MITSUBISHI HEAVY INDUSTRIES

VRF

INWERTEROWY SYSTEM KXZ

SPECYFIKACJA PROJEKTOWA

Project: BUDYNEK HURTOWNI FARMACEUTYCZN

Klient: Rządowa Agencja Rezerw Strategicznych

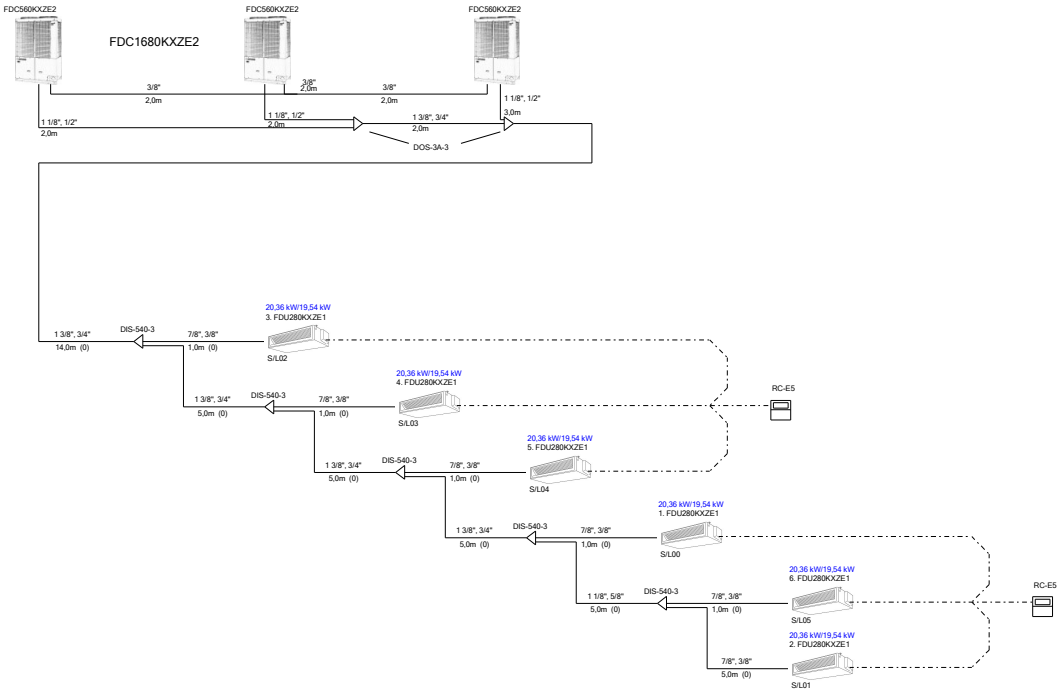
Przygotował: tk

Lokalizacja: Jeleń ul. Wąwał

Data/czas raportu: 05.04.2022 11:02

NEJ

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 1
Warunki projektowe: 27,0˚C DB, 16,0˚C WB / 35,0˚C DB
Całkowita długość rurociągów : 53,0m z 1000,0m
Ilość podłączonych jedn. wewn. : 6
Wydajność chłodnicza (rzeczywista) : 122,13 kW / 117,25 kW
Wydajność chłodnicza (żądana) : 0,00 kW / 0,00 kW
Indeks wydajności jedn. wewn. : 1680 / 2184
Wsp. niejednoczesności : 0%
Dod. ilość czynnika chł. : 29,0 kg
Całkowita ilość czynnika : 63,5 kg
Ekwiwalent CO2 : 132,57 t

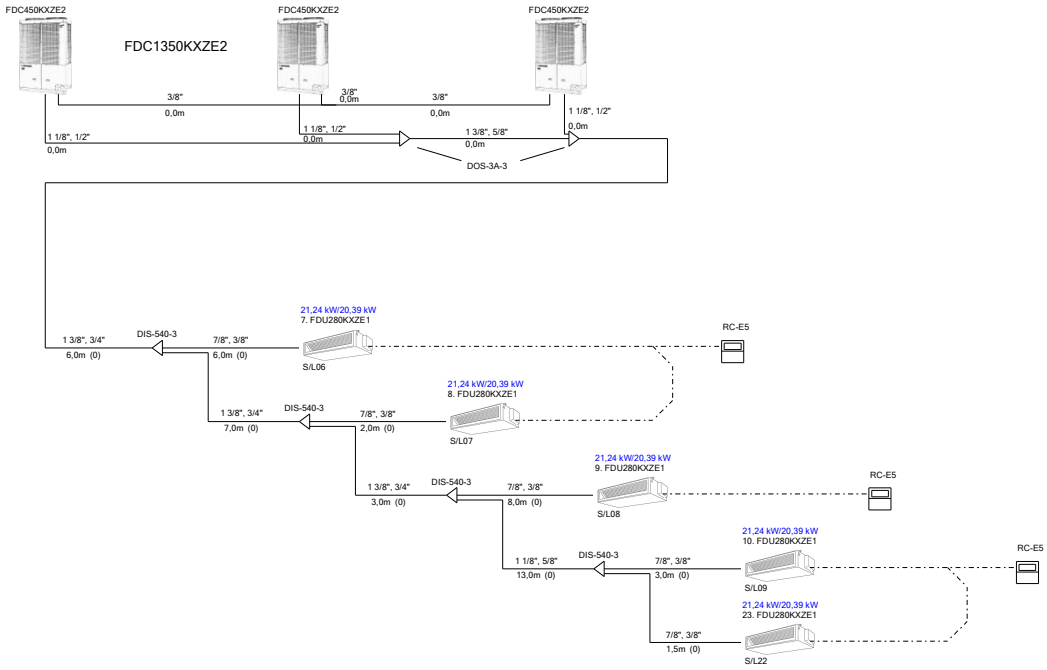


Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 1

Lista uwag

⚠ Chłodzenie w temp. zewn. poniżej 10°C: jedn. wewn. położone maksymalnie 30m ponad jedn. zewn.

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 4
Warunki projektowe: 27,0˚C DB, 16,0˚C WB / 35,0˚C DB
Całkowita długość rurociągów : 49,5m z 1000,0m
Ilość podłączonych jedn. wewn. : 5
Wydajność chłodnicza (rzeczywista) : 106,18 kW / 101,93 kW
Wydajność chłodnicza (żądana) : 0,00 kW / 0,00 kW
Indeks wydajności jedn. wewn. : 1400 / 1755
Wsp. niejednoczesności : 0%
Dod. ilość czynnika chł. : 14,5 kg
Całkowita ilość czynnika : 49,0 kg
Ekwiwalent CO2 : 102,33 t

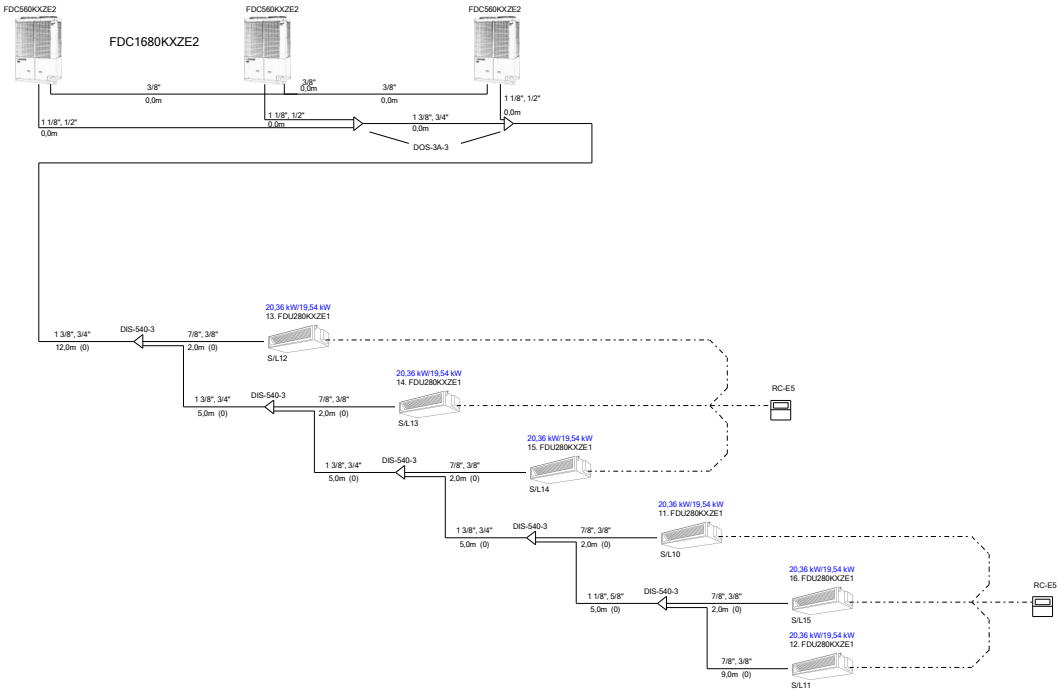


Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 4

Lista uwag

⚠ Chłodzenie w temp. zewn. poniżej 10°C: jedn. wewn. położone maksymalnie 30m ponad jedn. zewn.

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 2
Warunki projektowe: 27,0˚C DB, 16,0˚C WB / 35,0˚C DB
Całkowita długość rurociągów : 51,0m z 1000,0m
Ilość podłączonych jedn. wewn. : 6
Wydajność chłodnicza (rzeczywista) : 122,13 kW / 117,25 kW
Wydajność chłodnicza (żądana) : 0,00 kW / 0,00 kW
Indeks wydajności jedn. wewn. : 1680 / 2184
Wsp. niejednoczesności : 0%
Dod. ilość czynnika chł. : 27,6 kg
Całkowita ilość czynnika : 62,1 kg
Ekwiwalent CO2 : 129,75 t

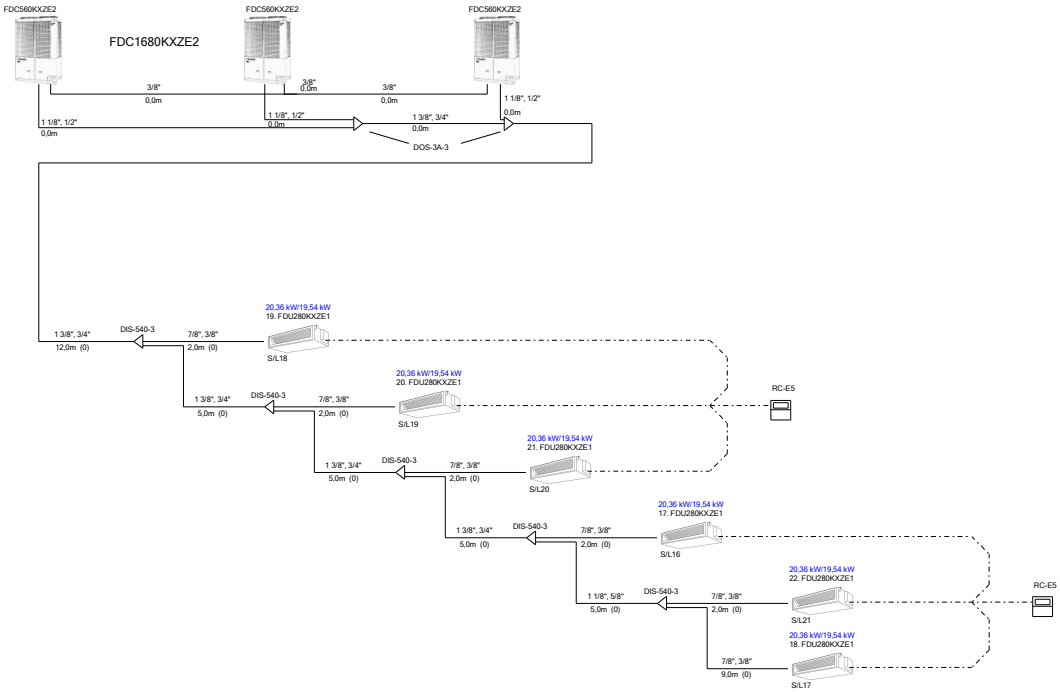


Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 2

Lista uwag

⚠ Chłodzenie w temp. zewn. poniżej 10°C: jedn. wewn. położone maksymalnie 30m ponad jedn. zewn.

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 3
Warunki projektowe: 27,0˚C DB, 16,0˚C WB / 35,0˚C DB
Całkowita długość rurociągów : 51,0m z 1000,0m
Ilość podłączonych jedn. wewn. : 6
Wydajność chłodnicza (rzeczywista) : 122,13 kW / 117,25 kW
Wydajność chłodnicza (żądana) : 0,00 kW / 0,00 kW
Indeks wydajności jedn. wewn. : 1680 / 2184
Wsp. niejednoczesności : 0%
Dod. ilość czynnika chł. : 27,6 kg
Całkowita ilość czynnika : 62,1 kg
Ekwiwalent CO2 : 129,75 t

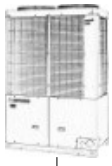


Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 3

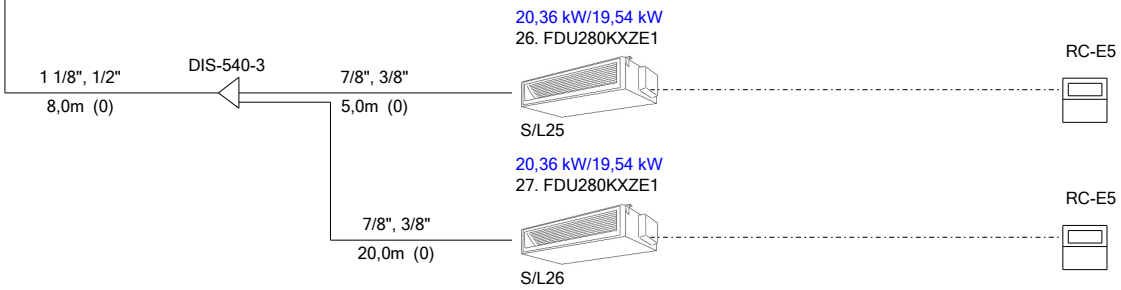
Lista uwag

⚠ Chłodzenie w temp. zewn. poniżej 10°C: jedn. wewn. położone maksymalnie 30m ponad jedn. zewn.

FDC560KXZE2



Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 5
Warunki projektowe: 27,0˚C DB, 16,0˚C WB / 35,0˚C DB
Całkowita długość rurociągów : 33,0m z 1000,0m
Ilość podłączonych jedn. wewn. : 2
Wydajność chłodnicza (rzeczywista) : 40,71 kW / 39,08 kW
Wydajność chłodnicza (żądana) : 0,00 kW / 0,00 kW
Indeks wydajności jedn. wewn. : 560 / 896
Wsp. niejednoczesności : 0%
Dod. ilość czynnika chł. : 8,6 kg
Całkowita ilość czynnika : 20,1 kg
Ekwiwalent CO2 : 42,04 t



Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 5

Lista uwag

⚠ Chłodzenie w temp. zewn. poniżej 10°C: jedn. wewn. położone maksymalnie 30m ponad jedn. zewn.

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100

System : System 1

Temperatury projektowe (chłodzenie)		Temperatury projektowe (ogrzewanie)	
temp. zewn. DB	temp. wewn. WB	temp. zewn. WB	temp. wewn. DB
35,0˚C	16,0˚C	6,0˚C	20,0˚C

Jed.	Pomieszczenie	Model	Wyd. nom. (kW) Całkowita	Jawna	Ogrzew.	Wyd. rzeczyw. (kW) Całkowita	Jawna	Ogrzew.	Jedn.wewn. Położenie (m)		Rzecz. Dł. (m)	Ruroc. Dł. (m)	Adres S/L	O/U	I/U
		FDC1680KXZE2	168,00	-	189,00	128,70	-	186,70					1	00	-
1		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	33,0	33,0	1	00	00
2		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	42,0	42,0	1	00	01
3		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	18,0	18,0	1	00	02
4		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	23,0	23,0	1	00	03
5		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	28,0	28,0	1	00	04
6		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	38,0	38,0	1	00	05
		ŁĄCZNIE	151,20	119,74	170,40	122,13	117,25	170,40							

System : System 4

Temperatury projektowe (chłodzenie)		Temperatury projektowe (ogrzewanie)	
temp. zewn. DB	temp. wewn. WB	temp. zewn. WB	temp. wewn. DB
35,0˚C	16,0˚C	6,0˚C	20,0˚C

Jed.	Pomieszczenie	Model	Wyd. nom. (kW) Całkowita	Jawna	Ogrzew.	Wyd. rzeczyw. (kW) Całkowita	Jawna	Ogrzew.	Jedn.wewn. Położenie (m)		Rzecz. Dł. (m)	Ruroc. Dł. (m)	Adres S/L	O/U	I/U
		FDC1350KXZE2	135,00	-	150,00	106,18	-	148,92					1	04	-
7		FDU280KXZE1	28,00	22,19	31,50	21,24	20,39	29,78	Poniżej	0,0	12,0	12,0	1	04	06
8		FDU280KXZE1	28,00	22,19	31,50	21,24	20,39	29,78	Poniżej	0,0	15,0	15,0	1	04	07
9		FDU280KXZE1	28,00	22,19	31,50	21,24	20,39	29,78	Poniżej	0,0	24,0	24,0	1	04	08
10		FDU280KXZE1	28,00	22,19	31,50	21,24	20,39	29,78	Poniżej	0,0	32,0	32,0	1	04	09
23		FDU280KXZE1	28,00	22,19	31,50	21,24	20,39	29,78	Poniżej	0,0	30,5	30,5	1	04	22
		ŁĄCZNIE	140,00	110,96	157,50	106,18	101,93	148,92							

System : System 2

Temperatury projektowe (chłodzenie)		Temperatury projektowe (ogrzewanie)	
temp. zewn. DB	temp. wewn. WB	temp. zewn. WB	temp. wewn. DB
35,0˚C	16,0˚C	6,0˚C	20,0˚C

Jed.	Pomieszczenie	Model	Wyd. nom. (kW) Całkowita	Jawna	Ogrzew.	Wyd. rzeczyw. (kW) Całkowita	Jawna	Ogrzew.	Jedn.wewn. Położenie (m)		Rzecz. Dł. (m)	Ruroc. Dł. (m)	Adres S/L	O/U	I/U
		FDC1680KXZE2	168,00	-	189,00	128,92	-	186,76					1	05	-
11		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	29,0	29,0	1	05	10
12		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	41,0	41,0	1	05	11
13		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	14,0	14,0	1	05	12
14		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	19,0	19,0	1	05	13
15		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	24,0	24,0	1	05	14
16		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	34,0	34,0	1	05	15
		ŁĄCZNIE	151,20	119,74	170,40	122,13	117,25	170,40							

System : System 3

Temperatury projektowe (chłodzenie)		Temperatury projektowe (ogrzewanie)	
temp. zewn. DB	temp. wewn. WB	temp. zewn. WB	temp. wewn. DB
35,0˚C	16,0˚C	6,0˚C	20,0˚C

Jed.	Pomieszczenie	Model	Wyd. nom. (kW) Całkowita	Jawna	Ogrzew.	Wyd. rzeczyw. (kW) Całkowita	Jawna	Ogrzew.	Jedn.wewn. Położenie (m)		Rzecz. Dł. (m)	Ruroc. Dł. (m)	Adres S/L	O/U	I/U
		FDC1680KXZE2	168,00	-	189,00	128,92	-	186,76					1	08	-
17		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	29,0	29,0	1	08	16
18		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	41,0	41,0	1	08	17
19		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	14,0	14,0	1	08	18
20		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	19,0	19,0	1	08	19
21		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	24,0	24,0	1	08	20
22		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	34,0	34,0	1	08	21
		ŁĄCZNIE	151,20	119,74	170,40	122,13	117,25	170,40							

System : System 5

Temperatury projektowe (chłodzenie)		Temperatury projektowe (ogrzewanie)	
temp. zewn. DB	temp. wewn. WB	temp. zewn. WB	temp. wewn. DB
35,0˚C	16,0˚C	6,0˚C	20,0˚C

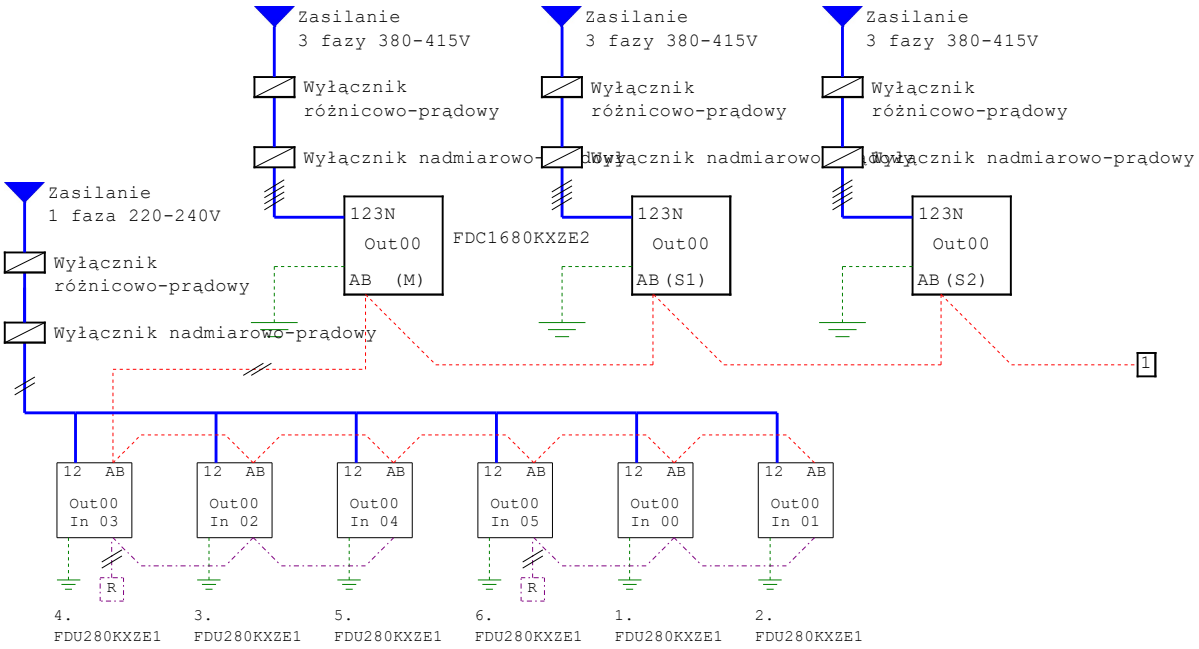
Jed.	Pomieszczenie	Model	Wyd. nom. (kW) Całkowita	Jawna	Ogrzew.	Wyd. rzeczyw. (kW) Całkowita	Jawna	Ogrzew.	Jedn.wewn. Położenie (m)		Rzecz. Dł. (m)	Ruroc. Dł. (m)	Adres S/L	O/U	I/U
		FDC560KXZE2	56,00	-	63,00	44,38	-	62,54					1	11	-
26		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	13,0	13,0	1	11	25
27		FDU280KXZE1	25,20	19,96	28,40	20,36	19,54	28,40	Poniżej	0,0	28,0	28,0	1	11	26
		ŁĄCZNIE	50,40	39,91	56,80	40,71	39,08	56,80							

Projekt: BUDYNEK HURTOWNI FA
Nr projektu: 0100
System: System 1

Jedn. zewn.	380v	415v
Prąd pracy (A)	80,70/78,30	73,80/71,70
Współczynnik mocy (%)	94/94	94/94
Prąd rozruchu (A)	24,00	
Prąd maks. (A)	40.2+40.2+40.2	
Pobór mocy el. (kW)	52,50/48,46	

Jedn. wewn. (chł./ogrz.)	220v	240v
Całk. pobór mocy el. (kW)	6,96/6,96	7,20/7,20
Całkowity prąd pracy (A)	40,80/40,80	39,00/39,00

Schematy elektryczne mają charakter wyłącznie poglądowy
Instalację elektryczną wykonać zgodnie z obowiązującymi normami.

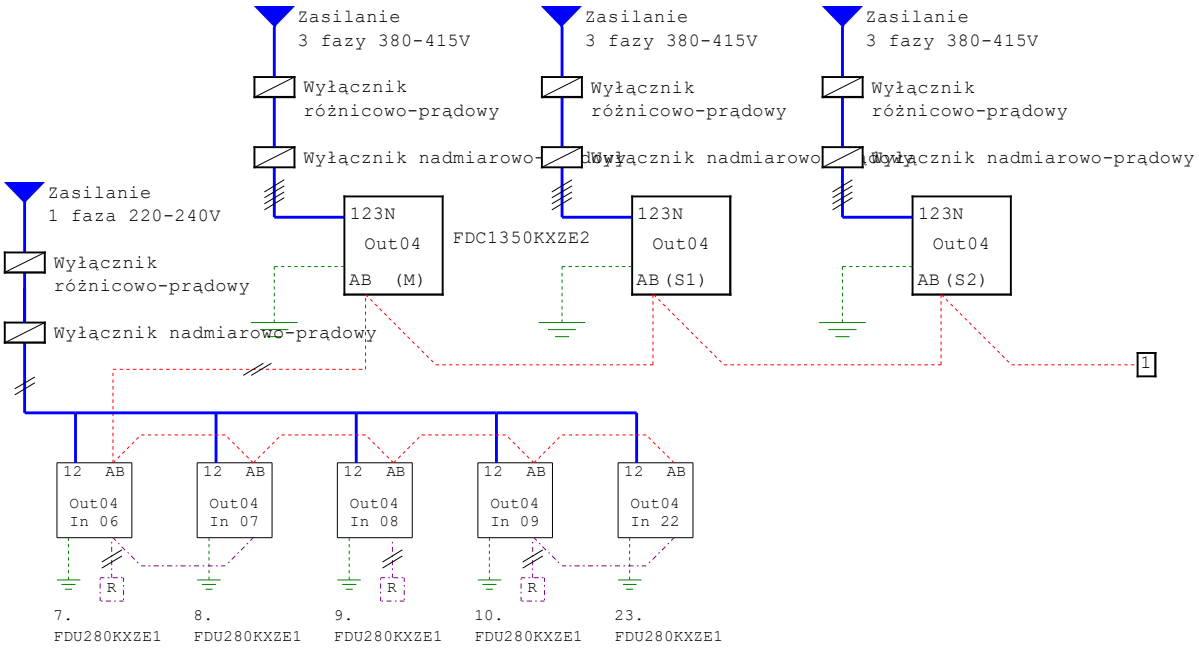


Projekt: BUDYNEK HURTOWNI FA
Nr projektu: 0100
System: System 4

Jedn. zewn.	380v	415v
Prąd pracy (A)	67,20/61,20	61,50/56,10
Współczynnik mocy (%)	95/93	95/93
Prąd rozruchu (A)	15,00	
Prąd maks. (A)	32+32+32	
Pobór mocy el. (kW)	41,93/37,50	

Jedn. wewn. (chł./ogrz.)	220v	240v
Całk. pobór mocy el. (kW)	5,80/5,80	6,00/6,00
Całkowity prąd pracy (A)	34,00/34,00	32,50/32,50

Schematy elektryczne mają charakter wyłącznie poglądowy
Instalację elektryczną wykonać zgodnie z obowiązującymi normami.

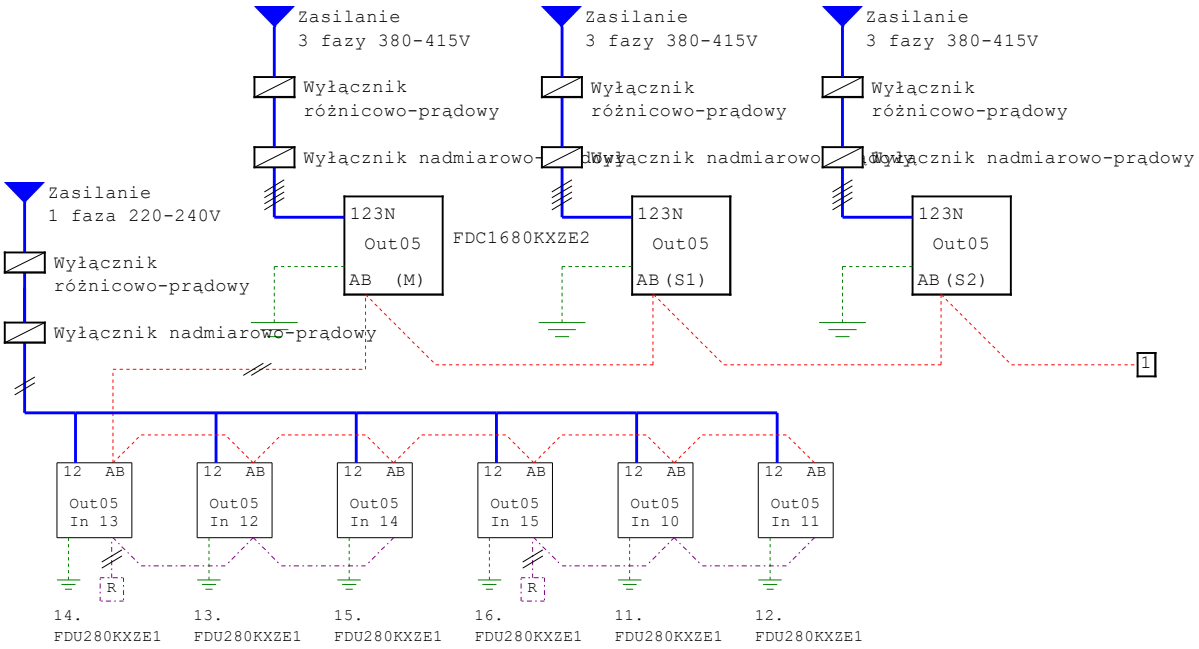


Projekt: BUDYNEK HURTOWNI FA
Nr projektu: 0100
System: System 2

Jedn. zewn.	380v	415v
Prąd pracy (A)	80,70/78,30	73,80/71,70
Współczynnik mocy (%)	94/94	94/94
Prąd rozruchu (A)	24,00	
Prąd maks. (A)	40.2+40.2+40.2	
Pobór mocy el. (kW)	52,50/48,46	

Jedn. wewn. (chł./ogrz.)	220v	240v
Całk. pobór mocy el. (kW)	6,96/6,96	7,20/7,20
Całkowity prąd pracy (A)	40,80/40,80	39,00/39,00

Schematy elektryczne mają charakter wyłącznie poglądowy
Instalację elektryczną wykonać zgodnie z obowiązującymi normami.

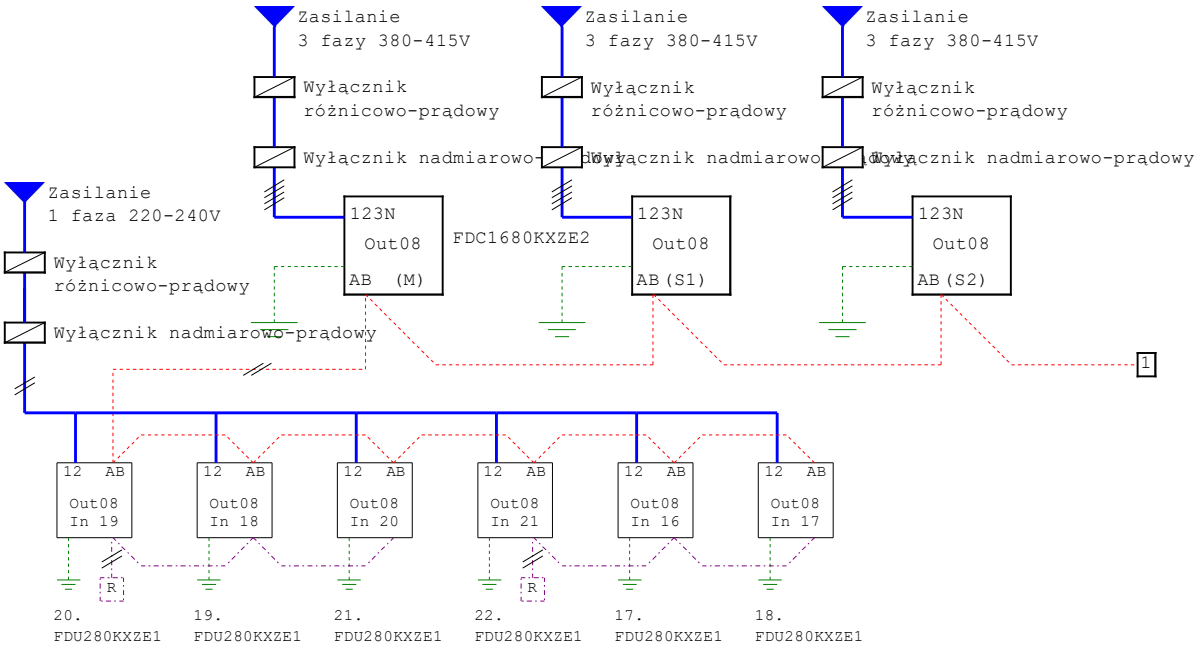


Projekt: BUDYNEK HURTOWNI FA
Nr projektu: 0100
System: System 3

Jedn. zewn.	380v	415v
Prąd pracy (A)	80,70/78,30	73,80/71,70
Współczynnik mocy (%)	94/94	94/94
Prąd rozruchu (A)	24,00	
Prąd maks. (A)	40.2+40.2+40.2	
Pobór mocy el. (kW)	52,50/48,46	

Jedn. wewn. (chł./ogrz.)	220v	240v
Całk. pobór mocy el. (kW)	6,96/6,96	7,20/7,20
Całkowity prąd pracy (A)	40,80/40,80	39,00/39,00

Schematy elektryczne mają charakter wyłącznie poglądowy
Instalację elektryczną wykonać zgodnie z obowiązującymi normami.

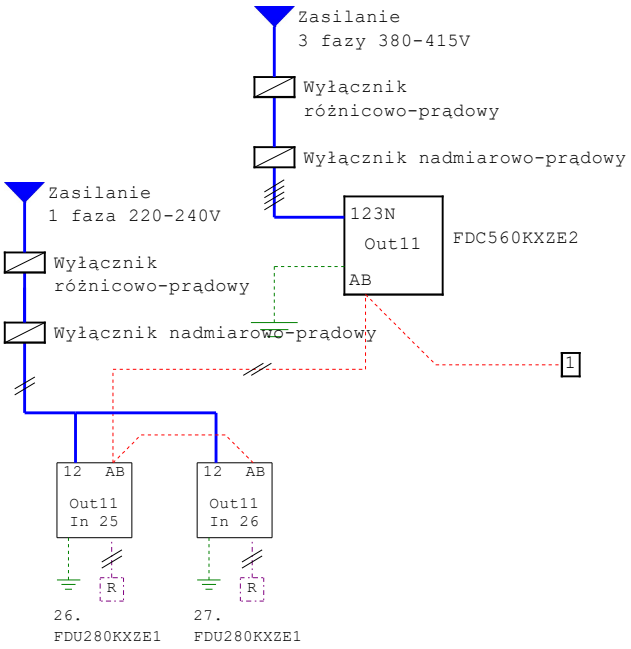


Projekt: BUDYNEK HURTOWNI FA
Nr projektu: 0100
System: System 5

Jedn. zewn.	380v	415v
Prąd pracy (A)	26,90/26,10	24,60/23,90
Współczynnik mocy (%)	94/94	94/94
Prąd rozruchu (A)	8,00	
Prąd maks. (A)	40.2	
Pobór mocy el. (kW)	17,50/16,15	

Jedn. wewn. (chł./ogrz.)	220v	240v
Całk. pobór mocy el. (kW)	2,32/2,32	2,40/2,40
Całkowity prąd pracy (A)	13,60/13,60	13,00/13,00

Schematy elektryczne mają charakter wyłącznie poglądowy
Instalację elektryczną wykonać zgodnie z obowiązującymi normami.



Lista materiałów w projekcie

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100

W projekcie nie występują sterowniki centralne i sterowniki BMS

Lista materiałów w systemie

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 1

Jedn. zewn.	Ilość
FDC560KXZE2	3

Jedn.wewn.	Ilość
FDU280KXZE1	6

Trójnik	Ilość
DIS-540-3	5

Trójnik dla jednostek zewnętrznych	Ilość
DOS-3A-3	1

Sterowniki	Ilość
RC-E5	2

Dod. ilość czynnika chł.	29,0 kg

Średnica rurociągu	Całkowita dł. (m)
3/8"	12,0
1/2"	7,0
5/8"	5,0
3/4"	31,0
7/8"	10,0
1 1/8"	12,0
1 3/8"	31,0

Lista materiałów w systemie

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 4

Jedn. zewn.	Ilość
FDC450KXZE2	3

Jedn.wewn.	Ilość
FDU280KXZE1	5

Trójnik	Ilość
DIS-540-3	4

Trójnik dla jednostek zewnętrznych	Ilość
DOS-3A-3	1

Sterowniki	Ilość
RC-E5	3

Dod. ilość czynnika chł.	14,5 kg

Średnica rurociągu	Całkowita dł. (m)
3/8"	20,5
5/8"	13,0
3/4"	16,0
7/8"	20,5
1 1/8"	13,0
1 3/8"	16,0

Lista materiałów w systemie

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 2

Jedn. zewn.	Ilość
FDC560KXZE2	3

Jedn.wewn.	Ilość
FDU280KXZE1	6

Trójnik	Ilość
DIS-540-3	5

Trójnik dla jednostek zewnętrznych	Ilość
DOS-3A-3	1

Sterowniki	Ilość
RC-E5	2

Dod. ilość czynnika chł.	27,6 kg

Średnica rurociągu	Całkowita dł. (m)
3/8"	19,0
5/8"	5,0
3/4"	27,0
7/8"	19,0
1 1/8"	5,0
1 3/8"	27,0

Lista materiałów w systemie

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 3

Jedn. zewn.	Ilość
FDC560KXZE2	3

Jedn.wewn.	Ilość
FDU280KXZE1	6

Trójnik	Ilość
DIS-540-3	5

Trójnik dla jednostek zewnętrznych	Ilość
DOS-3A-3	1

Sterowniki	Ilość
RC-E5	2

Dod. ilość czynnika chł.	27,6 kg

Średnica rurociągu	Całkowita dł. (m)
3/8"	19,0
5/8"	5,0
3/4"	27,0
7/8"	19,0
1 1/8"	5,0
1 3/8"	27,0

Lista materiałów w systemie

Projekt : BUDYNEK HURTOWNI FARMACEUTYCZNEJ
Nr projektu : 0100
System : System 5

Jedn. zewn.	Ilość
FDC560KXZE2	1

Jedn.wewn.	Ilość
FDU280KXZE1	2

Trójnik	Ilość
DIS-540-3	1

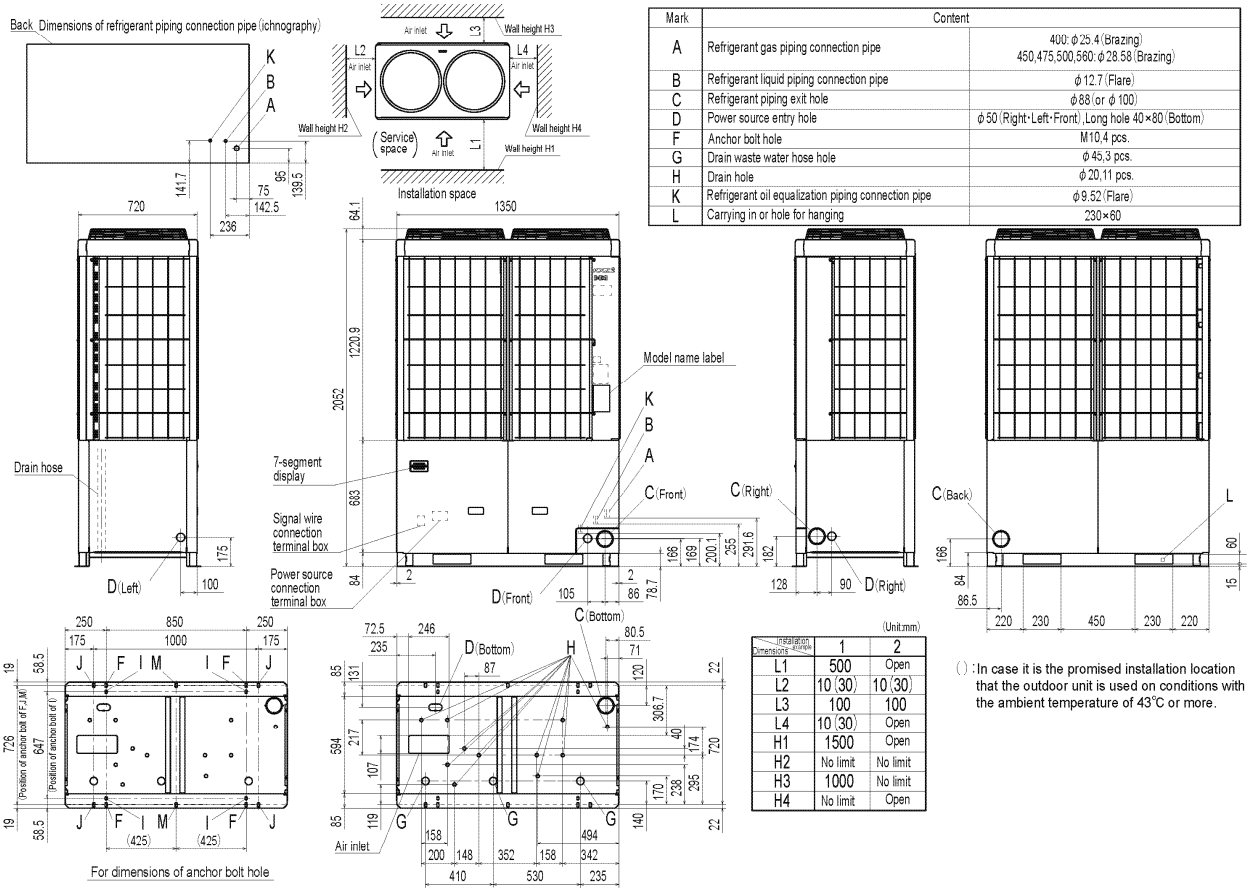
Sterowniki	Ilość
RC-E5	2

Dod. ilość czynnika chł.	8,6 kg

Średnica rurociągu	Całkowita dł. (m)
3/8"	25,0
1/2"	8,0
7/8"	25,0
1 1/8"	8,0

FDC400KXZE2, FDC450KXZE2, FDC475KXZE2, FDC500KXZE2, FDC560KXZE2

Unit:mm



Mark	Content	
A	Refrigerant gas piping connection pipe	400: φ25.4 (Brazing) 450,475,500,560: φ28.58 (Brazing)
B	Refrigerant liquid piping connection pipe	φ12.7 (Flare)
C	Refrigerant piping exit hole	φ88 (or φ100)
D	Power source entry hole	φ50 (Right・Left・Front), Long hole 40×80 (Bottom)
F	Anchor bolt hole	M10,4 pcs.
G	Drain waste water hose hole	φ45,3 pcs.
H	Drain hole	φ20,11 pcs.
K	Refrigerant oil equalization piping connection pipe	φ9.52 (Flare)
L	Carrying in or hole for hanging	230×60

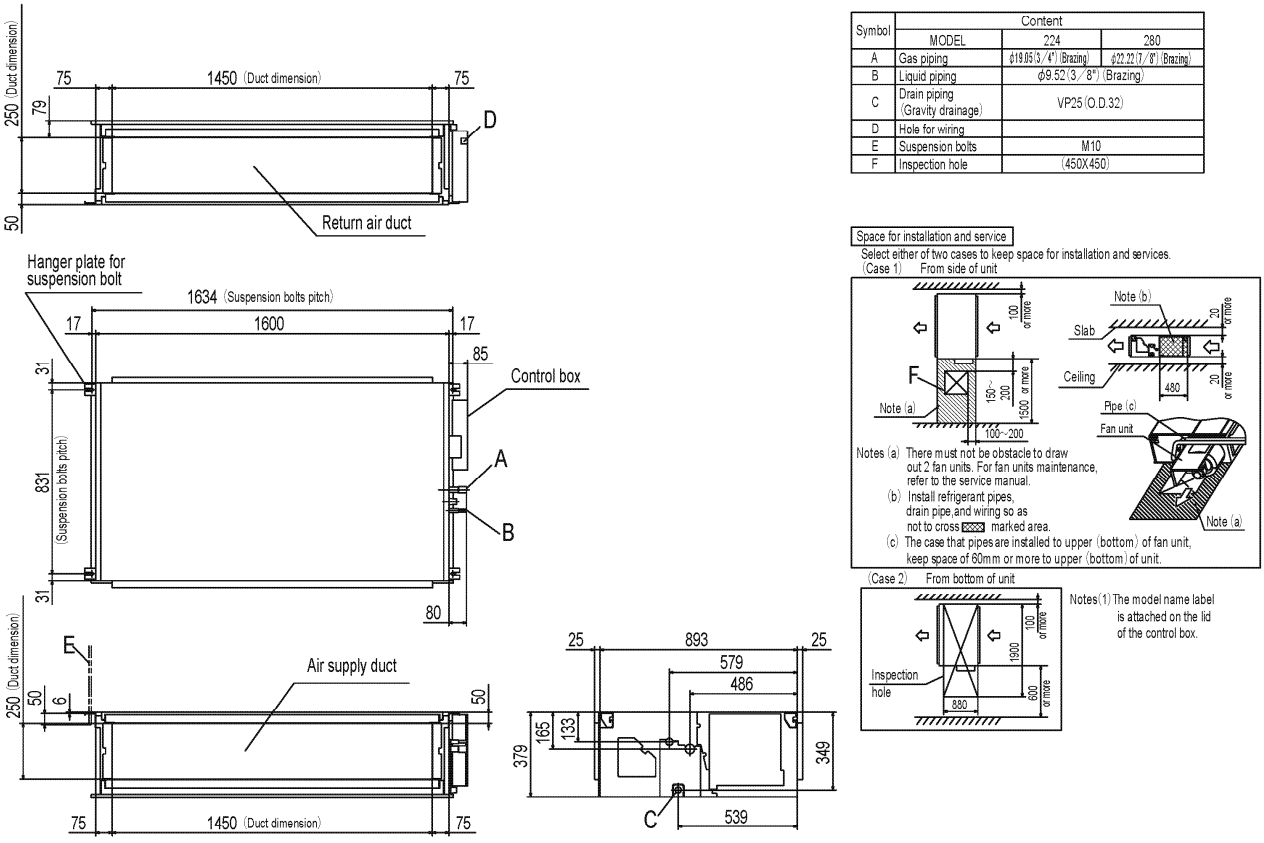
(Unit:mm)

Installation Dimensions / Example	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.

FDU224KXZE1, 280KXZE1

Unit:mm



Symbol	Content		
	MODEL	224	280
A	Gas piping	φ19.05(3/4") (Brazing)	φ22.22(7/8") (Brazing)
B	Liquid piping	φ9.52(3/8") (Brazing)	
C	Drain piping (Gravity drainage)	VP25(O.D.32)	
D	Hole for wiring		
E	Suspension bolts	M10	
F	Inspection hole	(450X450)	

Space for installation and service

Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

Notes (a) There must not be obstacle to draw out 2 fan units. For fan units maintenance, refer to the service manual.

(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross ▨ marked area.

(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit

Notes(1) The model name label is attached on the lid of the control box.

OUTDOOR UNIT(FDC)

Models			FDC280KXZE2	FDC335KXZE2	FDC400KXZE2	FDC450KXZE2	FDC475KXZE2	FDC500KXZE2	FDC560KXZE2
Nominal cooling capacity*1		kW	28.0	33.5	40.0	45.0	47.5	50.0	56.0
Nominal heating capacity*2			31.5	37.5	45.0	50.0	53.0	56.0	63.0
Maximum heating capacity			31.5	37.5	45.0	50.0	53.0	56.0	63.0
Power source			3 Phase 380／415V 50Hz ／ 380V 60Hz						
Power consumption	Cooling	kW	7.25	8.98	10.98	13.98	13.97	14.01	17.50
	Heating		7.41	9.03	10.23	12.50	12.99	13.56	16.15
Running current	Cooling	A	12.0／11.0	14.7／13.4	17.6／16.3	22.4／20.5	22.6／20.7	22.6／20.7	26.9／24.6
	Heating		12.2／11.2	14.8／13.5	16.7／15.5	20.4／18.7	21.0／19.2	21.9／20.1	26.1／23.9
Power factor	Cooling	%	92／92	93／93	95／94	95／95	94／94	94／94	94／94
	Heating		92／92	93／93	93／92	93／93	94／94	94／94	94／94
EER			3.86	3.73	3.64	3.22	3.40	3.57	3.20
COP			4.25	4.15	4.40	4.00	4.08	4.13	3.90
Sound Pressure Level (Cooling／Heating)		dB(A)	56／57	63／62	60／62	61／62	61／61	61／62	63／64
Sound Power Level (Cooling／Heating)		dB(A)	75／76	82／81	80／82	81／82	81／81	81／82	82／83
Starting current		A	5				8		
Maximum current			20.1	20.1	32.0	32.0	40.2	40.2	40.2
Exterior dimensions Height × Width × Depth		mm	1697×1350×720		2052×1350×720				
Exterior appearance (Munsell color)			Stucco White (4.2Y7.5／1.1) & Dark Silver (0.5Y4.3／0.1) near equivalent						
Net weight		kg	288		332		378		
Refrigerant equipment compressor type & Q'ty			GTC5150NC47BF×1		GUC5185ND47B×1		GTC5150NC47BF×2		
Motor		kW	4.76×1	5.94×1	7.32×1	9.32×1	4.64×2	4.91×2	5.36×2
Starting method			Direct line starting						
Crankcase heater		W	33×1		40×1		33×2		
Refrigerant equipment Heat exchanger			M fin & inner grooved tubing						
Refrigerant control			Electronic expansion valve						
Refrigerant type			R410A						
Refrigerant amount		kg	11.0		11.5				
Refrigerant oil		L	2.25 (M-MA32R)		2.9 (M-MA32R)		4.2 (M-MA32R)		
Defrost control			Microcomputer controlled De-Icer						
Air handling equipment fan type & Q'ty			Propeller fan × 2						
Motor		W	560×2						
Starting method			Direct start						
Air flow (Standard)		m³/min	225／225	294／283	304／304		300／300		300／284
Available external static pressure		Pa	Max.85						
Shock & vibration absorber			Rubber mount (for compressor)						
Safety equipment			Compressor overheat protection ／ overcurrent protection ／ power transistor overheating protection ／ abnormal high pressure protection						
Installation data Refrigerant piping size	Liquid Line	mm (in)	φ9.52 (3/8")	φ12.7 (1/2")					
	Gas line	mm (in)	φ22.22 (7/8")	φ25.4 (1") (φ22.22 (7/8"))	φ25.4 (1") (φ28.58 (1･1/8"))		φ28.58 (1･1/8")		
Connecting method			Gas line : Brazing ／ Liquid line : Flare						
MAX. Pressure		MPa	High 4.15 Low 2.21						
Drain			Hole for drain (φ20 × 10 pcs., φ45 × 3 pcs.)						
Insullation for piping			Necessary (both Liquid & Gas line)						
IP number			IP24						
Accessories			-	-	-	-	-	-	-

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

Item / Operation	Indoor air temperature DB	Indoor air temperature WB	Outdoor air temperature DB	Outdoor air temperature WB	Standards
Cooling	27 ℃	19 ℃	35 ℃	24 ℃	ISO5151-T1,H1
Heating	20 ℃	—	7 ℃	6 ℃	

(2) This air-conditioner is manufactured and tested in conformity with the ISO.
(3) Sound level indicates the value in an anechoic chamber.
During operation these value are somewhat higher due to ambient conditions.
(4) Refrigerant piping size applicable to European installations are shown in parentheses.
(5) This air-conditioner is adapted RoHS directive.

Duct Connected type (FDU)

Models			FDU280KXZE1
Nominal cooling capacity		kW	28.0
Nominal heating capacity			31.5
Power source			220-240V ~ 50Hz / 220V ~ 60Hz
Power consumption	Cooling	kW	1.16 - 1.20 / 1.16
	Heating		1.16 - 1.20 / 1.16
Running current	Cooling	A	6.8 - 6.5 / 6.8
	Heating		6.8 - 6.5 / 6.8
Sound Power Level		dB(A)	75
Sound Pressure Level		dB(A)	P-Hi : 52 Hi : 50 Me : 47 Lo : 45
Exterior dimensions Height x Width x Depth		mm	379 × 1600 × 893
Net weight		kg	89
Refrigerant equipment Heat exchanger			Louver fin & inner grooved tubing
Refrigerant control			Electronic Expansion Valve
Air handling equipment Fan type & Q'ty			Centrifugal fan ×3
Motor		W	130 + 350
Starting method			Direct line start
Air flow(Standard)		m^3/min	P-Hi : 80 Hi : 72 Me : 64 Lo : 56
External static pressure		Pa	200(at 80 m^3/min)
Outside air intake			Possible
Air filter, Q'ty			Procure locally
Shock & vibration absorber			Rubber sleeve(for fan motor)
Insulation (noise & heat)			Polyurethane form
Operation control Operation switch			Remote control switch(OPTION) wired: RC-EX1A,RC-E5,RCH-E3 wireless: RCN-KIT3-E
Room temperature control			Thermostat by electronics
Safety equipment			Overload protection for fan motor Frost protection thermostat
Installation data Refrigerant piping size			Liquid line: ϕ9.52 (3/8") Gas line: ϕ22.22 (7/8")
Connecting method			Brazing
Refrigerant			R410A
Drain pump			-
Drain hose			Connectable with VP25 (Standard)
Insulation for piping			Necessary(both Liquid & Gas line)
Accessories			Mounting kit

Notes

(1) The data are measured at the following conditions. Adapted to **RoHS** directive

Item	Indoor air temperature		Outdoor air temperature		Standards	External static pressure of indoor unit
Operation	DB	WB	DB	WB		Pa
Cooling	27 ℃	19 ℃	35 ℃	24 ℃	ISO-T1	72
Heating	20 ℃		7 ℃	6 ℃		

(2) This packaged air-conditioner is manufactured and tested in conformity with the following standard. ISO-T1 "UNITARY AIR-CONDITIONERS'
(3) Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
(4) Select the breaker size according to the own national standard.
(5)When wireless remote controller is used, fan is 3 speed setting(Hi-Me-Lo) only.
(6) The factory E.S.P. setting is set within the range of 80 - 150 Pa.If SW8-4 is turned to "ON", E.S.P. setting range can be changed to 10 - 200 Pa.(For RC-EX1A and RC-E5 only)

Range of usage & limitations

• Single use (also for combined use)

Item \ System		FDC280KXZE2	FDC335KXZE2	FDC400KXZE2
Indoor air temperature (Upper, lower limits)		Refer to the DATA BOOK		
Outdoor air temperature (Upper, lower limits)				
Indoor units that can be used in combination	Number of connected units	1 to 37 units	1 to 44 units	1 to 53 units
	Connectable capacity (1)	140 - 560	168 - 670	200 - 800
Total piping length (2)		1000m or less		
Main pipe length		130m or less		
Single direction piping length		Actual length : 160m or less, Equivalent length : 185m or less		
Allowable pipe length from the first branching		90m or less (However, difference between the longest and shortest piping : 40m or less(6))		
Elevation difference between the first branching point and the indoor unit		18m or less		
Difference in height between indoor and outdoor units	Outdoor unit is higher	50m or less (Max. 90m or less) (5),(7)		
	Outdoor unit is lower	40m or less (3)		
Difference in the elevation of indoor units in a system		18m or less (Max. 30m or less) (8)		
Indoor unit atmosphere (behind ceiling) temperature and humidity (Only models FDT, FDTC, FDTW, FDTS, FDTQ, FDU, FDUM, FDUT, FDUH, FDU-F)		Dew point temperature 28 ℃ or less, relative humidity 80% or less (FDE, FDK, FDFL, FDFU, FDFW : Dew point temperature 23℃ or less, relative humidity 80% or less)		
Compressor stop/start frequency	1 cycle time	5 min or more (from stop to stop or from start to start)		
	Stop time	3 min or more		
Power source voltage	Voltage fluctuation	Within ±10% of rated voltage		
	Voltage drop during start	Within −15% of rated voltage		
	Phase unbalance	Within 3%		

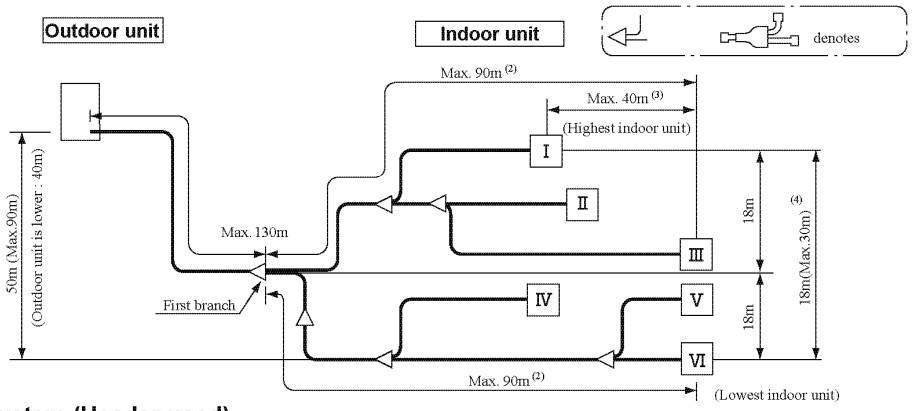
Item \ System		FDC450KXZE2	FDC475KXZE2	FDC500KXZE2	FDC560KXZE2
Indoor air temperature (Upper, lower limits)		Refer to the DATA BOOK			
Outdoor air temperature (Upper, lower limits)					
Indoor units that can be used in combination	Number of connected units	1 to 60 units	1 to 50 units	1 to 53 units	1 to 59 units
	Connectable capacity (1)	225 - 900	238 - 760	250 - 800	280 - 896
Total piping length (2)		1000m or less			
Main pipe length		130m or less			
Single direction piping length		Actual length : 160m or less, Equivalent length : 185m or less			
Allowable pipe length from the first branching		90m or less (However, difference between the longest and shortest piping : 40m or less(6))			
Elevation difference between the first branching point and the indoor unit		18m or less			
Difference in height between indoor and outdoor units	Outdoor unit is higher	50m or less (Max. 90m or less) (5),(7)			
	Outdoor unit is lower	40m or less (3)			
Difference in the elevation of indoor units in a system		18m or less (Max. 30m or less) (8)			
Indoor unit atmosphere (behind ceiling) temperature and humidity (Only models FDT, FDTC, FDTW, FDTS, FDTQ, FDU, FDUM, FDUT, FDUH, FDU-F)		Dew point temperature 28 ℃ or less, relative humidity 80% or less (FDE, FDK, FDFL, FDFU, FDFW : Dew point temperature 23℃ or less, relative humidity 80% or less)			
Compressor stop/start frequency	1 cycle time	5 min or more (from stop to stop or from start to start)			
	Stop time	3 min or more			
Power source voltage	Voltage fluctuation	Within ±10% of rated voltage			
	Voltage drop during start	Within −15% of rated voltage			
	Phase unbalance	Within 3%			

Notes (1) When connecting the indoor unit type FDK, FDFL, FDFU or FDFW Series, limit the connectable capacity not higher than 130%.
(2) When the pipe extension length exceeds 510m, additional refrigerant oil must be charged (1,000 cc).
(3) It must be less than 30m when conducting the cooling operation with the outdoor air temperature lower than 10°C.
(4) 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 and KXZ such as automatic address setting function for multiple refrigerant systems and etc. will be cancelled.
(5)When it is required to install in a range of 50 to 90m, the limitation of use, etc. are different from those described here. For details, refer to the DATA BOOK.
(6)When it is required to install in the difference between the longest and shortest piping more than 40m, refer to the DATA BOOK.
(7) It must be 40m or less, when it is required to use at the outdoor air temperature higher than 43°C.
(8) If the difference in the elevation is 18 to30m, the limitation of use, etc. are different from those described here. For details, refer to the DATA BOOK.

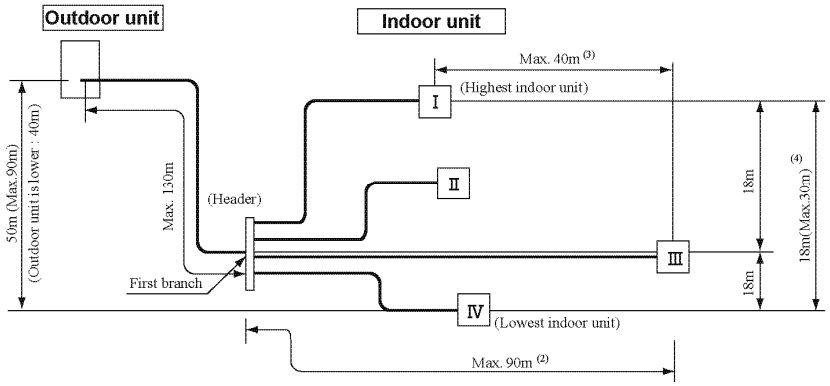
Range of usage & limitations

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

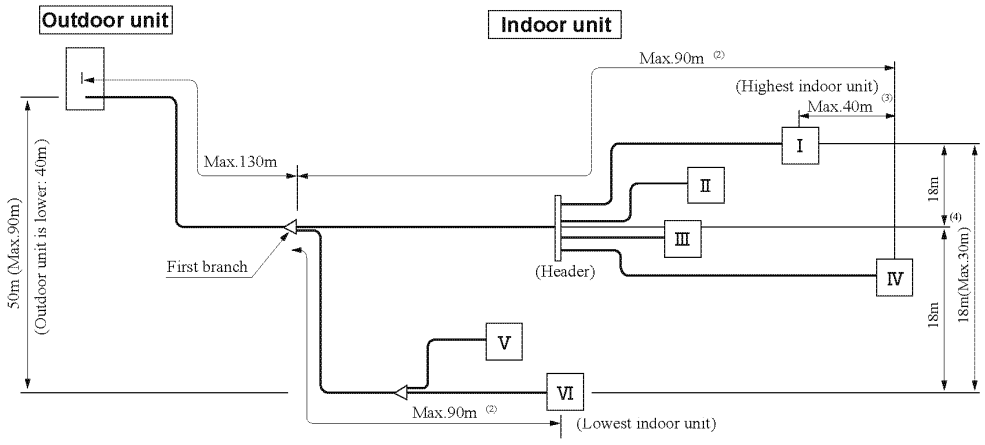
(1) Branch pipe System (Branch piping used)



(2) Header System (Header used)



(3) Mixed System (Branch piping and Header used)



Note (1) A branch piping system cannot be connected after a header system.
(2) 90m or less (However, difference between the longest and shortest piping : 40m or less (3))
(3) When it is required to install the difference between the longest and shortest piping more than 40m, refer to the DATA BOOK.
(4) When it is required to install the difference in the elevation 18 to 30m, refer to the DATA BOOK.
When the Additional refrigerant quantity (P+I) is over the following table, please separate the refrigerant line.

Important

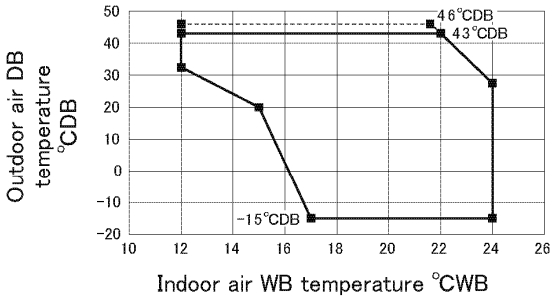
Outdoor unit	P+I (kg)
280-670	40
735-950	90
1000-1350	80
1425-1680	100

P: Additional refrigerant quantity for piping (kg)
I : Additional refrigerant quantity for indoor units (kg)

Range of usage & limitations

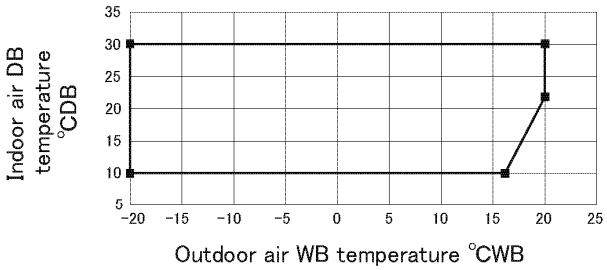
Operating temperature range

Cooling operation



*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, refer to (2.2 Exterior dimensions).

Heating operation



"CAUTION" Cooling operation under low outdoor air temperature conditions

KXZ 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

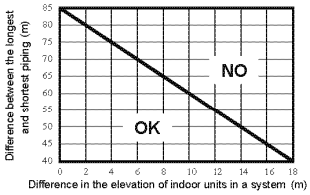
1) Install the outdoor unit at the place where strong wind cannot blow directly into the outdoor unit.
2) If there is no installation place where can prevent strong wind from directly blowing into the outdoor unit, prepare a windbreak fence or something like that locally in order to divert the strong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

Specification for installation with the difference between the longest and shortest piping more than 40m

When the difference between the longest and shortest piping is longer than 40m, adjust the difference in the elevation of indoor units in a system such that it will fall in the OK range on the following graph.
When the difference in the elevation between the indoor and the outdoor units is 50m – 90m or difference in the elevation of indoor units in a system is 18m – 30m, the difference between the longest and shortest piping cannot exceed 40m. Reduce it to less than 40m.

If the refrigerant quantity over occurs when the difference between the longest and shortest piping is longer than 40m, there is a risk that the heating capacity becomes insufficient. Take sufficient care to adjust the additional refrigerant quantity at correct value.



Range of usage & limitations

Specification for installation with large head difference (Applicable to: FDC280 - 1680KXZE2)

In case when the outdoor unit is installed at a higher place and **the difference in the elevation between the indoor and the outdoor units is larger than 50m and smaller than 90m,** the limitation on application differs partially from ordinary applications and, instead, the following specification applies. The pipe size, refrigerant amount and way of switch setting become also different.

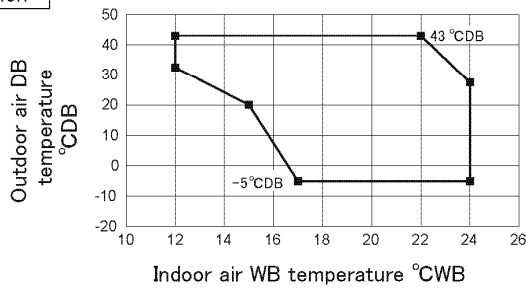
In the range of use, **the outdoor air temperature (lower limit), indoor units allowed to combine, total piping length and difference in the elevation between indoor units in the same system** are different from ordinary applications.

Table 1 Range of use

Item		FDC280-1680KXZE2
Indoor air temperature (Upper, lower limits)		Refer to Table 2.
Outdoor air temperature (Upper, lower limits)		
Indoor units that can be used in combination	Number of connected units	Refer to Table 3.
	Connectable capacity	
Total piping length		510m or less
Main pipe length		130m or less
Single direction piping length		Actual length : 160m or less, Equivalent length : 185m or less
Allowable pipe length from the first branching		90m or less (However, difference between the longest and shortest piping : 40m or less)
Allowable difference in the elevation	Elevation difference between the first branching point and the indoor unit	30m or less
	Outdoor unit is higher	50m or more-90m or less
	Outdoor unit is lower	40m or less
	Difference in the elevation of indoor units in a system	15m or less
Limitation on piping from outdoor unit to branching pipe at outdoor unit side	Difference in the elevation	0.4m or less
	Elevation from outdoor unit to branching pipe at outdoor unit side	5m or less
	Oil equalizing pipe length	10m or less
	Length between outdoor branching pipes for a combination of 3 units	5m or less
Indoor unit atmosphere (behind ceiling) temperature and humidity Only models FDT,FDTC,FDTW,FDTQ,FDTS,FDU,FDUM,FDUH,FDUT		Dew point temperature 28°C or less, relative humidity 80% or less (FDT,FDK,FDFL,FDFU,FDFW : Dew point temperature 28°C or less, relative humidity 80% or less)
Compressor stop/start frequency	1 cycle time	5 min or less (from stop to stop or from start to start)
	Stop time	3 min or more
Power source voltage	Voltage fluctuation	Within ±10% of rated voltage
	Voltage drop during start	Within −15% of rated voltage
	Phase unbalance	Within 3%

Table 2 Indoor air temperature/Outdoor air temperature

Cooling operation



Heating operation

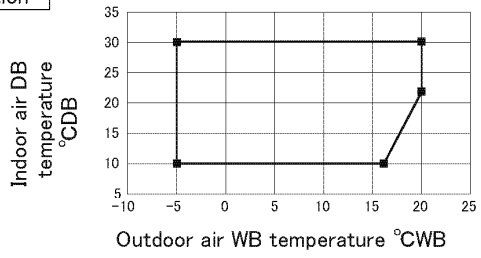


Table 3 Number of connectable indoor units and capacity range

Model/Item	Number of connectable units	Connectable capacity
FDC280KXZE2	1 to 18	140 - 280
FDC335KXZE2	1 to 22	168 - 335
FDC400KXZE2	1 to 26	200 - 400
FDC450KXZE2	1 to 30	225 - 450
FDC475KXZE2	1 to 31	238 - 475
FDC500KXZE2	1 to 33	250 - 500
FDC560KXZE2	1 to 37	280 - 560
FDC615KXZE2	2 to 41	308 - 615
FDC670KXZE2	2 to 44	335 - 670
FDC735KXZE2	2 to 49	368 - 735
FDC800KXZE2	2 to 53	400 - 800
FDC850KXZE2	2 to 56	425 - 850
FDC900KXZE2	2 to 60	450 - 900
FDC950KXZE2	2 to 63	475 - 950
FDC1000KXZE2	2 to 66	500 - 1000
FDC1060KXZE2	2 to 70	530 - 1060
FDC1120KXZE2	2 to 74	560 - 1120
FDC1200KXZE2	3 to 80	600 - 1200
FDC1250KXZE2	3 to 80	625 - 1250
FDC1300KXZE2	3 to 80	650 - 1300
FDC1350KXZE2	3 to 80	675 - 1350
FDC1425KXZE2	3 to 80	713 - 1425
FDC1450KXZE2	3 to 80	725 - 1450
FDC1500KXZE2	3 to 80	750 - 1500
FDC1560KXZE2	3 to 80	780 - 1560
FDC1620KXZE2	3 to 80	810 - 1620
FDC1680KXZE2	3 to 80	840 - 1680

Range of usage & limitations

<Pipe size selection>

In the figure for pipe selection, sizes of main pipe and the pipe between the branch at the indoor side and the indoor unit are selected on the basis different from normal practice.

(1) ain pipe (branch of the outdoor unit – first branch at the indoor side)
Size of liquid pipe is different. Change the size of main pipe according to Table 4.
When the maximum length (from the outdoor unit to the furthest indoor unit) is larger than 90m (actual length), change the size of main pipe according to Table 4.

Table 4 Main pipe size

Outdoor unit	Main pipe size (normal)		Pipe size for an actual length of 90m or longer	
	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe
280	φ22.22 × t1.0	**φ12.7 × t0.8**	φ25.4 (φ22.22) × t1.0	**φ15.88 × t1.0**
335	φ25.4 (φ22.22) × t1.0	**φ15.88 × t1.0**		
400	φ25.4 (φ28.58) × t1.0		φ28.58 × t1.0	
450	φ28.58 × t1.0		φ31.8 × t1.1 (φ28.58 × t1.0)	φ15.88 × t1.0
475				
500				
560				
615				
670				
735	φ31.8 × t1.1 (φ34.92 × t1.2)	**φ19.05 × t1.0**	φ38.1 × t1.35 (φ34.92 × t1.2)	φ19.05 × t1.0
800				
850				
900				
950				
1000	φ38.1 × t1.35 (φ34.92 × t1.2)	**φ22.22 × t1.0**		φ22.22 × t1.0
1060				
1120				
1200				
1250				
1300				
1350				
1425				
1450				
1500				
1560				
1620				
1680				

(2) Between branch at the indoor side and indoor unit
Size of gas pipe for indoor unit with capacity larger than 112 is different. Change the size of pipe connected to indoor unit according to Table 5.

Table 5 Indoor unit connecting pipe size

Capacity		Gas pipe	Liquid pipe
Indoor unit	15, 22, 28	φ9.52 × t0.8	φ6.35 × t0.8
	36, 45, 56	φ12.7 × t0.8	
	71, 90	φ15.88 × t1.0	φ9.52 × t0.8
	112, 140, 160	**φ19.05 × t1.0**	
	224	**φ22.22 × t1.0**	
	280	**φ25.4(φ28.58) × t1.0**	

(3) Refrigerant quantity
In addition to normal charge quantity for refrigerant pipes, charge quantity for the difference in capacity between the indoor and the outdoor units, and standard additional refrigerant quantity, measure and charge the additional refrigerant quantity for the installation with the difference in the elevation being over 50m and less than 90m.

Table 6 Additional refrigerant quantity for the installation with the difference in the elevation being over 50m and less than 90m

Outdoor unit	(kg)	Outdoor unit	(kg)	Outdoor unit	(kg)	Outdoor unit	(kg)
280	0.3	615	0.8	1000	1.6	1425	2.4
335	0.5	670	1.0	1060	1.7	1450	2.4
400	0.6	735	0.9	1120	1.8	1500	2.4
450	0.7	800	1.2	1200	1.8	1560	2.5
475	0.8	850	1.3	1250	1.9	1600	2.6
500	0.8	900	1.4	1300	2.0	1680	2.7
560	0.9	950	1.6	1350	2.1		

※High-COP combination

Outdoor unit	(kg)
560	0.6
850	0.9
900	1.1
950	1.3
1000	1.5
1060	1.6
1120	1.7

(4) Microcomputer control
Setting of microcomputer control needs to be changed when the outdoor unit is installed upwards and the difference in elevation is larger than 50m and less than 90m. Make sure to set SW6-4 at ON position on both the master and slave units, before turning the power

Table 7 Setting of microcomputer control

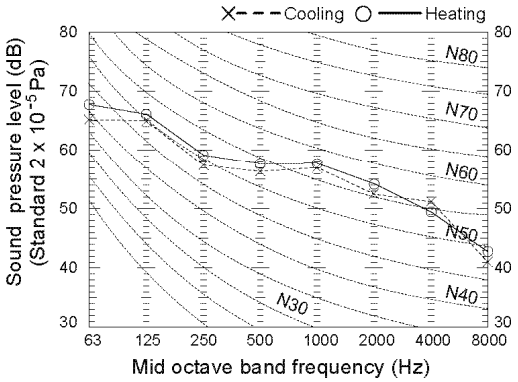
Elevation difference	Setting	
	SW6-4	7-segment F32
50m - 70m	ON	0
70m - 90m		1

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

FDC450KXZE2

Noise level 61 dB (A) at cooling
62 dB (A) at heating



Noise level

Measured based on JIS B 8616

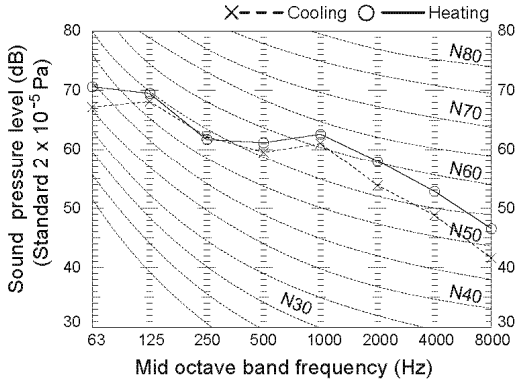
Mike position as highest noise level in position as below

Distance from front side 1m

Height 1m

FDC560KXZE2

Noise level 63 dB (A) at cooling
64 dB (A) at heating

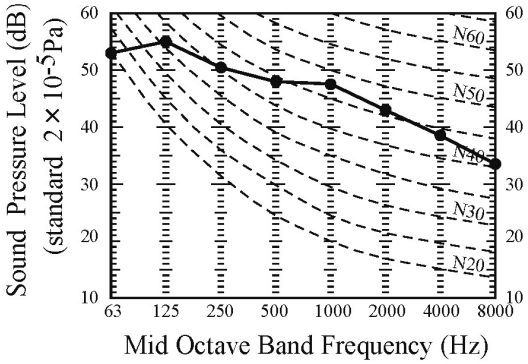


NOISE LEVEL

Notes(1) The data are based on the following conditions.
Ambient air temperature: Indoor unit 27℃WB. Outdoor unit 35℃DB.
(2) The data in the chart are measured in an anechoic room.
(3) The noise levels measured in the field are usually higher than the data because of reflection.

FDU280KXZE1

Noise level 52dB (A) at P-High
50dB (A) at High
47dB (A) at Medium
45dB (A) at Low



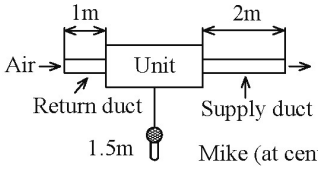
Power level

Measurement conditions : JIS B 8616
Measurement location : reverberation chamber

MODEL	dB(A)
FDU224KXZE1	75
FDU280KXZE1	

Note (1) Values are for external static pressure of 200Pa.

Measured based on JIS B 8616
Mike position



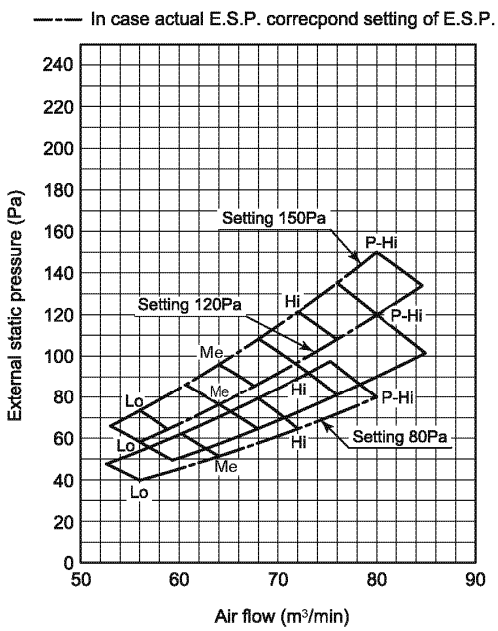
CHARACTERISTICS OF FAN

FDU280KXZE1

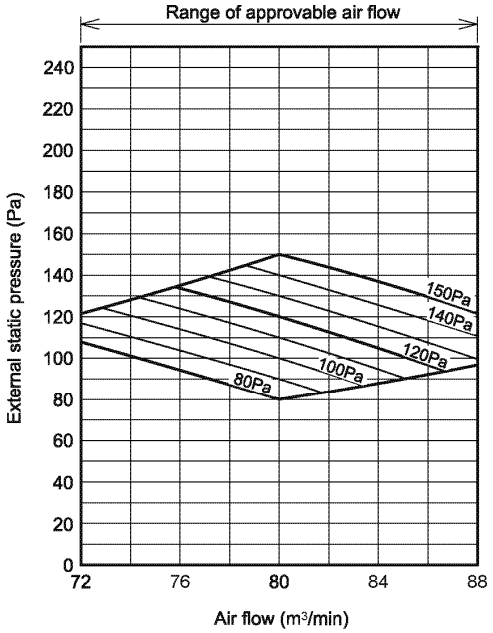
- Characteristic FAN (1) shows air flow vs. External Static Pressure (E.S.P.) range where settings of E.S.P. are maximum E.S.P. (SW8-4 OFF : 150Pa, SW8-4 ON : 200Pa) , rated E.S.P., and minimum E.S.P. (SW8-4 OFF : 80Pa, SW8-4 ON : 10Pa)
- Characteristic FAN (2) shows air flow vs. E.S.P curve when set fan tap is set P-Hi with each setting of E.S.P . by remote control.
- External Static Pressure (E.S.P.) can be set by wired remote control.
- You can set required E.S.P. by wired remote control which calculate it with the set air flow rate and pressure loss of the duct connected.

■SW8-4 : OFF (Range of use limitation : Setting 80Pa-150Pa)

Characteristic FAN (1)

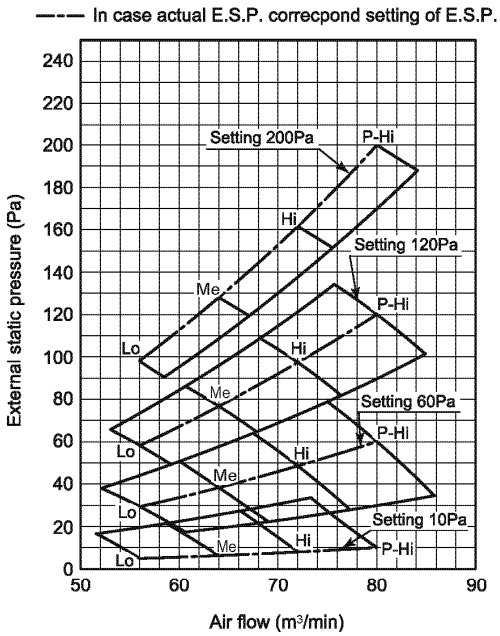


Characteristic FAN (2)

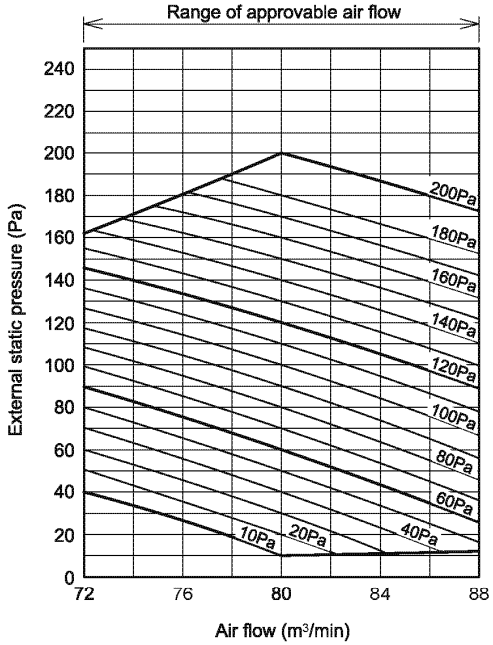


■SW8-4 : ON (Range of use limitation : Setting 10Pa-200Pa)

Characteristic FAN (1)



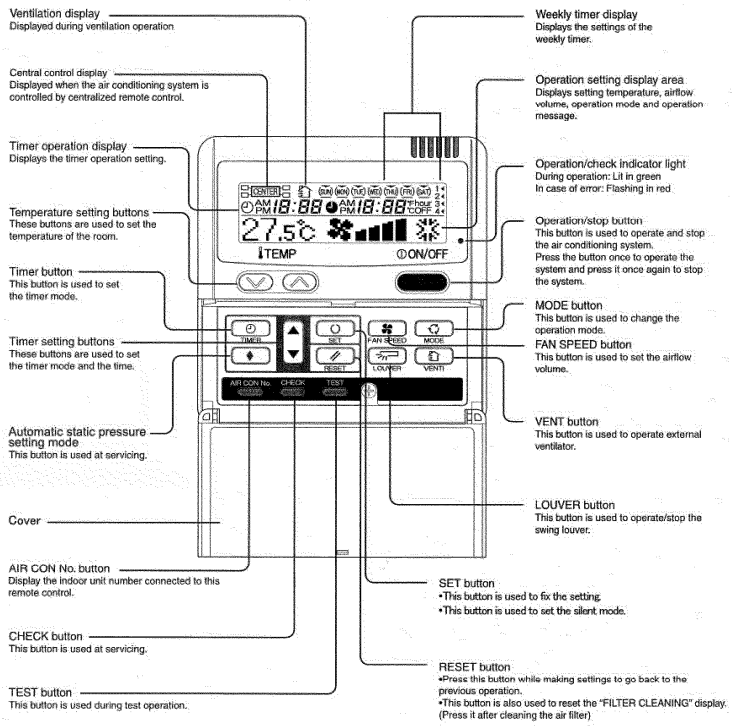
Characteristic FAN (2)



RC-E5

Unit:mm

The figure below shows the remote control with the cover opened.



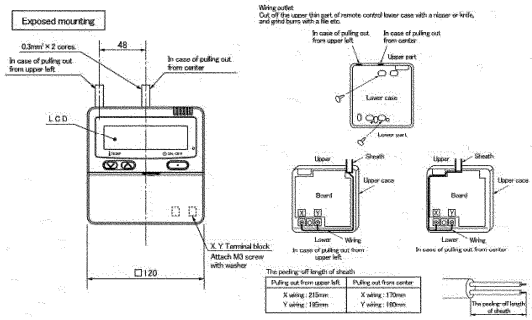
* All displays are described in the figuid crystal display for explanation.

Installation of remot control

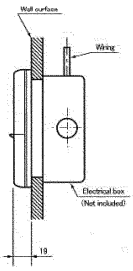
DO NOT install it on the following places in order to avoid malfunction.

(1) Places exposed to direct sunlight.
(2) Places near heat devices
(3) High humidity places
(4) Hot surface or cold surface enough to generate condensation
(5) Places exposed to oil mist or steam directly
(6) Uneven surface

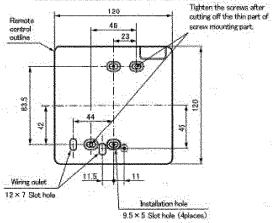
Exposed mounting



Embedded mounting



Remote control installation dimensions



(1) Installation screw for remote control
M4 Screw (2 pieces)

Wiring specifications

(1) If the prolongation is over 100m, change to the size below.
But, wiring in the remote controller case should be under 0.5mm². Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

Length	Wiring thickness
100 to 200m	0.5mm² × 2 cores
Under 300m	0.75mm² × 2 cores
Under 400m	1.25mm² × 2 cores
Under 600m	2.0mm² × 2 cores

Adapted to **RoHS** directive