



DRAFT

DATA BOOK

VRF INVERTER MULTI-SYSTEM AIR-CONDITIONERS (HEAT RECOVERY 3-PIPE SYSTEMS)

(OUTDOOR UNIT)

KXZR series (Heat recovery type)

Standard series

•Single use

FDC224KXZRE1,280KXZRE1,335KXZRE1,400KXZRE1,450KXZRE1,475KXZRE1,500KXZRE1,560KXZRE1,
615KXZRE1,670KXZRE1

•Combination use

FDC735KXZRE1,800KXZRE1,850KXZRE1,900KXZRE1,950KXZRE1,1000KXZRE1,1060KXZRE1,1120KXZRE1,
1200KXZRE1,1250KXZRE1,1300KXZRE1,1350KXZRE1,1425KXZRE1,1450KXZRE1,1500KXZRE1,
1560KXZRE1,1620KXZRE1,1680KXZRE1

•High-COP combination use

FDC450KXZRXE1(FDC224KXZRE1+FDC224KXZRE1),
FDC500KXZRXE1(FDC224KXZRE1+FDC280KXZRE1),
FDC560KXZRXE1(FDC280,KXZRE1+FDC280KXZRE1),
FDC615KXZRXE1(FDC280KXZRE1+FDC335KXZRE1),
FDC670KXZRXE1(FDC335KXZRE1+FDC335KXZRE1),
FDC735KXZRXE1(FDC224KXZRE1+FDC224KXZRE1+FDC280KXZRE1),
FDC800KXZRXE1(FDC224KXZRE1+FDC280KXZRE1+FDC280KXZRE1),
FDC850KXZRXE1(FDC280KXZRE1+FDC280KXZRE1+FDC280KXZRE1),
FDC900KXZRXE1(FDC280KXZRE1+FDC280KXZRE1+FDC335KXZRE1),
FDC950KXZRXE1(FDC280KXZRE1+FDC335KXZRE1+FDC335KXZRE1),
FDC1000KXZRXE1(FDC335KXZRE1+FDC335KXZRE1+FDC335KXZRE1)

• Note:

(1) Regarding the Indoor unit series, refer to the No.'15 • KX-T-247

(2) Regarding the Duct Connected-High static Pressure-type Outdoor Air Processing Unit Series (FDU500~1800FKXE6), refer to the DATA BOOK No.'08 • KX-DB-122

PREFACE

Combination table for KX4 series and KX6 series

() Date of launching in the market

Category	Outdoor unit	Indoor unit									
		Connectable remote controller	Same series	Same series	Same series	Mixed series	Mixed series	Mixed series	Same or Mixed series	Mixed series	Same series
		3-wire type	RC-E1	KXE4	KXE4(A)	KXE4A	KXE4A	KXE4A	KXE4A	KXE4R KXE4BR KXE5R	KXE4R KXE4BR KXE5R
Heat pump (2-pipe) systems	FDCA-HKXE4 5HP (2004.4-)		YES [C]	YES [C]	YES [C]	NO	NO	NO	NO	NO	NO
	FDCA-HKXE4 8-48HP (2004.4-)		NO	YES [C]	YES [C]	NO	NO	NO	NO	NO	NO
	FDCA-HKXE4A 5HP (2006.2-)		NO	YES [C]	YES [C]	YES [C] ^{*1}	NO	NO	YES [C] ^{*1}	NO	NO
	FDCA-HKXE4R 5.6HP (2006.5-)		NO	YES [C]	YES [C]	YES [C] ^{*1}	NO	NO	YES [C] ^{*1}	NO	NO
	FDCA-HKXE4A 8-48HP (2006.2-)										
	FDCA-HKXE4R 8-48HP (2006.5-)		NO	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]
	FDCA-HKXE4BR 8-48HP (2007.4-)										
	FDCA-HKXE4D 8-48HP (2008.7-)										
	FDC-KXE6 4.5,6HP (2008.3-)		NO	NO	NO	NO	NO	NO	NO	NO	YES [A] ^{*6}
FDC-KXE6 8-12HP (2009.2)		NO	NO	NO	NO	NO	NO	NO	YES [B]	YES [B]	YES [A]
FDC-KXE6 14-48HP (2009.1)		NO	NO	NO	NO	NO	NO	NO	YES [B]	YES [B]	YES [A]
FDC-KXZE1 10-60HP (2017.4-)		NO	NO	NO	NO	NO	NO	NO	NO	NO	YES [A]
Heat recovery (3-pipe) systems [Note(3)]	FDCA-HKXRE4 8-48HP (2004.11-)		NO	NO	YES [C]	NO	NO	NO	NO	NO	NO
	FDCA-HKXRE4A 8-48HP (2006.2-)										
	FDCA-HKXRE4R 8-48HP (2006.6-)		NO	NO	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]
	FDCA-HKXRE4BR 8-48HP (2007.4-)										
	FDCA-HKXRE4D 8-48HP (2008.7-)										
	FDC-KXRE6 8-48HP (2009.5-)		NO	NO	NO	NO	NO	NO	NO	YES [B]	YES [B]
FDC-KXZRE1 8-60HP (2017.4-)		NO	NO	NO	NO	NO	NO	NO	NO	NO	YES [A]

*1 except FDKA71KXE5R

Note (1) YES: Connectable (See following table in detail), NO: Not connectable

	Outdoor unit	Connected Indoor unit		Dip switch setting of outdoor unit KXE6	Superlink Protocol	Limitation
		Same series	Mixed series			
YES [A]*2	KXE6	KXE6		II (New)	New (for KX6)	New (for KX6)
YES [B]		KXE4 series	KXE6 & KXE4 series	I (Previous)	Previous (for KX4)	Previous (for KX4)
YES [C]		KXE4 series	KXE4 series	KXE4 series		Previous (for KX4)

*2 If Outdoor unit system (YES [A]) is connected to other outdoor unit systems (YES [B] and/or YES [C]) in one superlink network, the dip switch of outdoor unit KXE6 of (YES [A]) should be set from II(New) to I(Previous). In this case the superlink protocol and limitation of outdoor unit system (YES [A]) are switched to Previous (for KX4).

(2) Combination with new Central control, PC windows central control and BMS interface unit

	Connectable I/U	Central control, PC windows central control and BMS interface unit					
		SC-SL1N-E	SC-SL2N-E	SC-SL3N-AE/BE	SC-WGWN-A/B	SC-LGWN-A	SC-BGWN-A/B
YES [A]	Connectable I/U	16	64	128 (128x1)	128 (64x2)*3	96 (48x2)	128 (64x2)*3
	Superlink protocol	New	New	New	New	New	New
	Connectable network	1	1	1	2	2	2
YES[B] & YES[C]	Connectable I/U	16	48	144 (48x3)	96 *4 (48x2)	96 *4 (48x2)	96 *4 (48x2)
	Superlink*5 protocol	Previous	Previous	Previous	Previous	Previous	Previous
	Connectable network	1	1	3	2	2	2

*3 Maximum number of AC Cell is limited up to 96.

In case the number of connected indoor units are more than 96, some AC Cells should hold 2 or more indoor units.

*4 In case of other Central control like SC-SLxN-E is connected in the same network, the connectable indoor unit is limited up to 64 (32x2).

*5 In case of previous superlink protocol, the superlink mode of new central control should be set "Previous".

*6 In case of YES[A], previous central control is available to use. But the limitation of connectable indoor unit and so on is complied with the rule of YES superlink.

(3) The compatibility of PFD refrigerant flow branch controller is mentioned in following table.

Connectable PFD controller	Outdoor unit	Indoor unit	
		KXE4 & KXE5 series	KXE6 & KXZE1 series
KXRE4 series	KXRE4 series	PFD-E	PFD-E PFD***3-E
		PFD-ER	PFD-ER PFD***-E(New)
KXRE6 series	KXRE6 series	PFD-E	PFD***3-E
		PFD-ER	PFD***-E(New)
KXZRE1 series	KXZRE1 series	PFD-E	PFD***3-E
		PFD-ER	PFD***-E(New)

Note:

All indoor unit downstream PFD box must be same series, KXZR, KX6 series or KX4/5 series

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1. GENERAL INFORMATION

1.1 Specific feature

Connectable indoor capacity

Capacity from 50% to 200% is possible.

item			Number of connectable			Connectable capacity		
Model								
FDC	224	KXZRE1	1	to	29	units	112	~ 448
FDC	280	KXZRE1	1	to	37	units	140	~ 560
FDC	335	KXZRE1	1	to	44	units	168	~ 670
FDC	400	KXZRE1	1	to	53	units	200	~ 800
FDC	450	KXZRE1	1	to	60	units	225	~ 900

Note (1) If one or more indoor units of FDK, FDFL, FDFU and/or FDFW series are connected to the system, the total connecting capacity of indoor units should not exceed 130%.

Capacity from 50% to 160% is possible.

item			Number of connectable			Connectable capacity		
Model								
FDC	475	KXZRE1	1	to	50	units	238	~ 760
FDC	500	KXZRE1	1	to	53	units	250	~ 800
FDC	560	KXZRE1	1	to	59	units	280	~ 896
FDC	615	KXZRE1	2	to	65	units	308	~ 984
FDC	670	KXZRE1	2	to	71	units	335	~ 1072
FDC	735	KXZRE1	2	to	78	units	368	~ 1176
FDC	800	KXZRE1	2	to	80	units	400	~ 1280
FDC	850	KXZRE1	2	to	80	units	425	~ 1360
FDC	900	KXZRE1	2	to	80	units	450	~ 1440
FDC	950	KXZRE1	2	to	80	units	475	~ 1520

Note (1) If one or more indoor units of FDK, FDFL, FDFU and/or FDFW series are connected to the system, the total connecting capacity of indoor units should not exceed 130%.

Capacity from 50% to 130% is possible.

item			Number of connectable			Connectable capacity		
Model								
FDC	1000	KXZRE1	2	to	80	units	500	~ 1300
FDC	1060	KXZRE1	2	to	80	units	530	~ 1378
FDC	1120	KXZRE1	2	to	80	units	560	~ 1456
FDC	1200	KXZRE1	3	to	80	units	600	~ 1560
FDC	1250	KXZRE1	3	to	80	units	625	~ 1625
FDC	1300	KXZRE1	3	to	80	units	650	~ 1690
FDC	1350	KXZRE1	3	to	80	units	675	~ 1755
FDC	1425	KXZRE1	3	to	80	units	713	~ 1852
FDC	1450	KXZRE1	3	to	80	units	725	~ 1885
FDC	1500	KXZRE1	3	to	80	units	750	~ 1950
FDC	1560	KXZRE1	3	to	80	units	780	~ 2028
FDC	1620	KXZRE1	3	to	80	units	810	~ 2106
FDC	1680	KXZRE1	3	to	80	units	840	~ 2184

High-COP combination

Capacity from 80% to 200% is possible.

item			Number of connectable			Connectable capacity		
Model								
FDC	450	KXZRXE1	2	to	60	units	360	~ 900

Note (1) If one or more indoor units of FDK, FDFL, FDFU and/or FDFW series are connected to the system, the total connecting capacity of indoor units should not exceed 130%.

High-COP combination

Capacity from 80% to 160% is possible.

item			Number of connectable			Connectable capacity		
Model								
FDC	500	KXZRXE1	2	to	53	units	400	~ 800
FDC	560	KXZRXE1	2	to	59	units	448	~ 896
FDC	615	KXZRXE1	2	to	65	units	492	~ 984
FDC	670	KXZRXE1	2	to	71	units	536	~ 1072
FDC	735	KXZRXE1	3	to	78	units	588	~ 1176
FDC	800	KXZRXE1	3	to	80	units	640	~ 1280
FDC	850	KXZRXE1	3	to	80	units	680	~ 1360
FDC	900	KXZRXE1	3	to	80	units	720	~ 1440
FDC	950	KXZRXE1	3	to	80	units	760	~ 1520

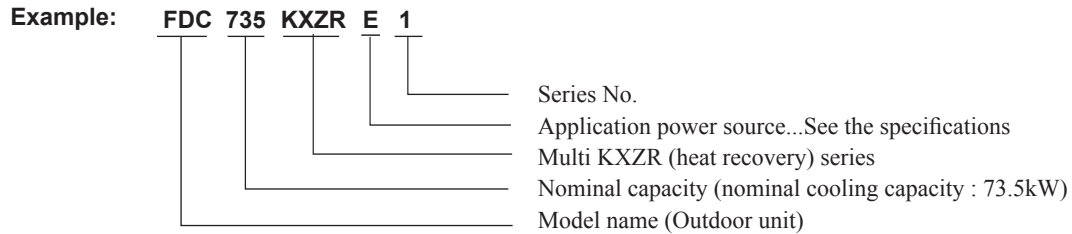
Note (1) If one or more indoor units of FDK, FDFL, FDFU and/or FDFW series are connected to the system, the total connecting capacity of indoor units should not exceed 130%.

High-COP combination
Capacity from 80% to 130% is possible.

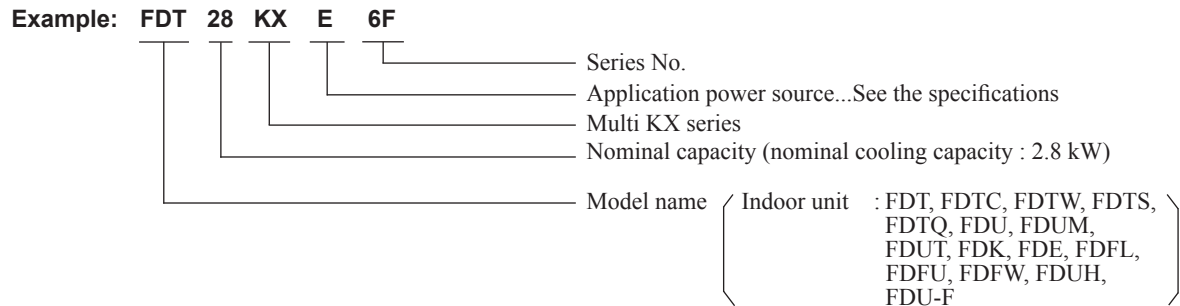
item			Number of connectable				Connectable capacity		
Model									
FDC	1000	KXZRxE1	3	to	80	units	800	~	1300

1.2 How to read the model name

(1) Outdoor unit



(2) Indoor unit



1.3 Table of models

Model	Capacity													
	15	22	28	36	45	56	71	90	112	140	160	224	280	
Ceiling cassette-4 way type (FDT)			○	○	○	○	○	○	○	○	○			
Ceiling cassette-4 way compact type (FDTc)	○	○	○	○	○	○								
Ceiling cassette-2 way type (FDTW)			○		○	○	○	○	○	○				
Ceiling cassette-1 way type (FDTS)					○		○							
Ceiling cassette-1 way compact type (FDTQ)		○	○	○										
Duct connected-High static pressure type (FDU)					○	○	○	○	○	○	○	○	○	
Duct connected-Low/Middle static pressure type (FDUM)		○	○	○	○	○	○	○	○	○	○			
Duct connected (thin)-Low static pressure type (FDUT)	○	○	○	○	○	○	○							
Wall mounted type (FDK)		○	○	○	○	○	○							
Ceiling suspended type (FDE)				○	○	○	○		○	○				
Floor standing (with casing) type (FDFL)							○							
Floor standing (without casing) type (FDFU)			○		○	○	○							
Floor standing-2 way type (FDFW)			○		○	○								
Duct connected-compact and Flexible type (FDUH)		○	○	○										
Outdoor air processing unit (FDU-F)								○		○		○	○	
Outdoor units to be combined (FDC)	FDC224KXZRE1-FDC1680KXZRE1													

Note (1) Reference No. of data book : '15-KX-DB-247

1.4 Outdoor units combination table

Model	item		FDC 335	FDC 400	FDC 450	FDC 475	FDC 500	FDC 560	Connectable capacity		Number of connectable	
	KXZRE1	KXZRE1	KXZRE1	KXZRE1	KXZRE1	KXZRE1	KXZRE1	KXZRE1				
FDC 735	KXZRE1		1	1					368	—	1176	2 to 78
FDC 800	KXZRE1			2					400	—	1280	2 to 80
FDC 850	KXZRE1			1	1				425	—	1360	2 to 80
FDC 900	KXZRE1				2				450	—	1440	2 to 80
FDC 950	KXZRE1					2			475	—	1520	2 to 80
FDC 1000	KXZRE1						2		500	—	1300	2 to 80
FDC 1060	KXZRE1							1	530	—	1378	2 to 80
FDC 1120	KXZRE1								560	—	1456	2 to 80
FDC 1200	KXZRE1			3					600	—	1560	3 to 80
FDC 1250	KXZRE1			2	1				625	—	1625	3 to 80
FDC 1300	KXZRE1			1	2				650	—	1690	3 to 80
FDC 1350	KXZRE1				3				675	—	1755	3 to 80
FDC 1425	KXZRE1					3			713	—	1852	3 to 80
FDC 1450	KXZRE1						2	1	725	—	1885	3 to 80
FDC 1500	KXZRE1							3	750	—	1950	3 to 80
FDC 1560	KXZRE1							2	780	—	2028	3 to 80
FDC 1620	KXZRE1							1	810	—	2106	3 to 80
FDC 1680	KXZRE1								840	—	2184	3 to 80

High-COP combination

Model	item		FDC 224	FDC 280	FDC 335	Connectable capacity		Number of connectable	
	KXZRE1	KXZRE1	KXZRE1	KXZRE1	KXZRE1				
FDC 450	KXZRE1		2			360	—	900	2 to 60
FDC 500	KXZRE1		1	1		400	—	800	2 to 53
FDC 560	KXZRE1			2		448	—	896	2 to 59
FDC 615	KXZRE1			1	1	492	—	984	2 to 65
FDC 670	KXZRE1				2	536	—	1072	2 to 71
FDC 735	KXZRE1		2	1		588	—	1176	3 to 78
FDC 800	KXZRE1		1	2		640	—	1280	3 to 80
FDC 850	KXZRE1			3		680	—	1360	3 to 80
FDC 900	KXZRE1			2	1	720	—	1440	3 to 80
FDC 950	KXZRE1			1	2	760	—	1520	3 to 80
FDC 1000	KXZRE1				3	800	—	1600	3 to 80

(a) Outdoor unit side branch pipe set (Optional)

Outdoor unit	Branch pipe set
For two units	DOS-2A-2R
For three units	DOS-3A-2R

Note (1) Be sure to use this when combining units.

(b) Branch pipe set (Optional)

In the upstream of a branching controller

Total capacity downstream	Branching pipe set
Less than 180	DIS-22-1-R
180 or more but less than 371	DIS-180-1-R
371 or more but less than 540	DIS-371-2-R
540 or more	DIS-540-2-R

In the downstream of a branching controller

Total capacity downstream	Branching pipe set
Less than 180	DIS-22-1
180 or more but less than 371	DIS-180-1
371 or more but less than 540	DIS-371-1
540 or more	DIS-540-1

(c) Branching controller model (Optional)

Total capacity downstream	Branching controller model	Number of connectable units
Less than 112	PFD1124-E	1 ~ 5
112 or more but less than 180	PFD1804-E	1 ~ 8
180 or more but less than 280	PFD2804-E	1 ~ 10

• Restriction on the number of branching controllers to be connected to the outdoor unit

Outdoor unit	Minimum number of connectable units	Outdoor unit	Minimum number of connectable units
~280(10HP)	2 units	~1130(40HP)	8 units
~560(20HP)	4 units	~1680(60HP)	10 units
~850(30HP)	6 units	—	—

(d) Integrated branching controller (Optional)

Model	Total of four branches		Per branch	
	Capacity restrictions	Maximum number of connectable units	Capacity restrictions	Maximum number of connectable units
PFD1124X4-E	Less than 371	16	Less than 112	5

Note (1) An indoor unit with a capacity up to 112 can be connected. Refer to page XXX for details.

2. OUTDOOR UNIT

2.1 Specifications

• Single use (Used also for combination)

OUTDOOR UNIT (FDC)		FDC224KXZRE1	FDC280KXZRE1	FDC335KXZRE1	FDC400KXZRE1	FDC450KXZRE1	FDC475KXZRE1	FDC500KXZRE1	FDC560KXZRE1	FDC615KXZRE1	FDC670KXZRE1
Models											
Nominal cooling capacity*1		22.4	28.0	33.5	40.0	45.0	47.5	50.0	56.0	61.5	67.0
Nominal heating capacity*2		22.4	28.0	33.5	40.0	45.0	47.5	50.0	56.0	61.5	63.0
Maximum heating capacity		25.0	31.5	37.5	45.0	50.0	53.0	56.0	63.0	63.0	63.0
Power source		3 Phase 380V/415V/50Hz / 380V 60Hz									
Power consumption		5.15	7.38	9.64	11.55	14.45	14.82	15.19	18.31	21.35	25.51
Heat		4.62	6.19	8.12	9.76	11.38	11.58	11.17	13.79	16.04	16.68
Maximum Heat											
Cool		9.0/8.3	12.2/11.2	15.8/14.5	18.5/17.1	23.2/21.2	24.0/22.0	24.6/22.5	29.6/27.1	34.6/31.6	41.3/37.8
Heat		8.0/7.4	10.3/9.4	13.3/12.2	16.0/14.8	18.6/17.1	18.8/17.2	19.1/17.5	22.3/20.5	26.0/23.8	27.0/24.7
Cool		87/87	92/92	93/93	95/94	95/95	94/94	94/94	94/94	94/94	94/94
Heat		88/88	92/92	93/93	93/92	93/93	94/94	94/94	94/94	94/94	94/94
EER		4.35	3.79	3.47	3.46	3.11	3.20	3.29	3.05	2.88	2.62
COP		4.84	4.52	4.12	4.09	3.95	4.10	4.24	4.06	3.85	3.77
Sound Pressure Level (Cool/Heat)		/	/	/	/	/	/	/	/	/	/
Sound Power Level (Cool/Heat)		/	/	/	/	/	/	/	/	/	/
Starting current						8					
Maximum current				21.2		32.0					42.4
Exterior dimensions		1690X1350X720									
Height x Width x Depth											
Net weight		2048X1350X720									
Refrigerant equipment compressor type & Q'ty		G1C5150NC47LF X 1		GUC5185ND47V X 1				G1C5150NC47LF X 2			
Motor		Direct line starting									
Starting method		33 X 1									
Crankcase heater		40 X 1									
Refrigerant equipment heat exchanger		M fin & inner grooved tubing									
Refrigerant control		Electronic expansion valve									
Refrigerant		R410A									
Quantity		11.5									
Refrigerant oil		2350 (M-MA32R)		3300 (M-MA32R)		3500 (M-MA32R)		4400 (M-MA32R)			
Defrost control		Microcomputer controlled De-Icer									
Air handling equipment fan type & Q'ty		Propeller fan x 2									
Motor		386X2									
Starting method		Direct start									
Air flow (Standard)		Max.50									
Static pressure											
Shock & vibration absorber		Rubber mount (for compressor)									
Safety equipment		Compressor overheat protection / overcurrent protection / power transistor overheat protection / abnormal high pressure protection									
Liquid Line		φ9.52 (3/8")		φ25.4 (1")		φ25.4 (1")		φ25.4 (1")		φ25.4 (1")	
Suction gas line		φ19.05 (3/4")		φ22.22 (7/8")		φ25.4 (1")		φ25.4 (1")		φ25.4 (1")	
Refrigerant piping size		φ15.88 (5/8")		φ19.05 (3/4")		φ22.22 (7/8")		φ22.22 (7/8")		φ25.4 (1")	
Discharge gas line		φ19.05 (3/4")		φ22.22 (7/8")		φ25.4 (1")		φ25.4 (1")		φ25.4 (1")	
Connecting method		Gas line : Brazing / Liquid line : Flare									
MAX. Pressure		High 4.15 Low 2.21									
Drain		Hole for drain (φ20 x 10pcs , φ45 x 3pcs)									
Insulation for piping		IP24									
Accessories		Necessary (both Liquid & Gas line)									
Exterior dimensions		PCB004Z087		PCB004Z090		PCB004Z088		PCB004Z091			
Electrical wiring		PCB004Z089		PCB004Z089		PCB004Z089		PCB004Z089			

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		Standards
	WB	DB	WB	DB	
Operation	19 °C	35 °C	24 °C	35 °C	ISO-11
Cooling*1	27 °C	-	7 °C	6 °C	
Heating*2	20 °C	-	7 °C	6 °C	

(2) This packaged air-conditioner is manufactured and tested in conformity with the following standard. ISO-11 "UNITARY AIR-CONDITIONERS"
 (3) Refrigerant piping size applicable to European installations are shown in parentheses.

Adapted to RoHS directive

PCB004Z085

• Combination use

Models	FDC730KXZRE1	FDC800KXZRE1	FDC850KXZRE1	FDC900KXZRE1
Combination unit	FDC335KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC450KXZRE1
	FDC400KXZRE1	FDC400KXZRE1	FDC450KXZRE1	FDC450KXZRE1
	3 Phase 380-415V 50Hz/380V 60Hz			
Power source				
Nominal cooling capacity*1	73.0	80.0	85.0	90.0
Nominal heating capacity*2	73.0	80.0	85.0	90.0
Power consumption	Cool	21.2	23.1	26.0
	Heat	17.9	19.5	21.1
Running current	Cool	34.30/31.60	37.00/34.20	41.70/38.30
	Heat	29.30/27.00	32.00/29.60	34.60/31.90
Power factor	Cool	94/94	95/94	95/95
	Heat	93/93	93/92	93/93
Net weight			φ15.88 (5/8")	
Refrigerant piping size	Liquid line			
	Suction gas line		φ31.75 (1.1/4") (φ34.92 (1.3/8"))	
	Discharge gas line	φ25.4 (1") (φ28.58 (1.1/8"))		φ28.58 (1.1/8")
	Oil equalization		φ9.52 (3/8")	

Models	FDC950KXZRE1	FDC1000KXZRE1	FDC1060KXZRE1	FDC1120KXZRE1
Combination unit	FDC450KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC560KXZRE1
	FDC500KXZRE1	FDC500KXZRE1	FDC560KXZRE1	FDC560KXZRE1
	3 Phase 380-415V 50Hz/380V 60Hz			
Power source				
Nominal cooling capacity*1	95.0	100.0	106.0	112.0
Nominal heating capacity*2	95.0	100.0	106.0	112.0
Power consumption	Cool	29.3	30.4	30.4
	Heat	23.0	23.5	23.4
Running current	Cool	47.20/43.20	49.20/45.00	48.60/44.50
	Heat	37.40/34.30	38.20/35.00	37.90/34.70
Power factor	Cool	95/95	94/94	94/94
	Heat	94/94	94/94	94/94
Net weight			φ15.88 (5/8")	φ19.05 (3/4")
Refrigerant piping size	Liquid line		φ15.88 (5/8")	
	Suction gas line	φ31.75 (1.1/4") (φ34.92 (1.3/8"))		φ38.1 (1.1/2") (φ34.92 (1.3/8"))
	Discharge gas line	φ28.58 (1.1/8")		φ31.75 (1.1/4") (φ28.58 (1.1/8"))
	Oil equalization		φ9.52 (3/8")	

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• Combination use

Models	FDC1200KXZRE1	FDC1250KXZRE1	FDC1300KXZRE1	FDC1350KXZRE1	FDC1425KXZRE1	
Combination unit	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	
	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	
	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	
	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	
Power source	3 Phase 380—415V 50Hz/380V 60Hz					
	Nominal cooling capacity*1	120.0	125.0	130.0	135.0	142.5
Nominal heating capacity*2	kW	120.0	125.0	130.0	135.0	142.5
	kW	34.65	37.55	40.45	43.35	44.46
Power consumption	Cool	29.28	30.90	32.52	34.14	34.74
	Heat	55.5/51.3	60.2/55.4	64.9/59.5	69.6/63.6	72.0/66.0
Running current	Cool	48.0/44.4	50.6/46.7	53.2/49.0	55.8/51.3	56.4/51.6
	Heat	95/94	95/94	95/95	95/95	94/94
Power factor	Cool	93/92	93/92	93/93	93/93	94/94
	Heat					
Net weight	kg					
	φmm (in)			φ19.05 (3/4")		
Refrigerant piping size	Suction gas line	φ38.1 (1.1/2") (φ34.92 (1.3/8"))				
	Discharge gas line	φ31.75 (1.1/4") (φ28.58 (1.1/8"))				
Oil equalization	φmm (in)	φ9.52 (3/8")				

Models	FDC1450KXZRE1	FDC1500KXZRE1	FDC1560KXZRE1	FDC1620KXZRE1	FDC1680KXZRE1	
Combination unit	FDC475KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	
	FDC475KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	
	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	
	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	
Power source	3 Phase 380—415V 50Hz/380V 60Hz					
	Nominal cooling capacity*1	145.0	150.0	156.0	162.0	168.0
Nominal heating capacity*2	kW	145.0	150.0	156.0	162.0	168.0
	kW	44.83	45.57	48.69	51.81	54.93
Power consumption	Cool	34.93	35.31	37.33	39.35	41.37
	Heat	72.6/66.5	73.8/67.5	78.8/72.1	83.8/76.7	88.8/81.3
Running current	Cool	56.7/51.9	57.3/52.5	60.5/55.5	63.7/58.5	66.9/61.5
	Heat	94/94	94/94	94/94	94/94	94/94
Power factor	Cool	94/94	94/94	94/94	94/94	94/94
	Heat					
Net weight	kg					
	φmm (in)			φ19.05 (3/4")		
Refrigerant piping size	Suction gas line	φ38.1 (1.1/2") (φ34.92 (1.3/8"))				
	Discharge gas line	φ31.75 (1.1/4") (φ28.58 (1.1/8"))				
Oil equalization	φmm (in)	φ9.52 (3/8")				

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• High COP Combination use

Models	FDC450KXZRE1	FDC500KXZRE1	FDC560KXZRE1	FDC615KXZRE1	FDC670KXZRE1	
Combination unit	FDC224KXZRE1	FDC224KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1	
	FDC224KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1	FDC335KXZRE1	
	3 Phase 380-415V 50Hz/380V 60Hz					
Power source						
Nominal cooling capacity*1	45.0	50.0	56.0	61.5	67.0	
Nominal heating capacity*2	45.0	50.0	56.0	61.5	67.0	
Power consumption	Cool	10.29	12.53	14.76	17.02	19.28
	Heat	9.24	10.81	12.38	14.31	16.24
Running current	Cool	18.0/16.6	21.2/19.5	24.4/22.4	28.0/25.7	31.6/29.0
	Heat	16.0/14.8	18.3/16.8	20.6/18.8	23.6/21.6	26.6/24.4
Power factor	Cool	87/87	90/90	92/92	93/93	93/93
	Heat	88/88	90/90	92/92	93/93	93/93
Net weight	kg					
Refrigerant piping size	Liquid line	φ12.7 (1/2")				
	Suction gas line	φ28.58 (1.1/8")				
	Discharge gas line	φ22.22 (7/8")				
	Oil equalization	φ9.52 (3/8")				

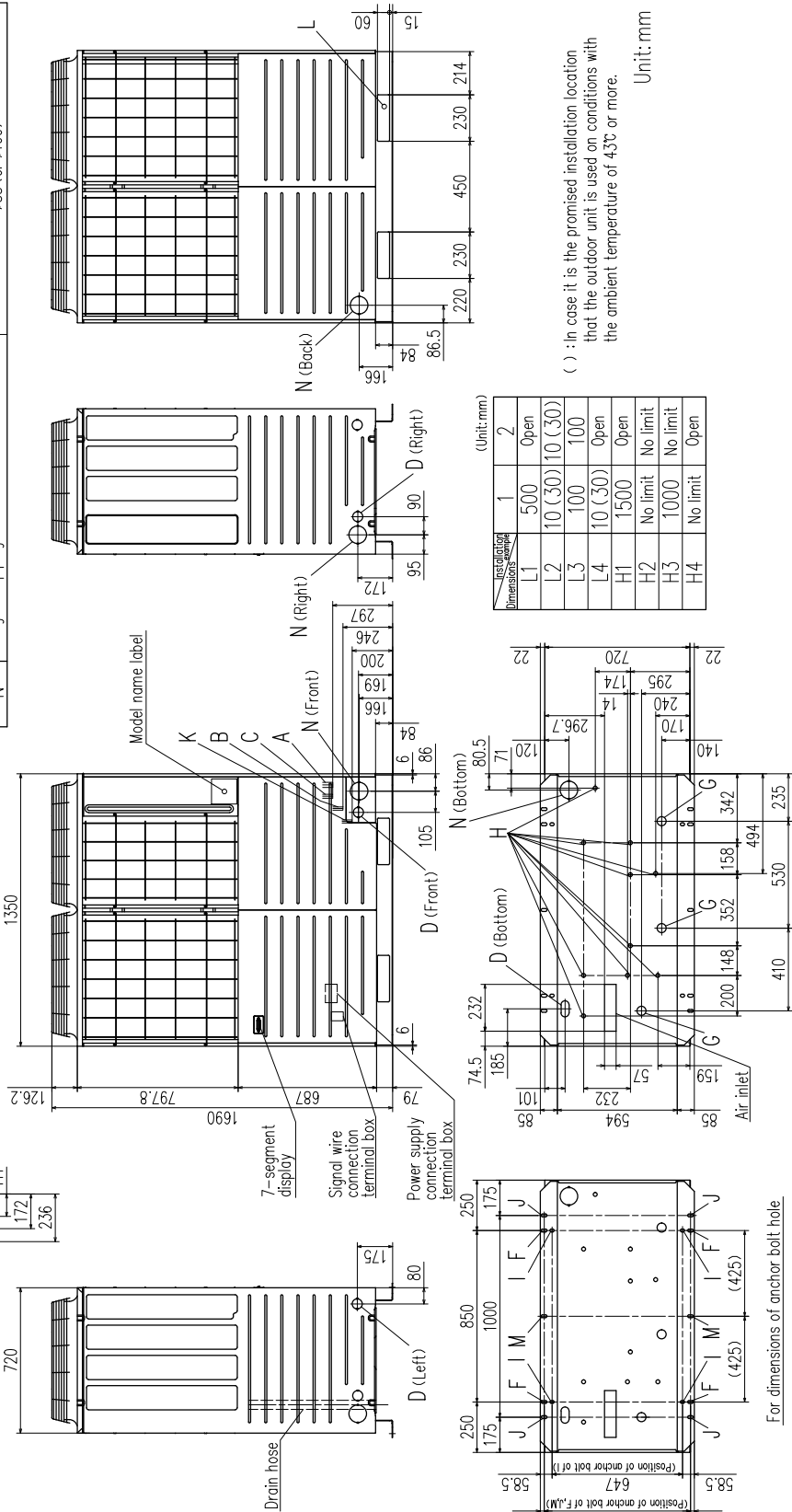
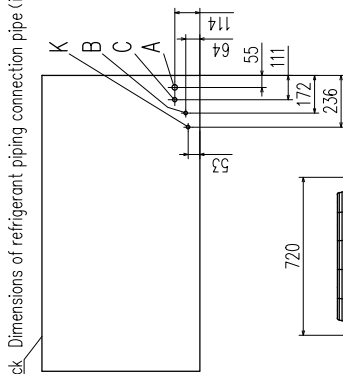
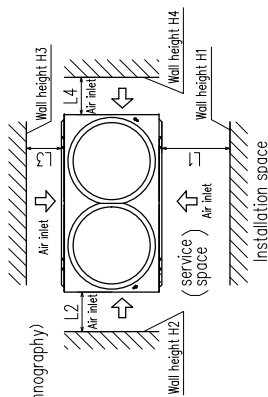
Models	FDC730KXZRE1	FDC800KXZRE1	FDC850KXZRE1	FDC900KXZRE1	FDC950KXZRE1	FDC1000KXZRE1	
Combination unit	FDC224KXZRE1	FDC224KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1	
	FDC224KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1	FDC335KXZRE1	
	FDC280KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1	FDC335KXZRE1	FDC335KXZRE1	
	3 Phase 380-415V 50Hz/380V 60Hz						
Power source							
Nominal cooling capacity*1	73.0	80.0	85.0	90.0	95.0	100.0	
Nominal heating capacity*2	73.0	80.0	85.0	90.0	95.0	100.0	
Power consumption	Cool	17.67	19.91	22.14	24.40	26.66	28.92
	Heat	15.43	17.00	18.57	20.50	22.43	24.36
Running current	Cool	30.2/27.8	33.4/30.7	36.6/33.6	40.2/36.9	43.8/40.2	47.4/43.5
	Heat	26.3/24.2	28.6/26.2	30.9/28.2	33.9/31.0	36.9/33.8	39.9/36.6
Power factor	Cool	89/89	90/90	92/92	92/92	93/93	93/93
	Heat	89/89	91/91	92/92	92/92	93/93	93/93
Net weight	kg						
Refrigerant piping size	Liquid line	φ15.88 (5/8")					
	Suction gas line	φ31.75 (1.1/4") (φ34.92 (1.3/8"))					
	Discharge gas line	φ25.4 (1") (φ28.58 (1.1/8"))					
	Oil equalization	φ9.52 (3/8")					

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2.2 Exterior dimensions

Models FDC224KXZRE1, 280KXZRE1, 335KXZRE1

MARK	Content	224	280	335
A	Refrigerant suction gas piping connection pipe	∅19.05 (BRAZING) ∅22.22 (BRAZING)	∅25.4 (BRAZING)	
B	Refrigerant liquid piping connection pipe	∅9.52 (FLARE)	∅12.7 (FLARE)	
C	Refrigerant discharge gas piping connection pipe	∅15.88 (BRAZING)	∅19.05 (BRAZING)	
D	Power supply entry hole	∅50 (Right-Left-Front) Long hole 40X80 (Bottom)		
F	Anchor bolt hole	M10, 4pcs.		
G	Drain waste water hose hole	∅45, 3pcs.		
H	Drain hole	∅20, 10pcs.		
K	Refrigerant oil equalization piping connection pipe	∅9.52 (Flare)		
L	Carrying in or hole for hanging	230X60		
N	Refrigerant piping exit hole	∅88 (or ∅100)		



Dimension	1	2
L1	500	Open
L2	10 (30)	10 (30)
L3	100	100
L4	10 (30)	Open
H1	1500	Open
H2	No limit	No limit
H3	1000	No limit
H4	No limit	Open

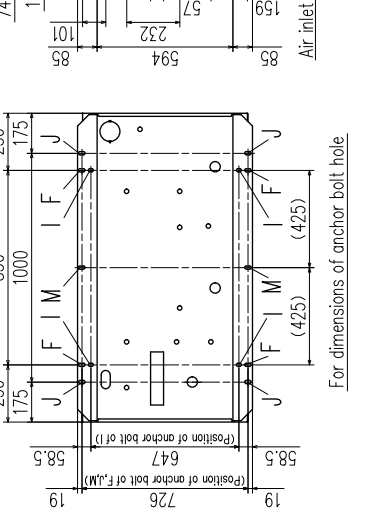
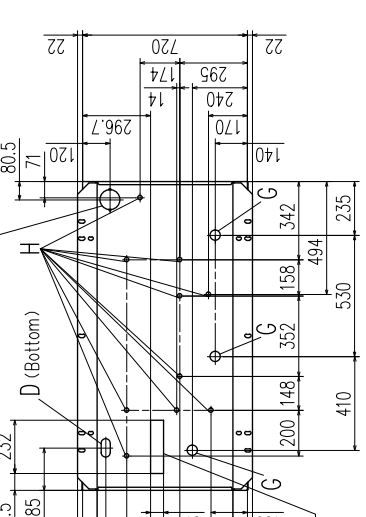
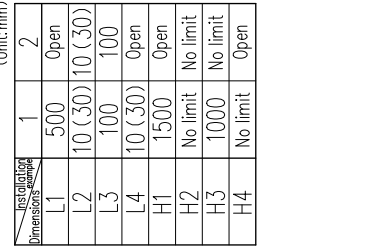
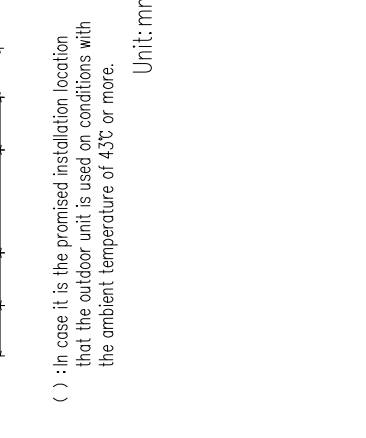
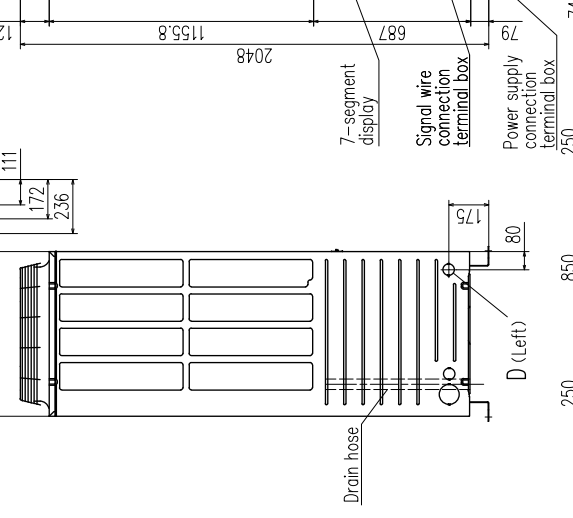
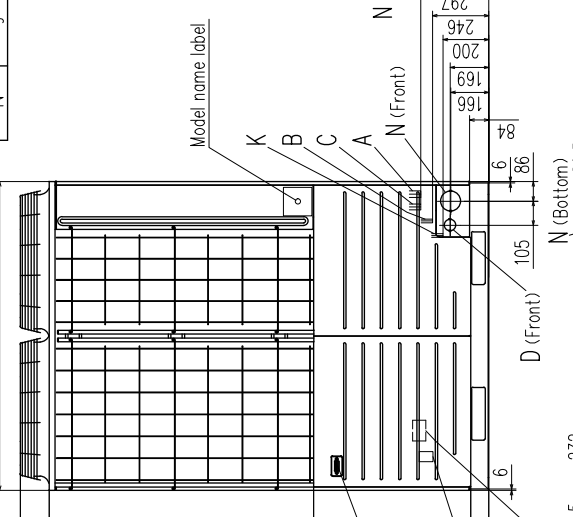
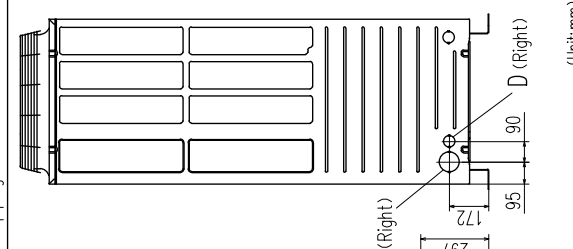
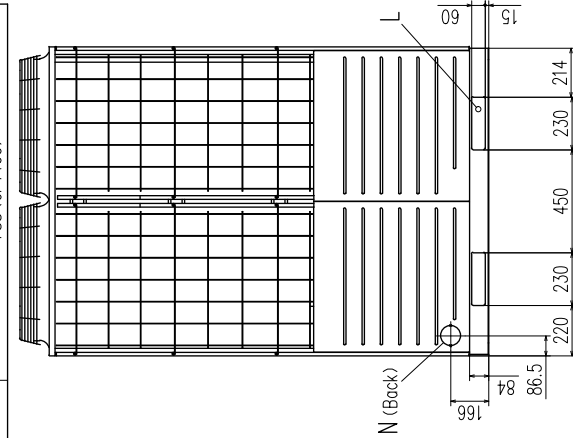
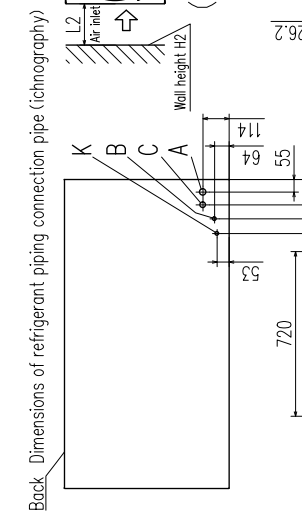
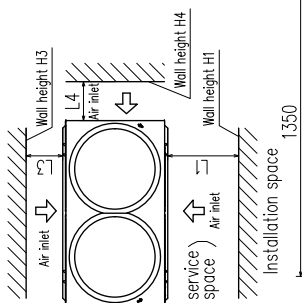
(Unit:mm)

() : In case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43°C or more.
Unit:mm

PCB004Z087

**Models FDC400KXZRE1, 450KXZRE1, 475KXZRE1, 500KXZRE1, 560KXZRE1
FDC615KXZRE1, 670KXZRE1**

MARK	Content	400	450,475,500,560	615,670
A	Refrigerant suction gas piping connection pipe	ø25.4 (BRAZING)	ø28.58 (BRAZING)	ø31.75 (BRAZING)
B	Refrigerant liquid piping connection pipe	ø12.7 (Flare)	ø12.7 (Flare)	ø12.7 (Flare)
C	Refrigerant discharge gas piping connection pipe	ø22.22 (BRAZING)	ø22.22 (BRAZING)	ø25.4 (BRAZING)
D	Power supply entry hole	ø50 (Right:Left-Front), Long hole 40X80 (Bottom)	M10,4pcs.	M10,4pcs.
F	Anchor bolt hole		ø45,3pcs.	ø45,3pcs.
G	Drain waste water hose hole		ø20,10pcs.	ø20,10pcs.
H	Drain hole		ø9.52 (Flare)	ø9.52 (Flare)
K	Refrigerant oil equalization piping connection pipe		230X60	230X60
L	Carrying in or hole for hanging		ø88 (or ø100)	ø88 (or ø100)
N	Refrigerant piping exit hole			



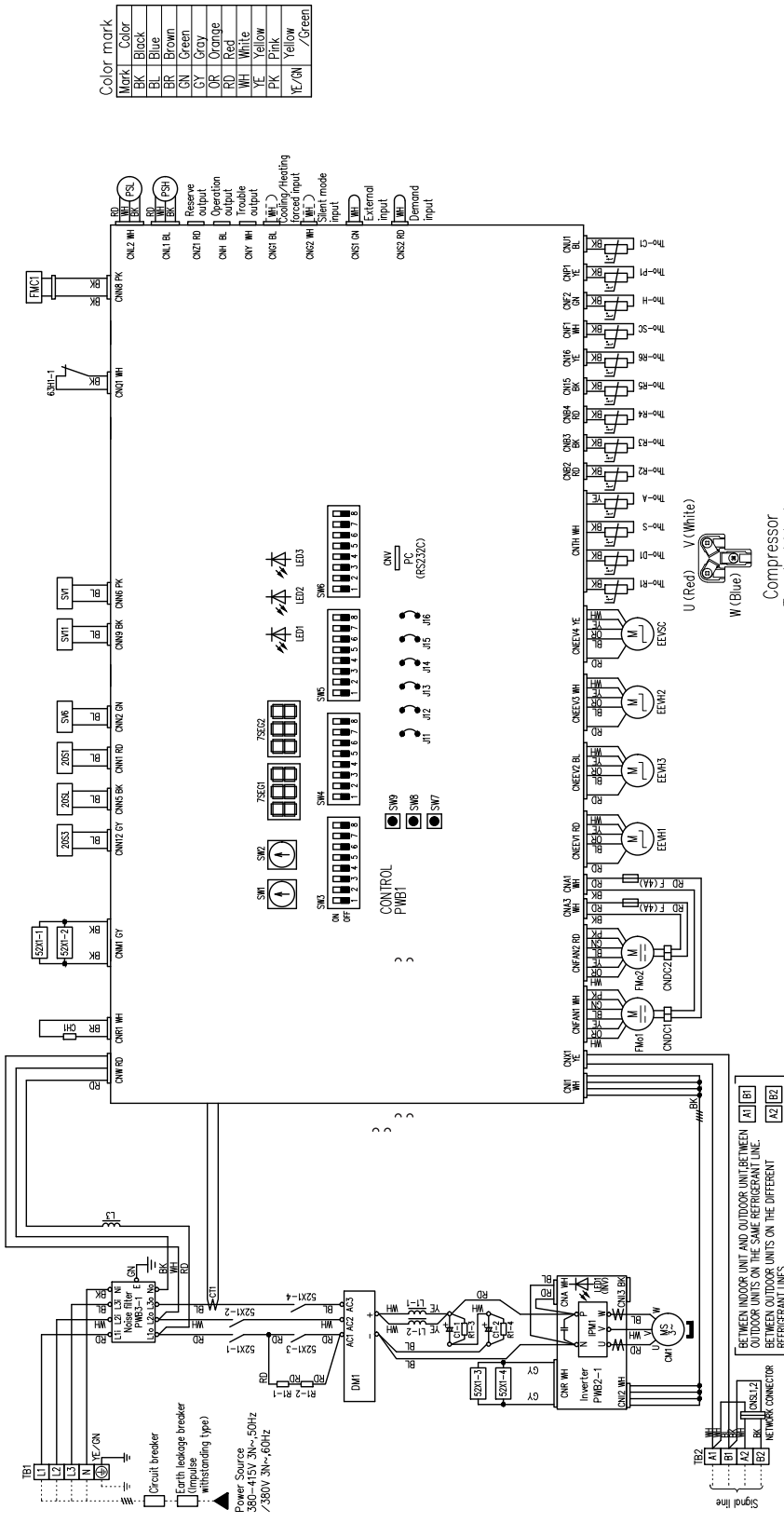
Installation Dimensions	(Unit:mm)	
	1	2
L1	500	Open
L2	10 (30)	10 (30)
L3	100	100
L4	10 (30)	Open
H1	1500	Open
H2	No limit	No limit
H3	1000	No limit
H4	No limit	Open

() : in case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43°C or more.
Unit:mm

PCB004Z088

2.3 Electrical wiring

Models FDC224KXZRE1, 280KXZRE1, 335KXZRE1



Mark	Color
BK	Black
BR	Brown
BU	Blue
GR	Green
OR	Orange
PK	Pink
RD	Red
WH	White
YL	Yellow
YE/ON	Yellow / Green

Terminal block

Mark	Parts name
Tho-A	External air thermostat
Tho-C1	Under-fame thermostat
Tho-D1	Discharge pipe thermostat
Tho-H1	Sub-cooling coil thermostat 2
Tho-P1	Power transistor thermostat
Tho-R1	Heat exchanger thermostat (exhaust)
Tho-R2	Heat exchanger thermostat (inlet)
Tho-R3	Heat exchanger thermostat (inlet)
Tho-R4	Heat exchanger thermostat (inlet)
Tho-R5	Heat exchanger thermostat (inlet)
Tho-R6	Heat exchanger thermostat (inlet)
Tho-SC	Suction pipe thermostat
Tho-S	4-way valve
ZOS1	4-way valve
ZOS3	4-way valve
52X1-1-1-4	Shenoid for CM
63H1-1	High pressure switch (for protection)
ZSG1	7-segment L.E.D. (function indication)
ZSG2	7-segment L.E.D. (data indication)

Mark	Parts name
SW4-1~4	Modal setting
SW4-5	Spare
SW4-6	Spare
SW4-7	Address setting switch (master-slave)
SW4-8	Address setting switch (master-slave)
SW5-1	ON Trial operation
SW5-2	OFF Regular operation
SW5-3	ON Trial operation mode/cooling
SW5-4	OFF Trial operation mode/heating
SW5-5	ON Pump down operation
SW5-6	OFF Regular operation
SW5-7	ON Super Link communication
SW5-8	OFF Super Link II communication
SW6-6-6	Spare
SW7	Data clear/insert
SW8	7-segment indicate (unit's place)
SW9	7-segment indicate (ten's place)
1B1,2	Terminal block

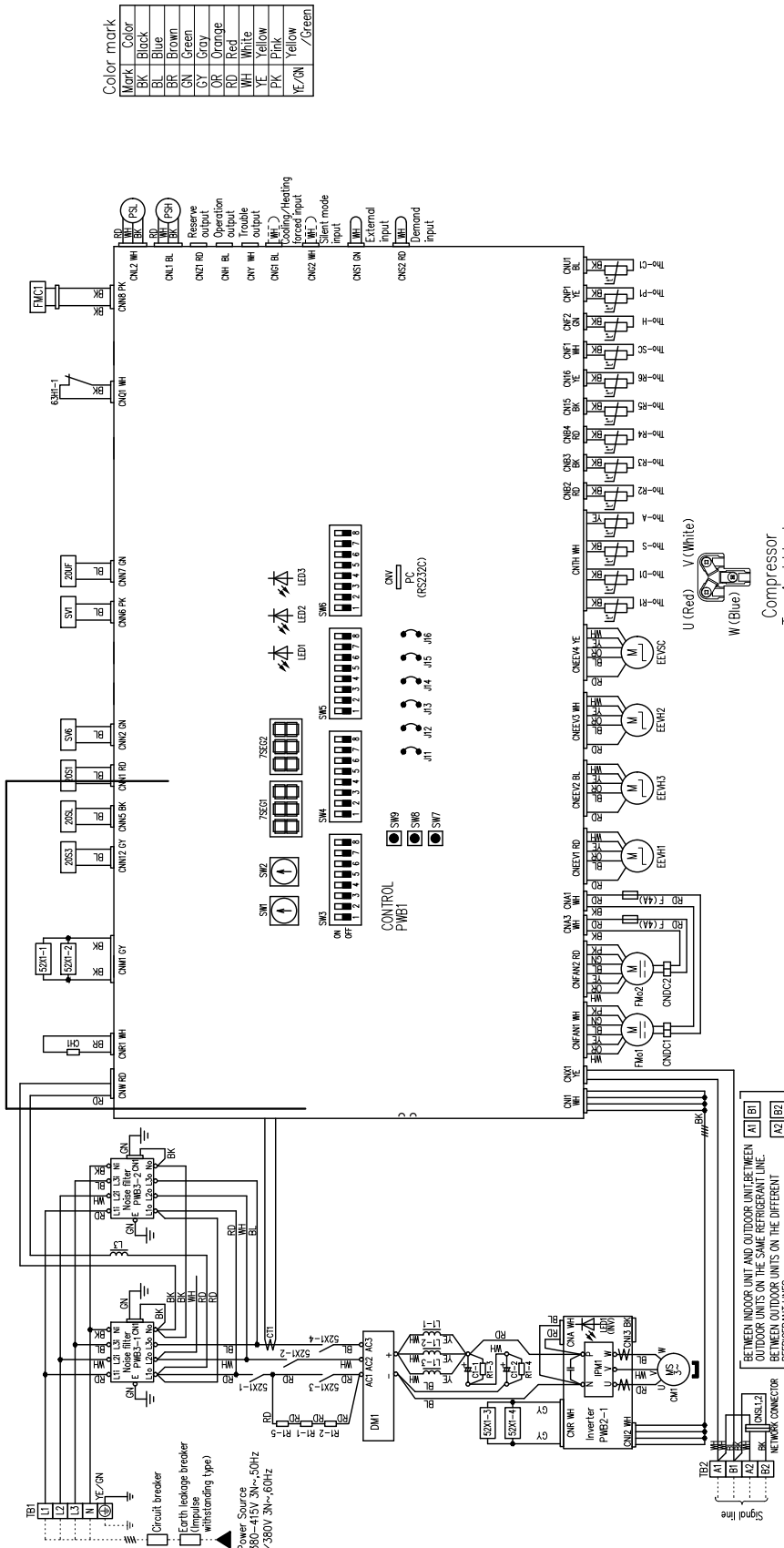
Mark	Parts name
L3	D.C.reactior
PSH	High pressure sensor
PSL	Low pressure sensor
PMB1-3	Printed wiring board (PCB)
R1-1~1-4	Each wiring board resistor
SV1	Solenoid valve (oil bypass)
SV6	Solenoid valve (oil separator)
SV11	Solenoid valve (gas bypass)
SV12	Address setting SW outdoor unit No. (2 digits)
SV2	Address setting SW outdoor unit No. (1 digit)
SW3-1	Inspection LED reset
SW3-2	ON Regular operation
SW3-3	OFF Backup operation
SW3-4	ON Refrigerant quantity check
SW3-5	OFF Regular operation
SW3-6	ON Check operation
SW3-7	OFF Regular operation
SW3-8	ON Forced cooling/heating
SW3-9	OFF Regular operation
SW3-10	ON Regular operation
SW3-11	OFF Regular operation
SW3-12	ON Regular operation
SW3-13	OFF Regular operation
SW3-14	ON Regular operation
SW3-15	OFF Regular operation
SW3-16	ON Regular operation
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SW3-18	ON Regular operation
SW3-19	OFF Regular operation
SW3-20	ON Regular operation
SW3-21	OFF Regular operation
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SW3-92	ON Regular operation
SW3-93	OFF Regular operation
SW3-94	ON Regular operation
SW3-95	OFF Regular operation
SW3-96	ON Regular operation
SW3-97	OFF Regular operation
SW3-98	ON Regular operation
SW3-99	OFF Regular operation
SW3-100	ON Regular operation

Mark	Parts name
GM1	Compressor heater
GM2	Compressor motor
GM3	Compressor
CT1	Current sensor
CT1-2	Electrolytic capacitor
DM1	Diode module
EDH1,2,3	Expansion valve for heating
EDHSC	Expansion valve for SC
F	Fan for IPM
FM0,2	Fan motor
IPM1	Intelligent power module
IL1,2	Set up mode (volt)
IL3	External input select level/pulse
IL4	Deboost recover temp
IL5	Deboost start temp
IL6	Heat recover unit
LED1	Inspection (Red)
LED1 (INV)	Normal (Yellow) -Flashing
LED2	Normal (Green)
LED3	Service (green for service)
L1-1,2	D.C.reactior

Meaning of marks

PCB004Z089

Models FDC400KXZRE1, 450KXZRE1



Color mark

MO	Black
BL	Blue
BR	Brown
GN	Green
GY	Gray
OR	Orange
RD	Red
WH	White
YE	Yellow
PK	Pink
YE/ON	Yellow / Green

Terminal block

Mark	Parts name
Tho-A	External air thermostat
Tho-C1	Under-dome thermostat
Tho-D1	Discharge pipe thermostat
Tho-H	Sub-cooling coil thermostat 2
Tho-P1	Power transistor thermostat
Tho-R1	Heat exchanger thermostat (exhaust)
Tho-R2	Heat exchanger thermostat (exhaust)
Tho-R3	Heat exchanger thermostat (inlet)
Tho-R4	Heat exchanger thermostat (inlet)
Tho-R5	Heat exchanger thermostat (inlet)
Tho-R6	Heat exchanger thermostat (inlet)
Tho-S	Suction pipe thermostat
Tho-SC	Sub-cooling coil thermostat 1
20S1	4-way valve
20S3	4-way valve
20S1	4-way valve
20UF	Capacity control
52M-1-1-4	Solenoid for OMI
6.3H1-1	High pressure switch (for protection)
75FC1	7-segment L.E.D. (function indication)
75FC2	7-segment L.E.D. (data indication)

Compressor

Mark	Parts name
SW3-8	Spare
SW4-1~4	Model setting
SW4-5	Spare
SW4-6	Spare
SW4-7	Address setting switch (master·slave)
SW4-8	Address setting switch (master·slave)
SW5-1	Trial operation
SW5-2	OFF Regular operation
SW5-3	OFF Trial operation mode/cooling
SW5-4	OFF Trial operation mode/heating
SW5-5	OFF Pump down operation
SW5-6	OFF Regular operation
SW5-7	OFF Regular operation
SW5-8	OFF Regular operation
SW6-1~4	Super Link communication
SW6-5	Super Link communication
SW6-6~8	Super Link communication
SW6-9	Spare
SW7	Data clear/insert
SW8	7-segment indicate (unit's place)
SW9	7-segment indicate (ten's place)
TB1,2	Terminal block

Meaning of marks

Mark	Parts name
LT-1~3	D.C reactor
L3	D.C reactor
PSH	High pressure sensor
PSL	Low pressure sensor
PMB1~3	Printed wiring board (PCB)
RT-1~5	Rush current suppression resistor
SV1	Solenoid valve (OMI bypass)
SV6	Solenoid valve (oil separator OMI)
SW1	Address setting SW outdoor unit No. (2 digits)
SW2	Address setting SW indoor unit No. (1 digit)
SW3-1	inspection LED reset
SW3-2/ON	Auto backup operation
SW3-3	OFF Regular operation
SW3-4	OFF Regular operation
SW3-5	OFF Regular operation
SW3-6	OFF Regular operation
SW3-7	OFF Regular operation
SW3-8	OFF Regular operation
SW3-9	OFF Regular operation
SW3-10	OFF Regular operation
SW3-11	OFF Regular operation
SW3-12	OFF Regular operation

Meaning of marks

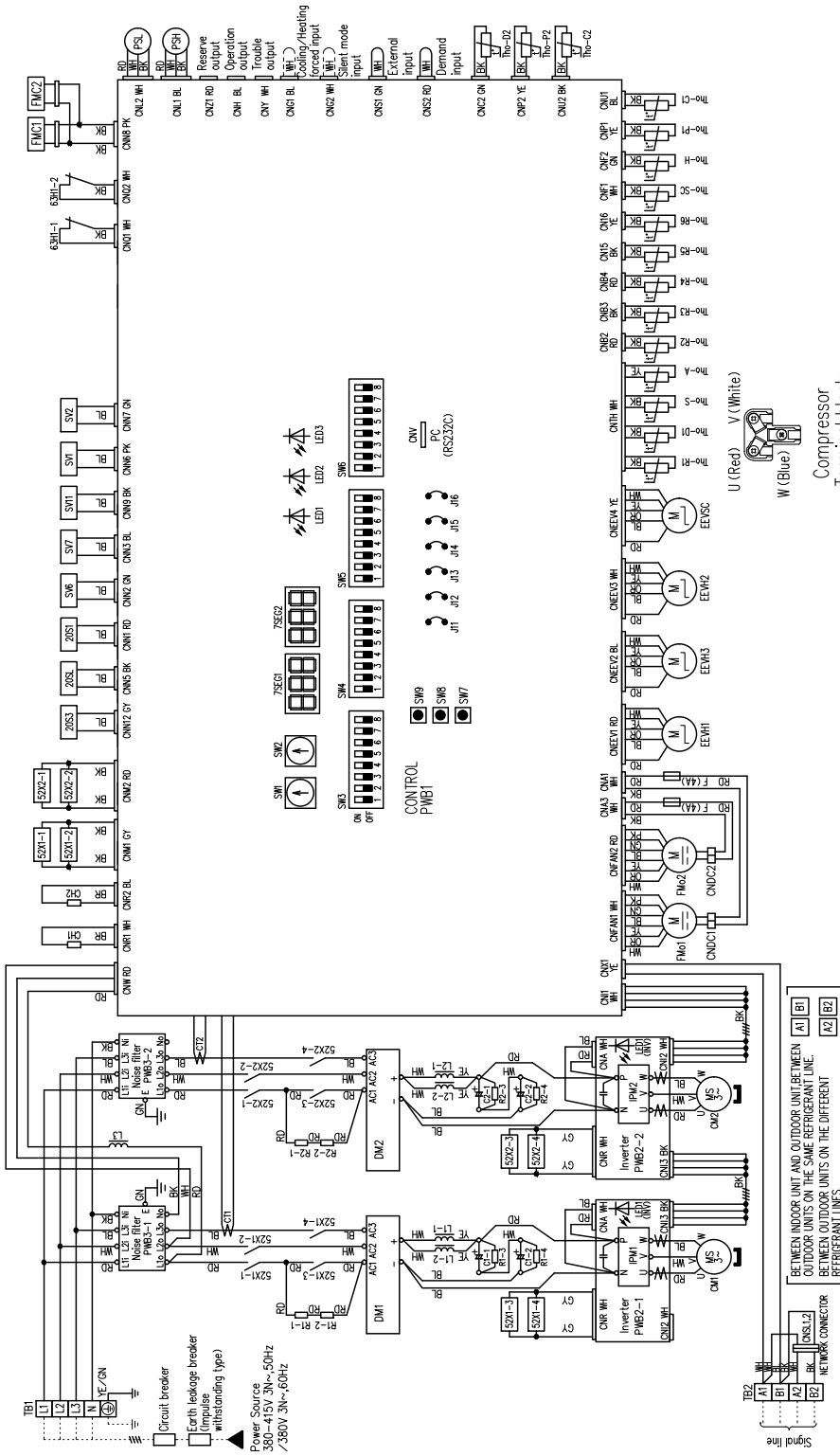
Mark	Parts name
CHT	Crankcase heater
COM1	Compressor motor
CONA-Z	Connector
CT1	Current sensor
CT-1,2	Electrolytic capacitor
DM1	Diode module
EEVH1,2,3	Expansion valve for heating
EEVSC	Expansion valve for SC
F	Fuse
F for IPM	Fan for IPM
FMo1,2	Blower motor
IPM	Intelligent power module
LI1,1,2	Set up model (volt)
LI3	External input select level/pulse
LI4	Defrost recover temp
LI5	Defrost start temp
LI6	Heat recover unit
LI01	Inspection (Red)
LED1 (NV2)	Normal (Yellow) - Flushing
LED2	Normal (Green)
LED3	Service (green for service)

PCB004Z090

Models FDC475KXZRE1, 500KXZRE1, 560KXZRE1
FDC615KXZRE1, 670KXZRE1

Color mark

Mark	Color
BK	Black
BL	Blue
BR	Brown
GN	Green
GY	Gray
OR	Orange
RD	Red
WH	White
YE	Yellow
PK	Pink
YE/ON	Yellow /Green



Terminal block

Mark	Parts name
Tho-2	Terminal block
Tho-A	External air thermostat
Tho-C1,2	Under-dome thermostat
Tho-D1,2	Discharge pipe thermostat
Tho-H	Sub-cooling coil thermostat 2
Tho-P1,2	Power transistor thermostat
Tho-R1	Heat exchanger thermostat (exhaust)
Tho-R2	Heat exchanger thermostat (inlet)
Tho-R3	Heat exchanger thermostat (inlet)
Tho-R4	Heat exchanger thermostat (inlet)
Tho-R5	Heat exchanger thermostat (exhaust)
Tho-R6	Heat exchanger thermostat (inlet)
Tho-SC	Suction pipe thermostat
Tho-SC	Sub-cooling coil thermostat 1
Z0S1	4-way valve
Z0S3	4-way valve
Z0S3L	4-way valve
S2X1-1~2-4	Solenoid for CM
63H1-1,2	High pressure switch (for protection)
7SEG1	7-segment L.E.D. (function indication)
7SEG2	7-segment L.E.D. (data indication)

Compressor Terminal block

Mark	Parts name
SW3-7 (ON)	Forced cooling/heating
SW3-7 (OFF)	Regular operation
SW3-8	Spare
SW4-1~4	Model setting
SW4-5	Spare
SW4-6	Spare
SW4-7	Address setting switch (master-slave)
SW4-8	Address setting switch (master-slave)
SW6-1 (ON)	Regular operation
SW6-2 (ON)	Trial operation
SW6-3 (ON)	Trial operation mode/cooling
SW6-3 (OFF)	Trial operation mode/heating
SW6-3 (ON)	Pump down operation
SW6-4	Spare
SW6-5 (ON)	Super Link communication
SW6-6~8	Spare
SW7	Data clear/insert
SW8	7-segment indicate (unit's place)
SW9	7-segment indicate (ten's place)

Meaning of marks

Mark	Parts name
I,3	D.C.reactior
PSH	High pressure sensor
PSL	Low pressure sensor
CM1~2	Inverter
CM1~2	Compressor motor
CM1~2	Connector
CT1,CT2	Current sensor
CI-1,CI-2	Printed wiring board (PCB)
DM1,2	Rush current suppression resistor
DM1,2	Solenoid valve (CM1;bypass)
EEVH1,2,3	Solenoid valve (oil separator CM1)
EEVSC	Solenoid valve (oil separator CM2)
F	Fuse
FM1,2	Fan for PM
FM1,2	Blower motor
PM	Intelligent power module
U1,1,2	Address setting SW outdoor unit No. (2 digits)
U1,3	Address setting SW outdoor unit No. (1 digit)
U1,4	Auto backup operation
U1,5	Inspection LED reset
U1,6	OFF Regular operation
U1,7	External input select level/pulse
U1,8	Derostat recover temp
U1,9	Spare
U1,10	Refrigerant quantity check
LED1	OFF Regular operation
LED1 (INV)	Inspection (Red)
LED2	Normal (Yellow) -Flashing
LED3	Normal (Green)
U1-1,2,12	Service (Green for service)
U1-1,2,12	D.C.reactior

PCB004Z091

2.4 Noise level

Measured based on JIS B 8616

Mike position as highest noise level in position as below

Distance from front side 1m

Height 1m

No DATA

4 RANGE OF USAGE & LIMITATIONS

• Single use

		Outdoor unit	FDC224KXZRE1	FDC280KXZRE1	FDC335KXZRE1
Item	Refer to page ***				
Indoor intake air temperature (Upper & lower limits)					
Outdoor air temperature (Upper & lower limits)					
Indoor unit	Number of connectable units	1 to 29 units	1 to 37 units	1 to 44 units	
	Total connectable capacity ⁽¹⁾	112 - 448	140 - 560	167 - 670	
Total piping length ⁽²⁾		1000m or less			
Main piping length (from outdoor unit to the first branching)		130m or less			
Maximum piping length from outdoor unit to the furthest indoor unit		Actual length : 160m or less, Equivalent length : 185m or less			
Allowable piping length from the first branching to the furthest indoor unit		90m or less (Difference between the longest and the shortest piping : 40m or less)			
Allowable piping length from the branching controller (PFD box) to the indoor unit		40m or less			
Height difference between outdoor and indoor units	Outdoor unit is above	50m or less			
	Outdoor unit is below	40m or less ⁽³⁾			
Height difference between the indoor units		18m or less			
Height difference between the branching controllers (PFD boxes)		18m or less			
Height difference between the first branching and the indoor unit		18m or less			
Height difference between the branching nearest to the branching controller (PFD box) and the PFD box		Refer to note (4)			
Height difference between the first branching and the branching controller (PFD box)		18m or less			
Height difference between the branching controller (PFD box) and the indoor unit	Indoor unit is above	1m or less			
	Indoor unit is below	4m or less			
Air flow volume and static pressure		Install the duct and air outlet grille with good insulation performance (arranged on site) within the range of fan characteristics. (for ducting models only such as FDU and etc)			
Air filter		Install air filter (arranged on site) at the place for easy maintenance (for ducting models only such as FDU and etc)			
Insulation of refrigerant piping		Insulation with 20mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.			
Insulation of drain piping		Insulation with 10mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.			
Indoor unit atmosphere (inside the ceiling) temperature and humidity (Only the models FDT, FDTC, FDTW, FDTS, FDTQ) (FDU, FDUM, FDQS and FDUH)		Dew-point temperature: 28°C or less, Relative humidity: 80% or less (for FDE, FDK, FDFL, FDFU, FDFW) Dew-point temperature: 23°C or less, Relative humidity: 80% or less			
Compressor start/stop frequency	Minimum operation cycle	5 minutes or more (stop operation- start -stop or start operation-stop-start)			
	Minimum stopping period	3 minutes or more			
Power source voltage	Voltage fluctuation	Within ±10% of rated voltage			
	Voltage drop at starting	Within ±15% of rated voltage			
	Unbalance between phases	Within ±3% of rated voltage			

Note (1) When connecting the indoor unit type FDK, FDFL, FDFU or FDFW series, the total connectable capacity should not exceed 130% of the outdoor unit capacity.

(2) When the total piping length exceeds 510m, 1000cc of additional refrigerant oil should be charged.

(3) When conducting cooling operation at 10°C or lower outdoor air temperature, it must be 30m or less.

(4) When all of following conditions (a) (b) and (c) are established, height difference between the branching nearest to the branching controller (PFD box) and the PFD box should be limited to 4m or less.

(a) When the connected indoor unit model is 22 or 28.

(b) When the piping length from the first branching and the indoor unit is 40m or more.

(c) When the branching controller (PFD box) is installed above the branching nearest to the PFD box.

In such case the size of discharge gas piping between the branching nearest to the branching controller (PFD box) and the PFD box should be increased from φ 6.35 to φ 9.52.

(5) If superlink I (previous superlink) is selected, all the range of usage and limitations, not only the limitations of connectable indoor capacity and connectable number of indoor unit but also of the piping length, operating temperature range and etc., become same as those of KX4 (See technical manual '07 • KX • KXR-T-114). In addition to above limitations, all of new functions for KX6 such as automatic address setting function for multiple refrigerant systems and etc. will be cancelled.

Refer to page ***~*** (4-1. Restrictions on the use of pipes) for detail

Important

When the Additional refrigerant quantity for piping (P) is over the following table, please separate the refrigerant line.

Outdoor unit	Additional refrigerant charging amount
224~335	50

• Single use (For combination use as well)

Outdoor unit		FDC400KXZRE1	FDC450KXZRE1	FDC500KXZRE1
Indoor intake air temperature(Upper & lower limits)		Refer to page ***		
Outdoor air temperature(Upper & lower limits)		Refer to page ***		
Indoor unit	Number of connectable units	1 to 53 units	1 to 60 units	1 to 50 units
	Total connectable capacity ⁽¹⁾	200 - 800	225 - 900	250 - 800
Total piping length ⁽²⁾		1000m or less		
Main piping length (from outdoor unit to the first branching)		130m or less		
Maximum piping length from outdoor unit to the furthest indoor unit		Actual length : 160m or less, Equivalent length : 185m or less		
Allowable piping length from the first branching to the furthest indoor unit		90m or less (Difference between the longest and the shortest piping : 40m or less)		
Allowable piping length from the branching controller (PFD box) to the indoor unit		40m or less		
Height difference between outdoor and indoor units	Outdoor unit is above	50m or less		
	Outdoor unit is below	40m or less ⁽³⁾		
Height difference between the indoor units		18m or less		
Height difference between the branching controllers		18m or less		
Height difference between the first branching and the indoor unit		18m or less		
Height difference between the branching nearest to the branching controller (PFD box) and the PFD box		Refer to note (4)		
Height difference between the first branching and the branching controller (PFD box)		18m or less		
Height difference between the branching controller (PFD box) and the indoor unit	Indoor unit is above	1m or less		
	Indoor unit is below	4m or less		
Air flow volume and static pressure		Install the duct and air outlet grille with good insulation performance (arranged on site) within the range of fan characteristics. (for ducting models only such as FDU and etc)		
Air filter		Install air filter (arranged on site) at the place for easy maintenance (for ducting models only such as FDU and etc)		
Insulation of refrigerant piping		Insulation with 20mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.		
Insulation of drain piping		Insulation with 10mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.		
Indoor unit atmosphere (inside the ceiling) temperature { Only the models FDT, FDTC, FDTW, FDTs, FDTQ } { FDU, FDUM, FDQS and FDUH }		Dew-point temperature: 28°C or less, Relative humidity: 80% or less (for FDE, FDK, FDFL, FDFU, FDFW) Dew-point temperature: 23°C or less, Relative humidity: 80% or less		
Compressor start/stop frequency	Minimum operation cycle	5minutes or more (stop operation- start -stop or start operation-stop-start)		
	Minimum stopping period	3minutes or more		
Power source voltage	Voltage fluctuation	Within ±10% of rated voltage		
	Voltage drop at starting	Within ±15% of rated voltage		
	Unbalance between phases	Within ±3% of rated voltage		

Note (1) When connecting the indoor unit type FDK, FDFL, FDFU or FDFW series, the total connectable capacity should not exceed 130% of the outdoor unit capacity.

(2) When the total piping length exceeds 510m, 1000cc of additional refrigerant oil should be charged.

(3) When conducting cooling operation at 10°C or lower outdoor air temperature, it must be 30m or less.

(4) When all of following conditions (a) (b) and (c) are established, height difference between the branching nearest to the branching controller (PFD box) and the indoor unit should be limited to 4m or less.

(a) When the connected indoor unit model is 22 or 28.

(b) When the piping length from the first branching and the indoor unit is 40m or more.

(c) When the branching controller (PFD box) is installed above the branching nearest to the PFD box.

In such case the size of discharge gas piping between the branching nearest to the branching controller (PFD box) and the PFD box should be increased from φ 6.35 to φ 9.52.

(5) If superlink I (previous superlink) is selected, all the range of usage and limitations, not only the limitations of connectable indoor capacity and connectable number of indoor unit but also of the piping length, operating temperature range and etc., become same as those of KX4 (See technical manual '07 • KX • KXR-T-114). In addition to above limitations, all of new functions for KX6 such as automatic address setting function for multiple refrigerant systems and etc. will be cancelled.

Important

When the calculation result of additional refrigerant charging amount exceeds the value mentioned in following table, please split the refrigerant system into two.

Outdoor unit	Additional refrigerant charging amount
400-500	50

• Single use (For combination use as well)

Outdoor unit		FDC560KXZRE1	FDC615KXZRE1	FDC670KXZRE1
Indoor intake air temperature(Upper & lower limits)		Refer to page ***		
Outdoor air temperature(Upper & lower limits)				
Indoor unit	Number of connectable units	1 to 59 units	2 to 65 units	2 to 71 units
	Total connectable capacity ⁽¹⁾	280 - 896	308 - 984	335 - 1172
Total piping length ⁽²⁾		1000m or less		
Main piping length (from outdoor unit to the first branching)		130m or less		
Maximum piping length from outdoor unit to the furthest indoor unit		Actual length : 160m or less, Equivalent length : 185m or less		
Allowable piping length from the first branching to the furthest indoor unit		90m or less (Difference between the longest and the shortest piping : 40m or less)		
Allowable piping length from the branching controller (PFD box) to the indoor unit		40m or less		
Height difference between outdoor and indoor units	Outdoor unit is above	50m or less		
	Outdoor unit is below	40m or less ⁽³⁾		
Height difference between the indoor units		18m or less		
Height difference between the branching controllers		18m or less		
Height difference between the first branching and the branching controller (PFD box) and the PFD box		18m or less		
Height difference between the first branching and the branching controller (PFD box)		Refer to note (4)		
Height difference between the branching controller (PFD box) and the indoor unit	Indoor unit is above	1m or less		
	Indoor unit is below	4m or less		
Air flow volume and static pressure		Install the duct and air outlet grille with good insulation performance (arranged on site) within the range of fan characteristics. (for ducting models only such as FDU and etc)		
Air filter		Install air filter (arranged on site) at the place for easy maintenance (for ducting models only such as FDU and etc)		
Insulation of refrigerant piping		Insulation with 20mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.		
Insulation of drain piping		Insulation with 10mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.		
Indoor unit atmosphere (inside the ceiling) temperature [Only the models FDT, FDTC, FDTW, FDTS, FDTQ] [FDU, FDUM, FDQS and FDUH]		Dew-point temperature: 28°C or less, Relative humidity: 80% or less (for FDE, FDK, FDFL, FDFU, FDFW) Dew-point temperature: 23°C or less, Relative humidity: 80% or less		
Compressor start/stop frequency	Minimum operation cycle	5minutes or more (stop operation- start -stop or start operation-stop-start)		
	Minimum stopping period	3minutes or more		
Power source voltage	Voltage fluctuation	Within ±10% of rated voltage		
	Voltage drop at starting	Within ±15% of rated voltage		
	Unbalance between phases	Within ±3% of rated voltage		

Note (1) When connecting the indoor unit type FDK, FDFL, FDFU or FDFW series, the total connectable capacity should not exceed 130% of the outdoor unit capacity.

(2) When the total piping length exceeds 510m, 1000cc of additional refrigerant oil should be charged.

(3) When conducting cooling operation at 10°C or lower outdoor air temperature, it must be 30m or less.

(4) When all of following conditions (a) (b) and (c) are established, height difference between the branching nearest to the branching controller (PFD box) and the indoor unit should be limited to 4m or less.

(a) When the connected indoor unit model is 22 or 28.

(b) When the piping length from the first branching and the indoor unit is 40m or more.

(c) When the branching controller (PFD box) is installed above the branching nearest to the PFD box.

In such case the size of discharge gas piping between the branching nearest to the branching controller (PFD box) and the PFD box should be increased from φ 6.35 to φ 9.52.

(5) If superlink I (previous superlink) is selected, all the range of usage and limitations, not only the limitations of connectable indoor capacity and connectable number of indoor unit but also of the piping length, operating temperature range and etc., become same as those of KX4 (See technical manual '07 • KX • KXR-T-114). In addition to above limitations, all of new functions for KX6 such as automatic address setting function for multiple refrigerant systems and etc. will be cancelled.

Important

When the calculation result of additional refrigerant charging amount exceeds the value mentioned in following table, please split the refrigerant system into two.

Outdoor unit	Additional refrigerant charging amount
560-670	50

•Combination use

		Outdoor unit	FDC735KXZRE1	FDC800KXZRE1	FDC850KXZRE1	FDC900KXZRE1	FDC950KXZRE1
Item							
Indoor intake air temperature(Upper & lower limits)		Refer to page ***					
Outdoor air temperature(Upper & lower limits)		Refer to page ***					
Indoor unit	Number of connectable units	2 to 78 units	2 to 80 units	2 to 80 units	2 to 80 units	2 to 80 units	2 to 80 units
	Total connectable capacity ⁽¹⁾	368 - 1176	400 - 1280	425 - 1360	450 - 1440	475 - 1520	475 - 1520
Total piping length ⁽²⁾		1000m or less					
Main piping length (from outdoor unit to the first branching)		130m or less					
Maximum piping length from outdoor unit to the furthest indoor unit		Actual length : 160m or less, Equivalent length : 185m or less					
Allowable piping length from the first branching to the furthest indoor unit		90m or less (Difference between the longest and the shortest piping : 40m or less)					
Allowable piping length from the branching controller (PFD box) to the indoor unit		40m or less					
Height difference between outdoor and indoor units	Outdoor unit is above	50m or less					
	Outdoor unit is below	40m or less ⁽³⁾					
Height difference between the indoor units		18m or less					
Height difference between the branching controllers		18m or less					
Height difference between the first branching and the indoor unit		18m or less					
Height difference between the branching nearest to the branching controller (PFD box) and the PFD box		Refer to note (4)					
Height difference between the first branching and the branching controller (PFD box)		18m or less					
Height difference between the branching controller (PFD box) and the indoor unit	Indoor unit is above	1m or less					
	Indoor unit is below	4m or less					
Height difference between master and slave outdoor units		0.4m or less					
Height difference between the outdoor unit and the outdoor side branching		5m or less					
Allowable piping length of oil equalization piping		10m or less					
Air flow volume and static pressure		Install the duct and air outlet grille with good insulation performance (arranged on site) within the range of fan characteristics. (for ducting models only such as FDU and etc)					
Air filter		Install air filter (arranged on site) at the place for easy maintenance (for ducting models only such as FDU and etc)					
Insulation of refrigerant piping		Insulation with 20mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.					
Insulation of drain piping		Insulation with 10mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.					
Indoor unit atmosphere (inside the ceiling) temperature and humidity { Only the models FDT, FDTC, FDTW, FDTS, FDTQ } { FDU, FDUM, FDQS and FDUH }		Dew-point temperature: 28°C or less, Relative humidity: 80% or less (for FDE, FDK, FDFL, FDFU, FDFW) Dew-point temperature: 23°C or less, Relative humidity: 80% or less					
Compressor start/stop frequency	Minimum operation cycle	5minutes or more (stop operation- start -stop or start operation-stop-start)					
	Minimum stopping period	3minutes or more					
Power source voltage	Voltage fluctuation	Within ±10% of rated voltage					
	Voltage drop at starting	Within ±15% of rated voltage					
	Unbalance between phases	Within ±3% of rated voltage					

Note (1) When connecting the indoor unit type FDK, FDFL, FDFU or FDFW series, the total connectable capacity should not exceed 130% of the outdoor unit capacity.

(2) When the total piping length exceeds 510m, 1000cc of additional refrigerant oil should be charged.

(3) When conducting cooling operation at 10°C or lower outdoor air temperature, it must be 30m or less.

(4) When all of following conditions (a) (b) and (c) are established, height difference between the branching nearest to the branching controller (PFD box) and the indoor unit should be limited to 4m or less.

(a) When the connected indoor unit model is 22 or 28.

(b) When the piping length from the first branching and the indoor unit is 40m or more.

(c) When the branching controller (PFD box) is installed above the branching nearest to the PFD box.

In such case the size of discharge gas piping between the branching nearest to the branching controller (PFD box) and the PFD box should be increased from $\phi 6.35$ to $\phi 9.52$.

(5) If superlink I (previous superlink) is selected, all the range of usage and limitations, not only the limitations of connectable indoor capacity and connectable number of indoor unit but also of the piping length, operating temperature range and etc., become same as those of KX4 (See technical manual '07 • KX • KXR-T-114). In addition to above limitations, all of new functions for KX6 such as automatic address setting function for multiple refrigerant systems and etc. will be cancelled.

Important

When the calculation result of additional refrigerant charging amount exceeds the value mentioned in following table, please split the refrigerant system into two.

Outdoor unit	Additional refrigerant charging amount
735-950	100

• Combination use

Outdoor unit		FDC1000 KXZRE1	FDC1060 KXZRE1	FDC1120 KXZRE1	FDC1200 KXZRE1	FDC1250 KXZRE1	FDC1300 KXZRE1	FDC1350 KXZRE1
Item								
Indoor intake air temperature (Upper & lower limits)		Refer to page ***						
Outdoor air temperature (Upper & lower limits)		Refer to page ***						
Indoor unit	Number of connectable units	2 to 80 units	2 to 80 units	2 to 80 units	3 to 80 units	3 to 80 units	3 to 80 units	3 to 80 units
	Total connectable capacity ⁽¹⁾	500 - 1300	530 - 1378	560 - 1456	600 - 1560	625 - 1625	650 - 1690	675 - 1755
Total piping length ⁽²⁾		1000m or less						
Main piping length (from outdoor unit to the first branching)		130m or less						
Maximum piping length from outdoor unit to the furthest indoor unit		Actual length : 160m or less, Equivalent length : 185m or less						
Allowable piping length from the first branching to the furthest indoor unit		90m or less (Difference between the longest and the shortest piping : 40m or less)						
Allowable piping length from the branching controller (PFD box) to the indoor unit		40m or less						
Height difference between outdoor and indoor units	Outdoor unit is above	50m or less						
	Outdoor unit is below	40m or less ⁽³⁾						
Height difference between the indoor units		18m or less						
Height difference between the branching controllers		18m or less						
Height difference between the first branching and the indoor unit		18m or less ⁽⁴⁾						
Height difference between the branching nearest to the branching controller (PFD box) and the PFD box		Refer to note (4)						
Height difference between the first branching and the branching controller (PFD box)		18m or less						
Height difference between the branching controller (PFD box) and the indoor unit	Indoor unit is above	1m or less						
	Indoor unit is below	4m or less						
Height difference between master and slave outdoor units		0.4m or less						
Height difference between the outdoor unit and the outdoor side branching		5m or less						
Allowable piping length of oil equalization piping		10m or less						
Air flow volume and static pressure		Install the duct and air outlet grille with good insulation performance (arranged on site) within the range of fan characteristics. (for ducting models only such as FDU and etc)						
Air filter		Install air filter (arranged on site) at the place for easy maintenance (for ducting models only such as FDU and etc)						
Insulation of refrigerant piping		Insulation with 20mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.						
Insulation of drain piping		Insulation with 10mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.						
Indoor unit atmosphere (inside the ceiling) temperature and humidity [Only the models FDT, FDTC, FDTW, FDTS, FDTQ] [FDU, FDUM, FDQS and FDUH]		Dew-point temperature: 28°C or less, Relative humidity: 80% or less (for FDE, FDK, FDFL, FDFU, FDFW) Dew-point temperature: 23°C or less, Relative humidity: 80% or less						
Compressor start/stop frequency	Minimum operation cycle	5minutes or more (stop operation- start -stop or start operation-stop-start)						
	Minimum stopping period	3minutes or more						
Power source voltage	Voltage fluctuation	Within ±10% of rated voltage						
	Voltage drop at starting	Within ±15% of rated voltage						
	Unbalance between phases	Within ±3% of rated voltage						

Note (1) When connecting the indoor unit type FDK, FDFL, FDFU or FDFW series, the total connectable capacity should not exceed 130% of the outdoor unit capacity.

(2) When the total piping length exceeds 510m, 1000cc of additional refrigerant oil should be charged.

(3) When conducting cooling operation at 10°C or lower outdoor air temperature, it must be 30m or less.

(4) When all of following conditions (a) (b) and (c) are established, height difference between the branching nearest to the branching controller (PFD box) and the indoor unit should be limited to 4m or less.

(a) When the connected indoor unit model is 22 or 28.

(b) When the piping length from the first branching and the indoor unit is 40m or more.

(c) When the branching controller (PFD box) is installed above the branching nearest to the PFD box.

In such case the size of discharge gas piping between the branching nearest to the branching controller (PFD box) and the PFD box should be increased from φ6.35 to φ9.52.

(5) If superlink I (previous superlink) is selected, all the range of usage and limitations, not only the limitations of connectable indoor capacity and connectable number of indoor unit but also of the piping length, operating temperature range and etc., become same as those of KX4 (See technical manual '07 • KX • KXR-T-114). In addition to above limitations, all of new functions for KX6 such as automatic address setting function for multiple refrigerant systems and etc. will be cancelled.

Important

When the calculation result of additional refrigerant charging amount exceeds the value mentioned in following table, please split the refrigerant system into two.

Outdoor unit	Additional refrigerant charging amount
1000-1350	100

• Combination use

Outdoor unit		FDC1425 KXZRE1	FDC1450 KXZRE1	FDC1500 KXZRE1	FDC1560 KXZRE1	FDC1620 KXZRE1	FDC1680 KXZRE1
Item							
Indoor intake air temperature (Upper & lower limits)		Refer to page ***					
Outdoor air temperature (Upper & lower limits)		Refer to page ***					
Indoor unit	Number of connectable units	3 to 80 units	3 to 80 units	3 to 80 units	3 to 80 units	3 to 80 units	3 to 80 units
	Total connectable capacity ⁽¹⁾	713 - 1852	725 - 1885	750 - 1950	780 - 2028	810 - 2106	840 - 2184
Total piping length ⁽²⁾		1000m or less					
Main piping length (from outdoor unit to the first branching)		130m or less					
Maximum piping length from outdoor unit to the furthest indoor unit		Actual length : 160m or less, Equivalent length : 185m or less					
Allowable piping length from the first branching to the furthest indoor unit		90m or less (Difference between the longest and the shortest piping : 40m or less)					
Allowable piping length from the branching controller (PFD box) to the indoor unit		40m or less					
Height difference between outdoor and indoor units	Outdoor unit is above	50m or less					
	Outdoor unit is below	40m or less ⁽³⁾					
Height difference between the indoor units		18m or less					
Height difference between the branching controllers		18m or less					
Height difference between the first branching and the indoor unit		18m or less ⁽⁴⁾					
Height difference between the branching nearest to the branching controller (PFD box) and the PFD box		Refer to note (4)					
Height difference between the first branching and the branching controller (PFD box)		18m or less					
Height difference between the branching controller (PFD box) and the indoor unit	Indoor unit is above	1m or less					
	Indoor unit is below	4m or less					
Height difference between master and slave outdoor units		0.4m or less					
Height difference between the outdoor unit and the outdoor side branching		5m or less					
Allowable piping length of oil equalization piping		10m or less					
Air flow volume and static pressure		Install the duct and air outlet grille with good insulation performance (arranged on site) within the range of fan characteristics. (for ducting models only such as FDU and etc)					
Air filter		Install air filter (arranged on site) at the place for easy maintenance (for ducting models only such as FDU and etc)					
Insulation of refrigerant piping		Insulation with 20mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.					
Insulation of drain piping		Insulation with 10mm or more thickness is required when the relative humidity exceeds 70% in such surroundings as inside of ceiling and etc.					
Indoor unit atmosphere (inside the ceiling) temperature and humidity [Only the models FDT, FDTC, FDTW, FDTS, FDTQ] [FDU, FDUM, FDQS and FDUH]		Dew-point temperature: 28°C or less, Relative humidity: 80% or less (for FDE, FDK, FDFL, FDFU, FDFW) Dew-point temperature: 23°C or less, Relative humidity: 80% or less					
Compressor start/stop frequency	Minimum operation cycle	5minutes or more (stop operation- start -stop or start operation-stop-start)					
	Minimum stopping period	3minutes or more					
Power source voltage	Voltage fluctuation	Within ±10% of rated voltage					
	Voltage drop at starting	Within ±15% of rated voltage					
	Unbalance between phases	Within ±3% of rated voltage					

Note (1) When connecting the indoor unit type FDK, FDFL, FDFU or FDFW series, the total connectable capacity should not exceed 130% of the outdoor unit capacity.

(2) When the total piping length exceeds 510m, 1000cc of additional refrigerant oil should be charged.

(3) When conducting cooling operation at 10°C or lower outdoor air temperature, it must be 30m or less.

(4) When all of following conditions (a) (b) and (c) are established, height difference between the branching nearest to the branching controller (PFD box) and the indoor unit should be limited to 4m or less.

(a) When the connected indoor unit model is 22 or 28.

(b) When the piping length from the first branching and the indoor unit is 40m or more.

(c) When the branching controller (PFD box) is installed above the branching nearest to the PFD box.

In such case the size of discharge gas piping between the branching nearest to the branching controller (PFD box) and the PFD box should be increased from φ6.35 to φ9.52.

(5) If superlink I (previous superlink) is selected, all the range of usage and limitations, not only the limitations of connectable indoor capacity and connectable number of indoor unit but also of the piping length, operating temperature range and etc., become same as those of KX4 (See technical manual '07 • KX • KXR-T-114). In addition to above limitations, all of new functions for KX6 such as automatic address setting function for multiple refrigerant systems and etc. will be cancelled.

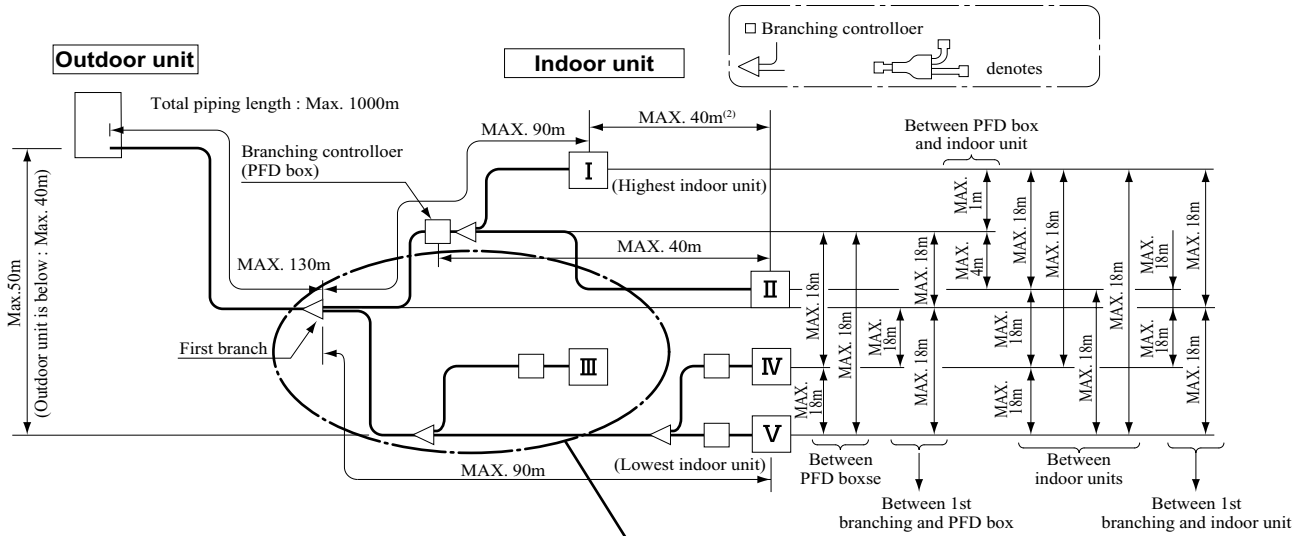
Important

When the calculation result of additional refrigerant charging amount exceeds the value mentioned in following table, please split the refrigerant system into two.

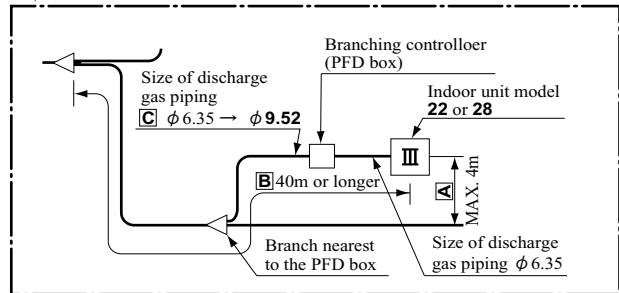
Outdoor unit	Additional refrigerant charging amount
1425-1680	100

Allowable length of refrigerant piping, height difference between indoor and outdoor unit

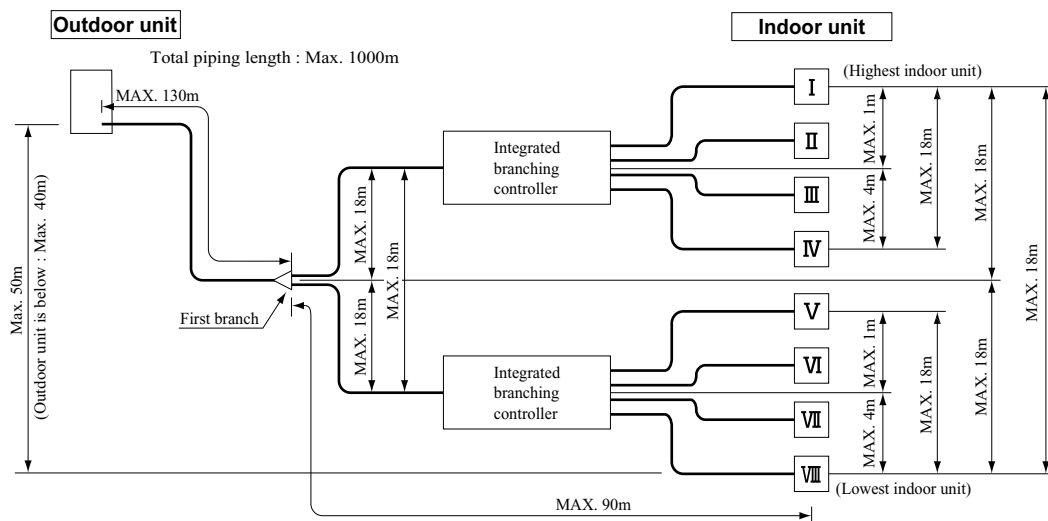
(a) Single use
1) Branching system



- Note (1) When all of following conditions (a), (b) and (c) are established, height difference **A** shown in right figure is limited to **4m or less**.
- (a) When the connected indoor unit **model is 22 or 28**.
 - (b) When the piping length **B** is **40m or more**.
 - (c) When the PFD box is installed above the branching nearest to the PFD box.
- Size of discharge gas piping **C** should be increased from $\phi 6.35$ to $\phi 9.52$.
- (2) Do not install any large traps () or bumps () exceeded **500mm** in height in the piping system.
 - (3) Difference between the longest and shortest piping : **40m or less**.

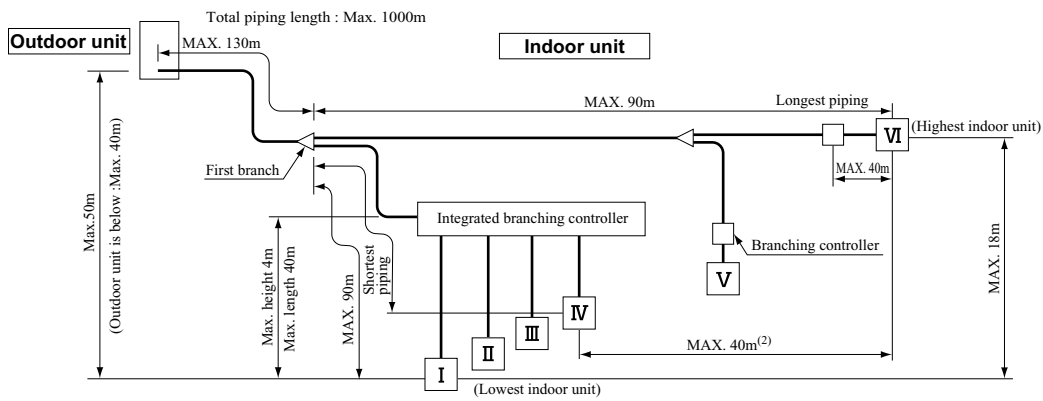




2) Integrated branching system



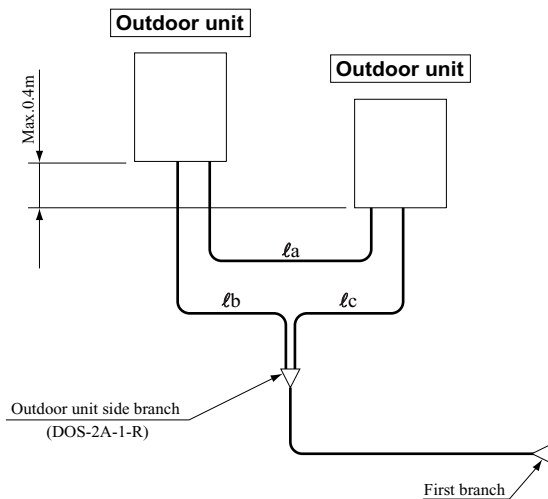
- Note (1) Do not install any large traps () or bumps () exceeded **500mm** in height in the piping system.

3) Mixed system (Branching controller and Integrated branching controller)



Note (1) Do not install any large traps () or bumps () exceeded 500mm in height in the piping system.
 (2) Difference between the longest and shortest piping : 40m or less.

(b) Combination use



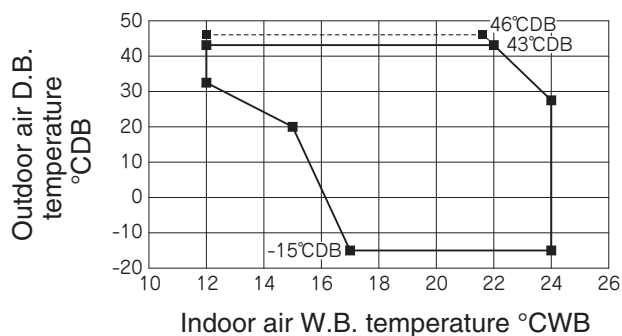
Allowable piping length

- Equalizing oil pipe $l_a \leq 10\text{m}$
- Refrigerant piping $l_b \leq 5\text{m}$
- Refrigerant piping $l_c \leq 5\text{m}$

Note (1) Limitations other than above are the same as that for the single use.

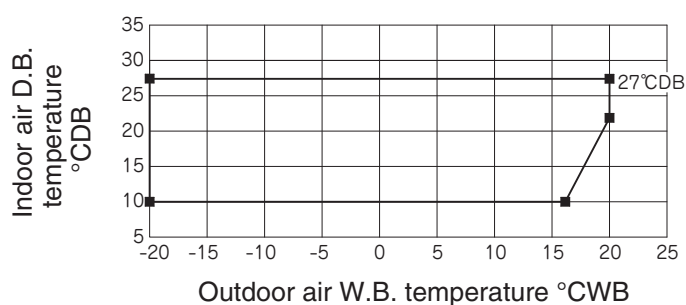
Operating temperature range

Cooling operation



*In case it is the promised installation location that the outdoor unit is used on conditions with

Heating operation



Note(1) Mixed operation of cooling/heating is prohibited with the outdoor air temperature at -5°C or lower.

“CAUTION” Cooling operation under low outdoor air temperature conditions

KXZR models can be operated in cooling mode at low outdoor air temperature condition within above temperature range.

However in case of severely low temperature conditions if the following precaution is not observed, it may not be operated in spite of operable temperature range mentioned above and cooling capacity may not be established under certain conditions.

[Precaution]

In case of severely low temperature condition

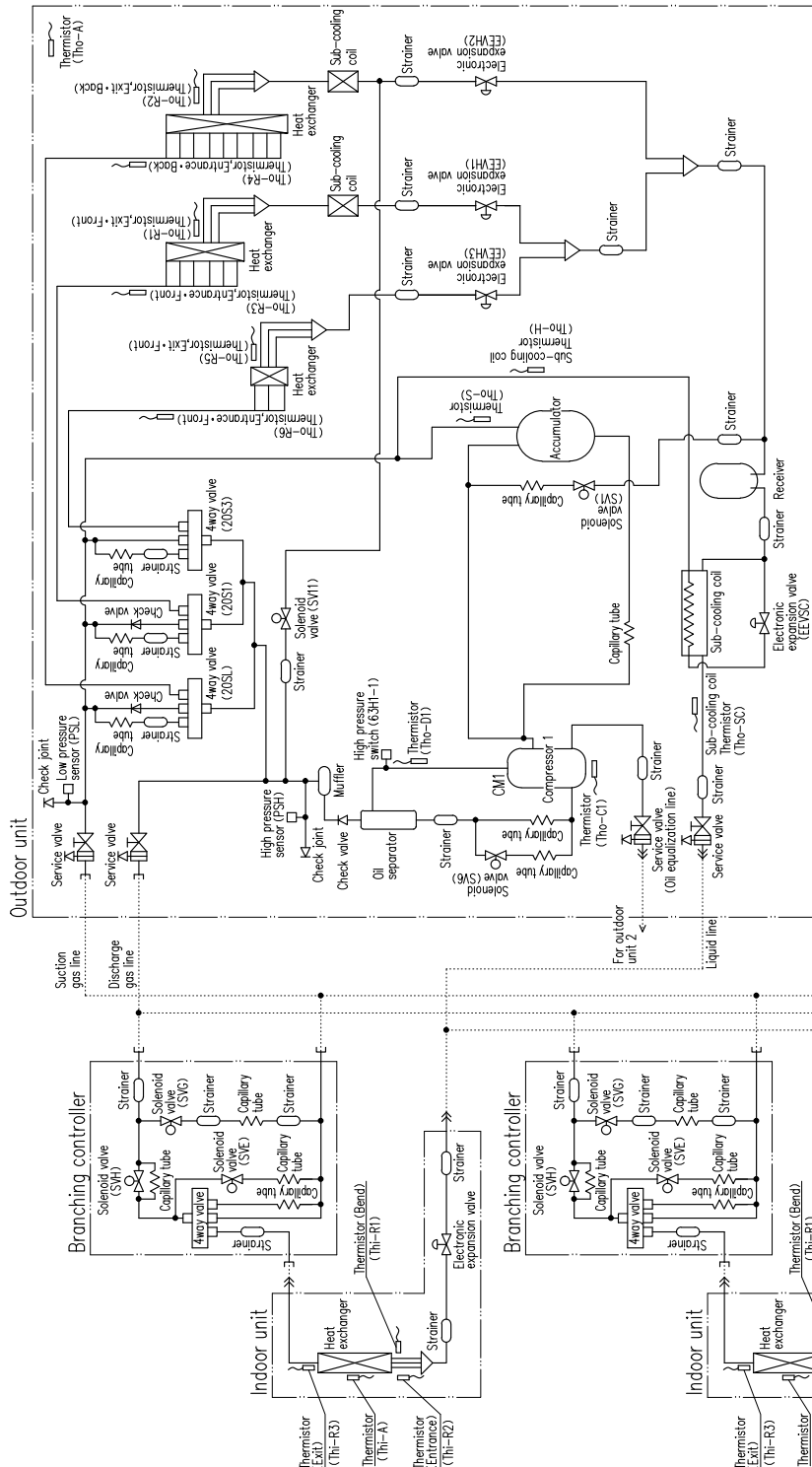
- 1) Install the outdoor unit at the place where strong wind cannot blow directly into the outdoor unit.
- 2) If there is no installation place where can prevent strong wind from directly blowing into the outdoor unit, prepare a windbreak fence or something like that locally in order to divert the strong wind from the outdoor unit.

[Reason]

Under the low outdoor air temperature conditions of -5°C or lower, if strong wind directly blow into the outdoor unit, the outdoor heat exchanger temperature will drop, even though the outdoor fan is stopped by outdoor fan control. This makes high and low pressures to drop as well. This low pressure drop makes the indoor heat exchanger temperature to drop and will activate anti-frost control at indoor heat exchanger at frequent intervals, that cooling operation may not be established for any given time.

4. PIPING SYSTEM

Models FDC224KXZRE1, 280KXZRE1, 335KXZRE1

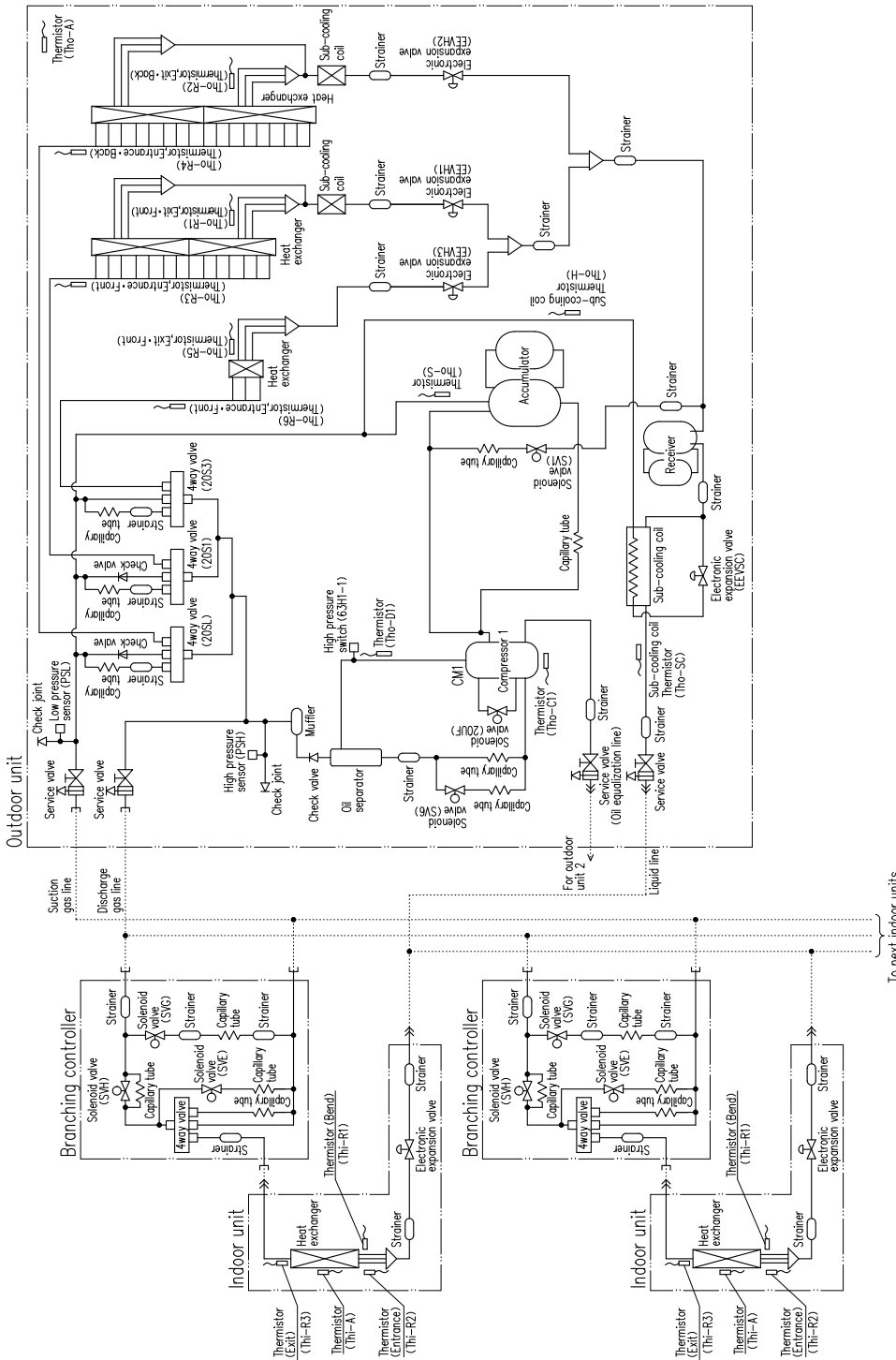


- Thi-R1, R2 : Heating operation : Indoor fan control.
Cooling operation : Frost prevention control.
Super heat control.
- Thi-R3 : For super heat control of cooling operation.
- Tho-D : For control of discharge pipe temperature.
- Tho-C : For control of temperature under the dome.
- Tho-S : For control of suction pipe temp
- Tho-R1,R2,R5 : For control of defrosting.
- Tho-A : For control of defrosting.
- Tho-R3, R4,R6 : Electronic expansion valve (EEVH1, 2) control of heating operation.
- Tho-SC : Electronic expansion valve (EEVSC) control of cooling operation.
- Tho-H : For super heat control of sub-cooling coil.

- Notes (1) Preset point of protective devices
63H1-1 : Open 4.15MPa, Close 3.15MPa
(For protection)
- (2) Function of thermisto
PSH : For compressor control
3.70 ON (MPa)
PSL : ON 0.18MPa, OFF 0.20MPa
(For compressor control)
ON 0.134MPa, OFF 0.18MPa
(For protection)

PCB004Z092

Models FDC400KXZRE1, 450KXZRE1

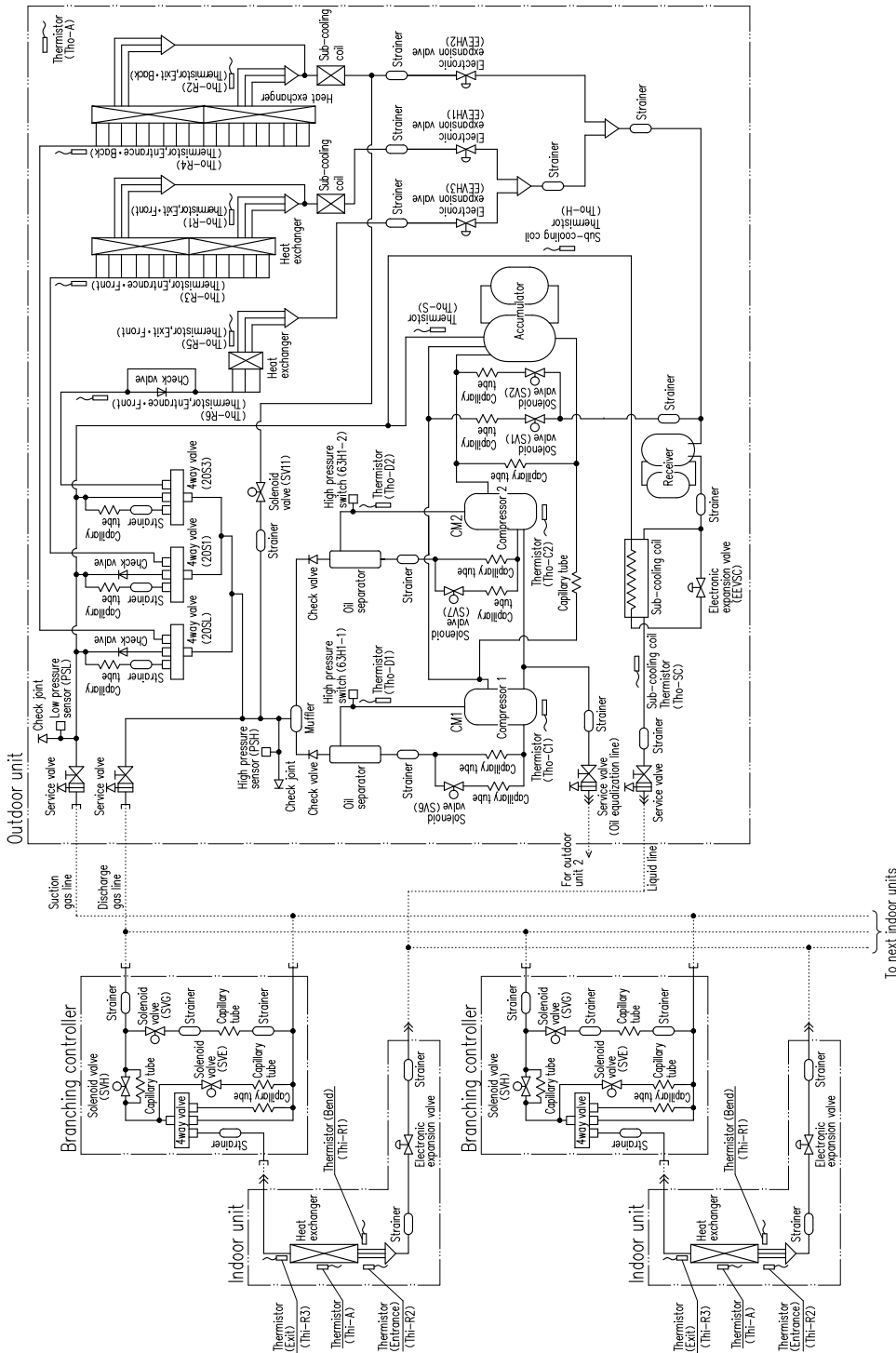


- Notes (1) Preset point of protective devices
 63HI-1 : Open 4.15MPa, Close 3.15MPa
 (For protection)
- (2) Function of thermosto
- PSH : For compressor control
 3.70 ON (MPa)
- PSL : ON 0.18MPa, OFF 0.20MPa
 (For compressor control)
 ON 0.134MPa, OFF 0.18MPa
 (For protection)

- Thi-R1, R2 : Heating operation : Indoor fan control.
 Cooling operation : Frost prevention control.
 Super heat control.
- Thi-R3 : For super heat control of cooling operation.
- Tho-D : For control of discharge pipe temperature.
- Tho-C : For control of temperature under the dome.
- Tho-S : For control of suction pipe tempe
- Tho-R1,R2,R5 : For control of defrosting.
- Tho-A : For control of defrosting.
- Tho-R3, R4,R6 : Electronic expansion valve (EEVH1, 2) control of heating operation.
- Tho-SC : Electronic expansion valve (EEVSC) control of cooling operation.
- Tho-H : For super heat control of sub-cooling coil.

PCB004Z093

**Models FDC475KXZRE1, 500KXZRE1, 560KXZRE1
FDC615KXZRE1, 670KXZRE1**



Notes (1) Preset point of protective devices
63H1-1, 2 : Open 4.15MPa, Close 3.15MPa
(For protection)

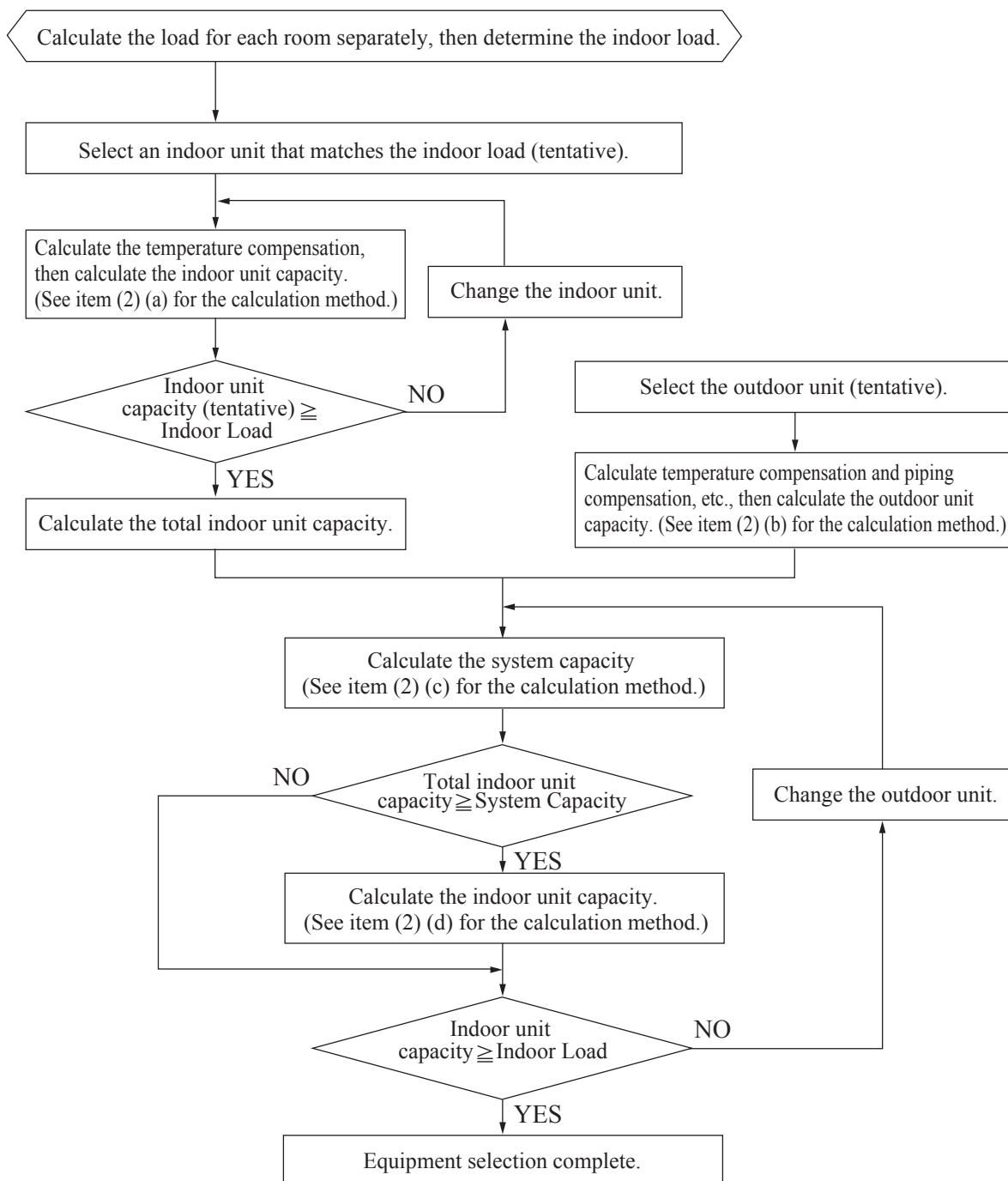
(2) Function of thermisto
PSH : For compressor control
3.70 ON (MPa)
PSL : ON 0.18MPa, OFF 0.20MPa
(For compressor control)
ON 0.134MPa, OFF 0.18MPa
(For protection)

Thi-R1, R2 : Heating operation : Indoor fan control.
Cooling operation : Frost prevention control.
Super heat control.
Thi-R3 : For super heat control of cooling operation.
Tho-D1, D2 : For control of discharge pipe temperature.
Tho-C1, C2 : For control of temperature under the dome.
Tho-S : For control of suction pipe temperature.
Tho-R1, R2, R5 : For control of defrosting.
Tho-A : For control of defrosting.
Tho-R3, R4, R6 : Electronic expansion valve (EEVH1, 2) control of heating operation.
Tho-SC : Electronic expansion valve (EEVSC) control of cooling operation.
Tho-H : For super heat control of sub-cooling coil.

PCB004Z094

5. SELECTION CHART

(1) Equipment selection flo



(2) Capacity calculation method

(a) Calculating the indoor unit capacity compensation

Indoor unit capacity (cooling, heating) = Indoor unit total rated capacity

× Capacity compensation coefficient according to temperature conditions

See item (3) (a) concerning the capacity compensation coefficient according to temperature conditions.

(b) Calculating the outdoor unit capacity compensation

Outdoor Unit Capacity (Cooling, Heating) = Outdoor unit rated capacity (rated capacity when 100% connected)

× Capacity compensation coefficient according to temperature conditions

× Capacity compensation coefficient according to piping length

× Capacity compensation coefficient according to height difference

- × Correction of heating capacity in relation to the frost on the outdoor unit heat exchanger
- × Capacity compensation coefficient according to indoor unit connection capacity
- × Correction of cooling capacity in relation to the anti-frost on the indoor unit heat exchanger

- ① See item (3) (a) concerning the capacity compensation coefficient according to temperature conditions.
- ② See item (3) (b) concerning the capacity compensation coefficient according to piping length.
- ③ See item (3) (c) concerning the capacity compensation coefficient according to height difference. This compensation should be carried out only in cases where the outdoor unit is lower during cooling and higher during heating.
- ④ See item (3) (d) correction of heating capacity in relation to the frost on the outdoor unit heat exchanger. This compensation should be carried out only when calculating the heating capacity.
- ⑤ See item (3) (e) concerning the capacity compensation coefficient according to indoor unit connected capacity. This compensation should be carried out only in cases where the indoor unit total capacity is 100% or higher.
- ⑥ See item (3) (f) correction of cooling capacity in relation to the anti-frost on the indoor unit heat exchanger. This compensation should be carried out only when calculating the cooling capacity.

(c) Calculating system capacity

Compare the capacities determined in items (a) and (b) above and let the smaller value be the system capacity (cooling, heating).

- ① In cases where indoor unit total capacity (cooling, heating) > outdoor unit capacity (cooling, heating)
System capacity (cooling, heating) = Outdoor unit capacity (cooling, heating)
- ② In cases where indoor unit total capacity (cooling, heating) < outdoor unit capacity (cooling, heating)
System capacity (cooling, heating) = Indoor unit capacity (cooling, heating)

(d) Calculating indoor unit capacity [item (c) ① only]

Indoor unit capacity (cooling, heating) = System capacity (cooling, heating)
× [(Indoor unit capacity) / (Indoor unit total capacity)]

Capacity calculation examples

Example 1

Cooling (when the indoor unit connected total capacity is less than 100%)

- Outdoor unit FDC450KXZRE1 1 Unit
- Indoor unit FDT56KXE6F 7 Units, All fan tap: PHi
- Piping length 60 m (Equivalent length)
- Indoor, outdoor unit height difference 15 m (Outdoor unit is lower)
- Temperature conditions Outdoor temperature: 33°C DB
- Temperature conditions Indoor temperature: 19°C WB

<Indoor unit total cooling capacity>: Item (2) (a) calculation.

- Indoor unit rated cooling capacity: 5.6 kW
- Capacity compensation coefficient according to temperature conditions:
1.02 (Calculated according to Indoor 19°C WB / Outdoor 33°C DB); (See page 28)
Indoor unit cooling capacity: 5.6 kW × 1.02 ≈ 5.7 kW
- Indoor unit total cooling capacity calculation;
indoor unit total cooling capacity: 5.7 kW × 7 units = 39.9 kW

<Outdoor unit maximum cooling capacity> : Item (2) (b) calculation

- Outdoor unit rated cooling capacity: 45.0 kW
- Capacity compensation coefficient according to temperature conditions:
1.02 (Calculated according to Indoor 19°C WB / Outdoor 33°C DB); (See page 28)
Outdoor unit cooling capacity: 45.0 kW × 1.02 ≈ 45.9 kW
- Capacity compensation coefficient according to piping length: 0.94 (calculated according to 60 m length); (See page 30)
45.9 kW × 0.94 ≈ 43.1 kW
- Correction of cooling capacity in relation to the anti-frost: 1.0 (calculated according to outdoor 33°C DB, Total capacity of concurrently operating indoor unit: (56 × 7) / 450 ≈ 87%); (See page 47-1)
Outdoor unit cooling capacity: 43.1 kW × 1.0 ≈ 43.1 kW
- Capacity compensation coefficient according to height difference: 0.97 (calculated according to 15 m difference); (See page 34)
43.1 kW × 0.97 ≈ 41.8 kW
- Capacity compensation coefficient according to indoor unit connected total capacity: 1.0 ← (56 × 7) / 450 < 100%)
No compensation

<System cooling capacity>: Item (2) (c) calculation

Compare the indoor unit total cooling capacity and the outdoor unit maximum cooling capacity. The smaller value is the actual system cooling capacity.

- Indoor unit total cooling capacity: 39.9 kW
 - Outdoor unit maximum cooling capacity: 41.8 kW
- ⇒ System cooling capacity: 39.9 kW

<Indoor unit capacity compensation> No compensation (5.7 kW)

Example 2

Cooling (when the indoor unit connected total capacity is 100% or higher)

- Outdoor unit FDC450KXZRE1 1 Unit
- Indoor unit FDT56KXE6F 10 Units, All fan tap: PHi
- Piping length 60 m (Equivalent length)
- Indoor, outdoor unit height difference 15 m (Outdoor unit is higher)
- Temperature conditions Outdoor temperature: 35°C DB
- Temperature conditions Indoor temperature: 18°C WB

<Indoor unit total cooling capacity>: Item (2) (a) calculation.

- Indoor unit rated cooling capacity: 5.6 kW
- Capacity compensation coefficient according to temperature conditions:
0.95 (Calculated according to Indoor 18°C WB / Outdoor 35°C DB); (See page 28)
Indoor unit cooling capacity: 5.6 kW × 0.95 = 5.3 kW
- Indoor unit total cooling capacity calculation;
indoor unit total cooling capacity: 5.3 kW × 10 units = 53.0 kW

<Outdoor unit maximum cooling capacity> : Item (2) (b) calculation

- Outdoor unit rated cooling capacity: 45.0 kW
- Capacity compensation coefficient according to temperature conditions:
0.95 (Calculated according to Indoor 18°C WB / Outdoor 35°C DB); (See page 28)
Outdoor unit cooling capacity: 45.0 kW × 0.95 = 42.8 kW
- Capacity compensation coefficient according to piping length: 0.94 (calculated according to 60 m length); (See page 30)
42.8 kW × 0.94 = 40.2 kW
- Collection of cooling capacity in relation to the anti-frost: 1.0 (calculated according to outdoor 35°C DB, Total capacity of concurrently operating indoor unit: (56 × 10) / 450 = 124%)
40.2 kW × 1.0 = 40.2 kW
- Capacity compensation coefficient according to height difference: 1.0 (the outdoor unit is higher during cooling)
No compensation
- Capacity compensation coefficient according to indoor unit connected total capacity: 1.04 ← (56 × 10) / 450 = 124% (See page 36)
40.2 kW × 1.04 = 41.8 kW

<System cooling capacity>: Item (2) (c) calculation

Compare the indoor unit total cooling capacity and the outdoor unit maximum cooling capacity. The smaller value is the actual system cooling capacity.

- Indoor unit total cooling capacity : 53.0 kW
 - Outdoor unit maximum cooling capacity : 41.8 kW
- ⇒ System cooling capacity: 41.8 kW

<Indoor unit cooling capacity Compensation>: Item (2) (d) calculation.

$$\frac{41.8 \text{ kW} \times 5.3 \text{ kW}}{53.0 \text{ kW}} = 4.2 \text{ kW}$$

Example 3

Heating (when the indoor unit connected total capacity is 100% or higher)

- Outdoor unit FDC450KXZRE1 1 Unit
- Indoor unit FDT56KXE6F 10 Units
- Piping length 60 m (Equivalent length)
- Indoor, outdoor unit height difference 20 m (Outdoor unit is higher)
- Temperature conditions Outdoor temperature: 6°C WB
- Temperature conditions Indoor temperature: 19°C DB

<Indoor unit total heating capacity>: Item (2) (a) calculation.

- Indoor unit rated heating capacity: 6.3 kW
- Capacity compensation coefficient according to temperature conditions:
1.04 (Calculated according to Outdoor 6°C WB / Indoor 19°C DB); (See page 29)
Indoor unit heating capacity: 6.3 kW × 1.04 = 6.6 kW
- Indoor unit total heating capacity calculation;
indoor unit total heating capacity: 6.6 kW × 10 units = 66.0 kW

<Outdoor unit maximum heating capacity> : Item (2) (b) calculation

- Outdoor unit rated heating capacity: 50.0 kW
- Capacity compensation coefficient according to temperature conditions:
1.04 (Calculated according to Outdoor 6°C WB / Indoor 19°C DB); (See page 29)
Outdoor unit heating capacity: 50.0 kW × 1.04 = 52.0 kW
- Capacity compensation coefficient according to piping length: 0.982 (calculated according to 60 m length); (See page 33)
52.0 kW × 0.982 = 51.0 kW
- Capacity compensation coefficient according to height difference: 0.96 (calculated according to 20 m difference); (See page 34)
51.0 kW × 0.96 = 49.0 kW
- Correction of heating capacity in relation to the frost on the outdoor unit heat exchanger:
1.0 (calculated according to 6°C WB); (See page 34)
49.0 kW × 1.0 = 49.0 kW.
- Capacity compensation coefficient according to indoor unit connected total capacity: 1.0 ← (56 × 10) / 450 = 124% (See page 36)
49.0 kW × 1.0 = 49.0 kW.

<System heating capacity> : Item (2) (c) calculation

Compare the indoor unit total heating capacity and the outdoor unit maximum heating capacity. The smaller value is the actual system heating capacity.

- Indoor unit total heating capacity : 66.0 kW ⇒ System heating capacity: 49.0 kW
- Outdoor unit maximum heating capacity : 49.0 kW

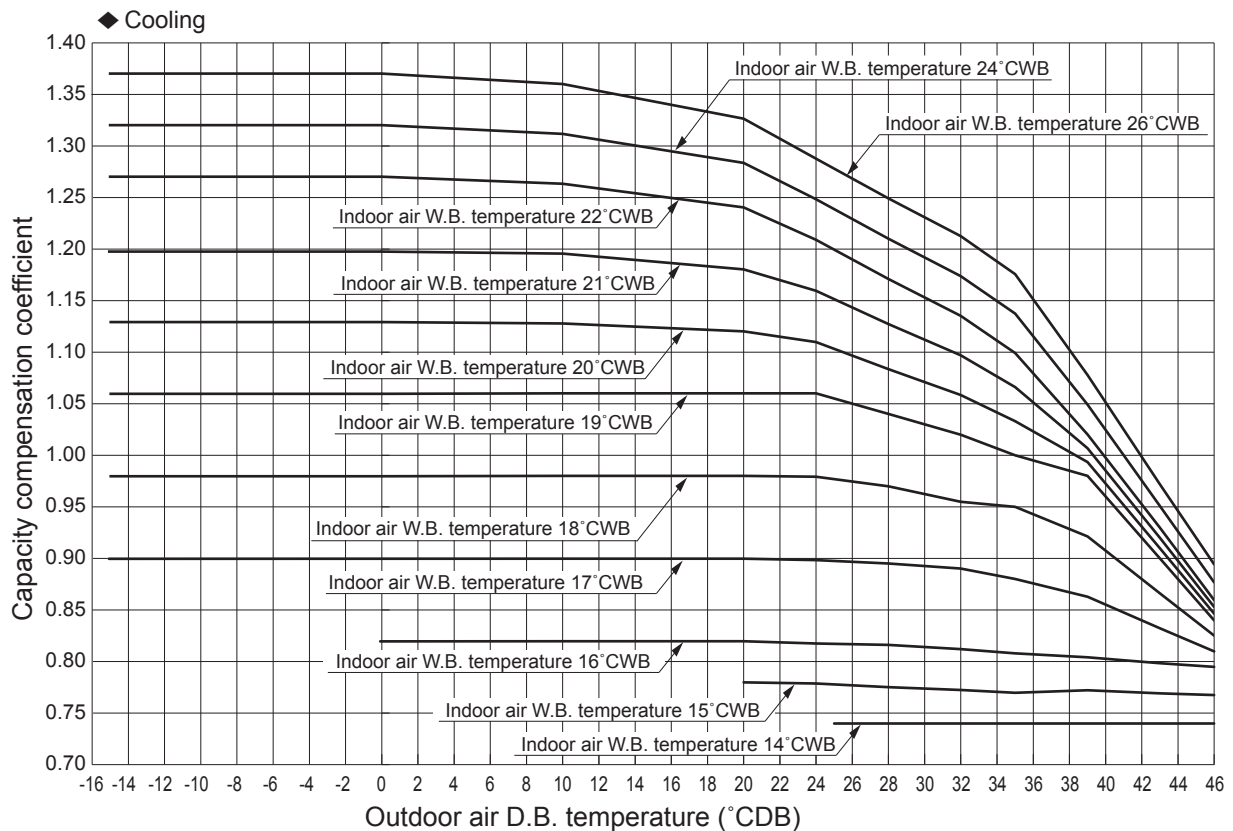
<Indoor unit heating capacity compensation> : Item (2) (d) calculation

$$\frac{49.0 \text{ kW} \times 6.6 \text{ kW}}{66.0 \text{ kW}} = 4.9 \text{ kW}$$

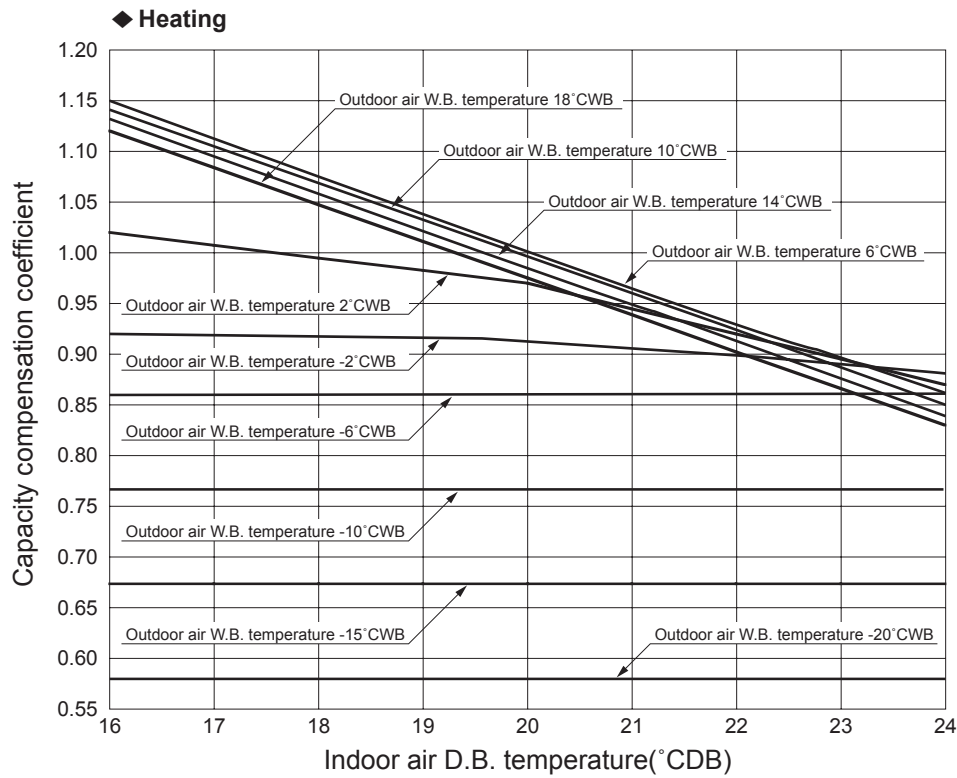
(3) Capacity compensation coefficient

(a) Capacity compensation coefficient and power consumption compensation coefficient according to indoor and outdoor temperature conditions.

1) Capacity compensation coefficient

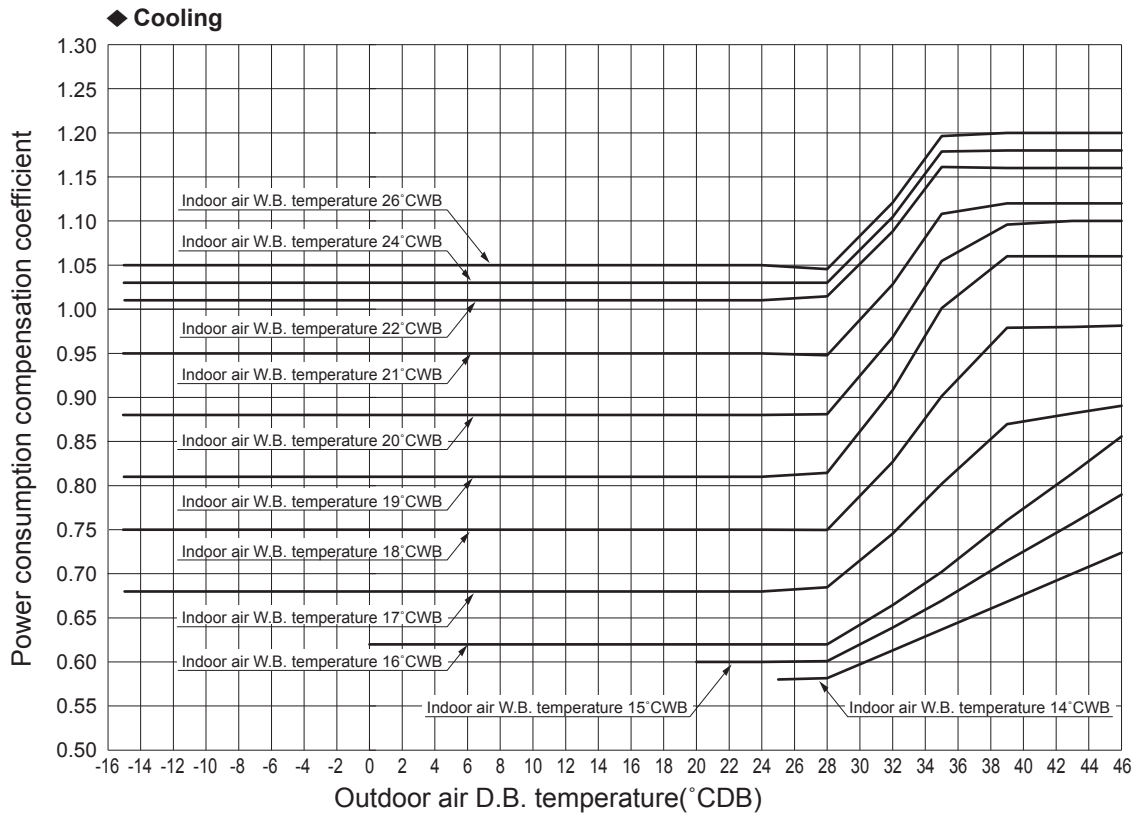


- Note (1) The above-mentioned table shows a typical condition among conditions to occur via controlling an air-conditioning equipment.
 (2) When performing the cooling operation with the outdoor air temperature being -5°C or under, a windbreak fence must be installed.
 (3) The cooling capacity may decrease by frequent actuation of anti-frost control in low outdoor temperature. Please avoid using the air-conditioners for computer rooms or industrial uses which require annual cooling operation.

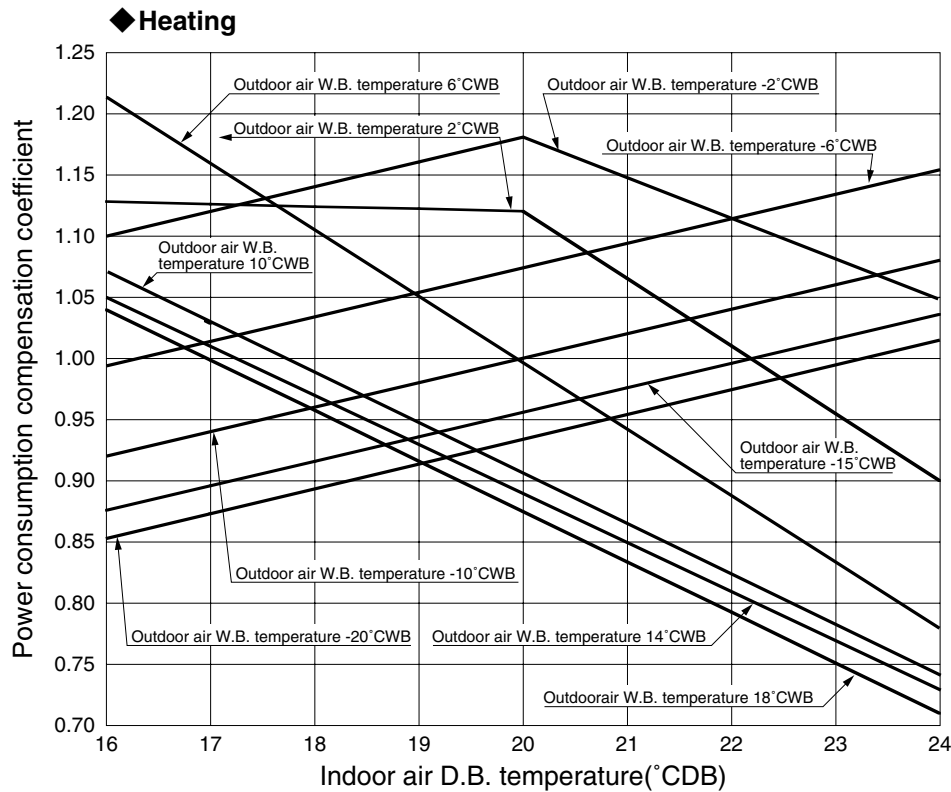


Note (1) The above-mentioned table shows a typical condition among conditions to occur via controlling an air-conditioning equipment.

2) Power consumption correction factor



Note (1) The above-mentioned table shows a typical condition among conditions to occur via controlling an air-conditioning equipment.

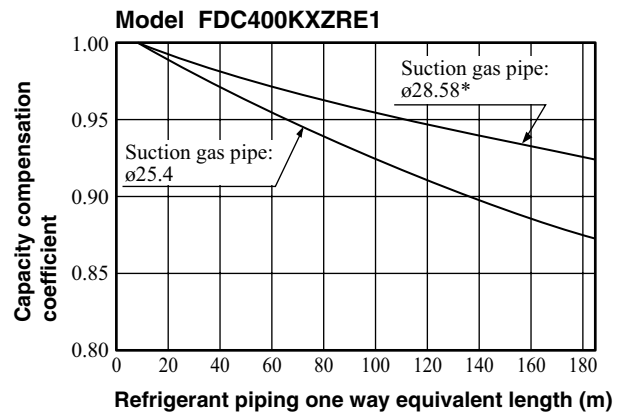
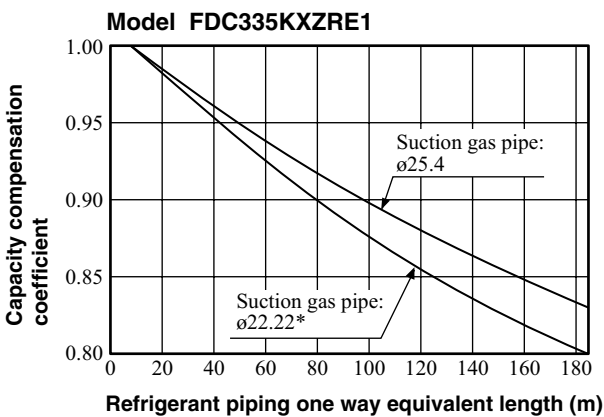
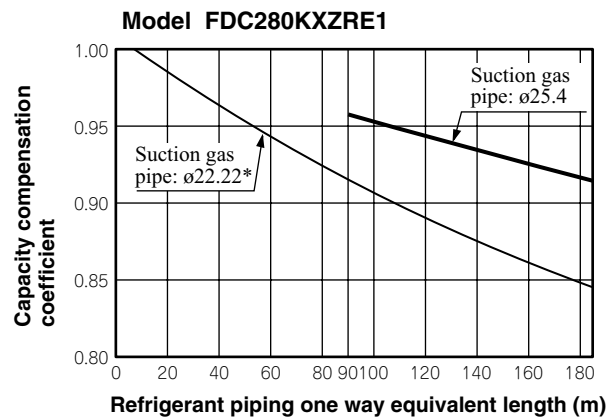
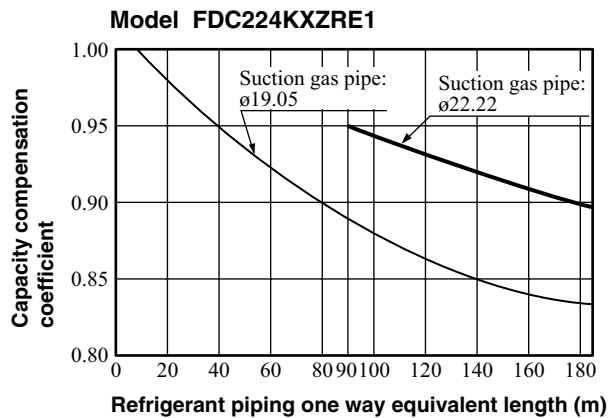


Note (1) The above-mentioned table shows a typical condition among conditions to occur via controlling an air-conditioning equipment.

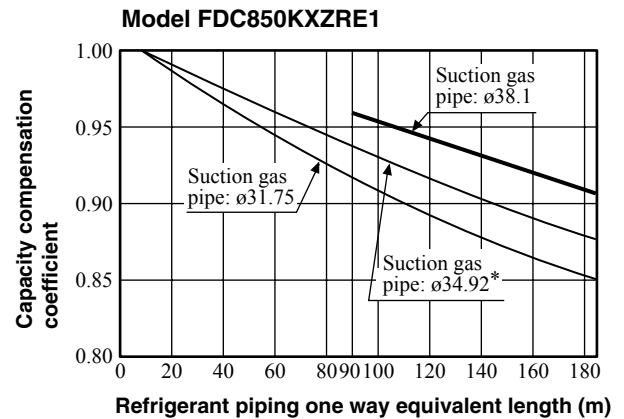
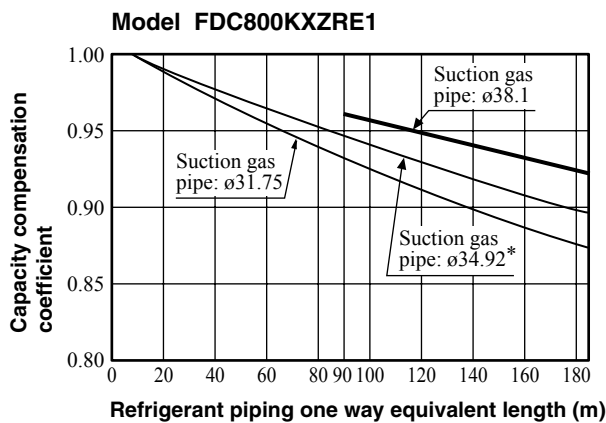
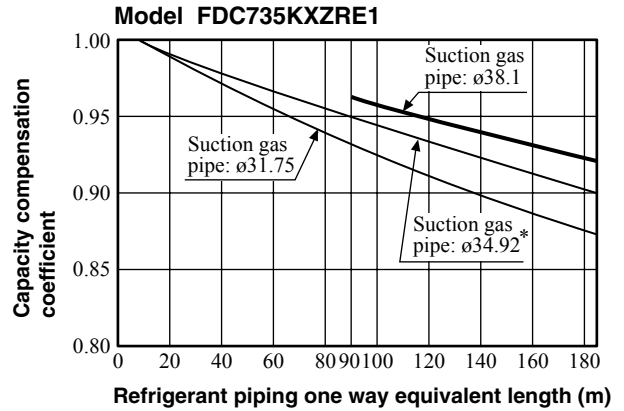
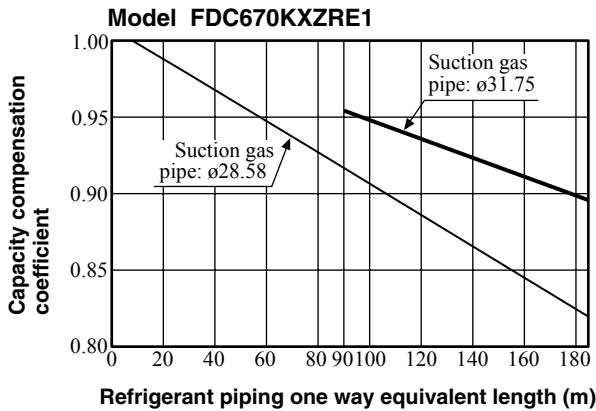
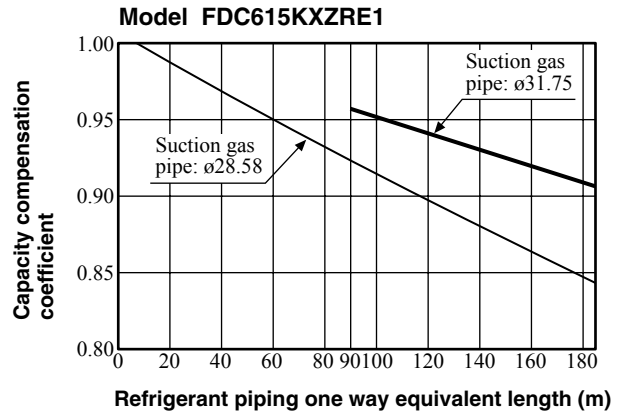
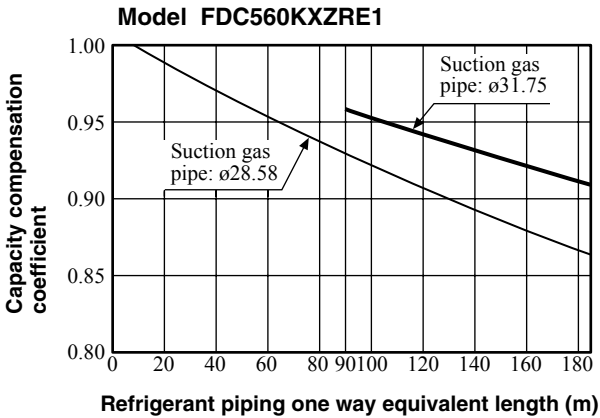
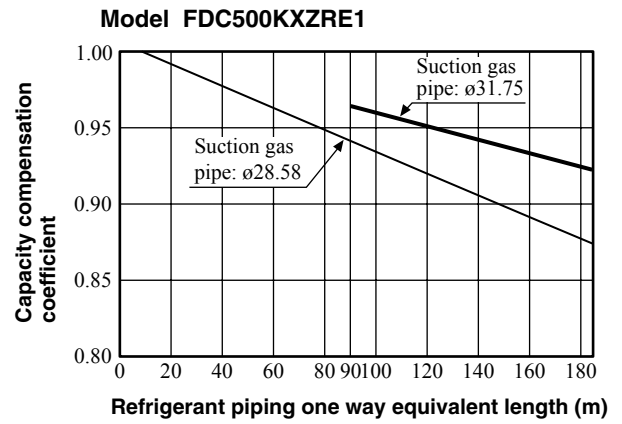
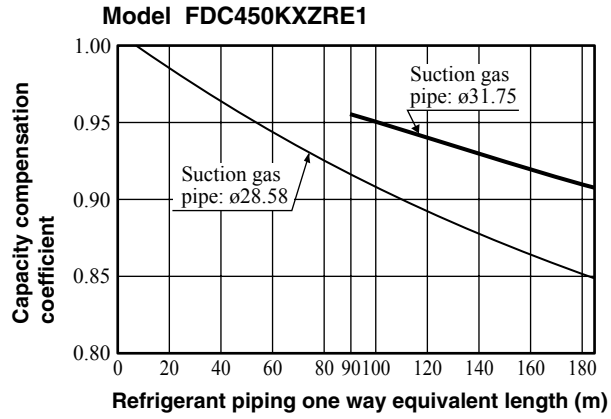
(b) Correction of cooling and heating capacity in relation to one way length of refrigerant piping.

(Note) This table is for reference only. If the refrigerant piping one way equivalent after the first branch is extended longer than 40 m, it could drop further by about 10% in the worst case.

1) Cooling

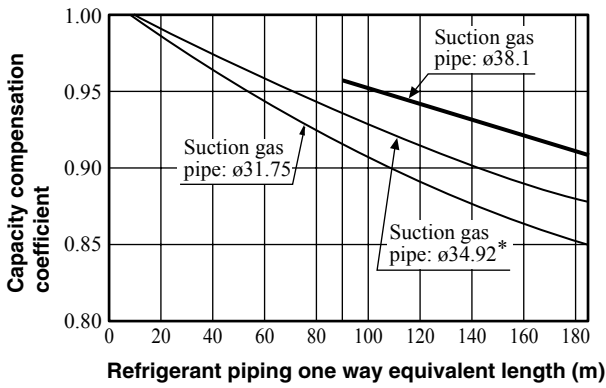


Note (1) Parts with the * mark show the piping size in case used in Europe.

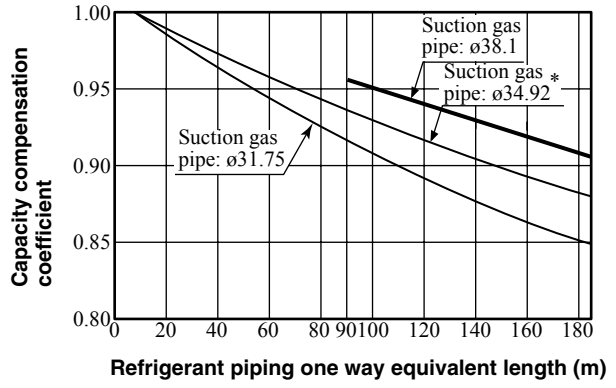


Note (1) Parts with the * mark show the piping size in case used in Europe.

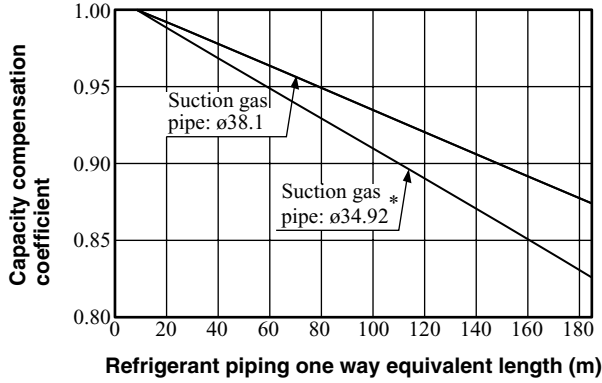
Model FDC900KXZRE1



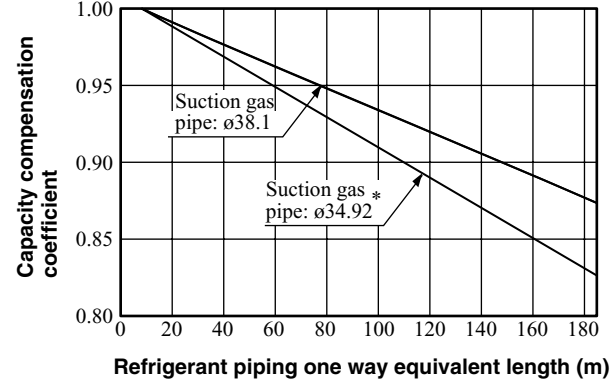
Model FDC950KXZRE1



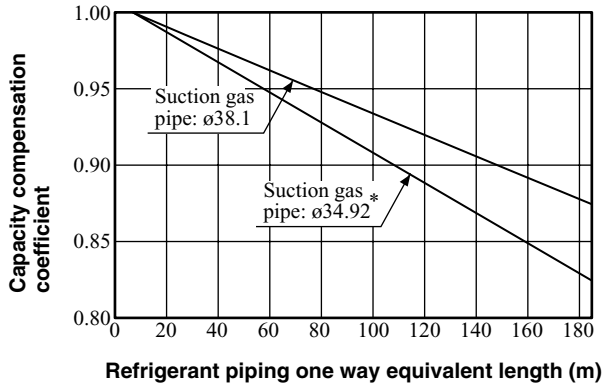
Model FDC1000KXZRE1



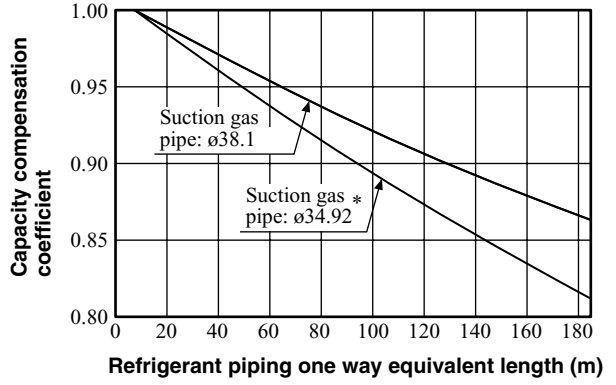
Model FDC1060KXZRE1



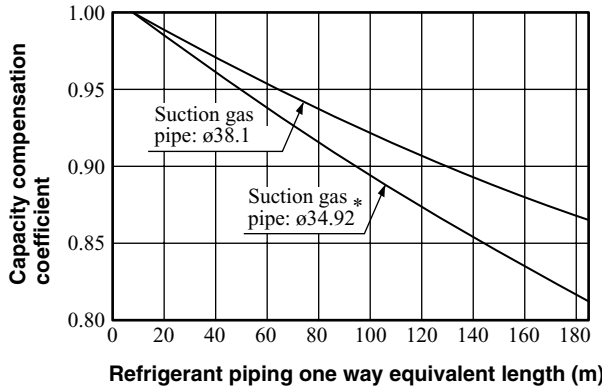
Model FDC1120KXZRE1



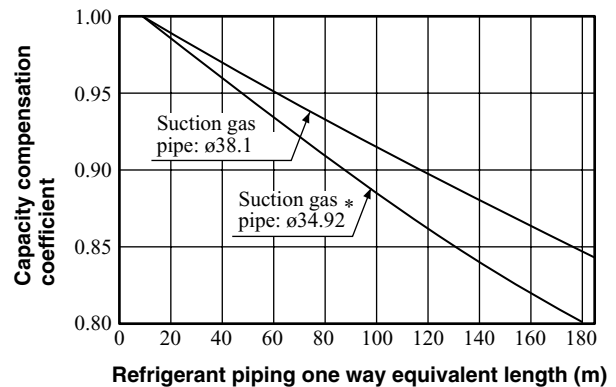
Model FDC1200KXZRE1



Model FDC1250KXZRE1

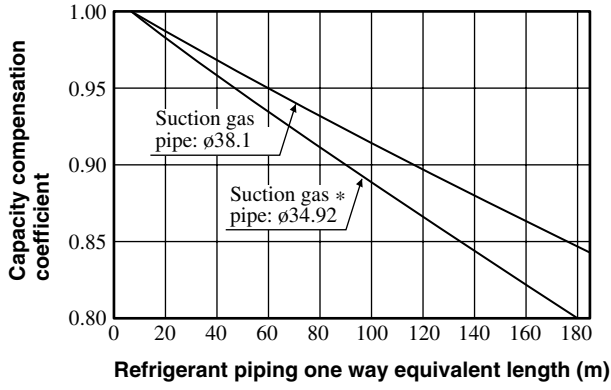


Model FDC1300KXZRE1

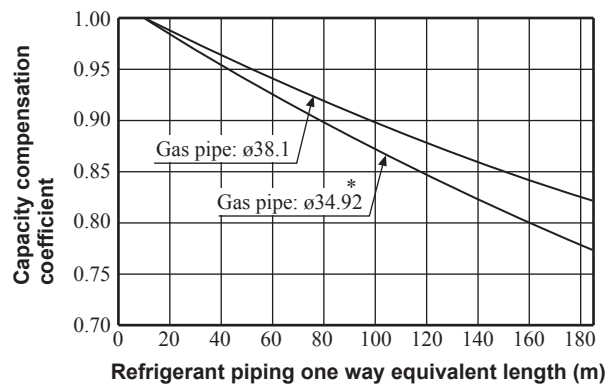


Note (1) Parts with the * mark show the piping size in case used in Europe.

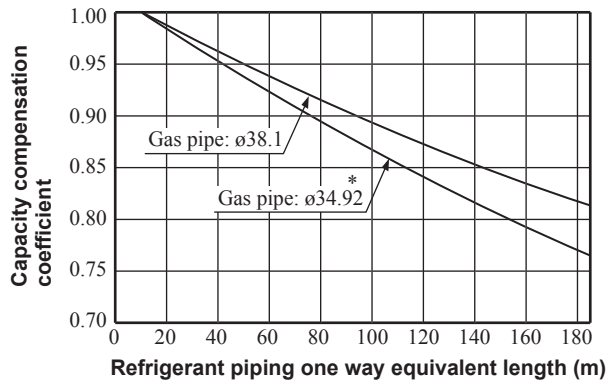
Model FDC1350KXZRE1



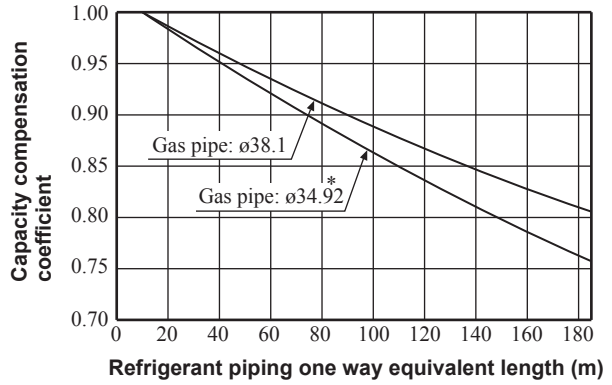
Model FDC1500KXZRE1



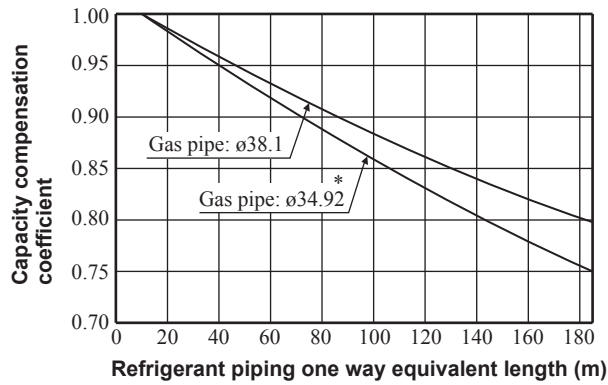
Model FDC1560KXZRE1



Model FDC1620KXZRE1

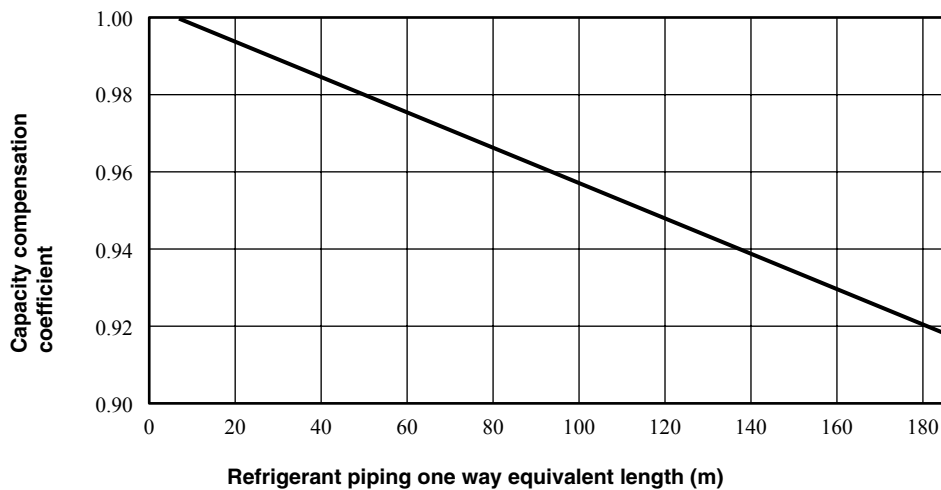


Model FDC1680KXZRE1



Note (1) Parts with the * mark show the piping size in case used in Europe.

2) Heating (Common)



Note (1) Equivalent piping length can be obtained by calculating as follows.

$$\text{Equivalent piping length} = \text{Real gas piping length} + \text{Number of bends in gas piping} \times \text{Equivalent piping length of bends.}$$

Equivalent length of each joint

Unit : m/one part

Gas piping size	φ9.52	φ12.7	φ15.88	φ19.05	φ22.22	φ25.4	φ28.58	φ31.8	φ34.92	φ38.1
Joint (90° elbow)	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.55	0.60	0.65

- (c) When the outdoor unit is located at a lower height than the indoor unit in cooling operation and when the outdoor unit is located at a higher height than the indoor unit in heating operation, the following values should be subtracted from the values in the above table.

Height difference between the indoor unit and outdoor unit in the vertical height difference	5 m	10 m	15 m	20 m	25 m	30 m
Adjustment coefficient	0.99	0.98	0.97	0.96	0.95	0.94

Height difference between the indoor unit and outdoor unit in the vertical height difference	35 m	40 m	45 m	50 m
Adjustment coefficient	0.93	0.92	0.91	0.90

- (d) Correction of heating capacity in relation to the frost on the outdoor unit heat exchanger

Air inlet temperature of outdoor unit in °C WB	-20	-15	-13	-11	-9	-7	-5	-3	-1	1	3	5 or more
Adjustment coefficient	0.96	0.96	0.96	0.95	0.94	0.93	0.91	0.88	0.86	0.87	0.92	1

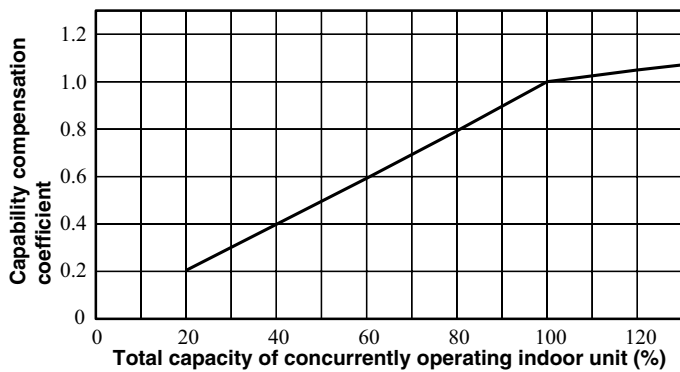
The correction factors will change drastically according to weather conditions. So necessary adjustment should be made empirically according to the weather data of the particular area.

- (e) The capacity compensation coefficient and power consumption compensation coefficient vary according to the total capacity of concurrently operating indoor units, as shown next page.

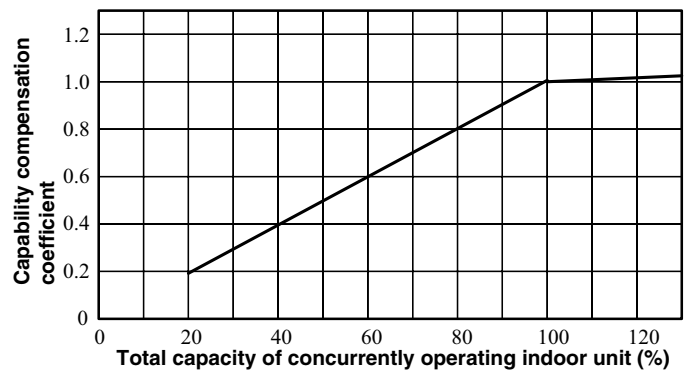
Model FDC224KXZRE1

◆ **Capability compensation coefficient**

Cooling

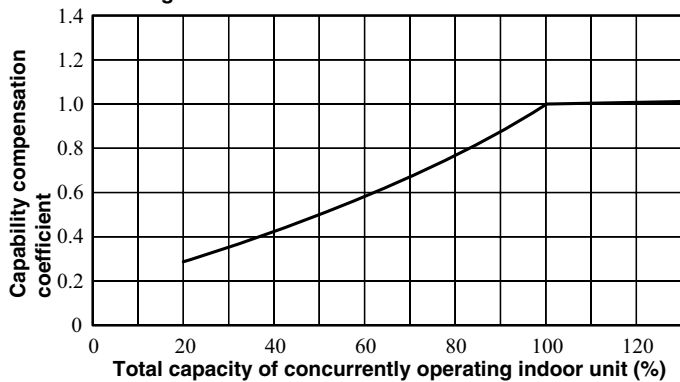


Heating

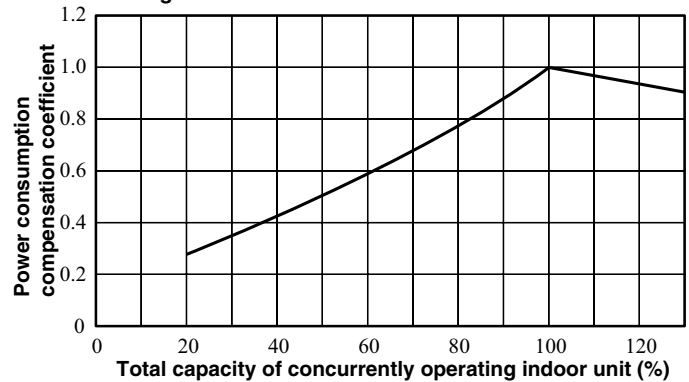


◆ **Power consumption compensation coefficient**

Cooling



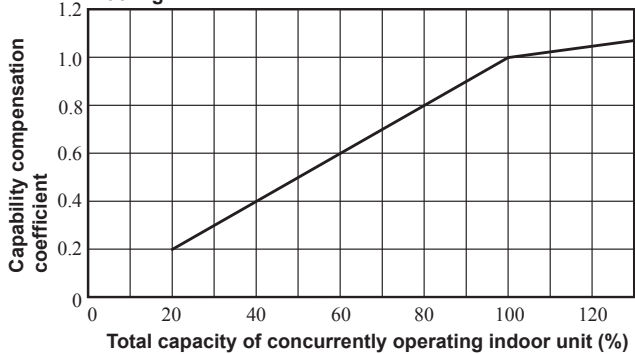
Heating



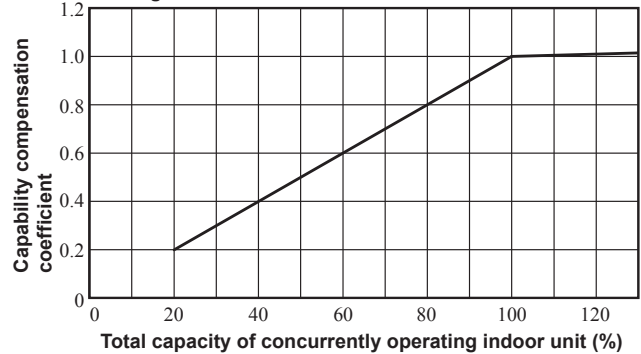
Model FDC280KXZRE1

◆ **Capability compensation coefficient**

Cooling

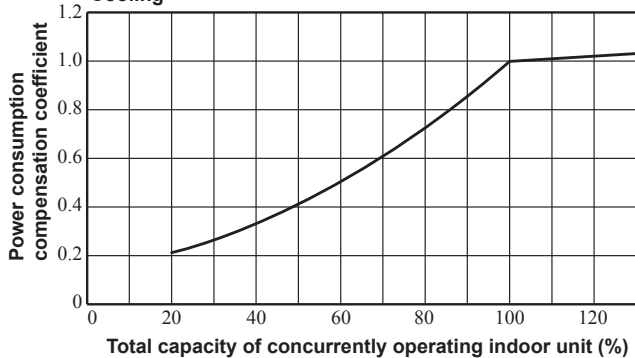


Heating

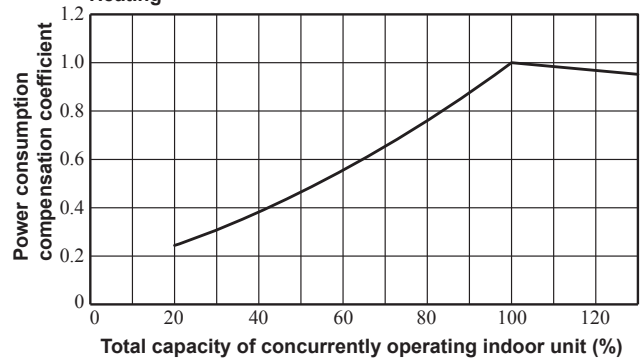


◆ **Power consumption compensation coefficient**

Cooling



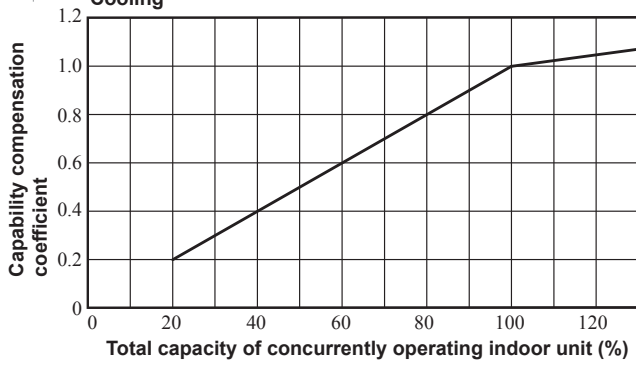
Heating



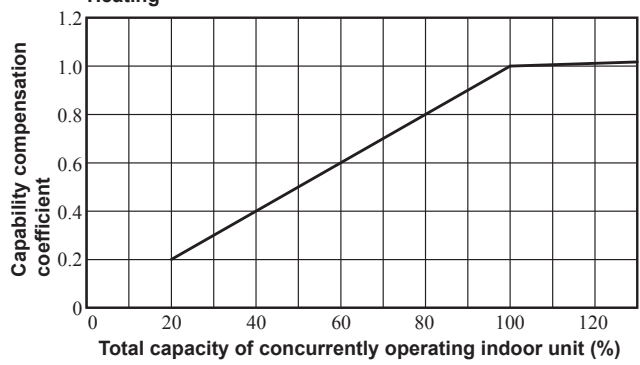
Model FDC335KXZRE1

◆ **Capability compensation coefficient**

Cooling

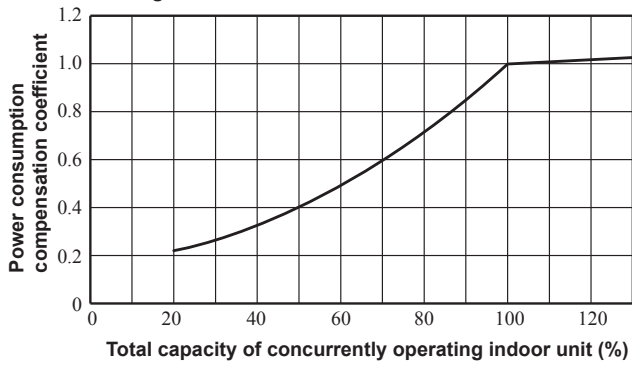


Heating

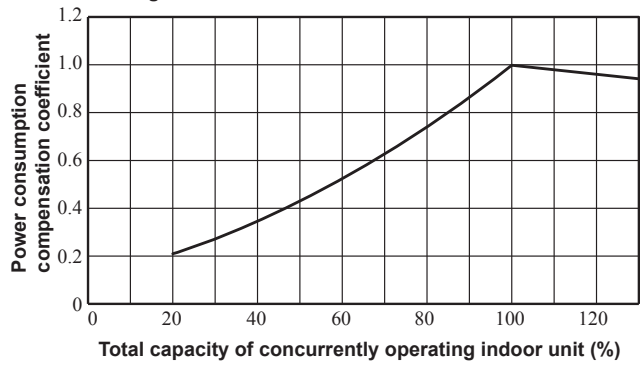


◆ **Power consumption compensation coefficient**

Cooling



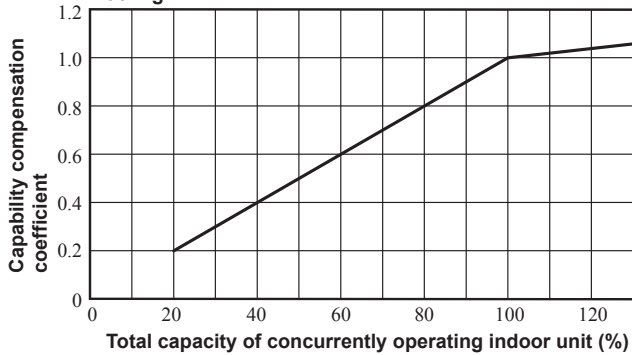
Heating



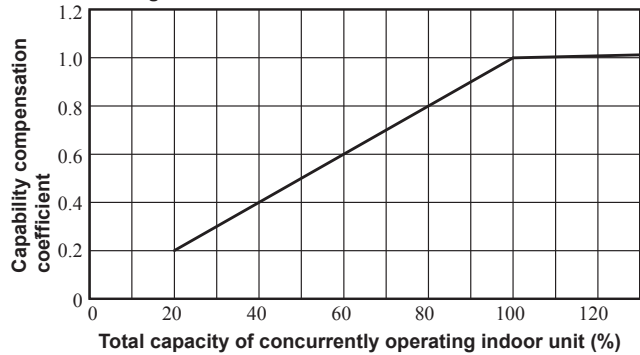
Model FDC400KXZRE1

◆ **Capability compensation coefficient**

Cooling

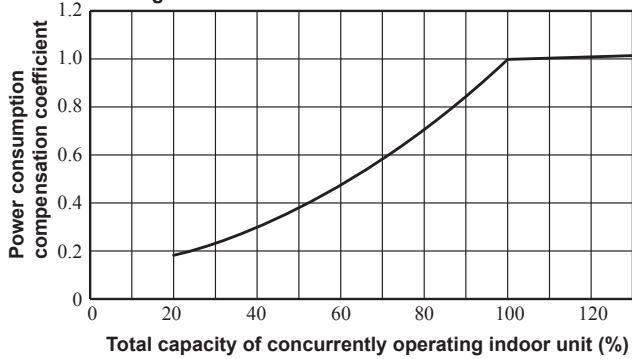


Heating

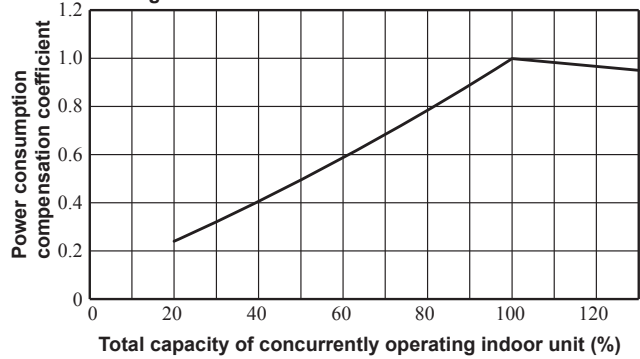


◆ **Power consumption compensation coefficient**

Cooling

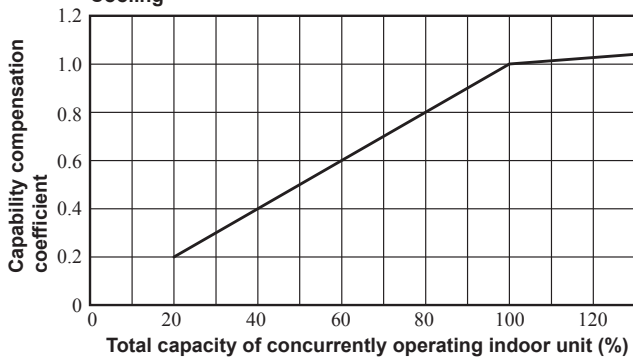


Heating

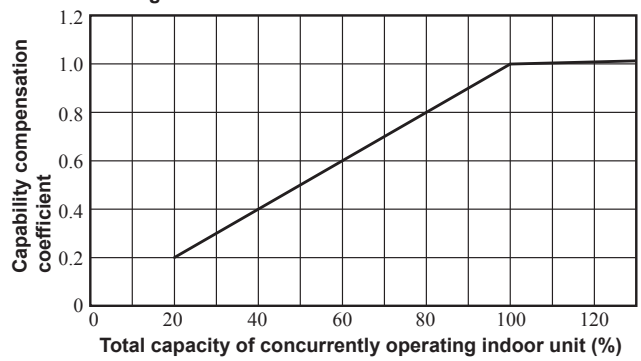


Model FDC450KXZRE1

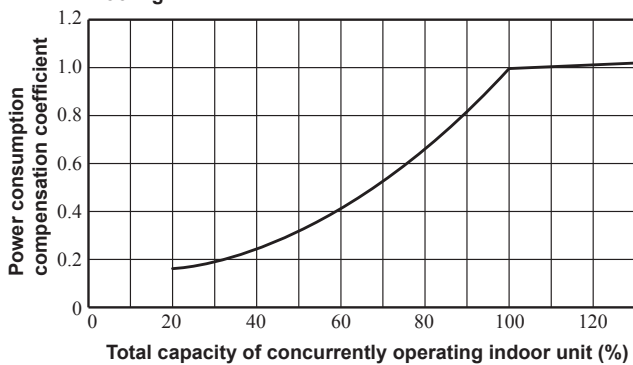
◆ **Capability compensation coefficient**
Cooling



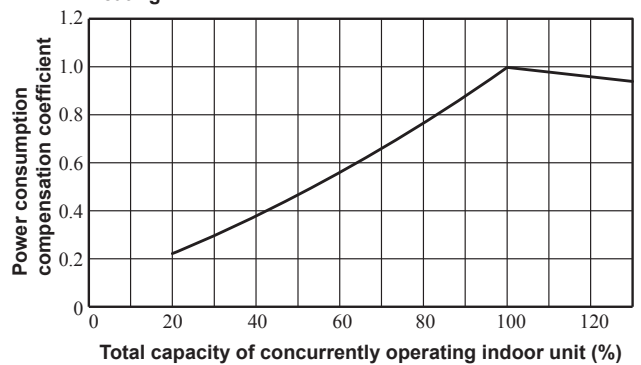
Heating



◆ **Power consumption compensation coefficient**
Cooling

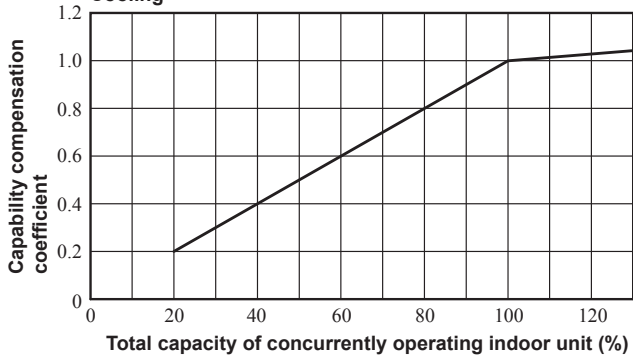


Heating

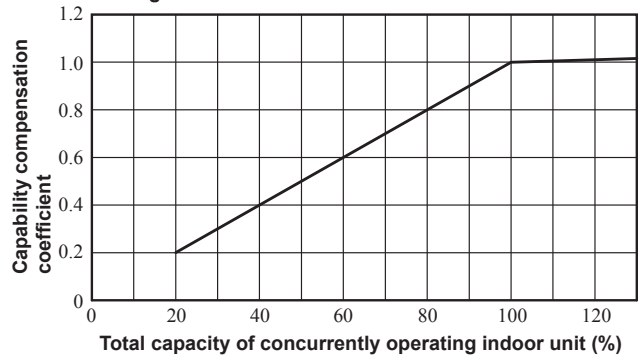


Model FDC475KXZRE1

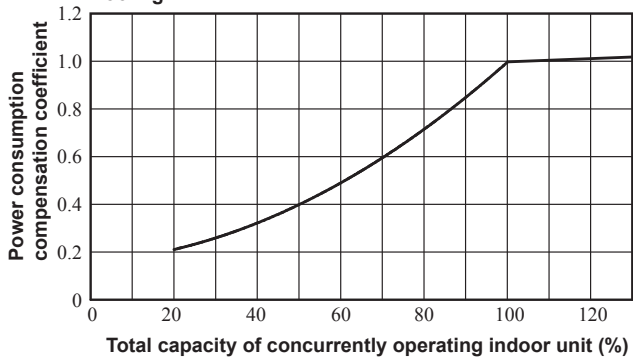
◆ **Capability compensation coefficient**
Cooling



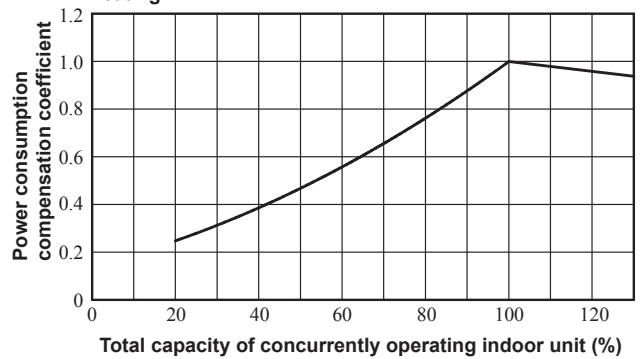
Heating



◆ **Power consumption compensation coefficient**
Cooling

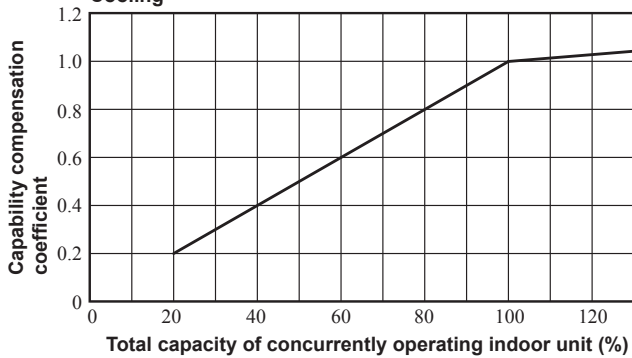


Heating

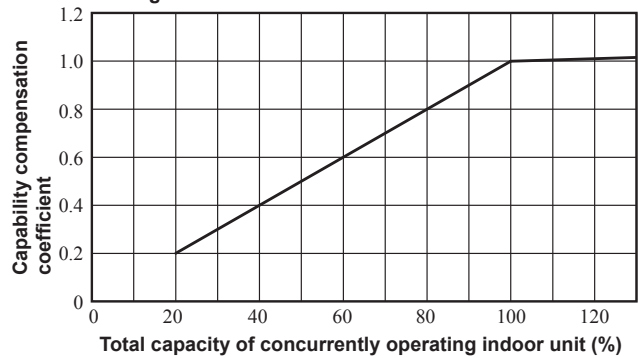


Model FDC500KXZRE1

◆ **Capability compensation coefficient**
Cooling

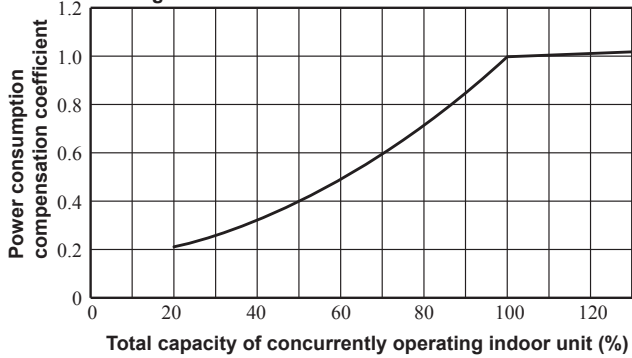


Heating

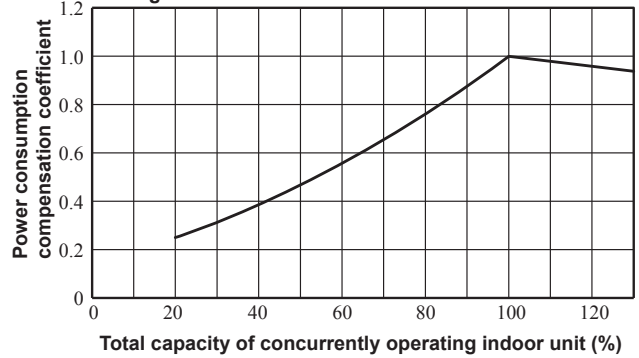


◆ **Power consumption compensation coefficient**

Cooling

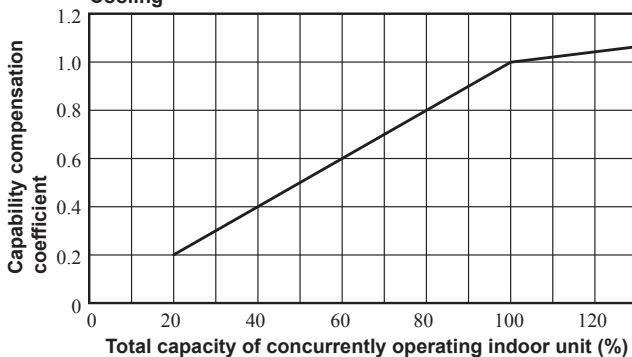


Heating

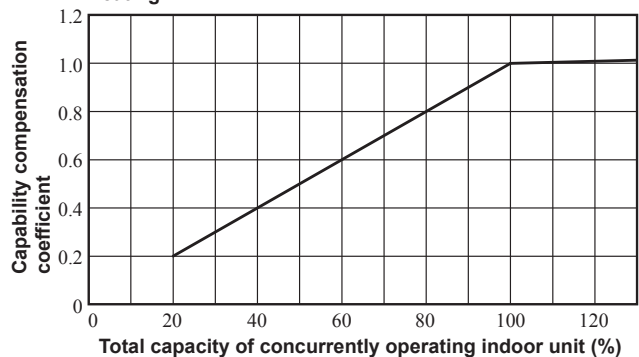


Model FDC560KXZRE1

◆ **Capability compensation coefficient**
Cooling

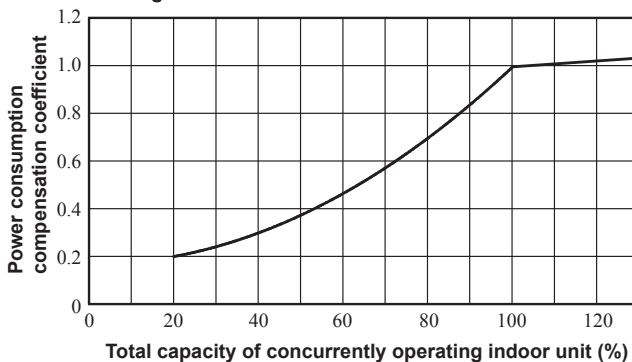


Heating

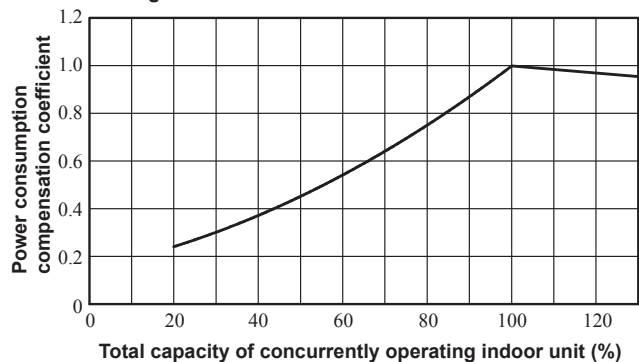


◆ **Power consumption compensation coefficient**

Cooling



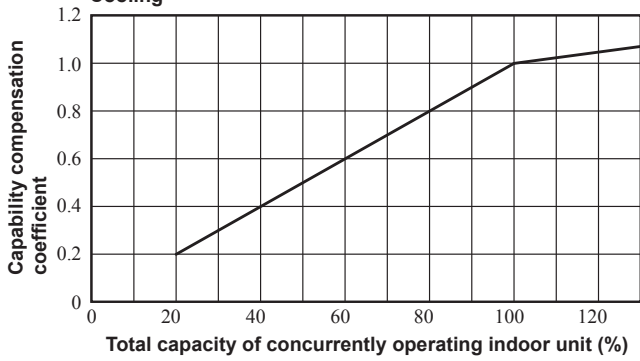
Heating



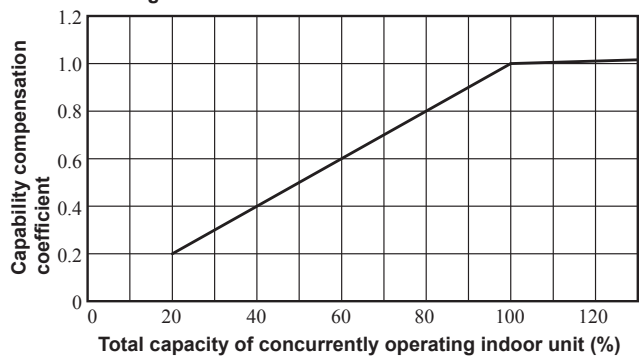
Model FDC615KXZRE1

◆ **Capability compensation coefficient**

Cooling

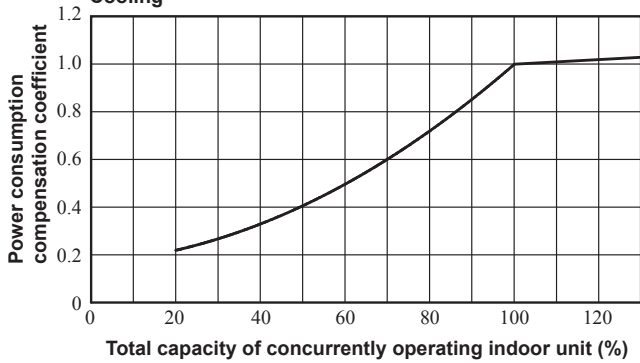


Heating

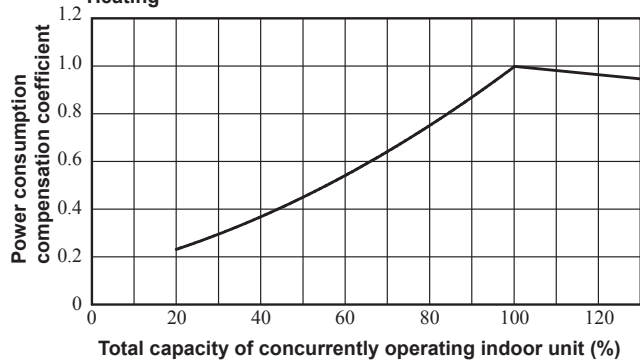


◆ **Power consumption compensation coefficient**

Cooling



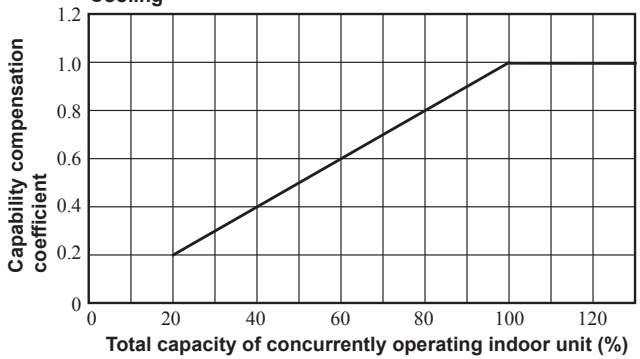
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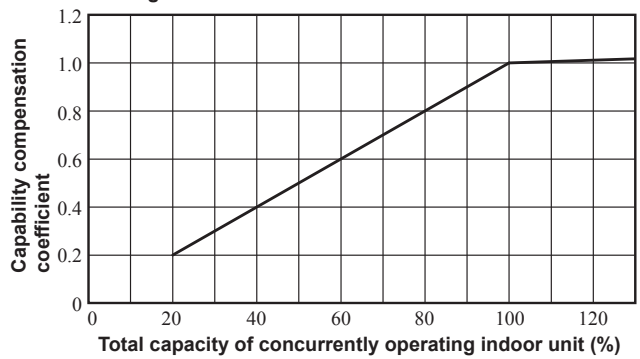
Model FDC670KXZRE1

◆ **Capability compensation coefficient**

Cooling

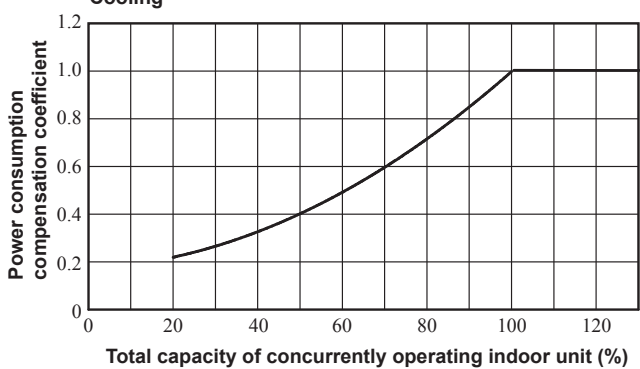


Heating

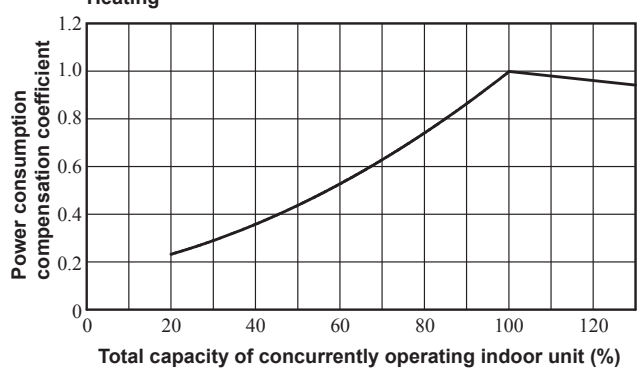


◆ **Power consumption compensation coefficient**

Cooling

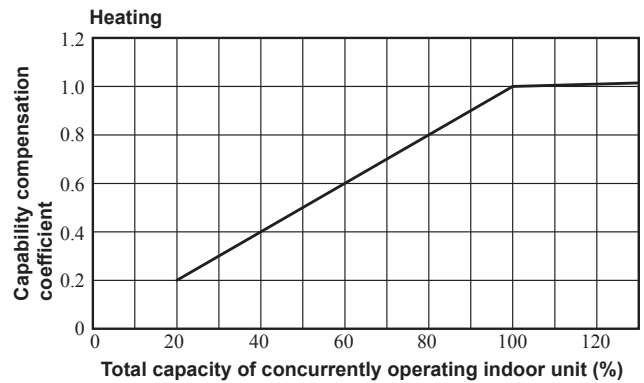
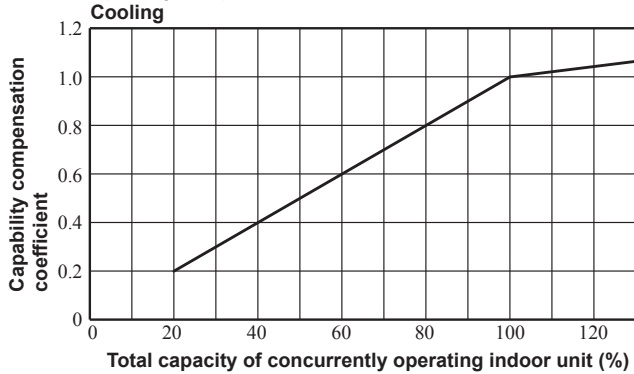


Heating

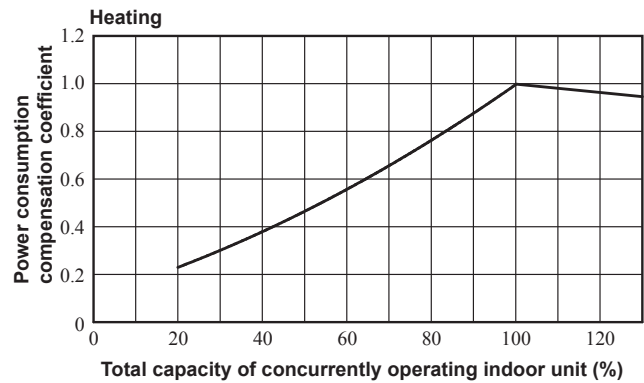
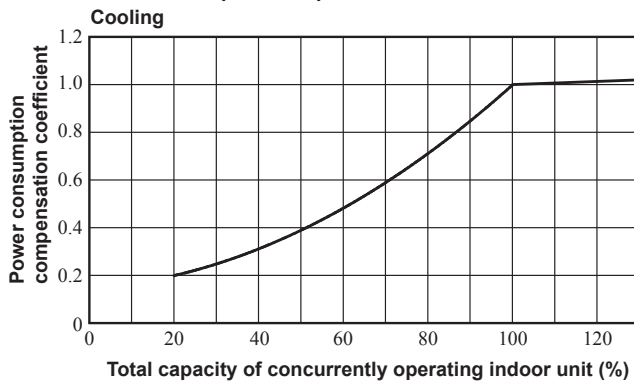


Model FDC735KXZRE1

◆ **Capability compensation coefficient**

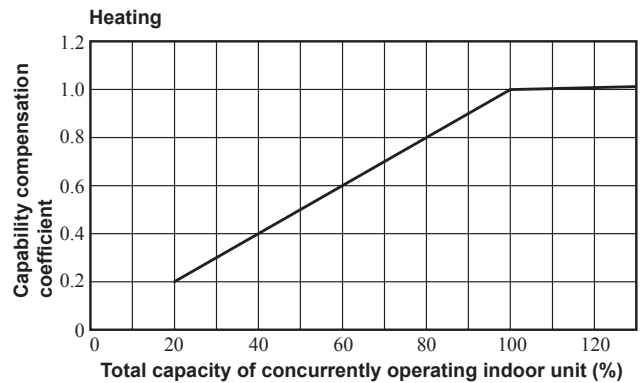
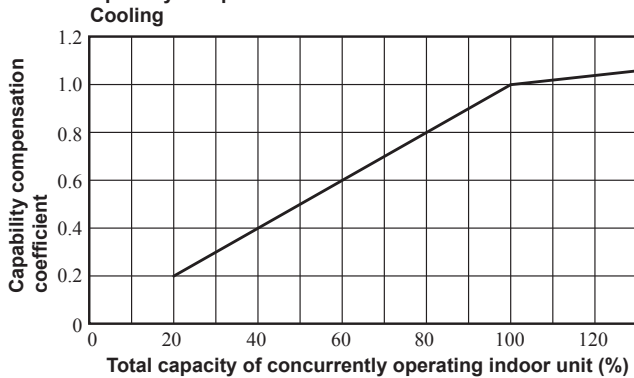


◆ **Power consumption compensation coefficient**

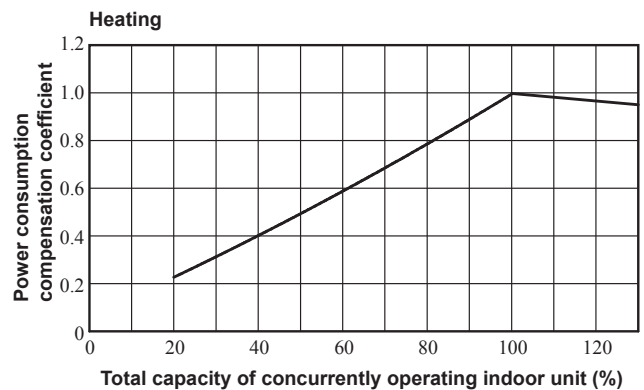
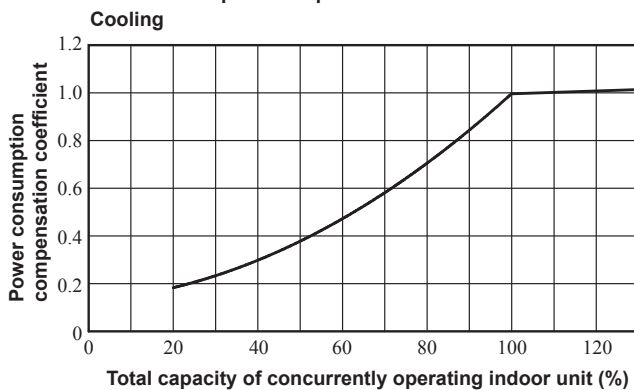


Model FDC800KXZRE1

◆ **Capability compensation coefficient**

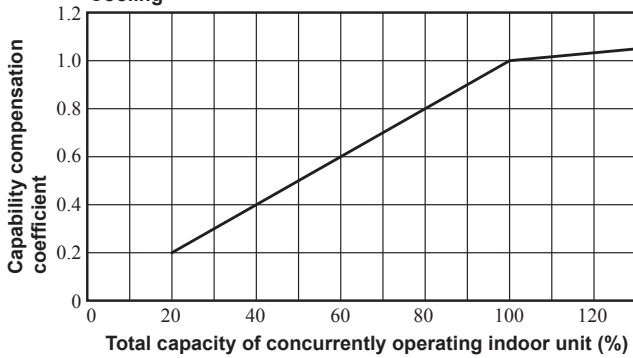


◆ **Power consumption compensation coefficient**

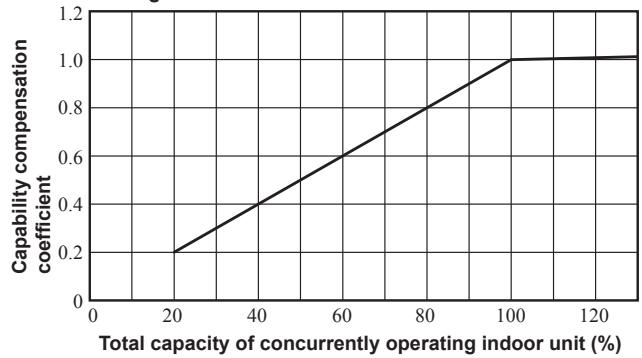


Model FDC850KXZRE1

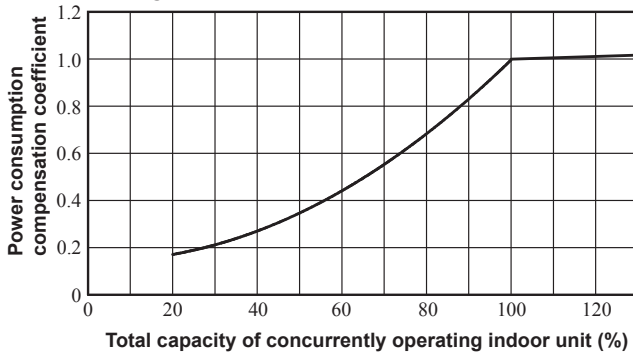
◆ **Capability compensation coefficient**
Cooling



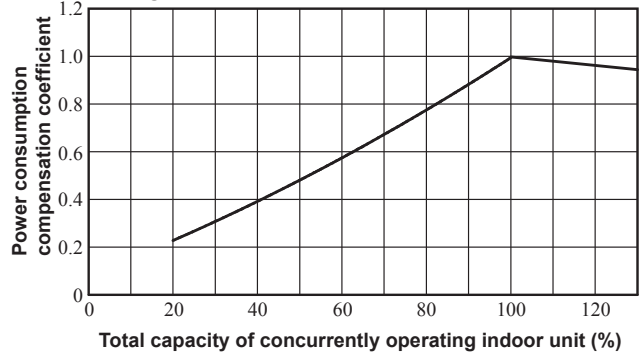
Heating



◆ **Power consumption compensation coefficient**
Cooling

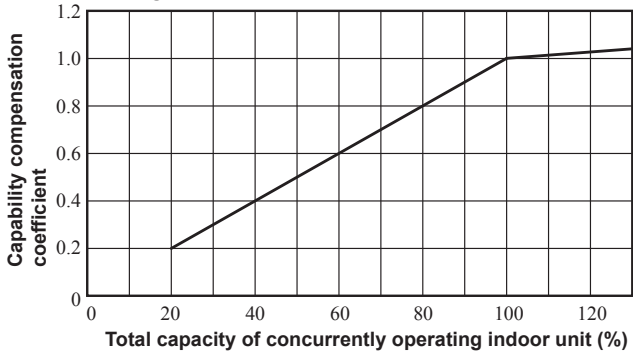


Heating

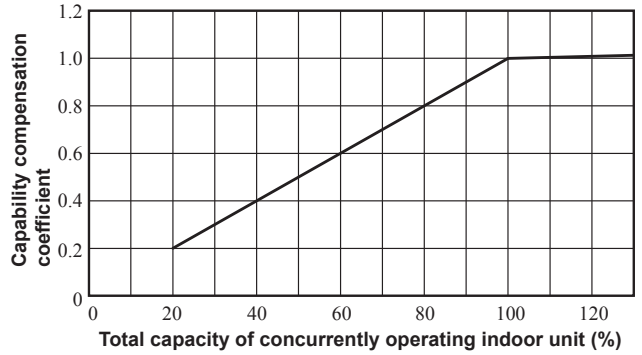


Model FDC900KXZRE1

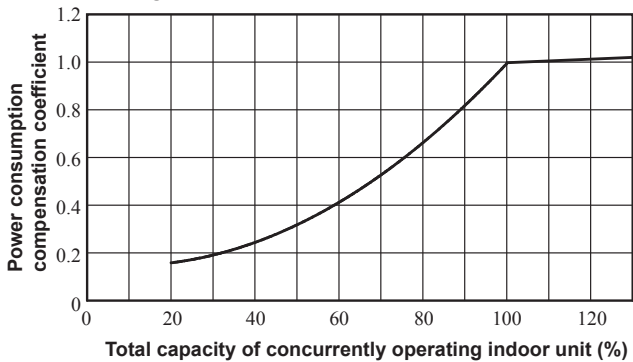
◆ **Capability compensation coefficient**
Cooling



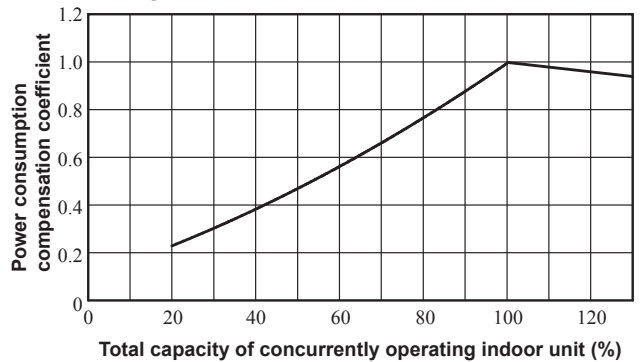
Heating



◆ **Power consumption compensation coefficient**
Cooling

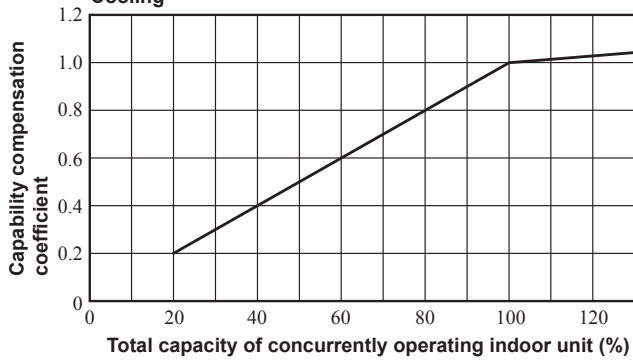


Heating

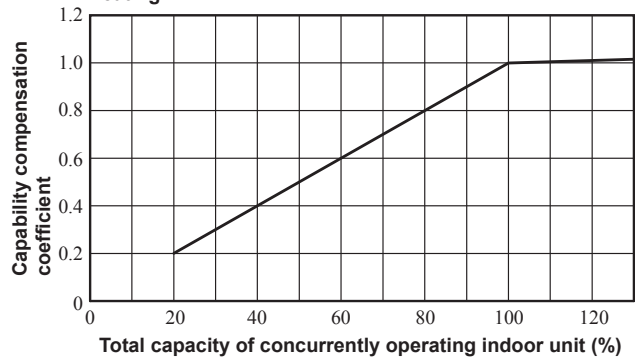


Model FDC950KXZRE1

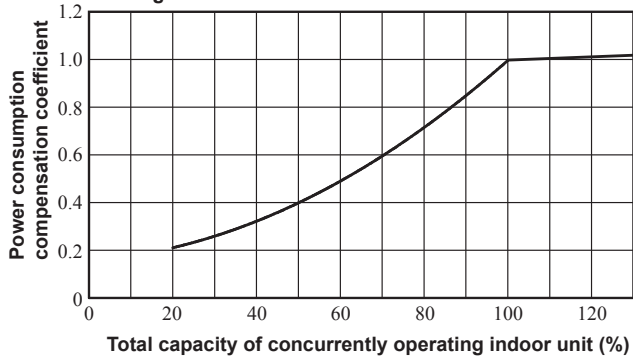
◆ **Capability compensation coefficient**
Cooling



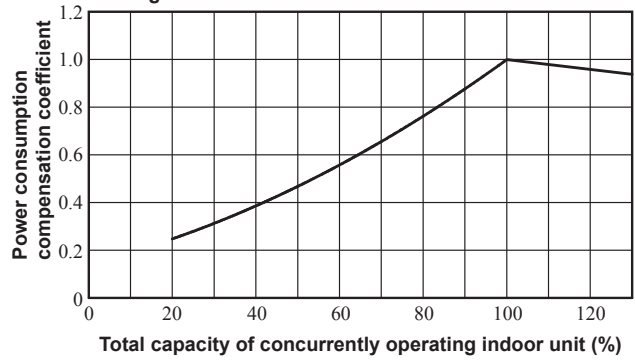
Heating



◆ **Power consumption compensation coefficient**
Cooling

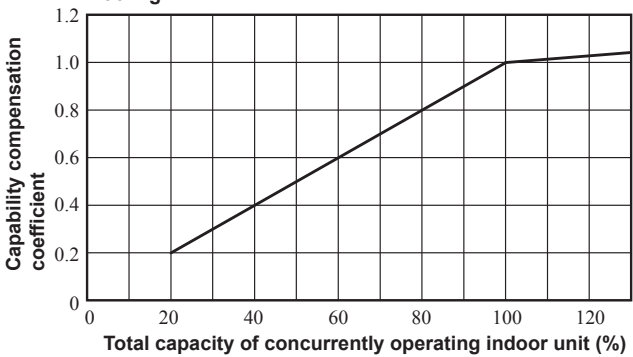


Heating

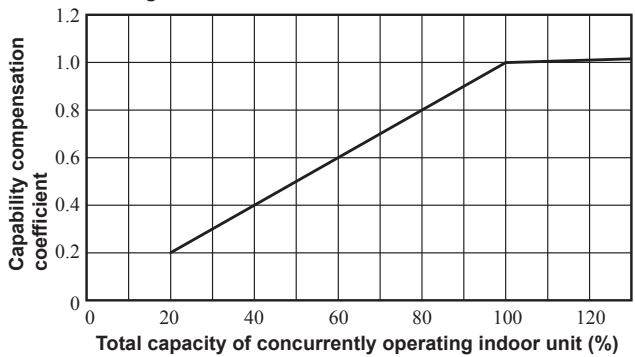


Model FDC1000KXZRE1

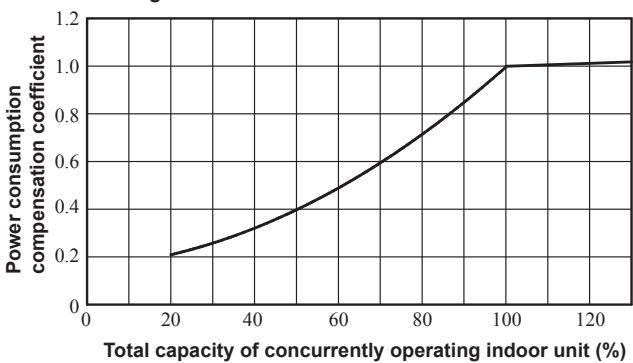
◆ **Capability compensation coefficient**
Cooling



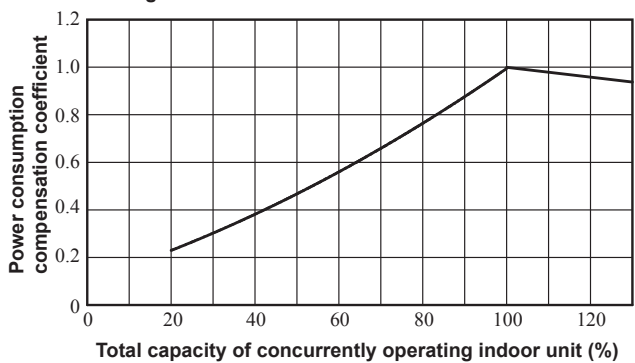
Heating



◆ **Power consumption compensation coefficient**
Cooling

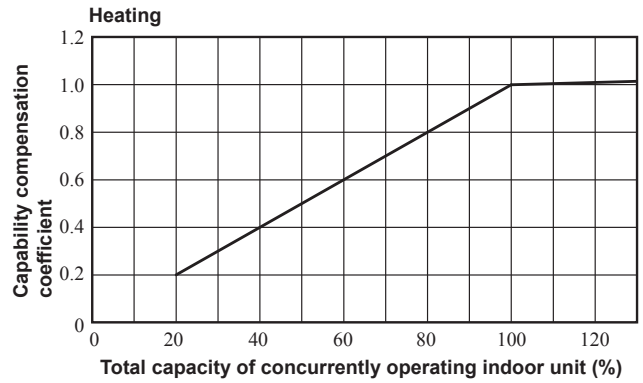
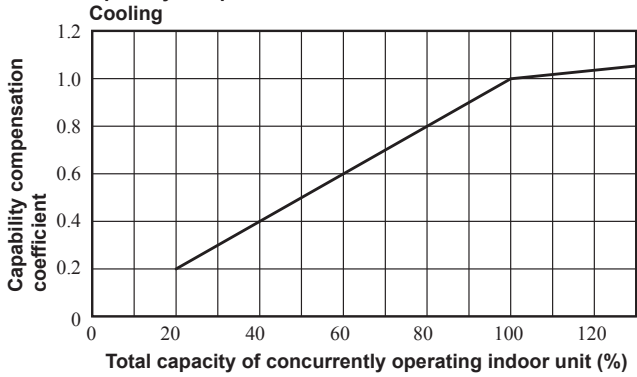


Heating

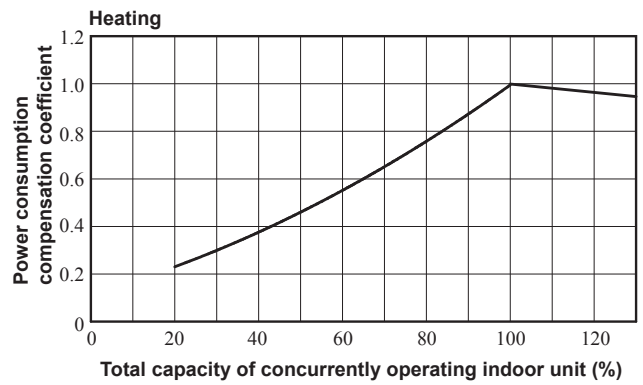
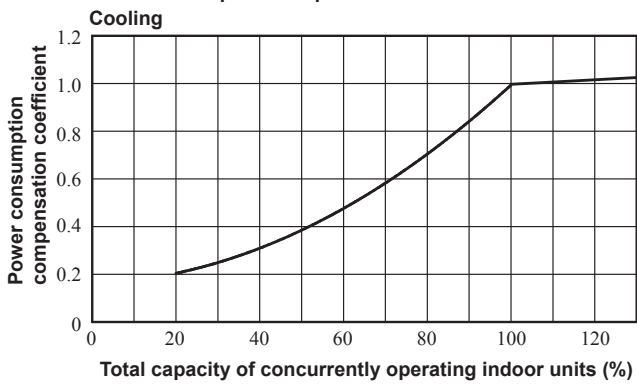


Model FDC1060KXZRE1

◆ **Capability compensation coefficient**

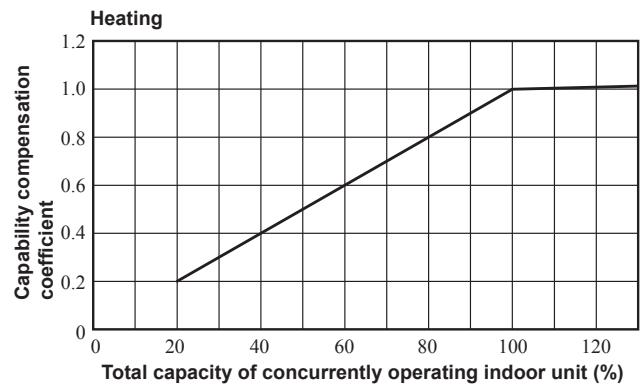
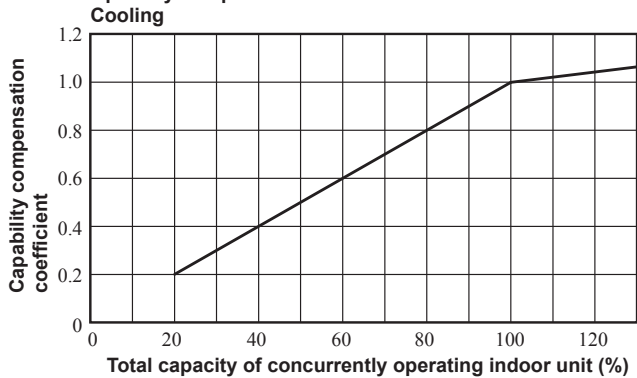


◆ **Power consumption compensation coefficient**

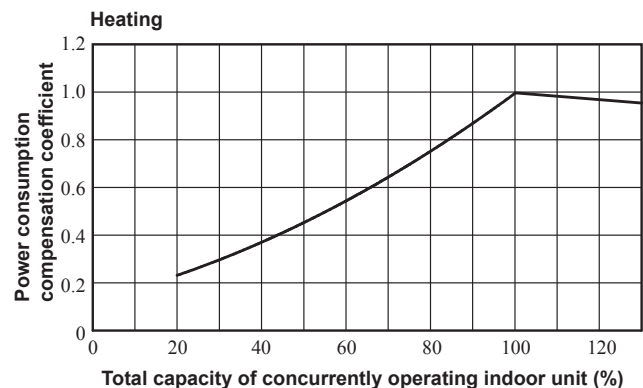
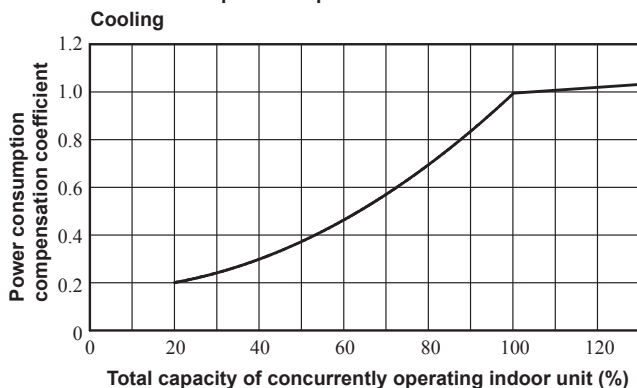


Model FDC1120KXZRE1

◆ **Capability compensation coefficient**

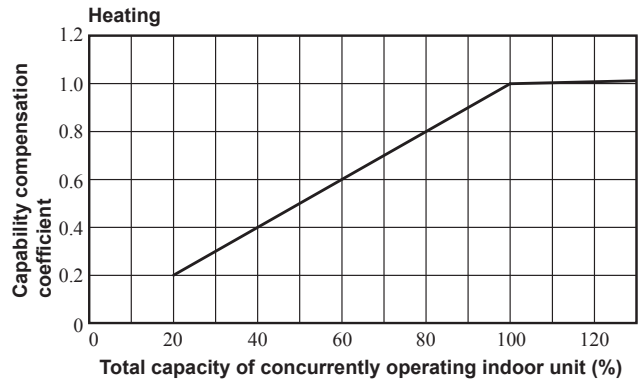
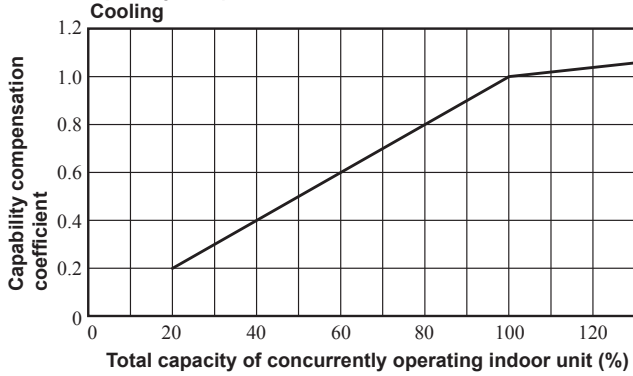


◆ **Power consumption compensation coefficient**

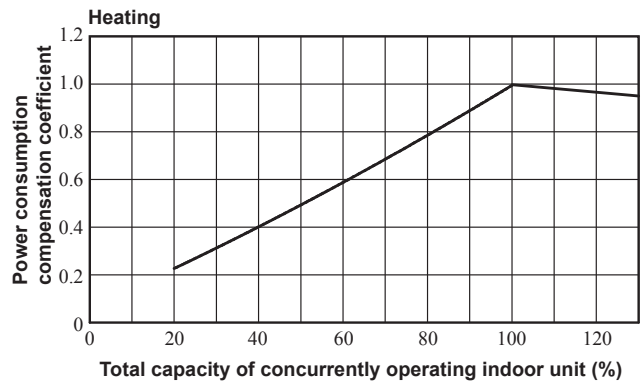
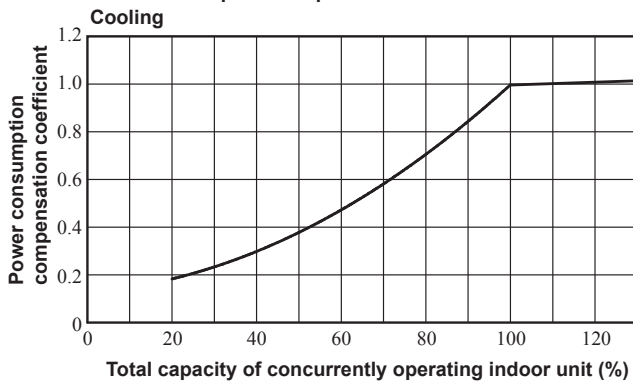


Model FDC1200KXZRE1

◆ **Capability compensation coefficient**

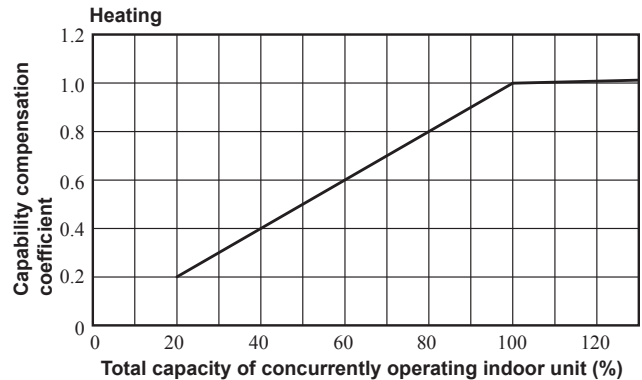
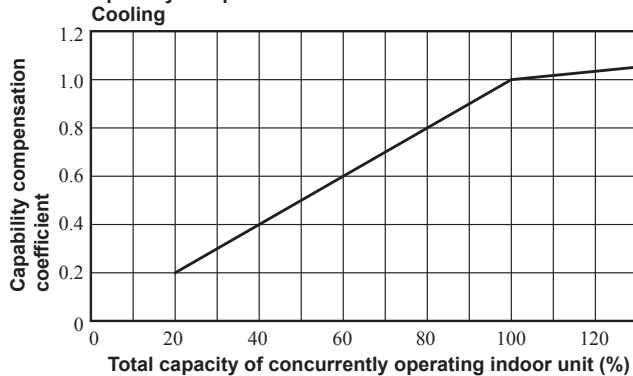


◆ **Power consumption compensation coefficient**

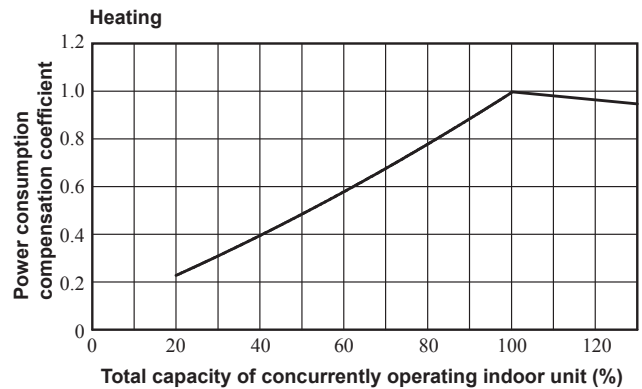
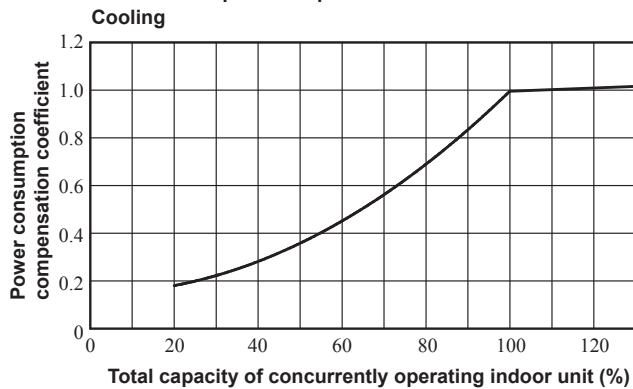


Model FDC1250KXZRE1

◆ **Capability compensation coefficient**

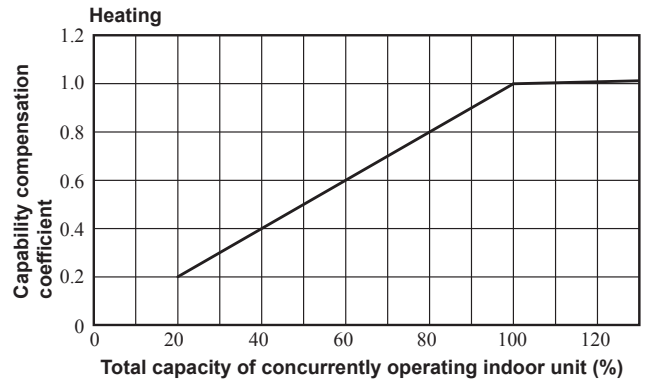
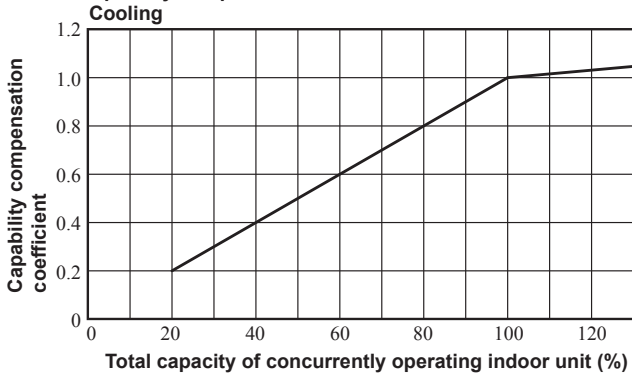


◆ **Power consumption compensation coefficient**

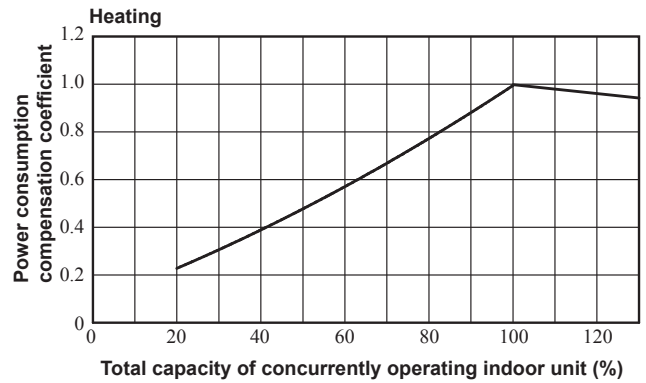
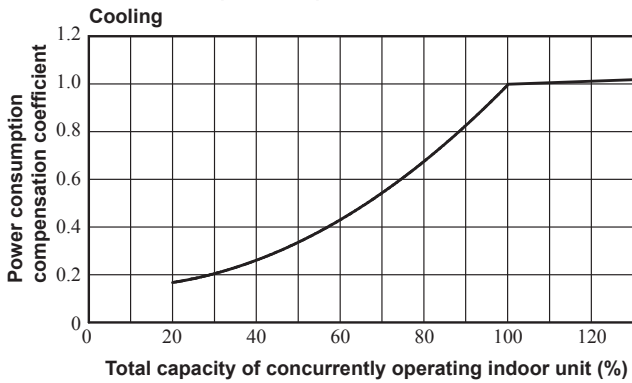


Model FDC1300KXZRE1

◆ **Capability compensation coefficient**

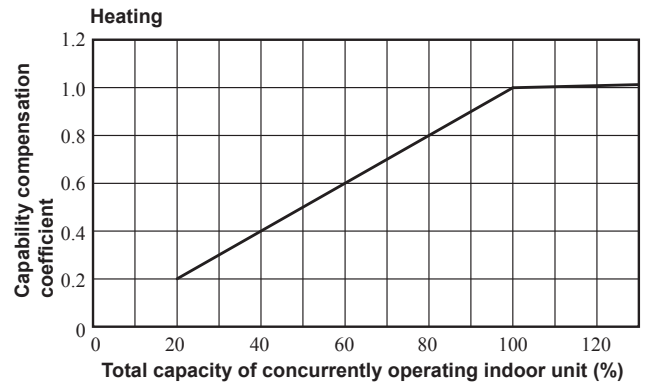
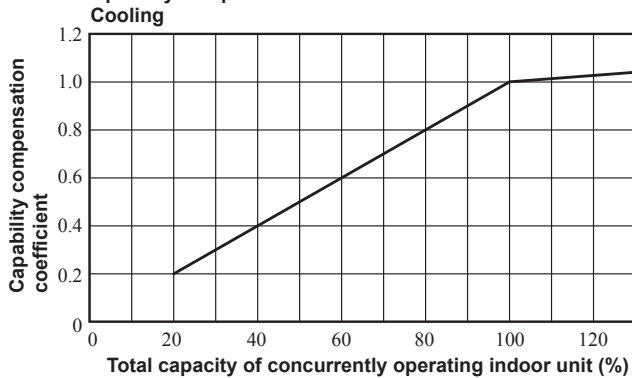


◆ **Power consumption compensation coefficient**

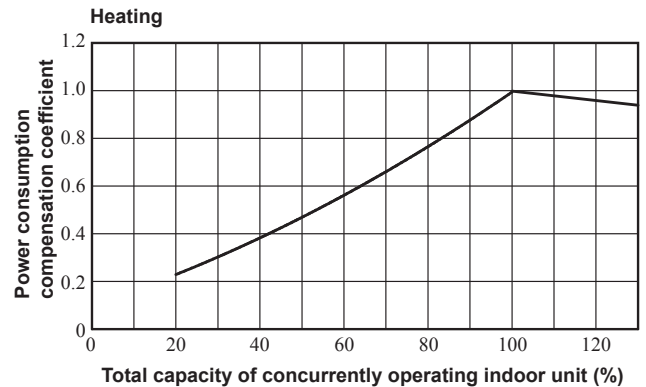
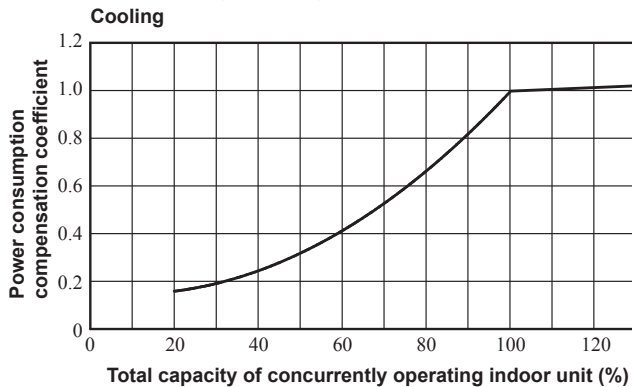


Model FDC1350KXZRE1

◆ **Capability compensation coefficient**

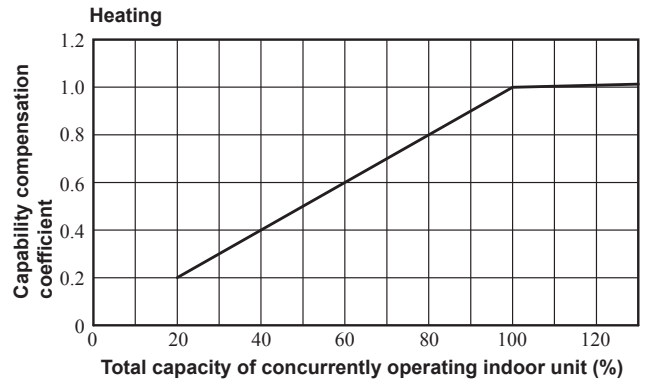
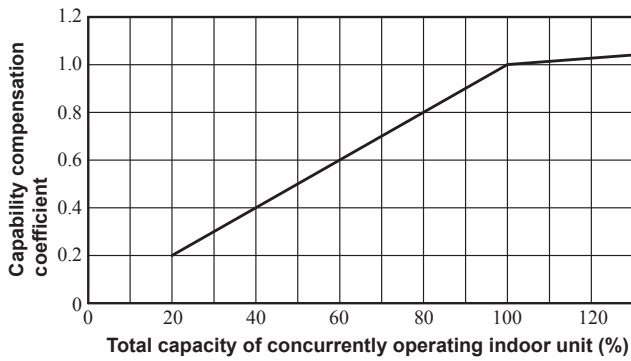


◆ **Power consumption compensation coefficient**

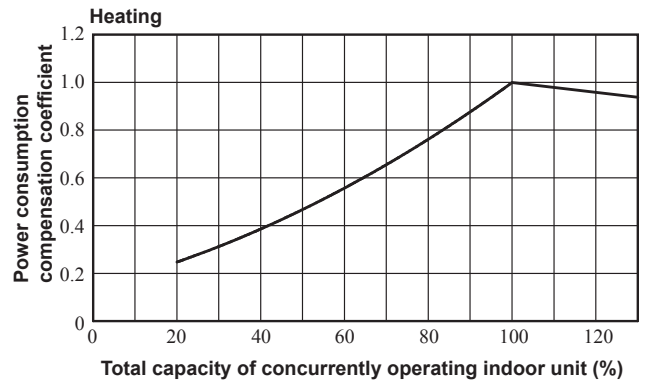
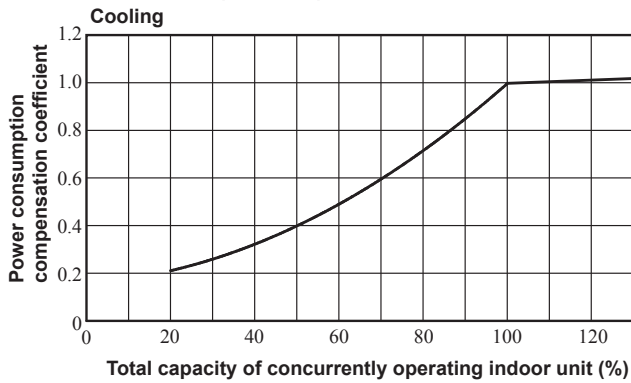


Model FDC1425KXZRE1

◆ **Capability compensation coefficient**

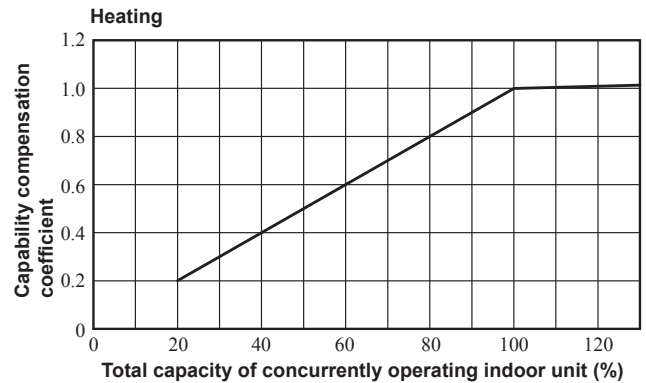
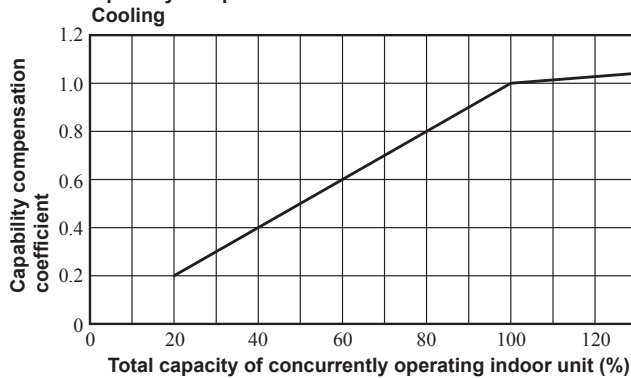


◆ **Power consumption compensation coefficient**

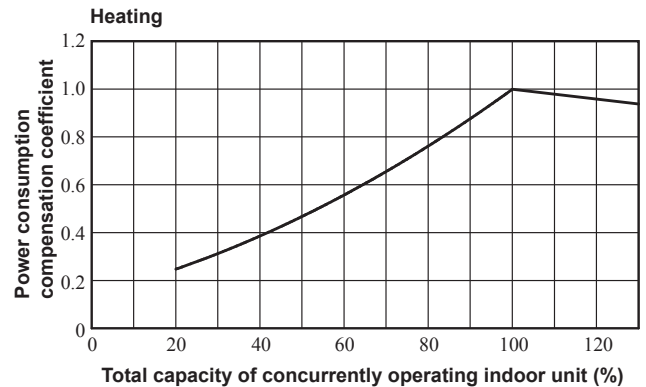
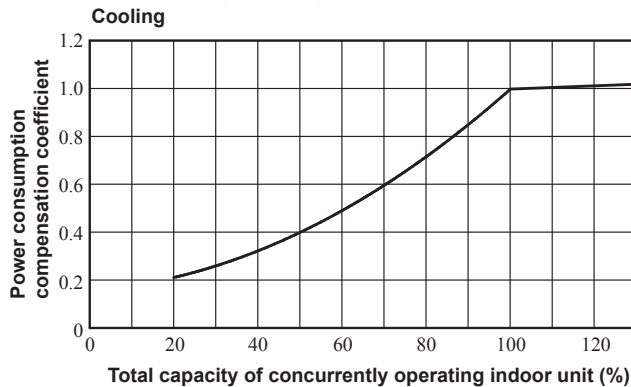


Model FDC1450KXZRE1

◆ **Capability compensation coefficient**

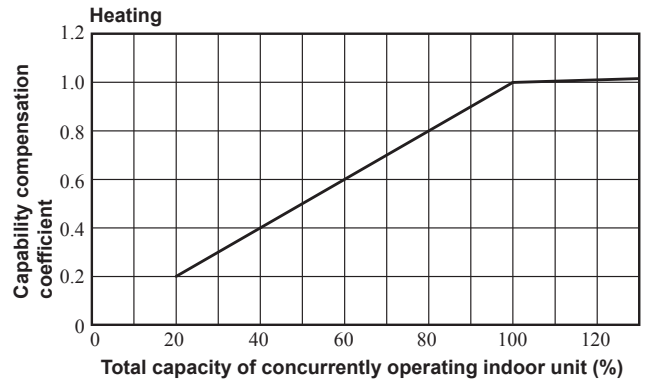
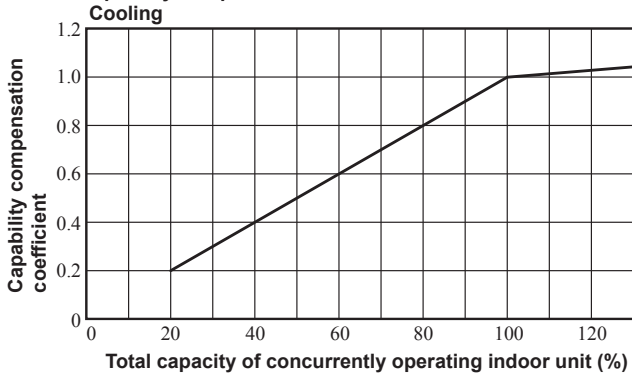


◆ **Power consumption compensation coefficient**

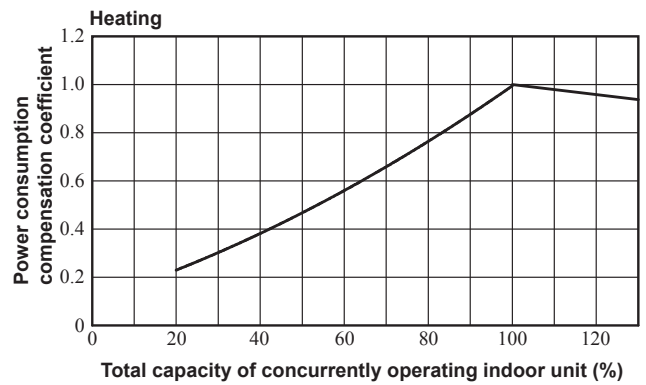
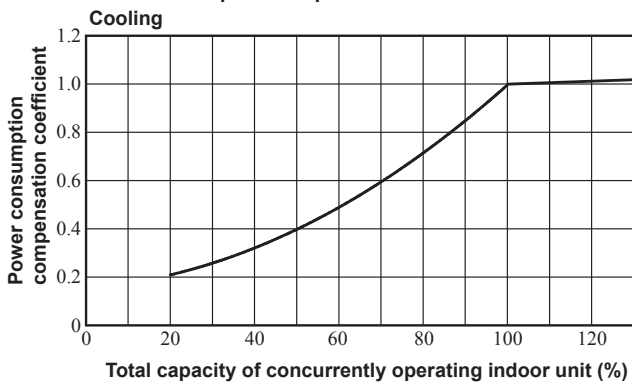


Model FDC1500KXZRE1

◆ **Capability compensation coefficient**

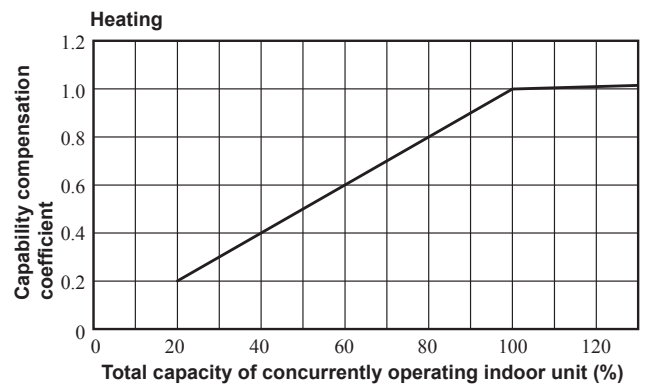
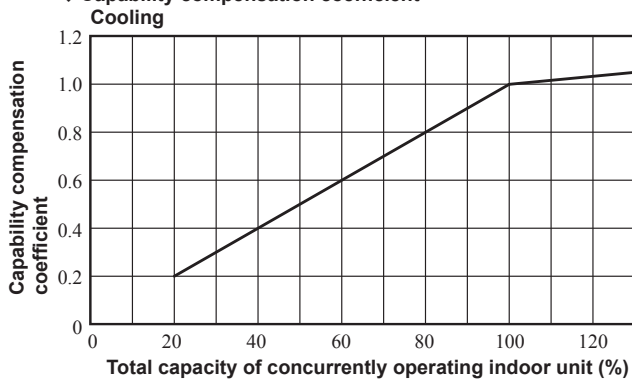


◆ **Power consumption compensation coefficient**

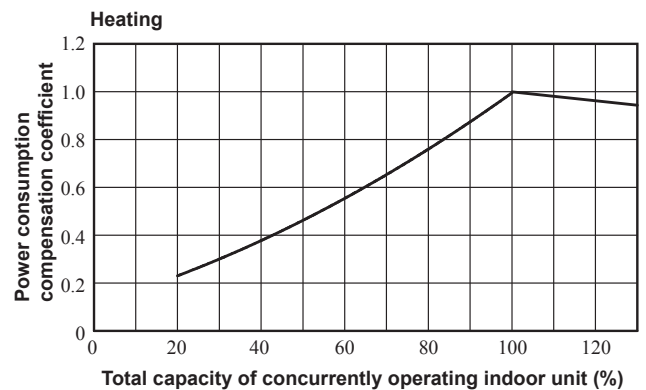
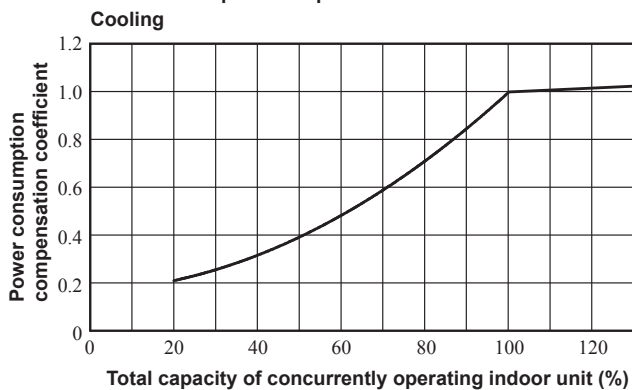


Model FDC1560KXZRE1

◆ **Capability compensation coefficient**



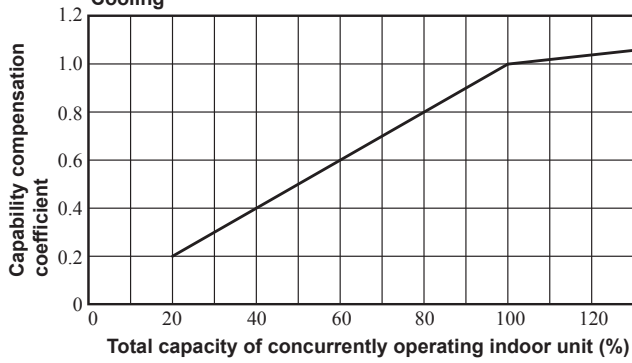
◆ **Power consumption compensation coefficient**



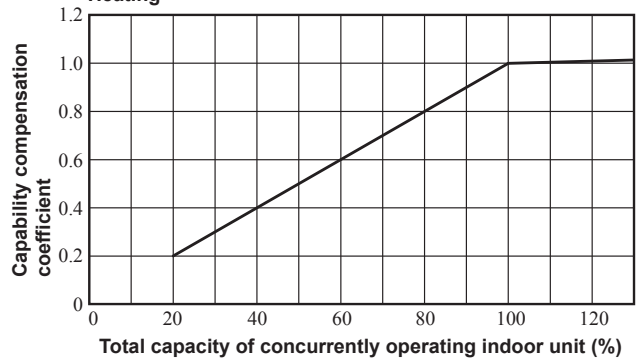
Model FDC1620KXZRE1

◆ Capability compensation coefficient

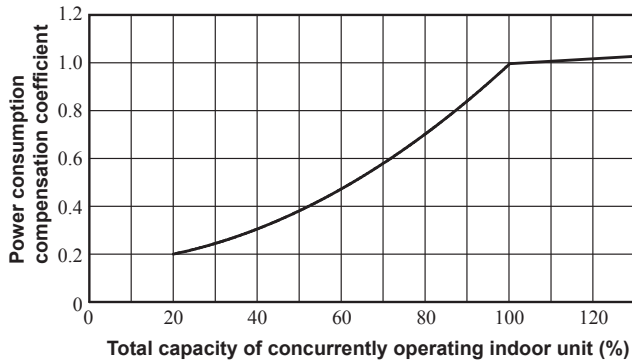
Cooling



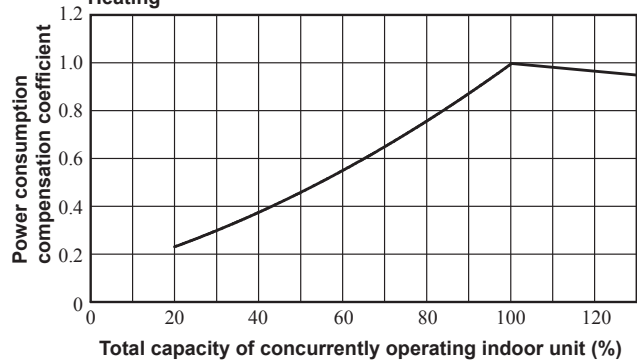
Heating



◆ Power consumption compensation coefficient



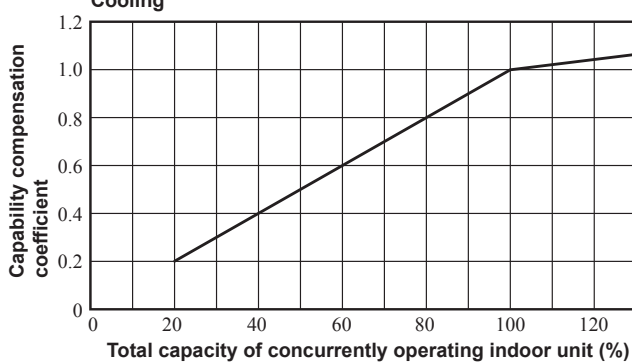
Heating



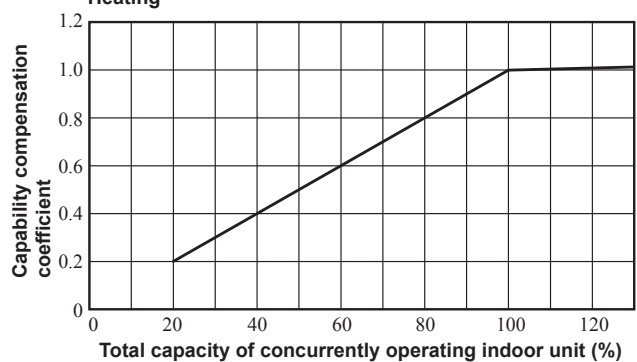
Model FDC1680KXZRE1

◆ Capability compensation coefficient

Cooling

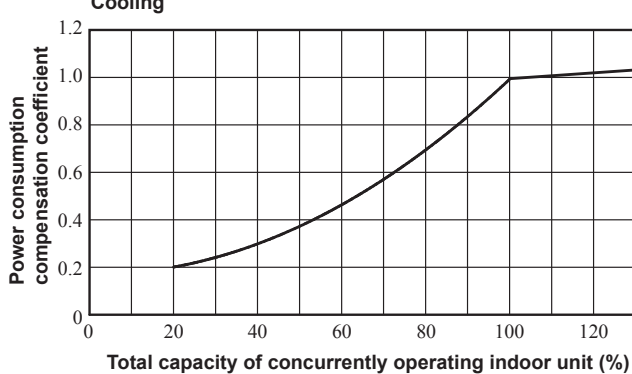


Heating

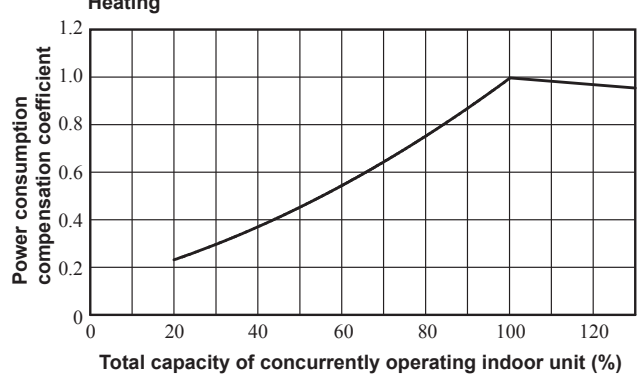


◆ Power consumption compensation coefficient

Cooling

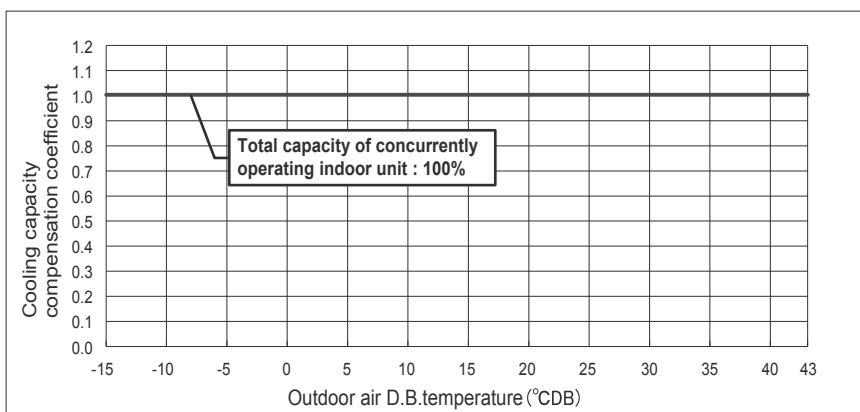
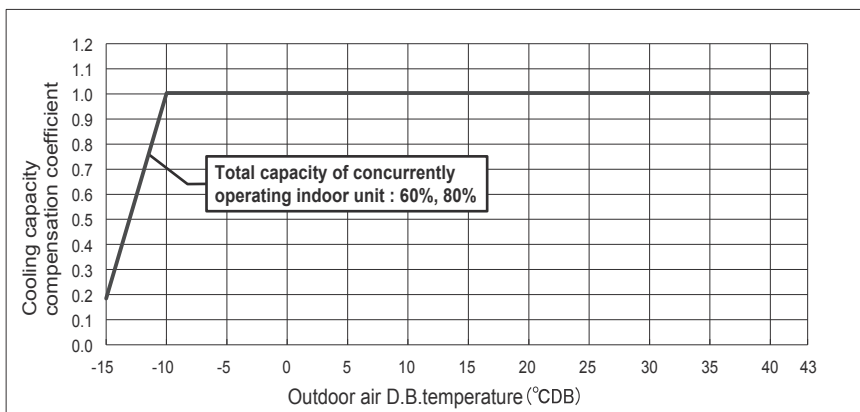
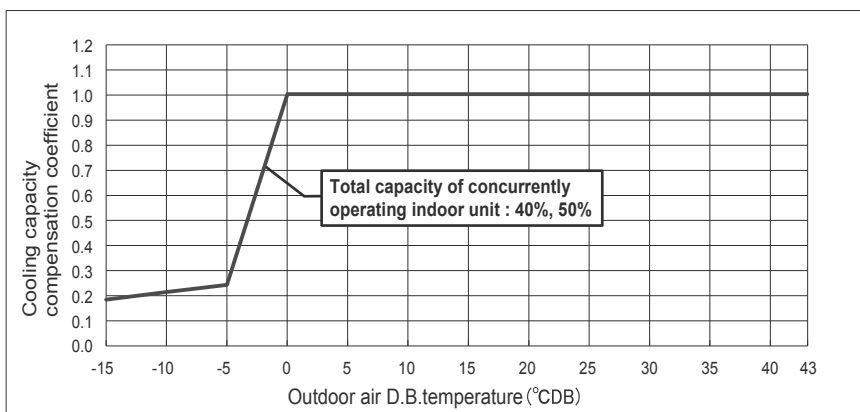
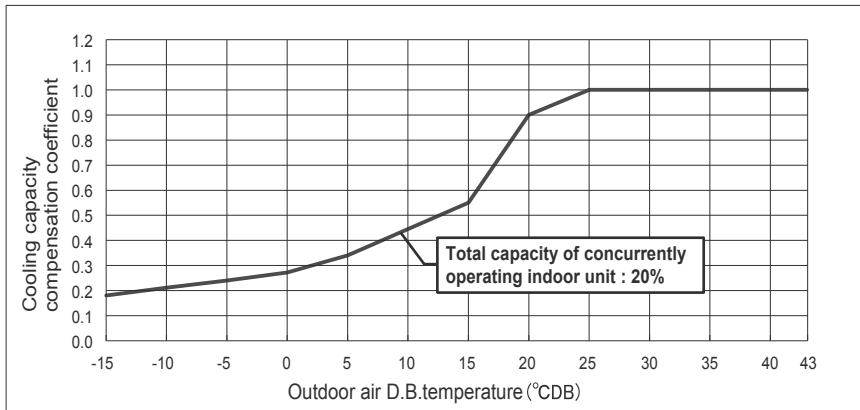


Heating



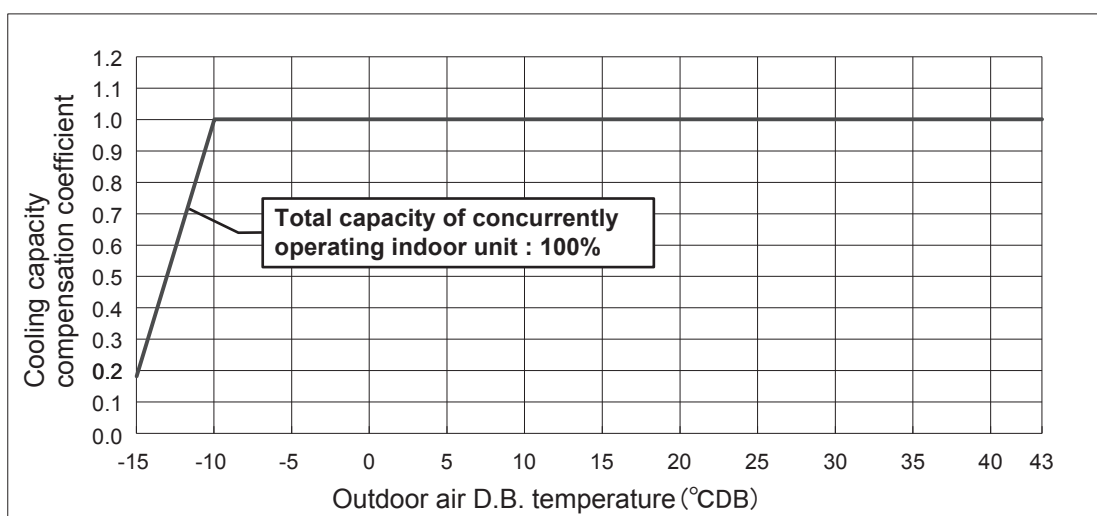
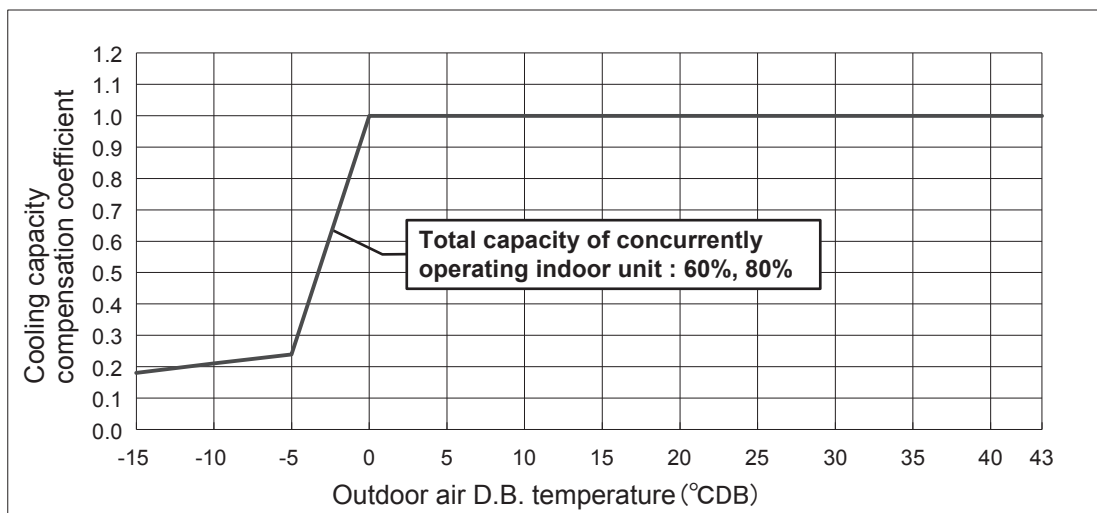
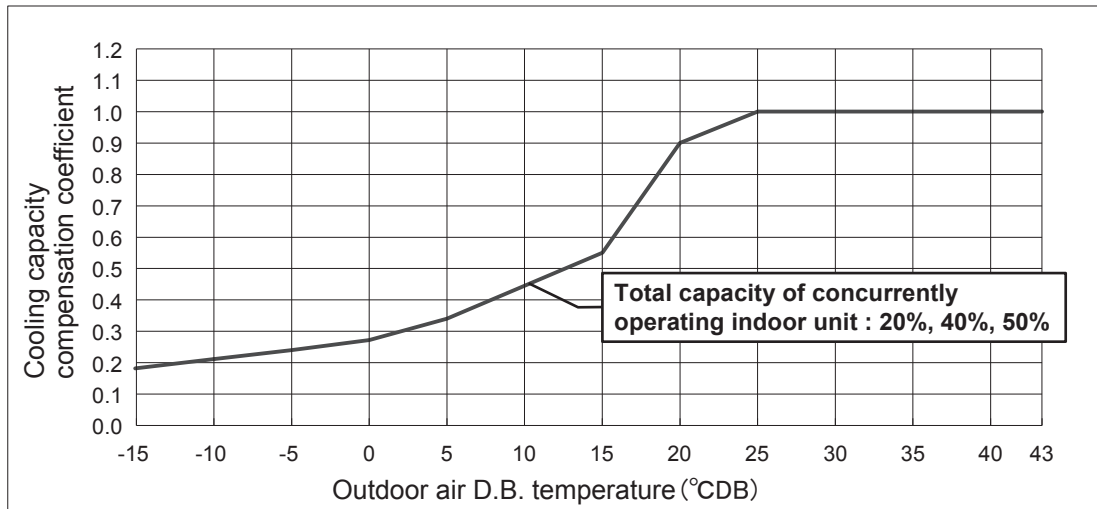
**(f) The capacity compensation coefficient:
Cooling capacity in low temperature under operation of Anti-frost control.**

(i) Indoor fan tap: PHi



Capacity compensation coefficient is that of cooling capacity at each fan-tap.
 (Condition) Room temp: 27 °CDB/19°CWB
 (*) If room temp. is lower than 27°CDB/19°CWB, cooling capacity ratio tends to be smaller than values shown in graph.
 The lowest fan tap in the operating indoor units should be selected on above graph.

(ii) Indoor fan tap: Lo



Capacity compensation coefficient is that of cooling capacity at each fan-tap.
 (Condition) Room temp: 27 °CDB/19°CWB
 (*) If room temp. is lower than 27°CDB/19°CWB, cooling capacity ratio tends to be smaller than values shown in graph.
 The lowest fan tap in the operating indoor units should be selected on above graph.

6. WARNINGS ON REFRIGERANT LEAKAGE

Check of concentration limit

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.

The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively.

Suffocation from leakage of R410A is almost nonexistent. With the recent increase in the number of high concentration buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.

Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

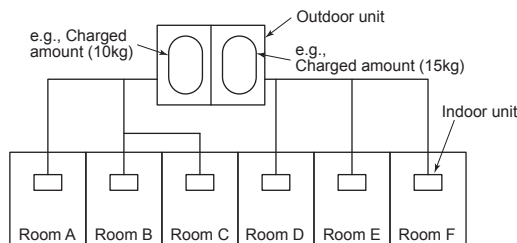
In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.

The concentration is as given below.

$$\frac{\text{Total amount of refrigerant (kg)}}{\text{Min. volume of the indoor unit installed room (m}^3\text{)}} \leq \text{Concentration limit (kg/m}^3\text{)}$$

The concentration limit of R410A which is used in multi air conditioners is 0.42kg/m³. (ISO5149)

Note(1) If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.

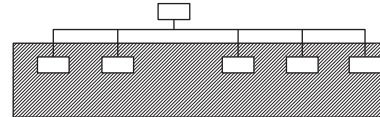


For the amount of charge in this example:
 The possible amount of leaked refrigerant gas in rooms A, B and C is 10kg.
 The possible amount of leaked refrigerant gas in rooms D, E and F is 15kg.

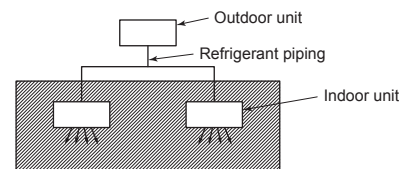
Important

Note(2) The standards for minimum room volume are as follows.

① No partition (shaded portion)

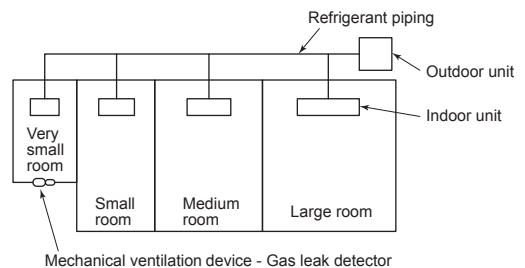


② When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).

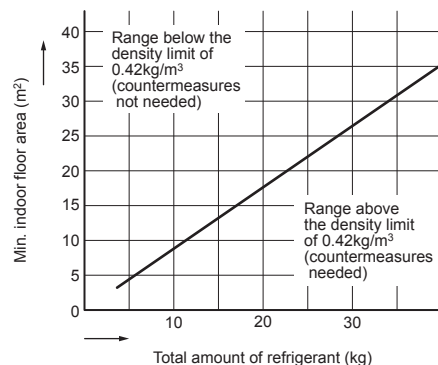


③ If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest of course becomes the object.

But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.



Note(3) The minimum indoor floor area compared with the amount of refrigerant is roughly as follows: (When the ceiling is 2.7m high)



VRF INVERTER MULTI-SYSTEM AIR-CONDITIONERS



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<http://www.mhi-mth.co.jp/>

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