperature is 0ºC or below.
  - Before a long period of non use, be sure to purge the water out of the unit.
- Salt-resistant unit is resistant to salt corrosion, but not salt-proof.

  Please note the following when installing and maintaining outdoor units in marine atmosphere.
  1. Install the salt-resistant unit out of direct exposure to sea breeze, and minimize the exposure to salt water mist.
  2. Avoid installing a sun shade over the outdoor unit, so that rain will wash away salt deposits off the unit.
  3. Install the unit horizontally to ensure proper water drainage from the base of the unit. Accumulation of water in the base of the outdoor unit will significantly accelerate corrosion.
  4. Periodically wash salt deposits off the unit, especially when the unit is installed in a coastal area.
  5. Repair all noticeable scratches after installation and during maintenance.
  6. Periodically check the unit, and apply anti-rust agent and replace corroded parts as necessary.

1-3-2. Circulating water

- Follow the guidelines published by JRAIA (JRA-GL02-1994) to check the water quality of the water in the heat source unit regularly.
- A cooling tower and heat source water circuit should be a closed circuit that water is not exposed to the atmosphere. When a tank is installed to ensure that the circuit has enough water, minimize the contact with outside air so that the oxygen from being dissolved in the water should be 1 mg/L or less.

1-3-3. Unit characteristics

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

1-3-4. Relevant equipment

- Provide grounding in accordance with the local regulations.

1-4. Precautions for Control-related items

1-4-1. Product specification

- To introduce the MELANS system, a consultation with us is required in advance. Especially to introduce the electricity charge apportioning function or energy-save function, further detailed consultation is required. Consult your local distributor for details.
- Billing calculation for AE-200E/AE-50E/EW-50E/AG-150A/EB-50GU-J/TG-2000A, or the billing calculation unit is unique and based on our original method. (Backup operation is included.) It is not based on the metering method, and do not use it for official business purposes. It is not the method that the amount of electric power consumption (input) by air conditioner is calculated. Note that the electric power consumption by air conditioner is apportioned by using the ratio corresponding to the operation status (output) for each air conditioner (indoor unit) in this method.
- In the apportioned billing function for AE-200E/AE-50E/EW-50E/AG-150A and EB-50GU-J, use separate watthour meters for A-control units, K-control units, and packaged air conditioner for City Multi air conditioners. It is recommended to use an individual watthour meter for the large-capacity indoor unit (with two or more addresses).
- When using the peak cut function on the AE-200E/AE-50E/EW-50E/AG-150A or EB-50GU-J, note that the control is performed once every minute and it takes time to obtain the effect of the control. Take appropriate measures such as lowering the criterion value. Power consumption may exceed the limits if AE-200E/AE-50E/EW-50E/AG-150A or EB-50GU-J 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-200E/AE-50E/EW-50E/AG-150A/EB-50GU-J/PAC-YG66DCA or PAC-YG63MCA, do not use it for the control for the fire prevention or security. (This function should never be used in the way that would put people's lives at risk.) Provide any methods or circuit that allow ON/OFF operation using an external switch in case of failure.

1-4-2. Installation environment

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

CAUTION FOR REFRIGERANT LEAKAGE

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

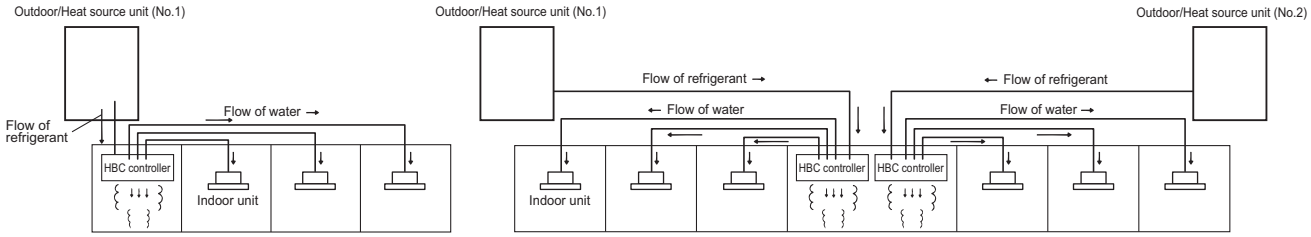
Critical concentration hereby is the refrigerant concentration in which no human body would be hurt if immediate measures can be taken when refrigerant leakage happens.

Critical concentration of R410A: 0.44kg/m^3
(The weight of refrigeration gas per 1 m^3 air conditioning space.);
* The Critical concentration is subject to ISO5149, EN378-1.

For the HYBRID 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.



Maximum refrigerant leakage concentration (Rmax)
Rmax=Wmax / V (kg/m^3)

Maximum refrigerant leakage concentration (Rmax)
Rmax=Wmax / V (kg/m^3) W1: Refrigerant weight of Outdoor/Heat source unit No.1
where, Wmax=W1+W2 W2: Refrigerant weight of Outdoor/Heat source unit No.2

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 HBC(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^3.
If no, then the HYBRID CITY MULTI is safe against refrigerant leakage.
If yes, following countermeasure is recommended to do at site.
Countermeasure 1: Let-out (making V bigger)
Design an opening of more than 0.15% of the floor area at a low position of the wall to let out the refrigerant whenever leaked.
e.g.make the upper and lower seams of door big enough.
Countermeasure 2: Smaller total charge (making Wmax smaller)
e.g.Avoid connecting more than 1 Outdoor/Heat source unit to one room.
e.g.Using smaller model size but more Outdoor/Heat source units.
e.g.Shorten the refrigerant piping as much as possible.
Countermeasure 3: Fresh air in from the ceiling (Ventilation)
As the density of the refrigerant is bigger than that of the air. Fresh air supply from the ceiling is better than air exhausting from the ceiling.
Fresh air supply solution refers to Fig.1-2~4.

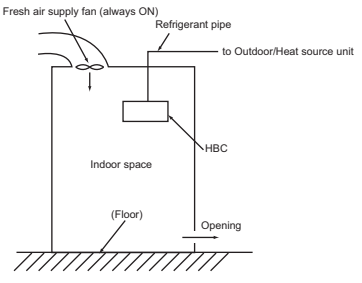


Fig.1-2.Fresh air supply always ON

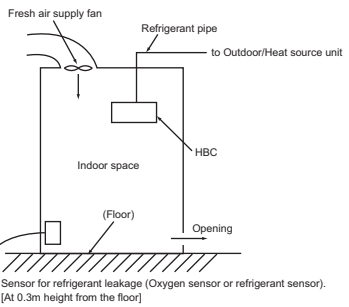


Fig.1-3.Fresh air supply upon sensor action

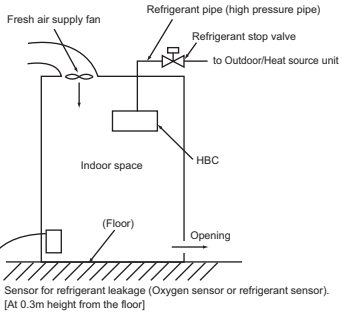


Fig.1-4.Fresh air supply and refrigerant shut-off upon sensor action

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.

for a greener tomorrow

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

⚠Warning

■ Do not use refrigerant other than the type indicated in the manuals provided with the unit and on the nameplate.
- Doing so may cause the unit or pipes to burst, or result in explosion or fire during use, repair, or at the time of disposal of the unit.
- It may also be in violation of applicable laws.
- MITSUBISHI ELECTRIC CORPORATION cannot be held responsible for malfunctions or accidents resulting from the use of the wrong type of refrigerant.

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

MITSUBISHI ELECTRIC CORPORATION

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MEES17K202

New publication effective May 2018
Specifications subject to change without notice