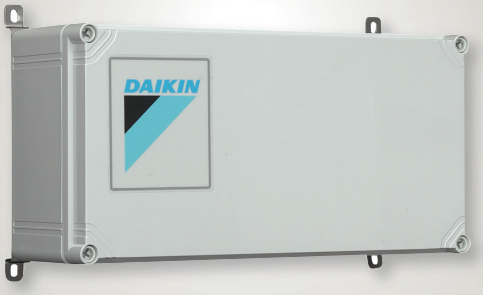
Ventilation

Technical Data

Air Handling Units



EEDEN11-205

EKEQ

DAIKIN

Ventilation

Technical Data

Air Handling Units

EEDEN11-205

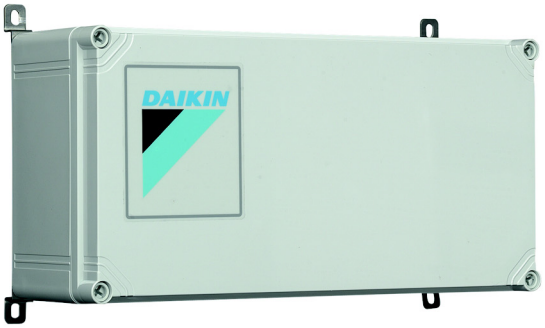
EKEQ

TABLE OF CONTENTS

EKEQ

1 Features

- Wide range of units offers maximum application potential and flexible control options
- The system provides optimized air conditions such as fresh air and humidity control etc. and can be used in small warehouses, showrooms and offices.
- Control box and expansion valve kit are required for each combination plus an air handling unit
- Both option kits are designed for indoor and outdoor installation and can be wall mounted.
- Wide offer in control possibilities: control x: room, suction or discharge temperature can be controlled via DDC control (field supplied); control y: control by fixed evaporating temperature; control z: room or suction temperature control via Daikin remote control; remote ON/OFF can be achieved by an optional adapter KRP4A51



2 Specifications

2-1 Technical Specifications				EKEQFCB	EKEQDCB	EKEQMCB
Application				Pair		Multi
Outdoor unit				ERQ		VRV®
Casing	Colour			White grey		
	Material			Resin		
Dimensions	Unit	Height	mm	132		
		Width	mm	400		
		Depth	mm	200		
	Packed unit	Height	mm	215		
		Width	mm	495		
		Depth	mm	310		
Weight	Unit		kg	3.9	3.6	
	Packed unit		kg	4.9	4.6	
Packing	Material			Carton / EPS / Plastic	Carton / EPS / Plastic	Carton / EPS / Plastic
Operation range	Cooling	Min.	°CDB	-10		
		Max.	°CDB	40		
Item				Stopper (closing up)		
Quantity				2		
Item				Capacity setting adapter		
Quantity				7		
Item				Tie-wraps		
Quantity				6		
Item				Screw nut		
Quantity				7		
Item				Installation and operation manual		
Quantity				1		
Item				Wire to wire splice		
Quantity				4		
Item				Rubber sheet		
Quantity				2		
Item				Insulation sheet		
Quantity				2		
Item				Thermistor (R2T/R3T)		
Quantity				2		
Item				Thermistor (R1T)		
Quantity				0		

2 Specifications

2-2 Electrical Specifications				EKEQFCB	EKEQDCB	EKEQMCB
Power supply	Name			V3		
	Phase			1~		
	Frequency		Hz	50		
	Voltage		V	230		
	Voltage range	Min.	%	-10		
		Max.	%	10		
Wiring connections	For power supply	Quantity		3		
		Remark		Earth wire included		
	For connection with indoor	Quantity		2		
		Remark		F1,F2		
	For remote control	Quantity		2		
		Remark		P1,P2 (for service)	P1,P2	
	For expansion valve kit	Quantity		6		
		Remark		Y1~Y6		
	Thermistors liquid pipe	Quantity		2		
		Remark		R1,R2		
	Thermistors gas pipe	Quantity		2		
		Remark		R3,R4		
	Thermistor air	Quantity		-	2	
		Remark		-	R5,R6	
	ON/OFF	Quantity		2		
		Remark		T1,T2		
	Error signal	Quantity		2	-	
		Remark		C1,C2	-	
	Operation signal	Quantity		2	-	
		Remark		C3,C4	-	
	Capacity steps	Quantity		2	-	
		Remark		C5,C6	-	
	Fan on/off	Quantity		2		
		Remark		C7,C8	C1,C2	
	Defrost signal	Quantity		2	-	
		Remark		C9,C10	-	
Power supply intake				Bottom		

3 Options

3 - 1 Options

EKEQDCB
EKEQFCB
EKEQMCB

Option list

N°	Item	EKEQFCB	EKEQDCB	EKEQMCB
1	Remote controller (Wired type)	BRC1D527 (*)	BRC1D527 (*)	
2	Wiring adaptor for electrical appendices	—	KRP4A516	
3	Remote sensor	—	KRCS01-1	
4	Valve kits	EKEXV63,80,100,125,140,200,250		EKEXV50,63,80,100,125,140,200,250

4TW32139-3

(*) Not required for operation, only useful accessory tool for service and installation.

Caution for options:

- Do not connect the system to DIII-NET devices (intelligent controller, intelligent manager, interface for use in BACnet, interface for use in Lonworks...) This could result in malfunction or breakdown of the total system.
- Only use this system in combination with a field supplied air handling unit. Do not connect this system to other indoor units.
- See combination table for application of valve kits

4 Combination table

4 - 1 Combination Table

EKEQDCB/MCB/FCB
Combination table

Outdoor unit			Control box											Existing options			
			EKEQDCBV3	EKEQFCBV3	EKEQMCBV3	EKEXV50	EKEXV63	EKEXV80	EKEXV100	EKEXV125	EKEXV140	EKEXV200	EKEXV250	KKPJ5F180	KWC26B160	KWC 26B280	KRC19-26A5
System A	1 ph	ERQ100	P	P	-	-	P	P	P	P	-	-	-	0	-	-	0
		ERQ125	P	P	-	-	P	P	P	P	P	-	-	0	-	-	0
		ERQ140	P	P	-	-	-	P	P	P	P	-	-	0	-	-	0
	3 ph	ERQ125	P	P	-	-	P	P	P	P	P	-	-	-	0	-	0
		ERQ200	P	P	-	-	-	-	P	P	P	P	P	-	-	0	0
		ERQ250	P	P	-	-	-	-	-	P	P	P	P	-	-	0	0
System B	Heat pump		-	-	n	n	n	n	n	n	n	n	n	See outdoor unit but no connection to D-III net is allowed.			

P: Pair: Combination depending on AHU coil volume and capacity.

n: to determine the Quantity refer to 3TW32152-2.

NOTES

1. The EKEQF and EKEQD boxes can only be connected with an ERQ outdoor in pair application.
2. The EKEQM box can only be connected with a VRV outdoor in multi application.
3. Depending on the AHU, a connectable EKEXV (expansion valve kit) must be selected using following limitations:
   SH (superheat) = 5K and SC (subcool) = 3K
   Cooling:

EKEXV	Allowed heat exchanger capacity (kW)	
class	minimum	maximum
50	5.0	6.2
63	6.3	7.8
80	7.9	9.9
100	10.0	12.3
125	12.4	15.4
140	15.5	17.6
200	17.7	24.6
250	24.7	30.8

   Saturated suction temperature (ST) = 6°C, Air temperature = 27°CDB / 19°CWB
   Heating:

EKEXV	Allowed heat exchanger capacity (kW)	
class	minimum	maximum
50	5.6	7.0
63	7.1	8.8
80	8.9	11.1
100	11.2	13.8
125	13.9	17.3
140	17.4	19.8
200	19.9	27.7
250	27.8	34.7

   Saturated suction temperature (ST) = 46°C, Air temperature = 20°CDB

3TW32193-2B

5 Capacity tables

5 - 1 Cooling Capacity Tables

EKEQMCB

Evaporator capacity table

Capacity index	Outdoor °CDB	Indoor air temp. 14WB 20DB TC	16WB 23DB TC	18WB 26DB TC	19WB 27DB TC	20WB 28DB TC	22WB 30DB TC	24WB 32DB TC
50	10,0	3,8	4,5	5,2	5,6	6,0	6,7	7,4
	12,0	3,8	4,5	5,2	5,6	6,0	6,7	7,3
	14,0	3,8	4,5	5,2	5,6	6,0	6,7	7,2
	16,0	3,8	4,5	5,2	5,6	6,0	6,7	7,1
	18,0	3,8	4,5	5,2	5,6	6,0	6,7	7,0
	20,0	3,8	4,5	5,2	5,6	6,0	6,7	6,9
	21,0	3,8	4,5	5,2	5,6	6,0	6,7	6,8
	23,0	3,8	4,5	5,2	5,6	6,0	6,6	6,7
	25,0	3,8	4,5	5,2	5,6	6,0	6,5	6,6
	27,0	3,8	4,5	5,2	5,6	6,0	6,4	6,6
	29,0	3,8	4,5	5,2	5,6	6,0	6,3	6,5
	31,0	3,8	4,5	5,2	5,6	6,0	6,2	6,4
	33,0	3,8	4,5	5,2	5,6	6,0	6,1	6,3
	35,0	3,8	4,5	5,2	5,6	5,9	6,0	6,2
	37,0	3,8	4,5	5,2	5,6	5,8	5,9	6,1
	39,0	3,8	4,5	5,2	5,6	5,7	5,8	6,0
63	10,0	4,8	5,7	6,6	7,1	7,6	8,5	9,3
	12,0	4,8	5,7	6,6	7,1	7,6	8,5	9,2
	14,0	4,8	5,7	6,6	7,1	7,6	8,5	9,1
	16,0	4,8	5,7	6,6	7,1	7,6	8,5	9,0
	18,0	4,8	5,7	6,6	7,1	7,6	8,5	8,8
	20,0	4,8	5,7	6,6	7,1	7,6	8,5	8,7
	21,0	4,8	5,7	6,6	7,1	7,6	8,5	8,7
	23,0	4,8	5,7	6,6	7,1	7,6	8,4	8,5
	25,0	4,8	5,7	6,6	7,1	7,6	8,3	8,4
	27,0	4,8	5,7	6,6	7,1	7,6	8,1	8,3
	29,0	4,8	5,7	6,6	7,1	7,6	8,0	8,2
	31,0	4,8	5,7	6,6	7,1	7,6	7,9	8,1
	33,0	4,8	5,7	6,6	7,1	7,6	7,8	7,9
	35,0	4,8	5,7	6,6	7,1	7,5	7,7	7,8
	37,0	4,8	5,7	6,6	7,1	7,4	7,5	7,7
	39,0	4,8	5,7	6,6	7,1	7,2	7,4	7,6
80	10,0	6,1	7,2	8,4	9,0	9,6	10,8	11,8
	12,0	6,1	7,2	8,4	9,0	9,6	10,8	11,7
	14,0	6,1	7,2	8,4	9,0	9,6	10,8	11,5
	16,0	6,1	7,2	8,4	9,0	9,6	10,8	11,4
	18,0	6,1	7,2	8,4	9,0	9,6	10,8	11,2
	20,0	6,1	7,2	8,4	9,0	9,6	10,8	11,1
	21,0	6,1	7,2	8,4	9,0	9,6	10,8	11,0
	23,0	6,1	7,2	8,4	9,0	9,6	10,6	10,8
	25,0	6,1	7,2	8,4	9,0	9,6	10,5	10,7
	27,0	6,1	7,2	8,4	9,0	9,6	10,3	10,5
	29,0	6,1	7,2	8,4	9,0	9,6	10,2	10,4
	31,0	6,1	7,2	8,4	9,0	9,6	10,0	10,2
	33,0	6,1	7,2	8,4	9,0	9,6	9,8	10,1
	35,0	6,1	7,2	8,4	9,0	9,5	9,7	9,9
	37,0	6,1	7,2	8,4	9,0	9,3	9,5	9,8
	39,0	6,1	7,2	8,4	9,0	9,2	9,4	9,6
100	10,0	7,6	9,0	10,5	11,2	11,9	13,4	14,7
	12,0	7,6	9,0	10,5	11,2	11,9	13,4	14,5
	14,0	7,6	9,0	10,5	11,2	11,9	13,4	14,4
	16,0	7,6	9,0	10,5	11,2	11,9	13,4	14,2
	18,0	7,6	9,0	10,5	11,2	11,9	13,4	14,0
	20,0	7,6	9,0	10,5	11,2	11,9	13,4	13,8
	21,0	7,6	9,0	10,5	11,2	11,9	13,4	13,7
	23,0	7,6	9,0	10,5	11,2	11,9	13,2	13,5
	25,0	7,6	9,0	10,5	11,2	11,9	13,0	13,3
	27,0	7,6	9,0	10,5	11,2	11,9	12,8	13,1
	29,0	7,6	9,0	10,5	11,2	11,9	12,6	12,9
	31,0	7,6	9,0	10,5	11,2	11,9	12,4	12,7
	33,0	7,6	9,0	10,5	11,2	11,9	12,2	12,5
	35,0	7,6	9,0	10,5	11,2	11,8	12,1	12,3
	37,0	7,6	9,0	10,5	11,2	11,6	11,9	12,2
	39,0	7,6	9,0	10,5	11,2	11,4	11,7	12,0

Capacity index	Outdoor °CDB	Indoor air temp. 14WB 20DB TC	16WB 23DB TC	18WB 26DB TC	19WB 27DB TC	20WB 28DB TC	22WB 30DB TC	24WB 32DB TC
125	10,0	9,5	11,3	13,1	14,0	14,9	16,8	18,4
	12,0	9,5	11,3	13,1	14,0	14,9	16,8	18,2
	14,0	9,5	11,3	13,1	14,0	14,9	16,8	18,0
	16,0	9,5	11,3	13,1	14,0	14,9	16,8	17,7
	18,0	9,5	11,3	13,1	14,0	14,9	16,8	17,5
	20,0	9,5	11,3	13,1	14,0	14,9	16,8	17,2
	21,0	9,5	11,3	13,1	14,0	14,9	16,8	17,1
	23,0	9,5	11,3	13,1	14,0	14,9	16,5	16,9
	25,0	9,5	11,3	13,1	14,0	14,9	16,3	16,6
	27,0	9,5	11,3	13,1	14,0	14,9	16,1	16,4
	29,0	9,5	11,3	13,1	14,0	14,9	15,8	16,2
	31,0	9,5	11,3	13,1	14,0	14,9	15,6	15,9
	33,0	9,5	11,3	13,1	14,0	14,9	15,3	15,7
	35,0	9,5	11,3	13,1	14,0	14,8	15,1	15,4
	37,0	9,5	11,3	13,1	14,0	14,5	14,9	15,2
	39,0	9,5	11,3	13,1	14,0	14,3	14,6	15,0
140	10,0	10,8	12,9	15,0	16,0	17,0	19,1	21,0
	12,0	10,8	12,9	15,0	16,0	17,0	19,1	20,7
	14,0	10,8	12,9	15,0	16,0	17,0	19,1	20,5
	16,0	10,8	12,9	15,0	16,0	17,0	19,1	20,2
	18,0	10,8	12,9	15,0	16,0	17,0	19,1	19,9
	20,0	10,8	12,9	15,0	16,0	17,0	19,1	19,7
	21,0	10,8	12,9	15,0	16,0	17,0	19,1	19,5
	23,0	10,8	12,9	15,0	16,0	17,0	18,9	19,3
	25,0	10,8	12,9	15,0	16,0	17,0	18,6	19,0
	27,0	10,8	12,9	15,0	16,0	17,0	18,3	18,7
	29,0	10,8	12,9	15,0	16,0	17,0	18,1	18,5
	31,0	10,8	12,9	15,0	16,0	17,0	17,8	18,2
	33,0	10,8	12,9	15,0	16,0	17,0	17,5	17,9
	35,0	10,8	12,9	15,0	16,0	16,9	17,3	17,6
	37,0	10,8	12,9	15,0	16,0	16,6	17,0	17,4
	39,0	10,8	12,9	15,0	16,0	16,3	16,7	17,1
200	10,0	15,1	18,0	21,0	22,4	23,8	26,8	29,4
	12,0	15,1	18,0	21,0	22,4	23,8	26,8	29,0
	14,0	15,1	18,0	21,0	22,4	23,8	26,8	28,7
	16,0	15,1	18,0	21,0	22,4	23,8	26,8	28,3
	18,0	15,1	18,0	21,0	22,4	23,8	26,8	27,9
	20,0	15,1	18,0	21,0	22,4	23,8	26,8	27,5
	21,0	15,1	18,0	21,0	22,4	23,8	26,8	27,4
	23,0	15,1	18,0	21,0	22,4	23,8	26,4	27,0
	25,0	15,1	18,0	21,0	22,4	23,8	26,1	26,6
	27,0	15,1	18,0	21,0	22,4	23,8	25,7	26,2
	29,0	15,1	18,0	21,0	22,4	23,8	25,3	25,8
	31,0	15,1	18,0	21,0	22,4	23,8	24,9	25,4
	33,0	15,1	18,0	21,0	22,4	23,8	24,5	25,0
	35,0	15,1	18,0	21,0	22,4	23,6	24,2	24,6
	37,0	15,1	18,0	21,0	22,4	23,2	23,8	24,3
	39,0	15,1	18,0	21,0	22,4	22,8	23,4	23,9
250	10,0	18,9	22,5	26,2	28,0	29,8	33,5	36,8
	12,0	18,9	22,5	26,2	28,0	29,8	33,5	36,3
	14,0	18,9	22,5	26,2	28,0	29,8	33,5	35,9
	16,0	18,9	22,5	26,2	28,0	29,8	33,5	35,4
	18,0	18,9	22,5	26,2	28,0	29,8	33,5	34,9
	20,0	18,9	22,5	26,2	28,0	29,8	33,5	34,4
	21,0	18,9	22,5	26,2	28,0	29,8	33,5	34,2
	23,0	18,9	22,5	26,2	28,0	29,8	33,0	33,7
	25,0	18,9	22,5	26,2	28,0	29,8	32,6	33,2
	27,0	18,9	22,5	26,2	28,0	29,8	32,1	32,8
	29,0	18,9	22,5	26,2	28,0	29,8	31,6	32,3
	31,0	18,9	22,5	26,2	28,0	29,8	31,1	31,8
	33,0	18,9	22,5	26,2	28,0	29,8	30,6	31,3
	35,0	18,9	22,5	26,2	28,0	29,5	30,2	30,8
	37,0	18,9	22,5	26,2	28,0	29,0	29,7	30,4
	39,0	18,9	22,5	26,2	28,0	28,5	29,2	29,9

3TW32152-1

5 Capacity tables

5 - 2 Heating Capacity Tables

EKEQMCB

Unit size	Outdoor air temp.		On coil temp.: °CDB						
			10.0	16.0	18.0	20.0	21.0	22.0	24.0
	°CDB	°CWB	kW	kW	kW	kW	kW	kW	kW
50	-19,8	-20,0	3,7	3,7	3,7	3,7	3,7	3,7	3,7
	-18,8	-19,0	3,8	3,8	3,8	3,8	3,8	3,8	3,8
	-16,7	-17,0	4,1	4,1	4,0	4,0	4,0	4,0	4,0
	-14,7	-15,0	4,3	4,3	4,3	4,3	4,2	4,2	4,2
	-12,6	-13,0	4,5	4,5	4,5	4,5	4,5	4,5	4,5
	-10,5	-11,0	4,7	4,7	4,7	4,7	4,7	4,7	4,7
	-9,5	-10,0	4,8	4,8	4,8	4,8	4,8	4,8	4,8
	-8,5	-9,1	4,9	4,9	4,9	4,9	4,9	4,9	4,9
	-7,0	-7,6	5,1	5,1	5,1	5,1	5,1	5,1	5,1
	-5,0	-5,6	5,3	5,3	5,3	5,3	5,3	5,3	5,3
	-3,0	-3,7	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	0.0	-0,7	5,9	5,9	5,9	5,8	5,8	5,8	5,5
	3,0	2,2	6,2	6,2	6,2	6,2	6,1	5,9	5,5
	5,0	4,1	6,4	6,4	6,4	6,3	6,1	5,9	5,5
	7,0	6,0	6,6	6,6	6,6	6,3	6,1	5,9	5,5
	9,0	7,9	6,8	6,8	6,7	6,3	6,1	5,9	5,5
	11,0	9,8	7,0	7,0	6,7	6,3	6,1	5,9	5,5
	13,0	11,8	7,1	7,1	6,7	6,3	6,1	5,9	5,5
	15,0	13,7	7,1	7,1	6,7	6,3	6,1	5,9	5,5
63	-19,8	-20,0	4,7	4,7	4,7	4,7	4,7	4,7	4,7
	-18,8	-19,0	4,9	4,9	4,9	4,8	4,8	4,8	4,8
	-16,7	-17,0	5,1	5,1	5,1	5,1	5,1	5,1	5,1
	-14,7	-15,0	5,4	5,4	5,4	5,4	5,4	5,4	5,4
	-12,6	-13,0	5,7	5,7	5,7	5,7	5,7	5,7	5,7
	-10,5	-11,0	6,0	6,0	6,0	6,0	6,0	6,0	5,9
	-9,5	-10,0	6,1	6,1	6,1	6,1	6,1	6,1	6,1
	-8,5	-9,1	6,3	6,3	6,3	6,2	6,2	6,2	6,2
	-7,0	-7,6	6,5	6,5	6,5	6,4	6,4	6,4	6,4
	-5,0	-5,6	6,8	6,8	6,7	6,7	6,7	6,7	6,7
	-3,0	-3,7	7,0	7,0	7,0	7,0	7,0	7,0	7,0
	0.0	-0,7	7,5	7,5	7,4	7,4	7,4	7,4	7,0
	3,0	2,2	7,9	7,9	7,8	7,8	7,7	7,5	7,0
	5,0	4,1	8,1	8,1	8,1	8,0	7,7	7,5	7,0
	7,0	6,0	8,4	8,4	8,4	8,0	7,7	7,5	7,0
	9,0	7,9	8,7	8,7	8,5	8,0	7,7	7,5	7,0
	11,0	9,8	8,9	8,9	8,5	8,0	7,7	7,5	7,0
	13,0	11,8	9,0	9,0	8,5	8,0	7,7	7,5	7,0
	15,0	13,7	9,0	9,0	8,5	8,0	7,7	7,5	7,0
80	-19,8	-20,0	5,9	5,9	5,9	5,9	5,9	5,9	5,8
	-18,8	-19,0	6,1	6,1	6,1	6,0	6,0	6,0	6,0
	-16,7	-17,0	6,4	6,4	6,4	6,4	6,4	6,4	6,4
	-14,7	-15,0	6,8	6,8	6,8	6,8	6,7	6,7	6,7
	-12,6	-13,0	7,1	7,1	7,1	7,1	7,1	7,1	7,1
	-10,5	-11,0	7,5	7,5	7,5	7,5	7,5	7,4	7,4
	-9,5	-10,0	7,7	7,7	7,7	7,6	7,6	7,6	7,6
	-8,5	-9,1	7,8	7,8	7,8	7,8	7,8	7,8	7,8
	-7,0	-7,6	8,1	8,1	8,1	8,1	8,1	8,0	8,0
	-5,0	-5,6	8,4	8,4	8,4	8,4	8,4	8,4	8,4
	-3,0	-3,7	8,8	8,8	8,8	8,7	8,7	8,7	8,7
	0.0	-0,7	9,3	9,3	9,3	9,3	9,3	9,3	8,7
	3,0	2,2	9,8	9,8	9,8	9,8	9,7	9,4	8,7
	5,0	4,1	10,2	10,2	10,1	10,0	9,7	9,4	8,7
	7,0	6,0	10,5	10,5	10,5	10,0	9,7	9,4	8,7
	9,0	7,9	10,8	10,8	10,6	10,0	9,7	9,4	8,7
	11,0	9,8	11,2	11,2	10,6	10,0	9,7	9,4	8,7
	13,0	11,8	11,3	11,3	10,6	10,0	9,7	9,4	8,7
	15,0	13,7	11,3	11,3	10,6	10,0	9,7	9,4	8,7
100	-19,8	-20,0	7,4	7,4	7,4	7,3	7,3	7,3	7,3
	-18,8	-19,0	7,6	7,6	7,6	7,6	7,5	7,5	7,5
	-16,7	-17,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
	-14,7	-15,0	8,5	8,5	8,5	8,4	8,4	8,4	8,4
	-12,6	-13,0	8,9	8,9	8,9	8,9	8,9	8,9	8,8
	-10,5	-11,0	9,4	9,4	9,3	9,3	9,3	9,3	9,3
	-9,5	-10,0	9,6	9,6	9,6	9,5	9,5	9,5	9,5
	-8,5	-9,1	9,8	9,8	9,8	9,7	9,7	9,7	9,7
	-7,0	-7,6	10,1	10,1	10,1	10,1	10,1	10,1	10,0
	-5,0	-5,6	10,6	10,6	10,5	10,5	10,5	10,5	10,5
	-3,0	-3,7	11,0	11,0	11,0	10,9	10,9	10,9	10,9
	0.0	-0,7	11,6	11,6	11,6	11,6	11,6	11,6	10,9
	3,0	2,2	12,3	12,3	12,3	12,2	12,1	11,7	10,9
	5,0	4,1	12,7	12,7	12,7	12,5	12,1	11,7	10,9
	7,0	6,0	13,1	13,1	13,1	12,5	12,1	11,7	10,9
	9,0	7,9	13,5	13,5	13,3	12,5	12,1	11,7	10,9
	11,0	9,8	14,0	14,0	13,3	12,5	12,1	11,7	10,9
	13,0	11,8	14,1	14,1	13,3	12,5	12,1	11,7	10,9
	15,0	13,7	14,1	14,1	13,3	12,5	12,1	11,7	10,9

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NOTE

1. The temperature of the air entering the coil in heating mode can be reduced to -5°CDB if coil volume of the ventilation unit are within limitations:

Size EKEXV	Maximum coil volume (liter)
50	0.62
63	1.04
80	1.04
100	1.60
125	1.60
140	1.60
200	3.64
250	3.64

5 Capacity tables

5 - 2 Heating Capacity Tables

EKEQMCB

Unit size	Outdoor air temp.		On coil temp.: °CDB						
			10.0	16.0	18.0	20.0	21.0	22.0	24.0
	°CDB	°CWB	kW	kW	kW	kW	kW	kW	kW
125	-19,8	-20,0	9,4	9,4	9,4	9,4	9,4	9,4	9,3
	-18,8	-19,0	9,7	9,7	9,7	9,7	9,7	9,6	9,6
	-16,7	-17,0	10,3	10,3	10,3	10,2	10,2	10,2	10,2
	-14,7	-15,0	10,9	10,9	10,8	10,8	10,8	10,8	10,7
	-12,6	-13,0	11,4	11,4	11,4	11,4	11,4	11,3	11,3
	-10,5	-11,0	12,0	12,0	12,0	11,9	11,9	11,9	11,9
	-9,5	-10,0	12,3	12,3	12,2	12,2	12,2	12,2	12,2
	-8,5	-9,1	12,5	12,5	12,5	12,5	12,5	12,4	12,4
	-7,0	-7,6	13,0	13,0	12,9	12,9	12,9	12,9	12,8
	-5,0	-5,6	13,5	13,5	13,5	13,5	13,4	13,4	13,4
	-3,0	-3,7	14,1	14,1	14,0	14,0	14,0	14,0	13,9
	0,0	-0,7	14,9	14,9	14,9	14,8	14,8	14,8	13,9
	3,0	2,2	15,7	15,7	15,7	15,7	15,5	15,0	13,9
	5,0	4,1	16,3	16,3	16,2	16,0	15,5	15,0	13,9
	7,0	6,0	16,8	16,8	16,8	16,0	15,5	15,0	13,9
	9,0	7,9	17,3	17,3	17,0	16,0	15,5	15,0	13,9
	11,0	9,8	17,9	17,9	17,0	16,0	15,5	15,0	13,9
	13,0	11,8	18,1	18,1	17,0	16,0	15,5	15,0	13,9
	15,0	13,7	18,1	18,1	17,0	16,0	15,5	15,0	13,9
140	-19,8	-20,0	10,7	10,7	10,6	10,6	10,6	10,5	10,5
	-18,8	-19,0	10,9	10,9	10,9	10,9	10,9	10,9	10,8
	-16,7	-17,0	11,6	11,6	11,6	11,5	11,5	11,5	11,4
	-14,7	-15,0	12,2	12,2	12,2	12,2	12,2	12,1	12,1
	-12,6	-13,0	12,9	12,9	12,8	12,8	12,7	12,7	12,7
	-10,5	-11,0	13,5	13,5	13,5	13,4	13,4	13,4	13,4
	-9,5	-10,0	13,8	13,8	13,8	13,8	13,8	13,7	13,7
	-8,5	-9,1	14,1	14,1	14,0	14,0	14,0	14,0	14,0
	-7,0	-7,6	14,5	14,5	14,5	14,5	14,5	14,5	14,5
	-5,0	-5,6	15,2	15,2	15,2	15,1	15,1	15,1	15,0
	-3,0	-3,7	15,8	15,8	15,8	15,8	15,8	15,7	15,7
	0,0	-0,7	16,8	16,8	16,7	16,7	16,7	16,7	15,7
	3,0	2,2	17,7	17,7	17,6	17,6	17,4	16,8	15,7
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	13,0	11,8	20,3	20,3	19,2	18,0	17,4	16,8	15,7
	15,0	13,7	20,3	20,3	19,2	18,0	17,4	16,8	15,7
200	-19,8	-20,0	14,8	14,8	14,7	14,7	14,7	14,6	14,6
	-18,8	-19,0	15,2	15,2	15,2	15,1	15,1	15,1	15,0
	-16,7	-17,0	16,1	16,1	16,1	16,1	16,0	16,0	15,9
	-14,7	-15,0	17,0	17,0	16,9	16,9	16,9	16,8	16,8
	-12,6	-13,0	17,9	17,9	17,8	17,8	17,7	17,7	17,7
	-10,5	-11,0	18,7	18,7	18,7	18,6	18,6	18,6	18,6
	-9,5	-10,0	19,2	19,2	19,1	19,1	19,1	19,0	19,0
	-8,5	-9,1	19,6	19,6	19,5	19,5	19,5	19,4	19,4
	-7,0	-7,6	20,2	20,2	20,2	20,2	20,1	20,1	20,1
	-5,0	-5,6	21,1	21,1	21,1	21,0	21,0	21,0	20,9
	-3,0	-3,7	22,0	22,0	21,9	21,9	21,9	21,8	21,8
	0,0	-0,7	23,3	23,3	23,2	23,2	23,2	23,2	21,8
	3,0	2,2	24,6	24,6	24,5	24,5	24,2	23,4	21,8
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	15,0	13,7	28,2	28,2	26,6	25,0	24,2	23,4	21,8
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	-16,7	-17,0	20,3	20,3	20,2	20,2	20,1	20,1	20,0
	-14,7	-15,0	21,4	21,4	21,3	21,3	21,2	21,2	21,2
	-12,6	-13,0	22,5	22,5	22,4	22,4	22,4	22,3	22,3
	-10,5	-11,0	23,6	23,6	23,6	23,5	23,5	23,4	23,4
	-9,5	-10,0	24,2	24,2	24,1	24,1	24,0	24,0	23,9
	-8,5	-9,1	24,7	24,7	24,6	24,6	24,5	24,5	24,4
	-7,0	-7,6	25,5	25,5	25,4	25,4	25,4	25,3	25,3
	-5,0	-5,6	26,6	26,6	26,6	26,5	26,5	26,4	26,4
	-3,0	-3,7	27,7	27,7	27,6	27,6	27,5	27,5	27,5
	0,0	-0,7	29,3	29,3	29,3	29,2	29,2	29,2	27,5
	3,0	2,2	31,0	31,0	30,9	30,8	30,5	29,5	27,5
	5,0	4,1	32,0	32,0	32,0	31,5	30,5	29,5	27,5
	7,0	6,0	33,1	33,1	33,0	31,5	30,5	29,5	27,5
	9,0	7,9	34,1	34,1	33,5	31,5	30,5	29,5	27,5
	11,0	9,8	35,2	35,2	33,5	31,5	30,5	29,5	27,5
	13,0	11,8	35,5	35,5	33,5	31,5	30,5	29,5	27,5
	15,0	13,7	35,5	35,5	33,5	31,5	30,5	29,5	27,5

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5 Capacity tables

5 - 3 Capacity Correction Factor

EKEQMCB

Capacity calculation for multi combination of third manufacturer air handling unit.

Introduction

The capacity of the indoor unit must be selected on the standard cooling or heating operation conditions as specified below because the connected Air handling unit is operating in combination with other appliances connected to the outdoor.

Selection of capacity table

Take the capacity of the selected air handling unit heat exchanger on the standard operation conditions. (see below)

Determine the capacity class according to the table below, "Heat exchanger capacity class", use its capacity table as base for capacity calculations.

Heat exchanger capacity class for cooling			
capacity	capacity (kW)		
class	minimum	standard	maximum
50	5.0	5.6	6.2
63	6.3	7.1	7.8
80	7.9	9.0	9.9
100	10.0	11.2	12.3
125	12.4	14.0	15.4
140	15.5	16.0	17.6
200	17.7	22.4	24.6
250	24.7	28.0	30.8

heat exchanger capacity as defined under these conditions

Standard operation conditions of the indoor unit:

ST	6°C	(evaporator saturated temperature.)
SH	5K	(superheat at evaporator exit.)
SC	3K	(Sub cool condensor)
suction air temperature	27/19 (°CWB/°CDB)	(Degree Celsius Dry Bulb / wet Bulb)

Heat exchanger capacity class for heating			
capacity	capacity (kW)		
class	minimum	standard	maximum
50	5.6	6.3	7.0
63	7.1	8.0	8.8
80	8.9	10.0	11.1
100	11.2	12.5	13.8
125	13.9	16.0	17.3
140	17.4	18.0	19.8
200	19.9	25.0	27.7
250	27.8	31.5	34.7

heat exchanger capacity as defined under these conditions

Standard operation conditions of the indoor unit:

ST	46°C	(Condensor saturated temperature.)
SH	5K	(superheat at evaporator exit.)
SC	3K	(Sub cool condensor)
suction air temperature	20°CDB	(Degree Celsius Dry Bulb)

Correction of capacity table to actual heat exchanger capacity

To make the value more correct, a correction needs to be done on the capacity, based on the ratio of the actual heat exchanger capacity and the standard capacity (3TW32152-1 for cooling and 3TW32152-3 for heating).

The capacity class * ratio (actual capacity / standard capacity) = Air handling unit capacity index.

Power input of combination:

Take sum of all capacities of the the combined appliances.

See outdoor unit capacity table for the matching power input.

Example (using cooling selection):

Capacity table

An evaporator with a cooling capacity of 6.9kW at the "standard operation conditions".

A 10 HP outdoor unit is connected with 2 FXSQ50 class (standard indoor) + the mentioned air handling unit:

Indoor capacity

For the Air handling unit: the unit is within the range of a 63 class => the table of the 63 class must be used

To calculate the exact capacity correction is needed:

63 class indoor: standard capacity is 7.1kW.

The selected indoor unit has on the standard operation conditions a capacity of 6.9kW.

The values of the table need to be corrected with the ratio of : actual capacity / standard capacity

$$\frac{\text{actual capacity}}{\text{standard capacity}} = \frac{6.9\ (kW)}{7.1\ (kW)} = 97\%$$

For correct capacity the table of the capacity class of 63 must be multiplied by 0.97.

Capacity index of air handling unit: 0.97*63 = 61.

Power input of combination.

Take sum of capacity index of each individual indoor.

50 + 50 + 61 = 161.

Power input must be selected from 10 HP capacity table based on the 161 as total capacity index.

NOTES

Actual operation depends on the operating conditions (outdoor temperature / indoor load / connected indoors operating ....)

See outdoor unit data for additional correction when the connection ration passes over 100%, effect of long piping and other corrections.

Connection limitations to the outdoor condensing unit

Introduction

The outdoor unit determines the limitations of the allowed combination to keep its reliability. 2 limits exist:

Number of appliances that are connected (an appliance can be a standard Daikin indoor or a free choice Air handling unit).

Sum of the size of the connected appliances.

Maximum allowed number of indoor/evaporator units:

See outdoor unit engineering data or manual for the maximum number of appliances that may be connected.

Minimum and maximum size of connected appliances.

Step 1: Calculate the individual connection ratio of each individual appliance.

Step 2: Make sum of all the connected appliances.

Indoor unit connection ratio value:

The connection ratio of the outdoor unit must be within the limits specified by the outdoor unit and must additionally be within 50% and 110%, when a EKEQMCB is connected.

The connection ratio is the sum of all the units connected to an outdoor unit.

For standard indoor units: the capacity class is the value needed to calculate the connection ratio.

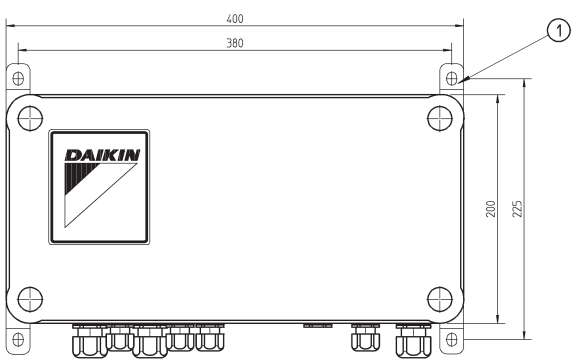
NOTE

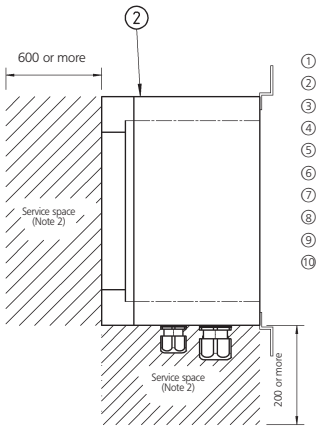
This is also the class of the expansion valve that must be used for this heat exchanger.

6 Dimensional drawings

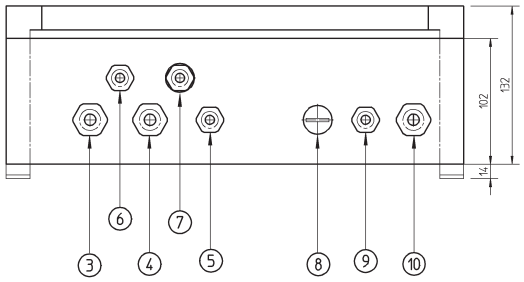
6 - 1 Dimensional Drawings

EKEQFCB





① 4 holes to fix control box
② Control box lid
③ Screw nut for power supply cable
④ Screw nut for expansion valve cable
⑤ Screw nut for thermistor cable (liquid) R2T + (gas) R3T
⑥ Screw nut for fan
⑦ Screw nut for connection cable to controller
⑧ Stopper (closing cup)
⑨ Screw nut for communication cable to outdoor unit
⑩ Screw nut for connection cable to controller



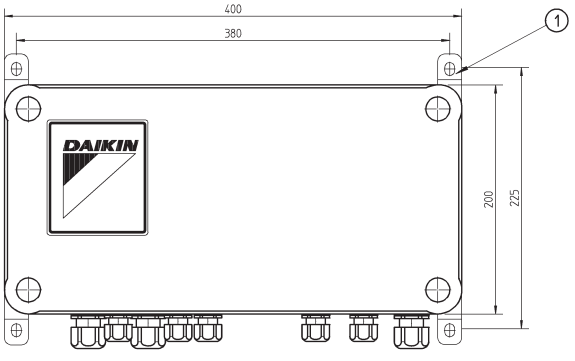
Notes:

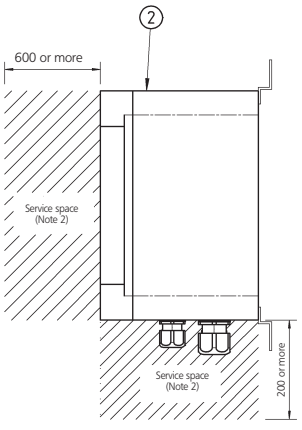
1 Installation:
Make sure that the control box is installed horizontal, screw nuts position downwards.
The option boxes (expansion valve and electrical control box) can be installed inside and outside.
Do not install the option boxes in or on the outdoor unit.
Do not put the option boxes in direct sunlight. Direct sunlight will increase the temperature inside the option boxes and may reduce its lifetime and influence its operation.
Choose a flat and strong mounting surface.
Operation temperature of the control box is between -10°C And 40°C

2 Service space:
Keep the space in front of the boxes free for future maintenance.

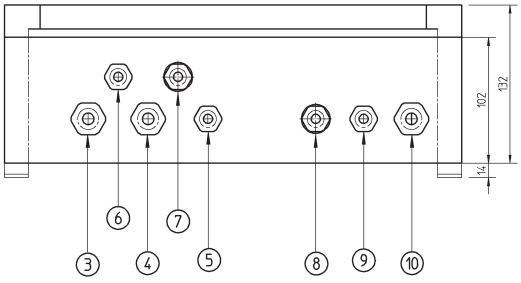
3TW27134-1

EKEQDCB





① 4 holes to fix control box
② Control box lid
③ Screw nut for power supply cable
④ Screw nut for expansion valve cable
⑤ Screw nut for thermistor cable (liquid) R2T + (Air) R1T
⑥ Screw nut for thermistor cable (gas) R3T
⑦ Screw nut for communication cable to outdoor unit
⑧ Screw nut for fan cable
⑨ Screw nut for remote controller
⑩ Screw nut for connection cable to controller



Notes:

1 Installation:
Make sure that the control box is installed horizontal, screw nuts position downwards.
The option boxes (expansion valve and electrical control box) can be installed inside and outside.
Do not install the option boxes in or on the outdoor unit.
Do not put the option boxes in direct sunlight. Direct sunlight will increase the temperature inside the option boxes and may reduce its lifetime and influence its operation.
Choose a flat and strong mounting surface.
Operation temperature of the control box is between -10°C And 40°C

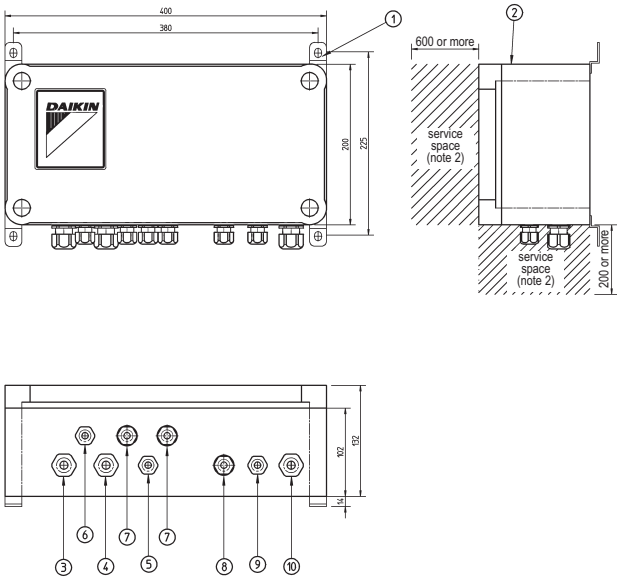
2 Service space:
Keep the space in front of the boxes free for future maintenance.

3TW27144-1

6 Dimensional drawings

6 - 1 Dimensional Drawings

EKEQMCB



3TW32154-1A

1	4 holes to fix the control box
2	Control box lid
3	Screw nut for power supply cable
4	Screw nut for expansion valve cable
5	Screw nut for thermistor cable (liquid) R2T + (air) R1T
6	Screw nut for thermistor calbe (gas) R3T
7	Srew nut for communication cable
8	Srew nut for fan cable
9	Srew nut for remote control
10	Screw nut for connection cable to controller

NOTES

1. Installation:
   Make sure that the control box is installed horizontal. Screw nuts position downwards.
   The option boxes (expansion valve and electrical control box) can be installed inside and outside.
   Do not install the option boxes in or on the outdoor unit.
   Do not put the option boxes in direct sunlight. Direct sunlight will increase the temperature inside the option boxes and may reduce its lifetime and influence its operation.
   Choose a flat and strong mounting surface.
   Operation temperature of the control box is between -10°C and 40°C.
2. Service space:
   Keep the space in front of the boxes free for future maintenance.

7 Wiring diagrams

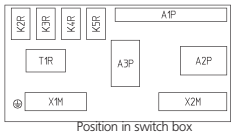
7 - 1 Wiring Diagrams - Single Phase

EKEQFCB

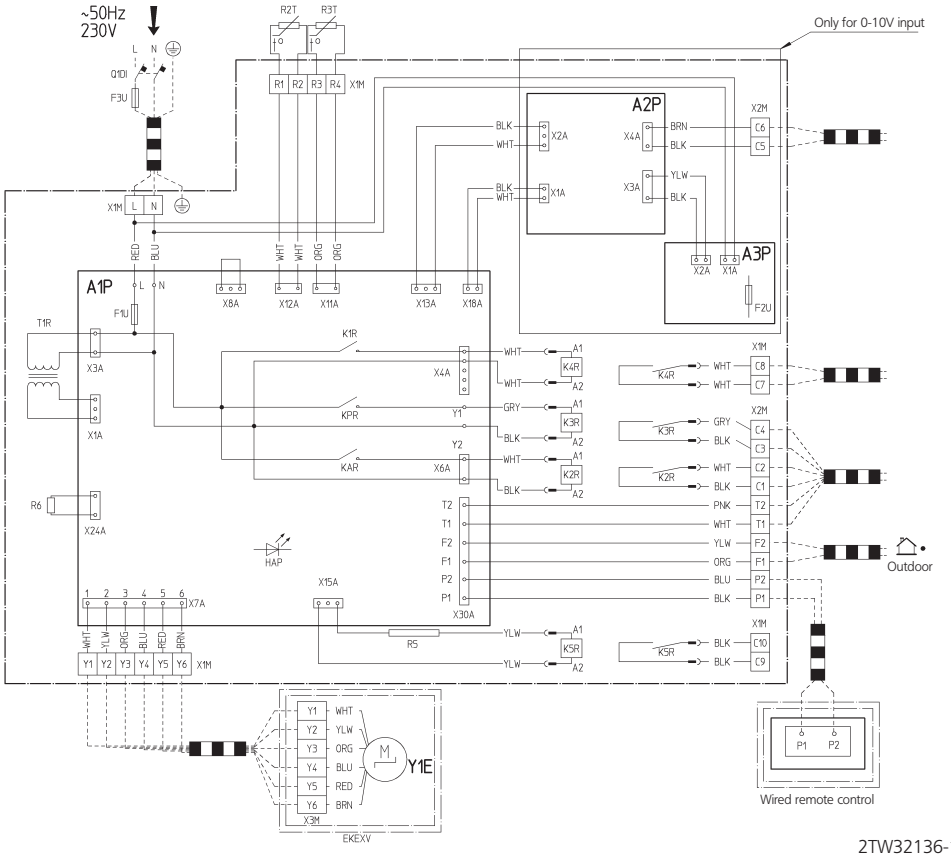
A1P : Printed circuit board
A2P : Printed circuit board (for voltage conversion)
A3P : Printed circuit board (Power supply)
F1U : Fuse (250V, F5A) (A1P)
F2U : Fuse (250V, T1A) (A3P)
F3U : Field fuse
HAP : Light emitting diode (service monitor green)
K2R : Magnetic relay (error status) AC
K3R : Magnetic relay (Operation / Compressor ON/OFF) AC
K4R : Magnetic relay (Fan) AC
K5R : Magnetic relay (Defrost signal) DC
K1R, KAR, KPR : Magnetic relay
Q1DI : Earth leakage breaker
R5 : Resistance (DC 120 OHM)
R6 : Capacity adaptor
R2T : Thermistor (Liquid)
R3T : Thermistor (Gas)
T1R : Transformer (220V/21.8V)
X1M : Terminal block
X2M : Terminal block
X3M : Terminal block
Y1E : Electronic expansion valve
X1M-R1/R2 : Thermistor Liquid
X1M-R3/R4 : Thermistor Gas
X1M-Y1–6 : Expansion valve
X2M-P1/P2 : Communication remote controller
X2M-C1/C2 : Output: error status
X2M-C3/C4 : Output: Operation / Compressor ON/OFF
X2M-C5/C6 : Input: 0-10V DC capacity control
X1M-C7/C8 : Output: Fan ON/OFF
X1M-C9/C10 : Output: Defrost signal
X2M-F1/F2 : Communication outdoor
X2M-T1/T2 : Input: ON/OFF

1 Use copper conductors only.
2 BLK: Black / WHT: White / RED: Red / BLU: Blue / BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / PINK: Pink / YLW: Yellow

L : Live
N : Neutral
: Connector
: Wire clamp
: Protective earth (Screw)
: Seperate component
: Optional accessory
: Field wiring



Position in switch box



EKEQDCB

A1P : Printed circuit board
A2P : Printed circuit board (Option KRP4)
F1U : Fuse (250V, F5A) (A1P)
F3U : Field fuse
HAP : Light emitting diode (service monitor green)
K1R : Magnetic relay
K4R : Magnetic relay (Fan) AC
Q1DI : Earth leakage breaker
R7 : Capacity adaptor
R1T : Thermistor (Air)
R2T : Thermistor (Liquid)
R3T : Thermistor (Gas)
T1R : Transformer (220V/21.8V)
X1M : Terminal block
X3M : Terminal block
X1M-R1/R2 : Thermistor Liquid
X1M-R3/R4 : Thermistor Gas
X1M-R5/R6 : Thermistor Air
X1M-Y1–6 : Expansion valve
X1M-C1/C2 : Output: Fan ON/OFF
X1M-P1/P2 : Communication remote controller
X1M-F1/F2 : Communication outdoor
X1M-T1/T2 : Input: ON/OFF
Y1E : Electronic expansion valve

1 Use copper conductors only.
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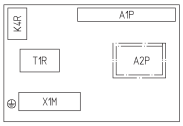
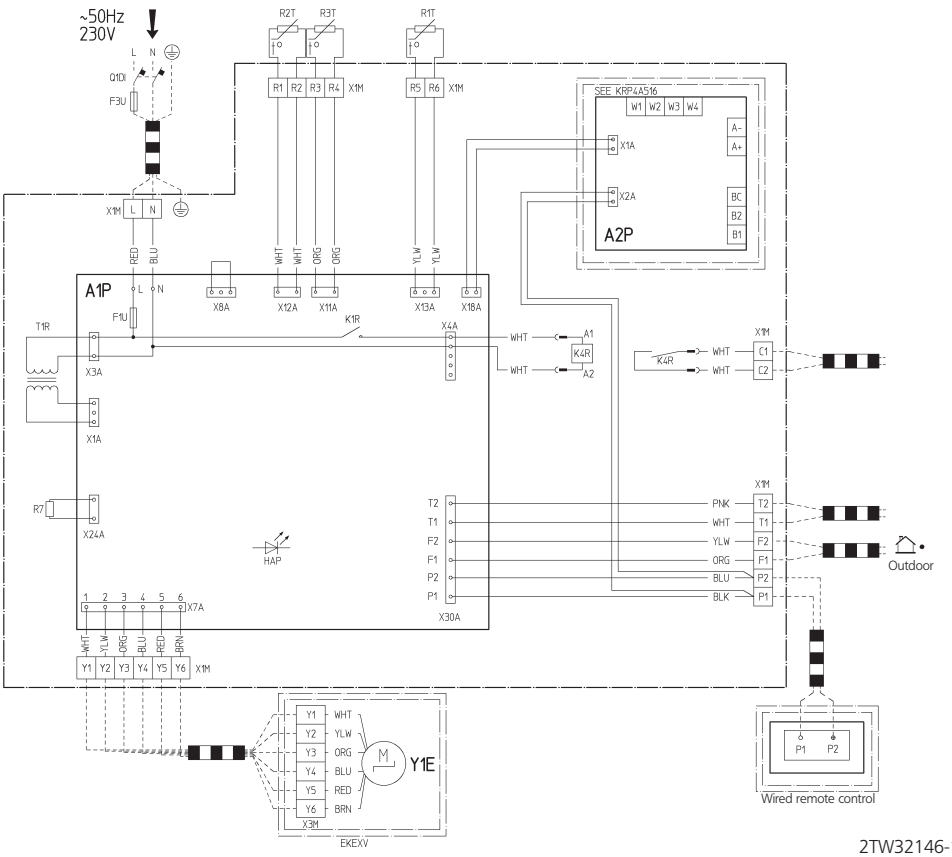
L : Live
N : Neutral
: Connector
: Wire clamp
: Protective earth (Screw)
: Seperate component
: Optional accessory
: Field wiring



Position in switch box



7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase

EKEQMCB

A1P : Printed circuit board
A2P : Printed circuit board (Option KRP4)
F1U : Fuse (250V, FSA) (A1P)
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K1R : Magnetic relay
K4R : Magnetic relay (Fan) AC
Q1DI : Earth leakage breaker
R7 : Capacity adaptor
R1T : Thermistor (Air)
R2T : Thermistor (Liquid)
R3T : Thermistor (Gas)
T1R : Transformer (220V/21.8V)
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X1M-Y1-6 : Expansion valve
X1M-C1/C2 : Output:Fan ON/OFF
X1M-P1/P2 : Communication remote controller
X1M-F1/F2 : Communication outdoor
X1M-T1/T2 : Input: ON/OFF
Y1E : Electronic expansion valve

1 Use copper conductors only.
2 BLK: Black / WHT: White / RED: Red / BLU: Blue / BRN: Brown / GRY: Grey / GRN: Green / ORG: Orange / PINK: Pink / YLW: Yellow

L : Live
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: Connector
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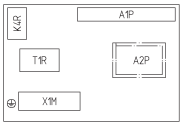
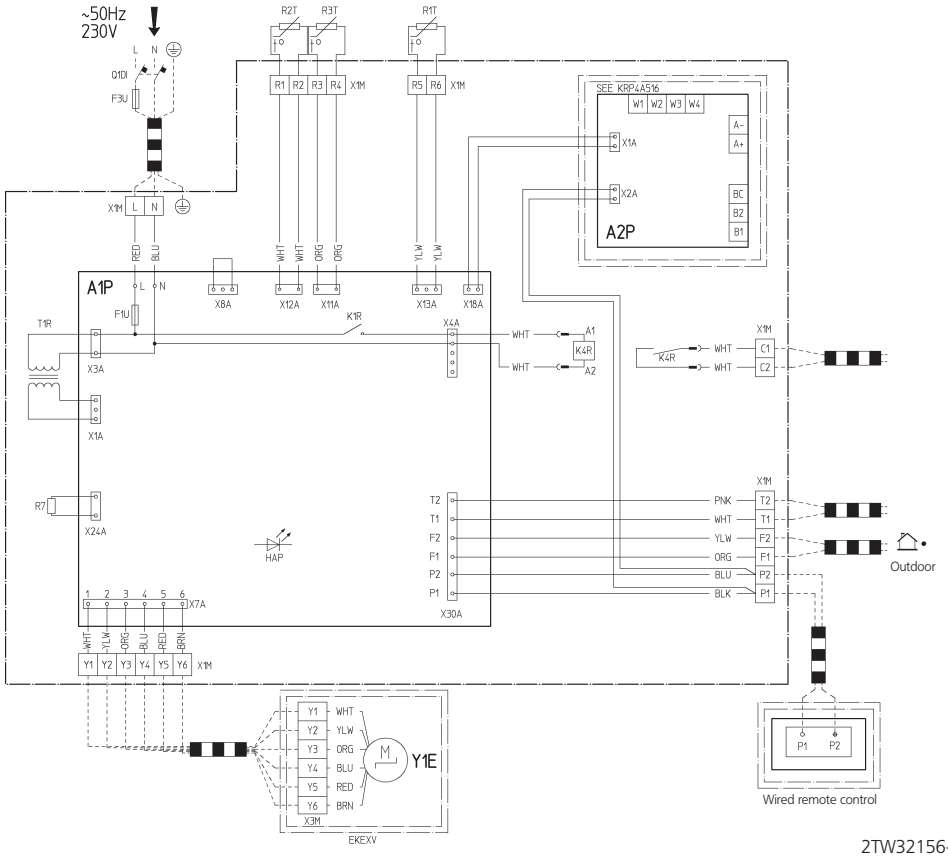
: Seperate component
: Optional accessory
: Field wiring



Position in switch box



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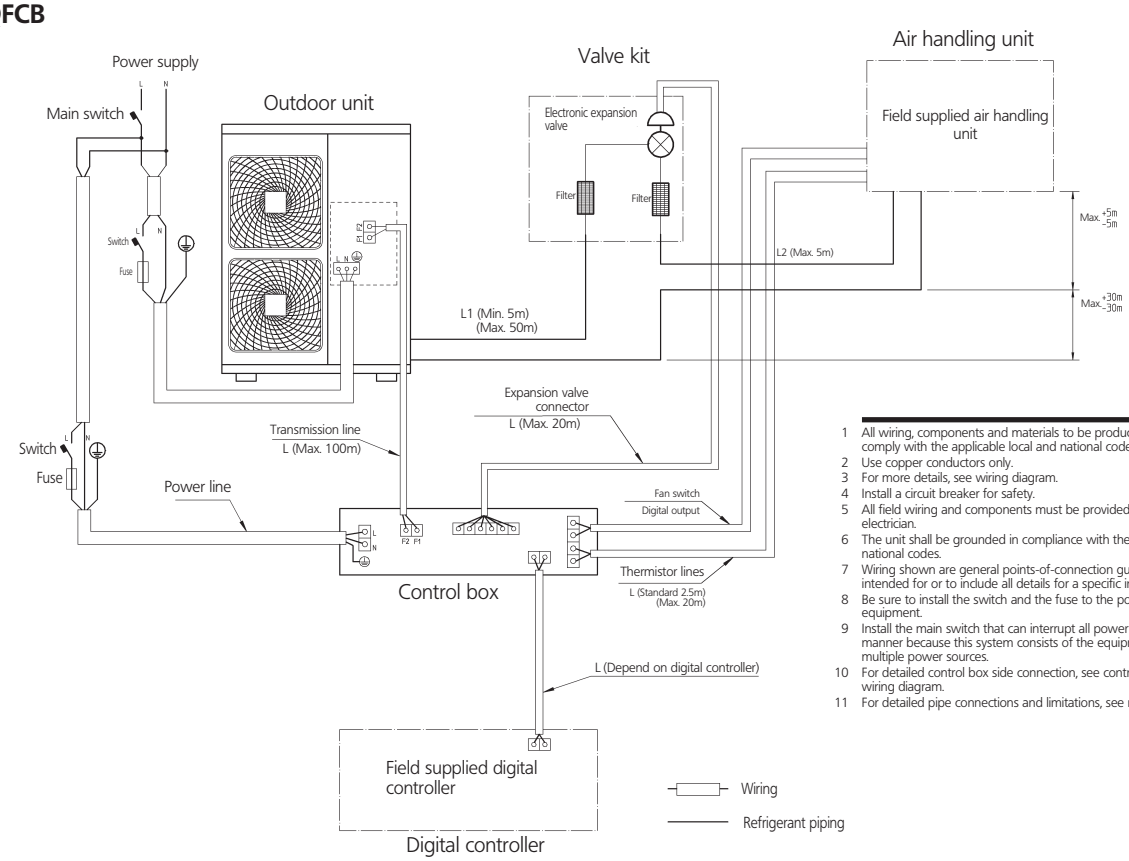
8 External connection diagrams

8 - 1 External Connection Diagrams

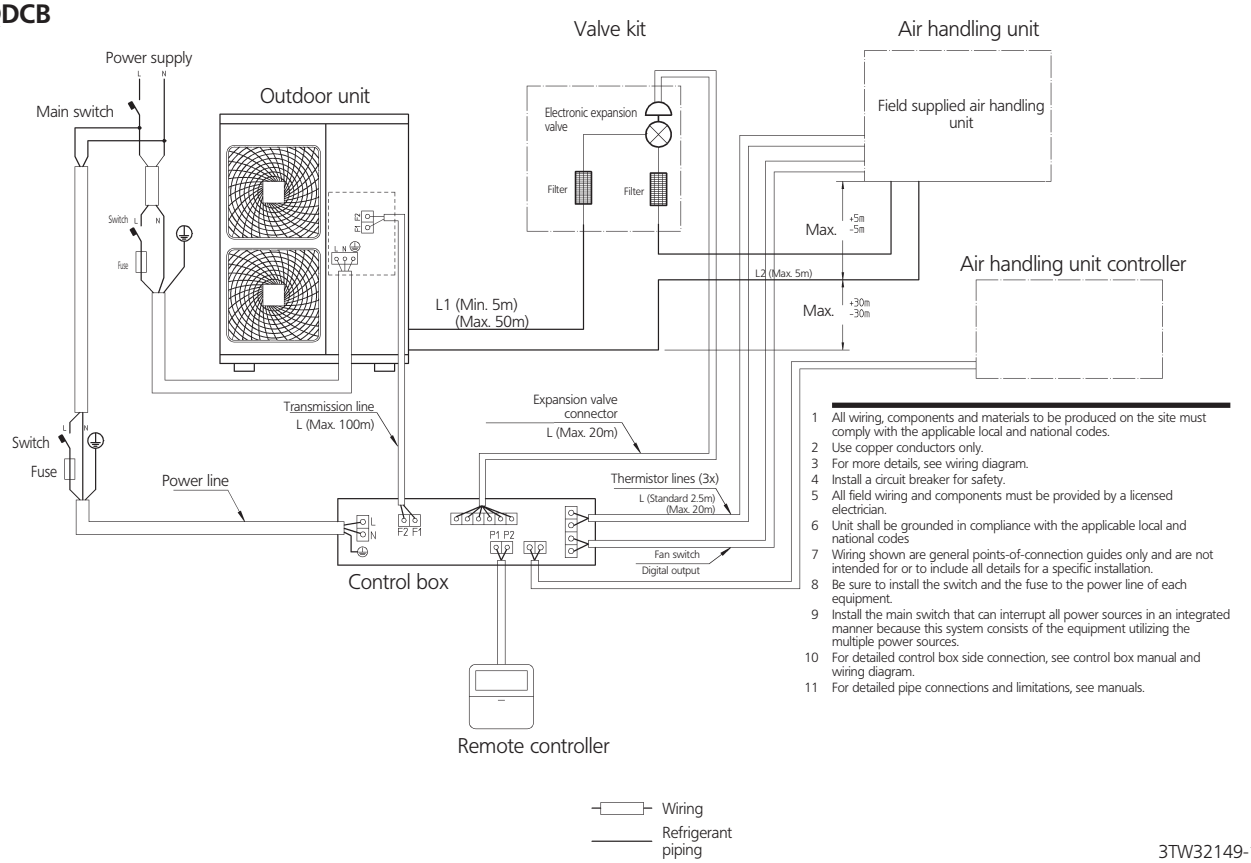
EKEQFCB



1 All wiring, components and materials to be produced on the site must comply with the applicable local and national codes.
2 Use copper conductors only.
3 For more details, see wiring diagram.
4 Install a circuit breaker for safety.
5 All field wiring and components must be provided by a licensed electrician.
6 The unit shall be grounded in compliance with the applicable local and national codes.
7 Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
8 Be sure to install the switch and the fuse to the power line of each equipment.
9 Install the main switch that can interrupt all power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.
10 For detailed control box side connection, see control box manual and wiring diagram.
11 For detailed pipe connections and limitations, see manuals.

3TW32139-1

EKEQDCB



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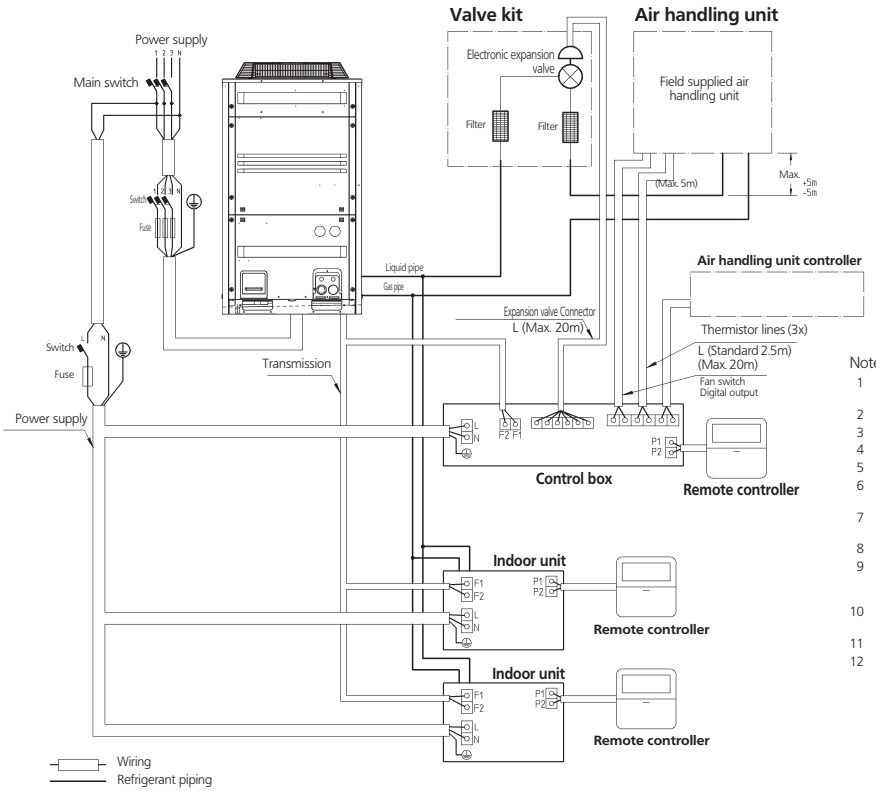
8 Be sure to install the switch and the fuse to the power line of each equipment.
9 Install the main switch that can interrupt all power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.
10 For detailed control box side connection, see control box manual and wiring diagram.
11 For detailed pipe connections and limitations, see manuals.

3TW32149-1

8 External connection diagrams

8 - 1 External Connection Diagrams

EKEQMCB



Notes:

1 All wiring, components and materials to be produced on the site must comply with the applicable local and national codes.
2 Use copper conductors only.
3 For more details, see wiring diagram.
4 Install a circuit breaker for safety.
5 All field wiring and components must be provided by a licensed electrician.
6 The unit shall be grounded in compliance with the applicable local and national codes.
7 Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
8 Be sure to install the switch and the fuse to the power line of each equipment.
9 Install the main switch that can interrupt all power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.
10 For detailed control box side connection, see control box manual and wiring diagram.
11 For detailed pipe connections and limitations, see manuals.
12 Connection appliance can be standard indoor unit or free choice of air handling unit.

3TW32159-1

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

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