DAIKIN

Applied Systems

Technical Data

Concealed ceiling unit

EEDEN13-400

FWE-CT

TABLE OF CONTENTS

FWE-CT

1 Features

- Easy installation and maintenance
- 4-speed fan motor
- High power air flow
- Wired electronic controllers range
- Available static pressure up to 50Pa
- Wide operating range
- Standard left and right side water connection
- Extended drain pan as standard
- Factory mounted valve (both left and right side)
- Nylon filter G2 class
- Polyethylene insulation

2 Specifications

2-1 Technical Specifications				FWE02CT	FWE03CT	FWE04CT	FWE06CT	FWE07CT	FWE08CT	FWE10CT
Cooling capacity	Total capacity	Super high	kW	2.17	3.22	4.34	6.06	6.83	7.84	9.96
		High	kW	1.81	2.78	3.49	5.32	5.68	6.92	8.64
		Low	kW	0.90	1.40	1.80	2.80	3.10	3.90	4.90
		Nom.	kW	1.60	2.45	2.96	4.56	4.94	6.07	7.51
	Sensible capacity	Super high	kW	1.61	2.44	3.27	4.55	4.83	6.02	7.58
		High	kW	1.33	2.08	2.58	3.94	4.30	5.25	6.48
		Low	kW	0.70	1.20	1.40	2.10	2.50	3.10	3.70
		Nom.	kW	1.16	1.82	2.16	3.34	3.71	4.56	5.57
Heating capacity	2-Pipe	Super high	kW	2.79	4.28	5.61	7.66	9.26	10.50	13.00
		High	kW	2.31	3.67	4.44	6.65	7.62	9.18	11.10
		Medium	kW	2.04	3.22	3.74	5.63	6.59	7.98	9.57
		Low	kW	1.20	2.00	2.30	3.40	4.40	5.30	6.30
Power input	Super high		W	46	69	83	119	163	181	230
	High		W	39	54	59	93	128	145	180
	Low		W	29	40	42	60	89	102	121
	Nom.		W	34	47	50	73	105	117	145
Casing	Colour			Metal						
	Material			Galvanised metal						
Dimensions	Unit	Height	mm	253						
		Width	mm	590						
		Depth	mm	705	875	1,005	1,205	1,455	1,555	1,815
	Packed unit	Height	mm	260						
		Width	mm	605						
		Depth	mm	720	890	1,020	1,220	1,470	1,570	1,830
Weight	Unit		kg	17	20	24	28	37	39	46
	Operation weight		kg	17	20	24	28	37	39	46
	Packed unit		kg	19	22	26	31	40	42	49
Heat exchanger	Rows	Quantity		3						
	Stages	Quantity		2	3			6		
	Fin pitch		mm	2.1						
	Face area		m²	6.0	8.4	10.1	12.8	16.2	17.3	21.0
	Water volume		l	0.74	1.02	1.24	1.56	1.97	2.14	2.56
Water flow	Cooling		l/h	360	540	756	1,044	1,188	1,368	1,728
	Heating		l/h	252	360	504	684	828	936	1,188
Water pressure drop	Cooling		kPa	15.1	11.7	23.9	46.4	14.8	19.3	32.9
	Heating		kPa	6.1	4.9	9.7	17.9	6.6	8.4	13.7
Fan	Type			Centrifugal (Blade: Forward - curve)						
	Quantity			1		2		3		4
	Air flow rate	Super high	m³/h	430	638	910	1,195	1,559	1,753	2,177
		High	m³/h	311	518	619	926	1,188	1,413	1,735
		Medium	m³/h	238	385	413	630	851	1,016	1,202
		Low	m³/h	150	256	284	426	569	688	808
	Available pressure	High	Pa	-						
Fan motor	Speed	Steps		4						
Sound power level	Super high		dBA	51	61	58	62		64	65
	High		dBA	49	56	48	55	57	58	60
	Nom.		dBA	37	49	38	46	47	50	
	Low		dBA	31	38	32	39	38	41	40
Sound pressure level	Super high		dBA	41	51	48	52		54	55
	High		dBA	39	46	38	45	47	48	49
	Medium		dBA	26	39	28	36	37	40	39
	Low		dBA	21	28	22	29	27	31	29
Piping connections	Drain	OD	mm	19.05						
Insulation material				Physical PE						
Water connections	Std. heat exchanger		inch	3/4						

2 Specifications

2-2 Electrical Specifications			FWE02CT	FWE03CT	FWE04CT	FWE06CT	FWE07CT	FWE08CT	FWE10CT
Current input	Super high	A	0.206	0.309	0.372	0.533	0.731	0.811	1.031
	High	A	0.174	0.243	0.265	0.430	0.575	0.648	0.780
	Medium	A	0.150	0.208	0.217	0.325	0.472	0.523	0.648
	Low	A	0.128	0.177	0.188	0.271	0.400	0.456	0.540
Power supply	Type		AC						
	Phase		1~						
	Frequency	Hz	50						
	Voltage	V	220-240						
Required wire section		mm²	1.00						
Required fuses		A	4						

Notes

(1) Cooling: 2 pipe: air 27ºCDB, 19ºCWB; entering water 7ºC; leaving water 12ºC

(2) Heating: 2 pipe: air 20ºCDB, entering water 50ºC, water flow as per cooling mode

(3) All declared values are for ESP "0 Pa"

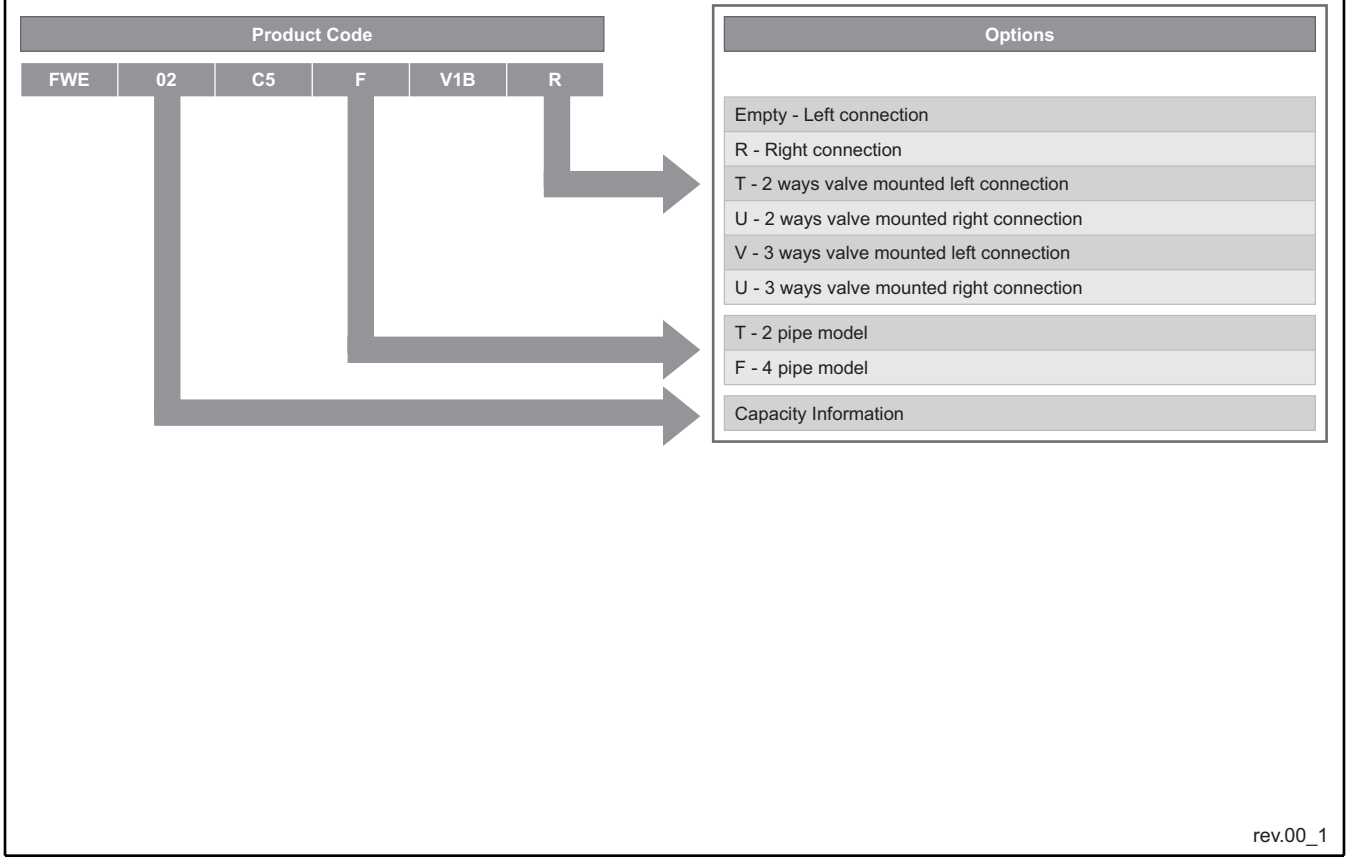
(4) Optional products (factory mounted kit) power consumption value is 2,5W (for each valves)

(5) Fan power output = power delivered to air by fan

3 Nomenclature

3 - 1 Nomenclature

FWE-CT/CF



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4 Options

4 - 1 Options

FWE-CT/CF

1 VALVE KIT MODELS

Model Name	Description
EK2MV2B10C5	2 Pipes 2 Way Valve Kit
EK2MV3B10C5	2 Pipes 3 Way Valve Kit
EK4MV2B10C5	4 Pipes 2 Way Valve Kit
EK4MV3B10C5	4 Pipes 3 Way Valve Kit

2 ON/OFF VALVE KITS SPECIFICATIONS

The 2-way or 3-way ON/OFF valve kits, connected to the Daikin controllers, help to set the room temperature by interrupting the water flow to the heat exchanger. The kits are available with various fittings for all FWE units, both for 2-pipe and for 4-pipe systems.

The position of water input, connections to heat exchanger and water returning to the circuit is shown in figure 1 (2 way type) and figure 2 (3 way type) according to the indications on the valve body.

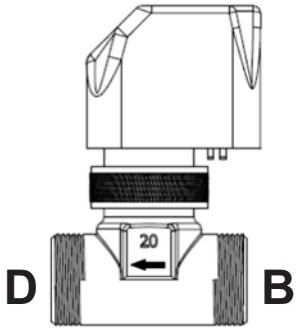

Figure 1

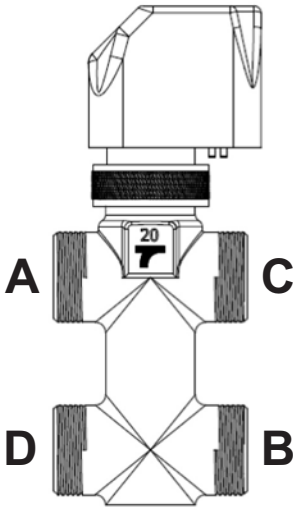

Figure 2

A = Heat exchanger
B = Water inlet from circuit
C = Water returning to circuit
D = Heat exchanger water inlet

The connection must be made by using “Piping Connection Diagrams” and “Pipe Description Schemas” inside the kit box for each models. All fittings are specified in “Pipe Description Schema” with 1:1 scale to facilitate finding the correct fitting part.

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4 Options

4 - 1 Options

FWE-CT/CF

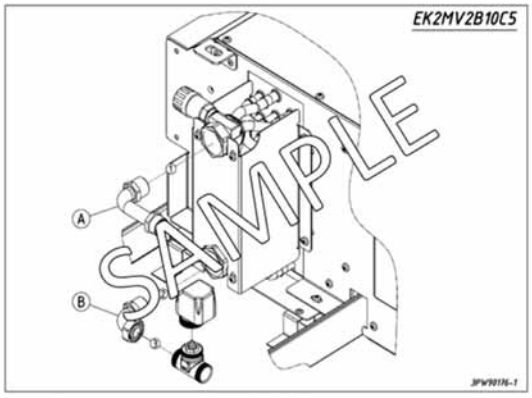

Figure for
4 pipe / 2 way valve model piping connection diagram

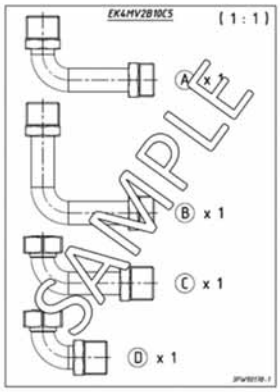

Figure for
4 pipe / 2 way valve model pipe description schema

Piping Connection Diagram

In these files, the letters indicate the corresponding fittings in “pipe description schema”. The numbers indicated the assembly sequence that has to be followed.

Pipe Description Schema

In these files, part drawings are scaled 1:1 and the numbers at the right of the part drawings indicate quantity.

! WARNING:
- For electrical connection to the controller, refer to the wiring diagram of the controller.
- Each unit requires a switch (IL) on the feeder line with a distance of at least 3 mm between the opening contacts, and a suitable safety fuse (F).

3 THE KIT CONSISTS OF
- 2-way valve body with 2 connections and 3-way valve body with 4 connections with built-in by-pass made of brass, maximum working pressure 16 bar.
- Electro-thermal actuator having the following specifications:
- Power supply; 230 VAC, activation; NC (Normal Close) and ON/OFF,
- Total opening time: 3 minutes.
- Cable length: 1 meter
- Protection class: IP44 to EN 60529
- Power consumption (normal operation): 2.5 W

! Caution: During mounting of the hydraulic kit to unit, the required amount of extra sealing material should be used to seal between fitting connection points for unmounted units.

! Caution: After mounting the hydraulic kit, the installer must ensure that there is no leakage on any connection point.

Hydraulic kit for the installation of the valve on the heat exchanger.

The flow resistance of the valve is obtained from the following formula:

Pw = (Qw/Kv)2

Valve	K_v direct passage	K_v by-pass
2 Way 3/4”	2.8	-
3 Way 3/4”	2.8	1.8

Where:

Pw is the flow resistance expressed in kg/cm2.

Qw is the water flow rate expressed in m3/h.

Kv is the flow rate identified in the table.

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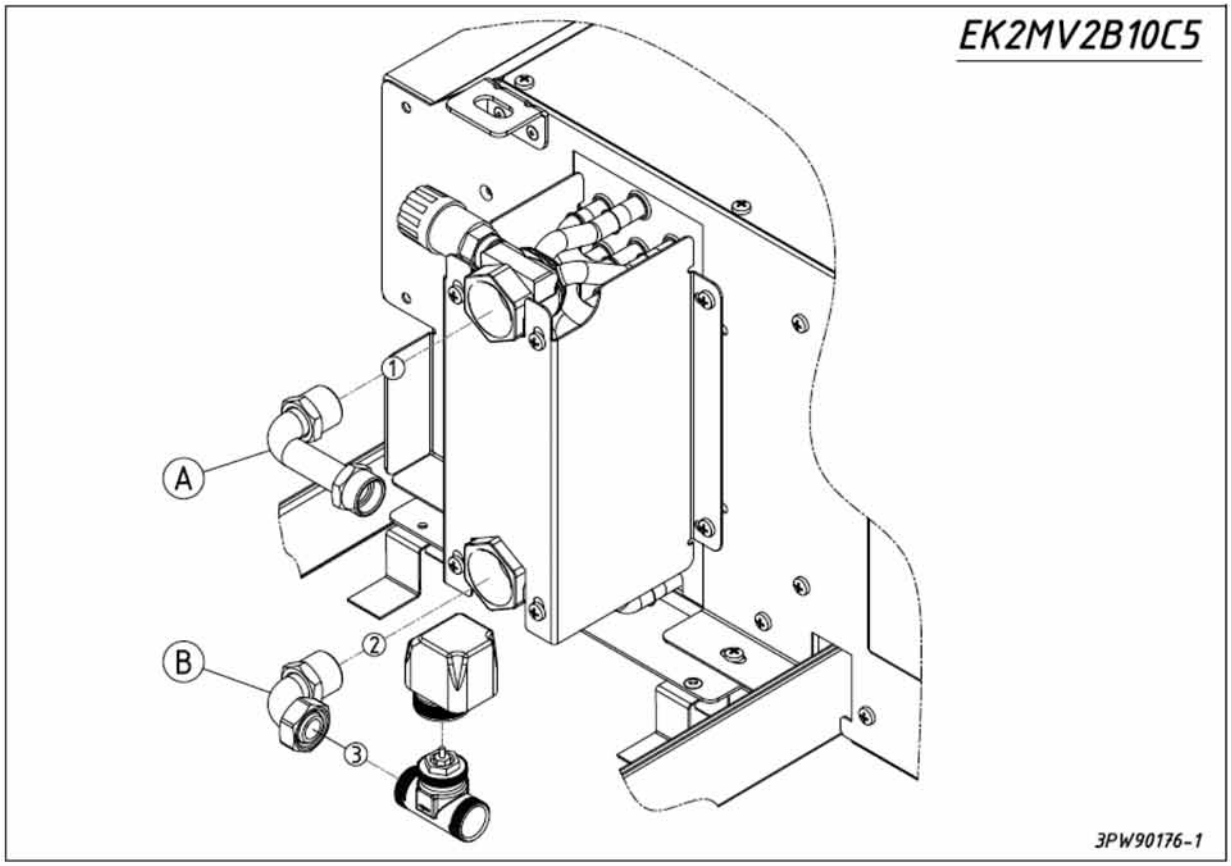
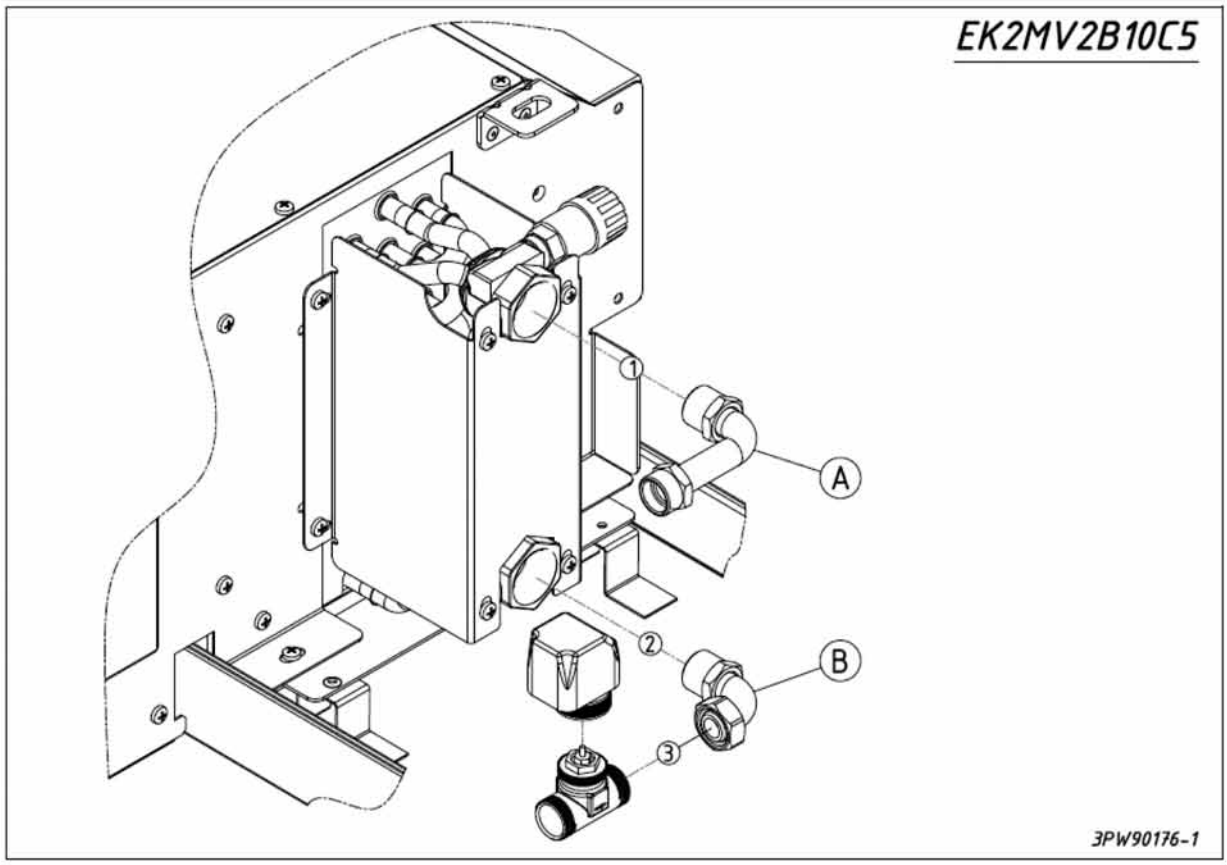
4 Options

4 - 1 Options

FWE-CT/CF





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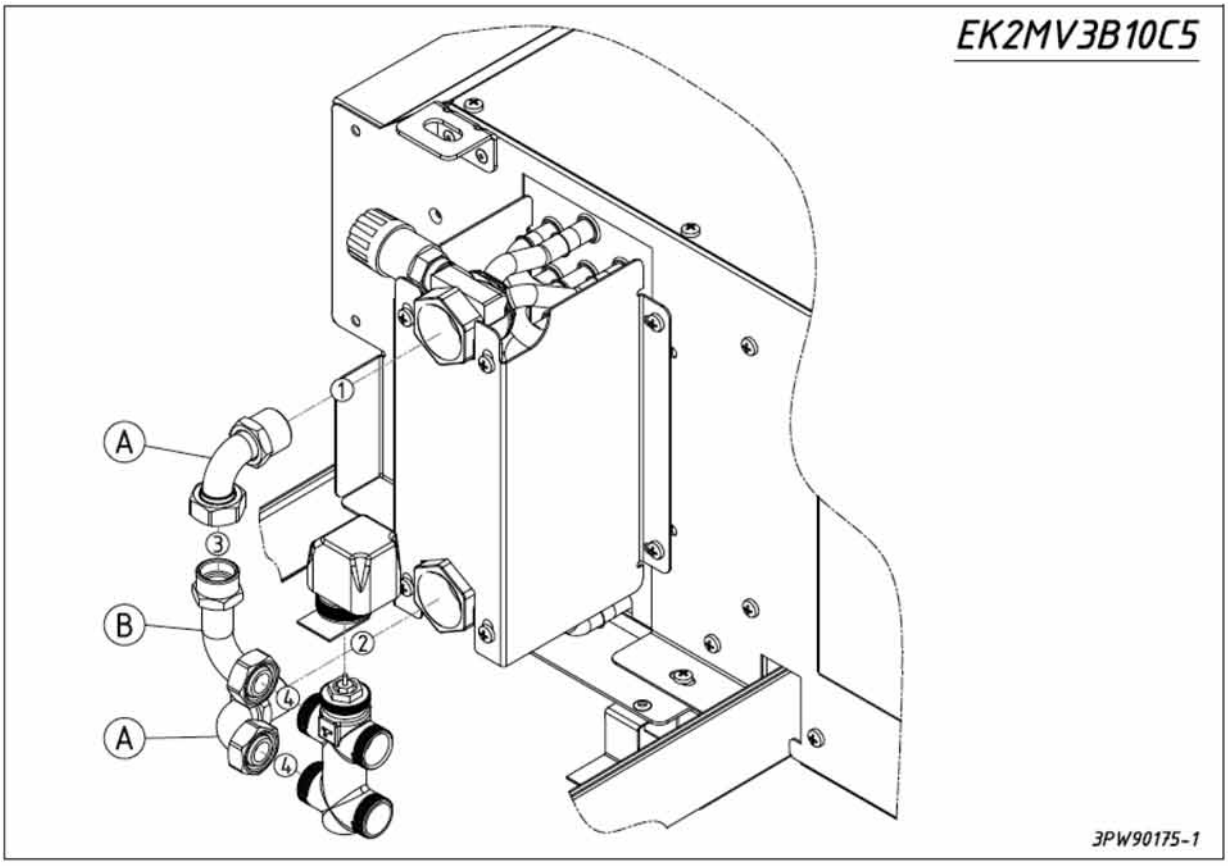
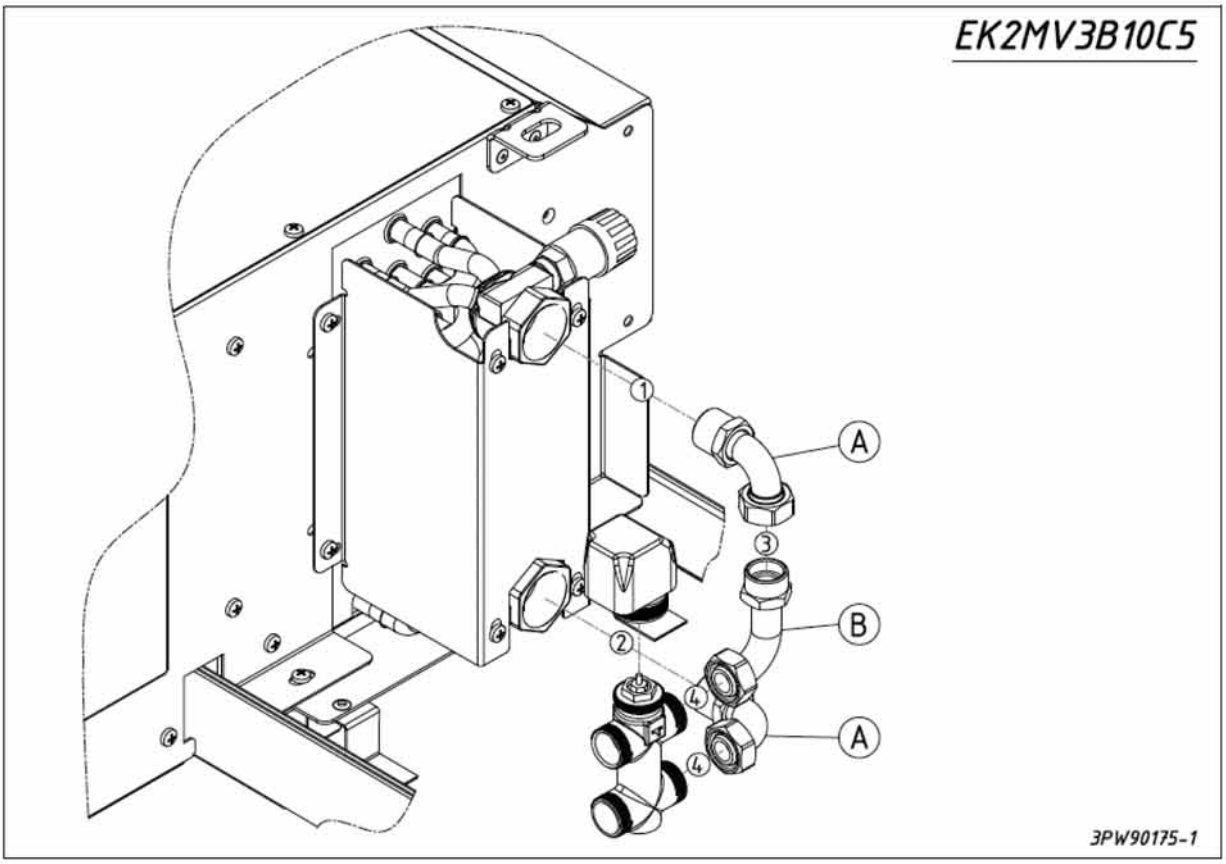
4 Options

4 - 1 Options

FWE-CT/CF





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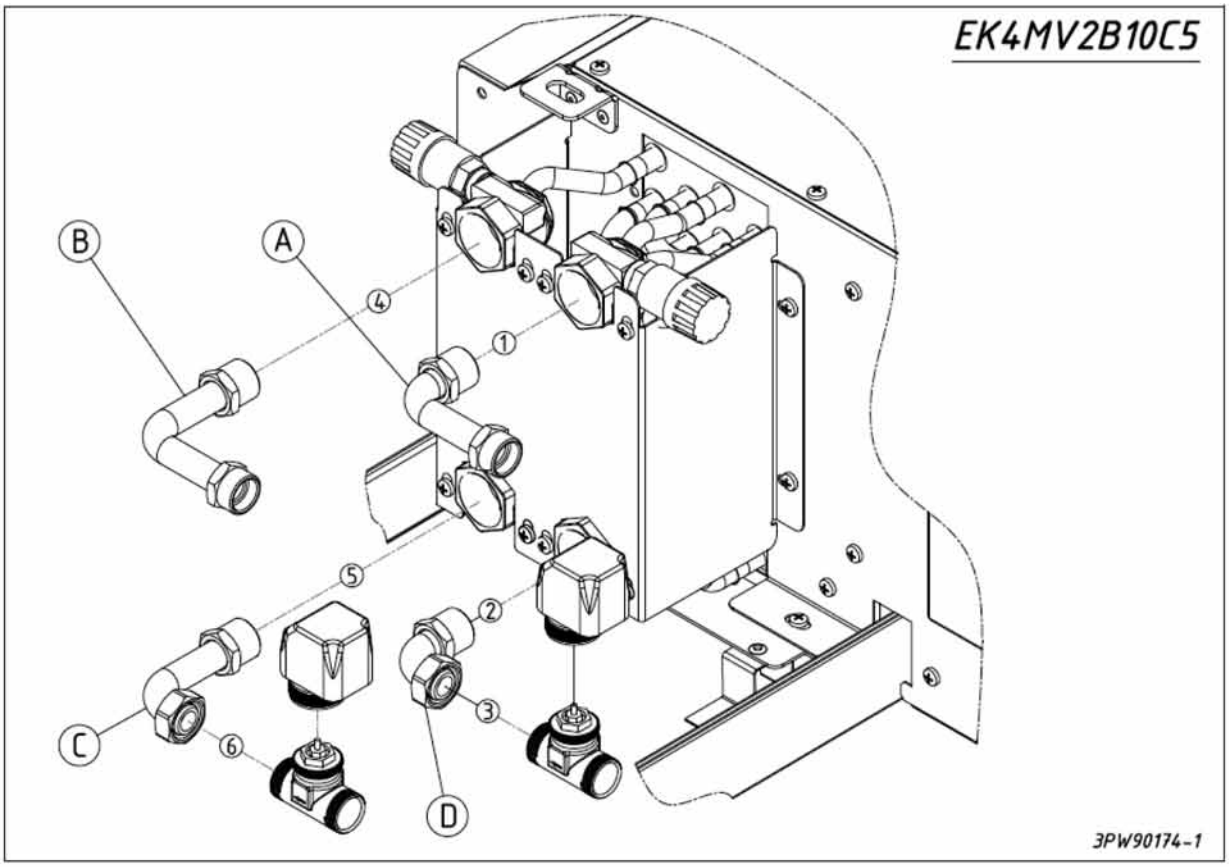
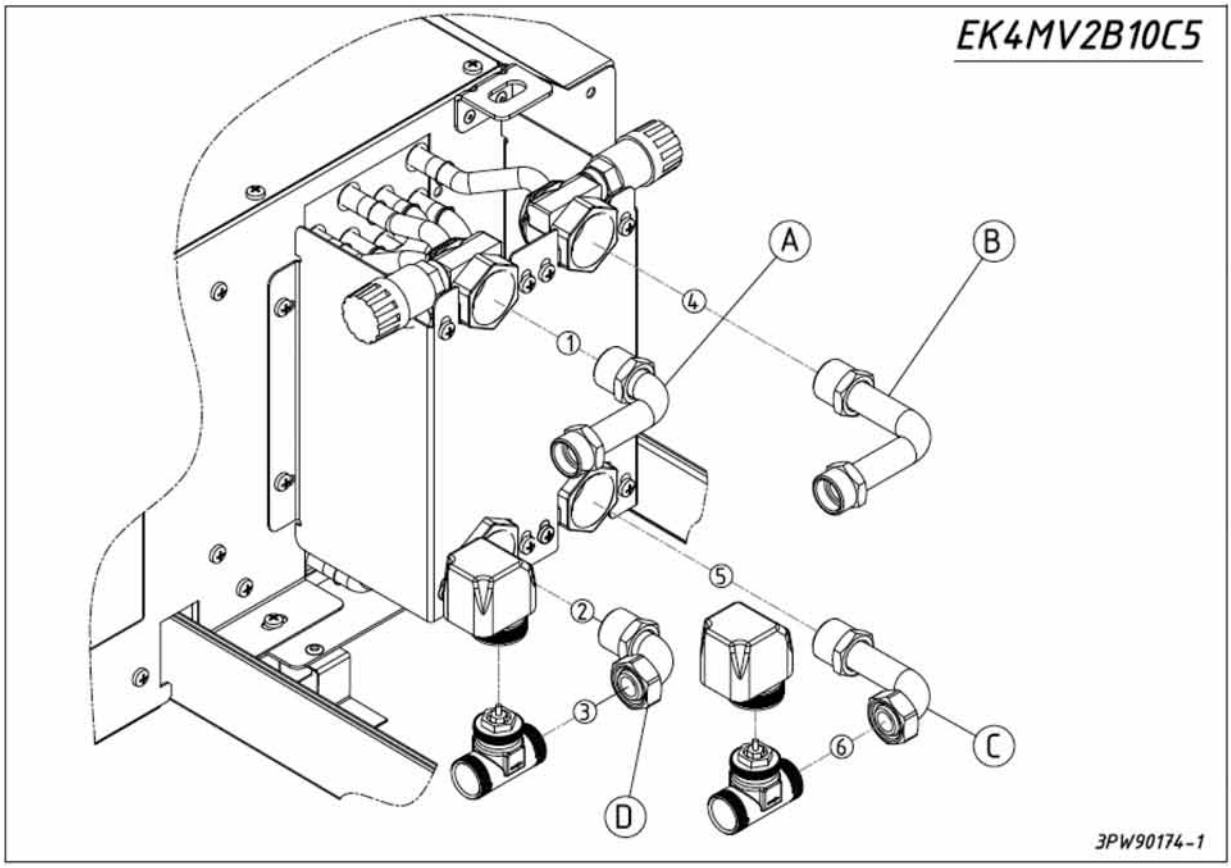
4 Options

4 - 1 Options

FWE-CT/CF





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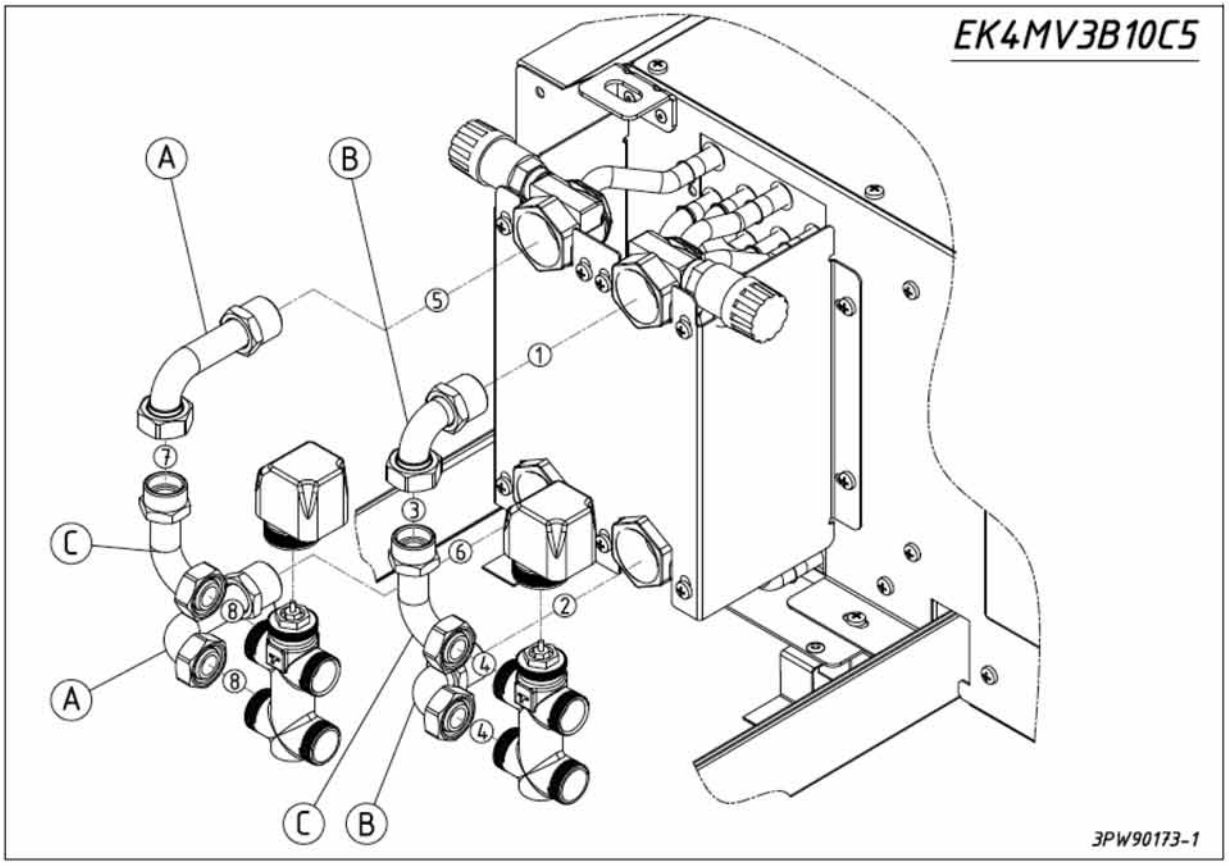
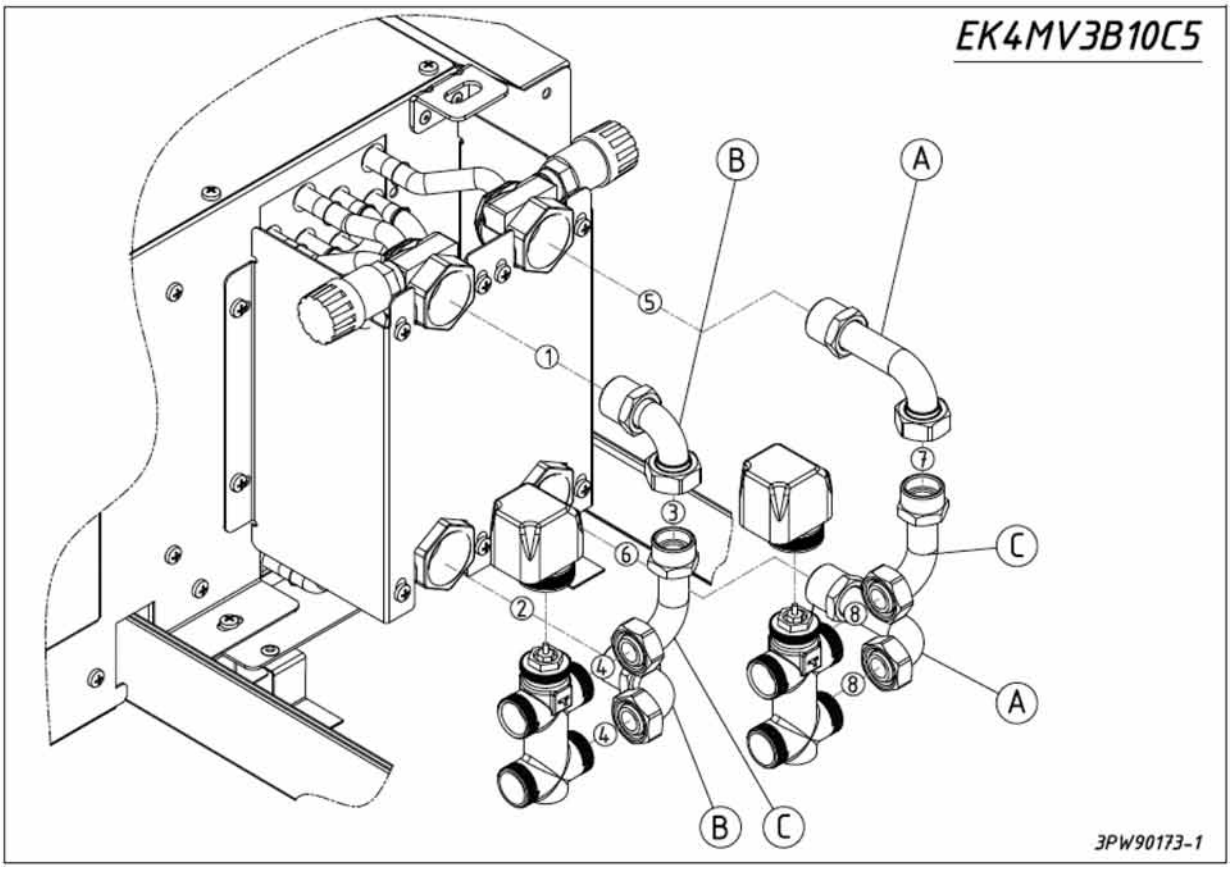
4 Options

4 - 1 Options

FWE-CT/CF





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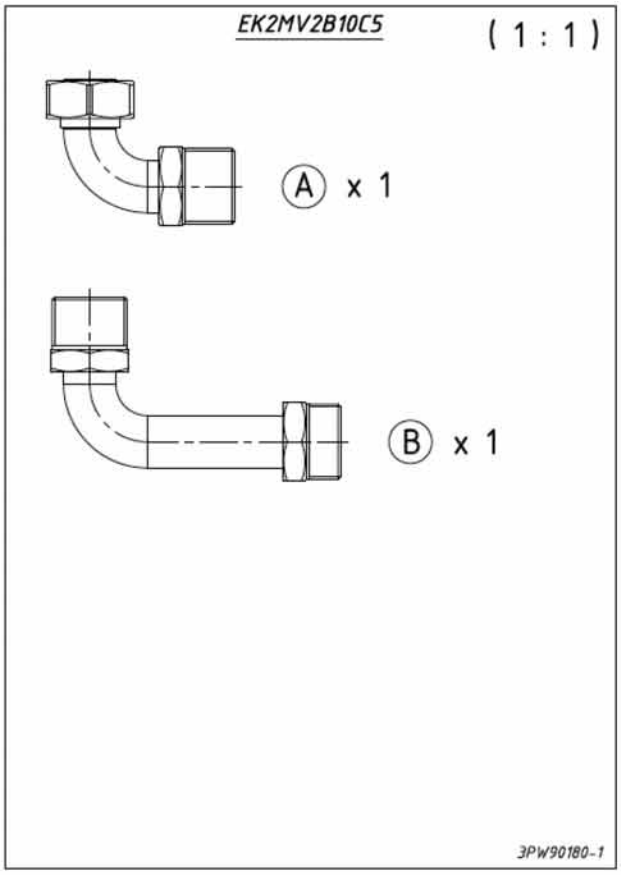
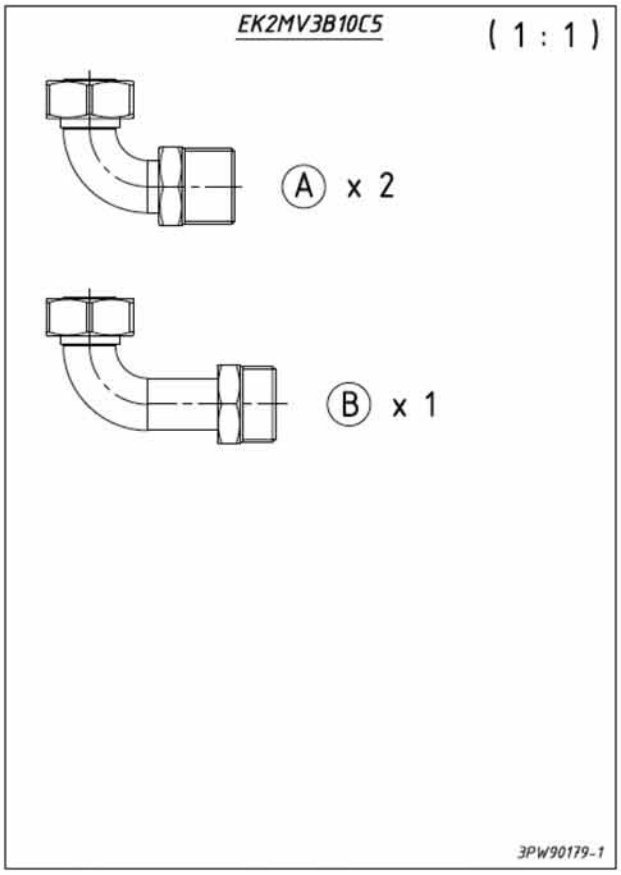
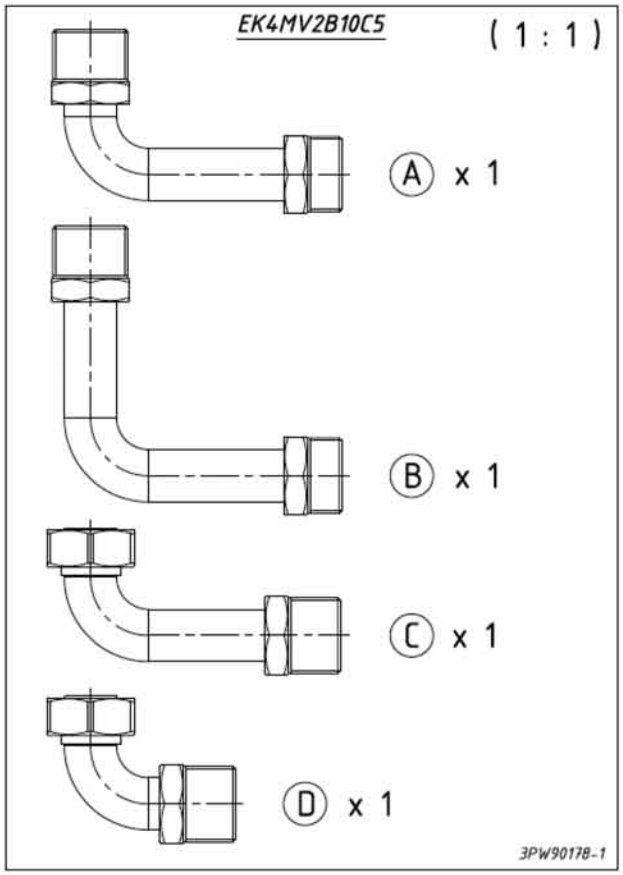
4 Options

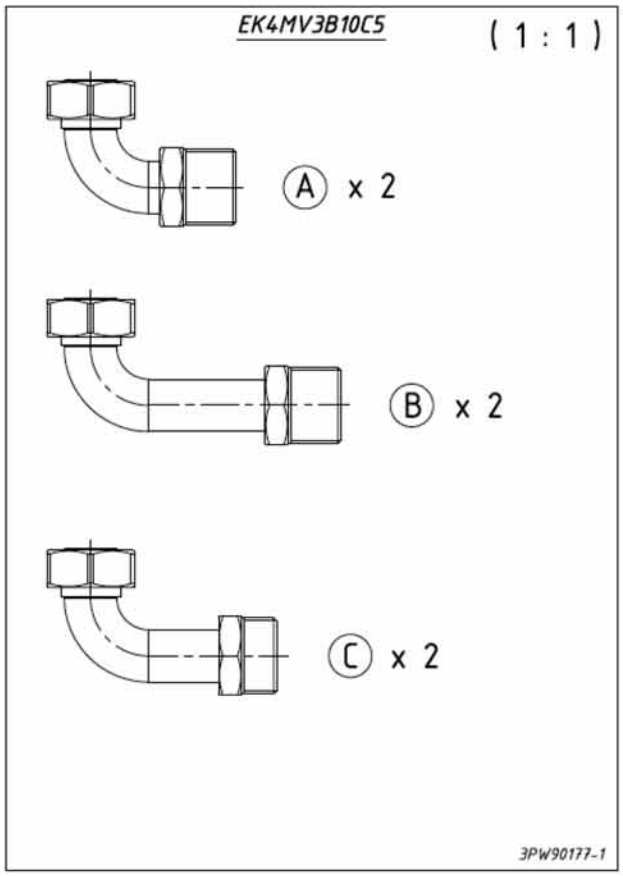
4 - 1 Options

FWE-CT/CF









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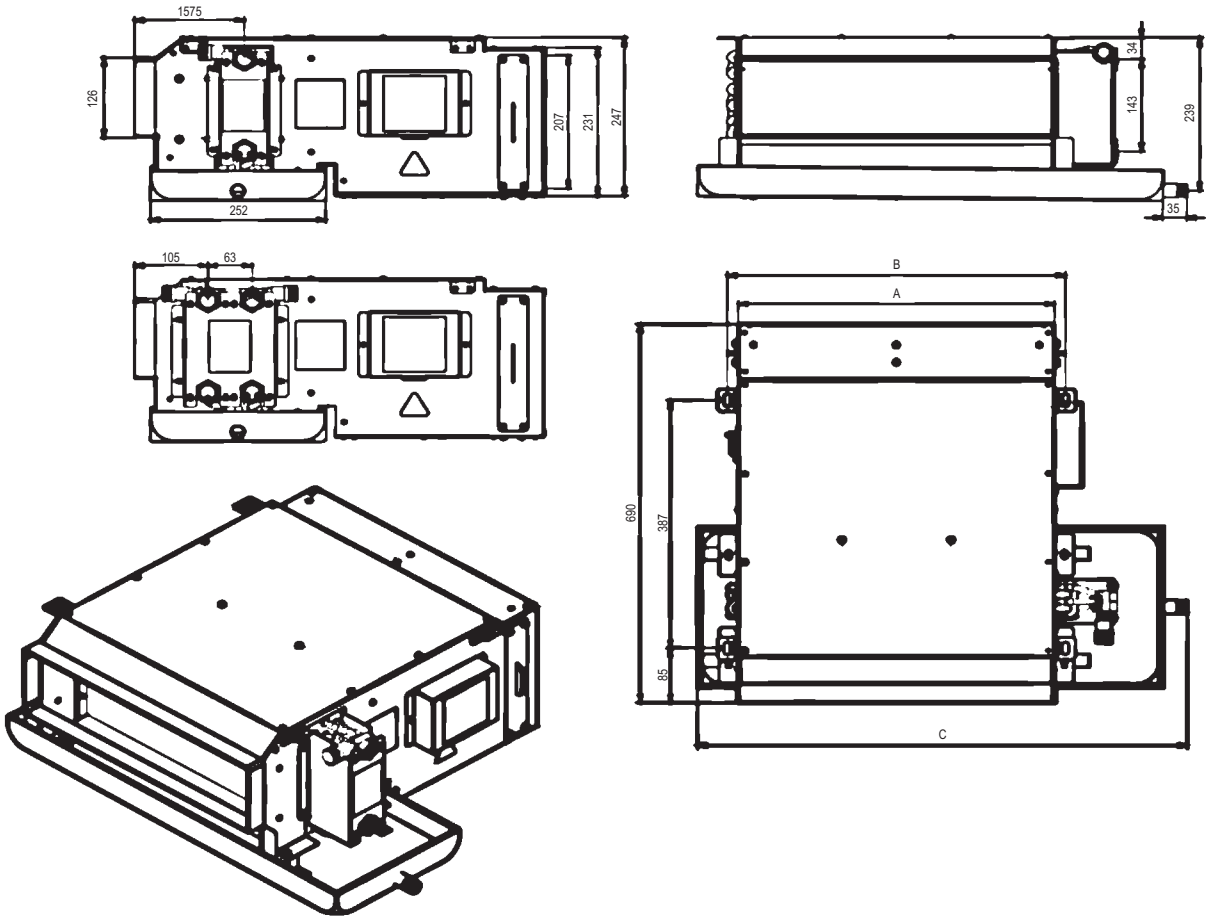
5 Dimensional drawings

5 - 1 Dimensional Drawings

FWE-CT/CF



Unit dimensions						
Model	A (mm)	B (mm)	C (mm)	Water Inlet (Inch)	Water Outlet (Inch)	Drain (Inch)
FWE02C5(T/F)V1B	454	486	705	R3/4"	R3/4"	R3/4"
FWE03C5(T/F)V1B	629	661	875	R3/4"	R3/4"	R3/4"
FWE04C5(T/F)V1B	759	791	1005	R3/4"	R3/4"	R3/4"
FWE06C5(T/F)V1B	959	991	1205	R3/4"	R3/4"	R3/4"
FWE07C5(T/F)V1B	1209	1241	1455	R3/4"	R3/4"	R3/4"
FWE08C5(T/F)V1B	1309	1341	1555	R3/4"	R3/4"	R3/4"
FWE10C5(T/F)V1B	1569	1601	1815	R3/4"	R3/4"	R3/4"

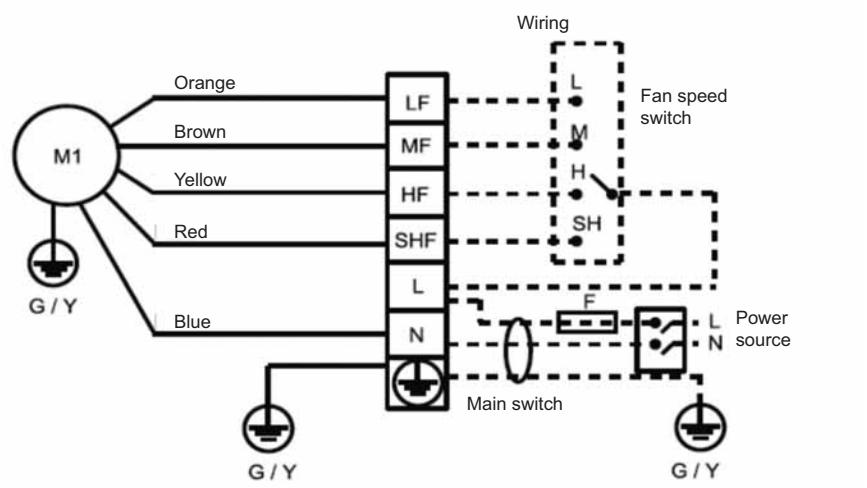
rev.00_1

6 Wiring diagrams

6 - 1 Wiring Diagrams - Single Phase

FWE02,03,04,06CT/CF

FWE (02-03-04-06)C5(T/F)V1
Electrical circuit diagram



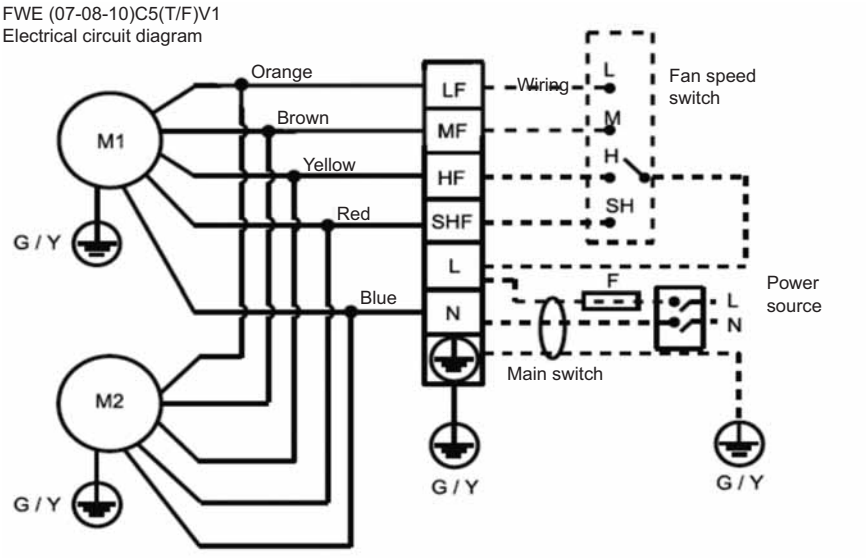
NOTES

- - - - - = Field wiring
M1, M2 = Fan motor
G/Y = Green/Yellow
F = Fuse
LF = Low speed
MF = Medium speed
HF = High speed
SHF = Super high speed

rev.00_1

FWE07,08,10CT/CF

FWE (07-08-10)C5(T/F)V1
Electrical circuit diagram



NOTES

- - - - - = Field wiring
M1, M2 = Fan motor
G/Y = Green/Yellow
F = Fuse
LF = Low speed
MF = Medium speed
HF = High speed
SHF = Super high speed

rev.00_2

7 Installation

7 - 1 Installation Method

FWE-CT/CF

1 Caution Before Installation Of Unit

- Do the following checks before installation and operation.
- Have adequate space for installation and maintenance. Please refer to the unit size (figure 1) and the correction diagram. (Figure 2: Gaps around the unit show the required minimum space.)
- Make sure you have adequate space for piping and electrical connections.
- Make sure that the carrier rods can withstand the weight of the unit.
- For proper operation of the unit and the condensed water discharge, installation of the unit should be done horizontally.
- Channel external static pressure is designed to be within the range of static pressure.
- The installer must supply service valves and insulation for water piping in accordance with the local code and regulation.
- Before installation and service transactions are done, main switch of the unit should be verified in switch off position.

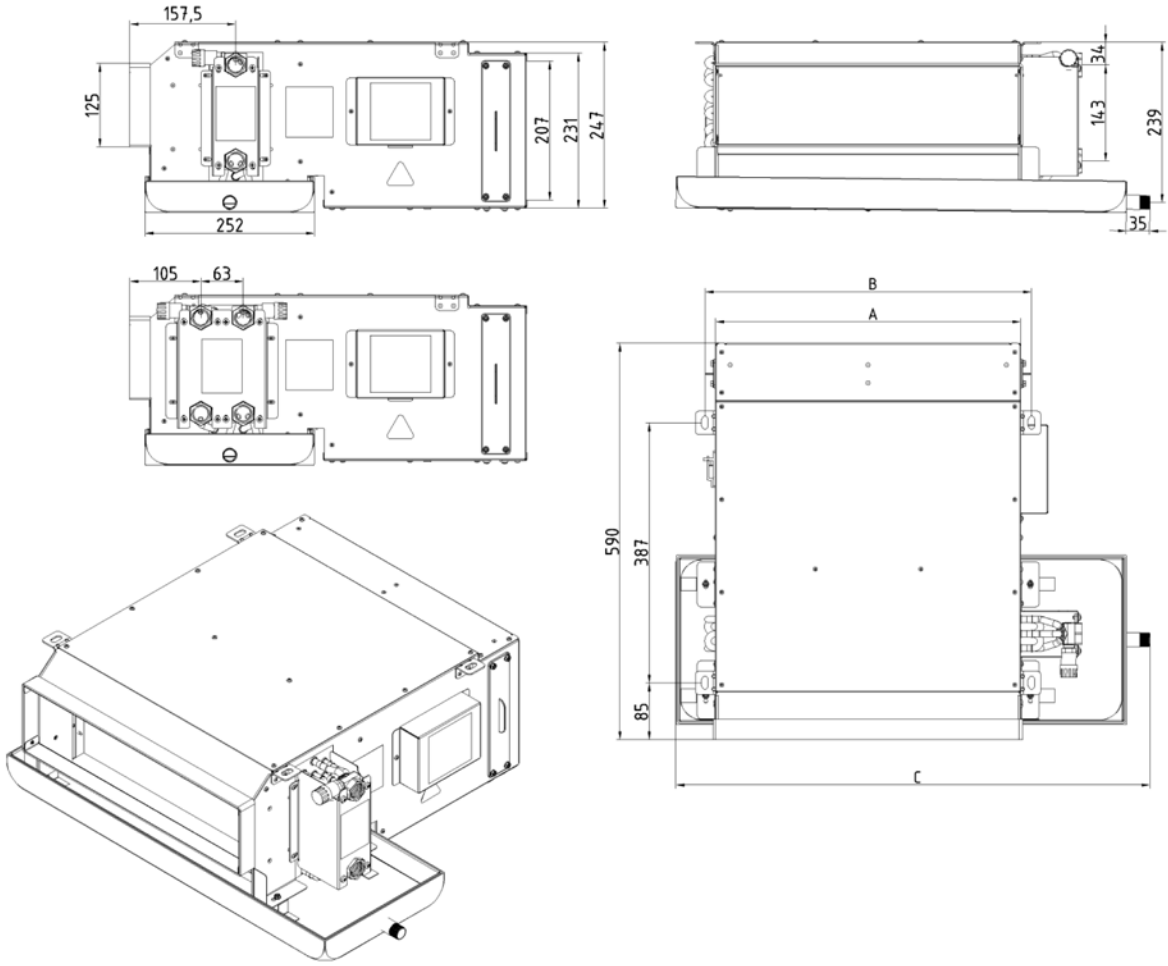


Figure 1

Model	Unit dimensions A (mm)	B (mm)	C (mm)	Water Inlet (Inch)	Water Outlet (Inch)	Drain (Inch)
FWE02C5(T/F)V1B	454	486	705	R3/4"	R3/4"	R3/4"
FWE03C5(T/F)V1B	629	661	875	R3/4"	R3/4"	R3/4"
FWE04C5(T/F)V1B	759	791	1005	R3/4"	R3/4"	R3/4"
FWE06C5(T/F)V1B	959	991	1205	R3/4"	R3/4"	R3/4"
FWE07C5(T/F)V1B	1209	1241	1455	R3/4"	R3/4"	R3/4"
FWE08C5(T/F)V1B	1309	1341	1555	R3/4"	R3/4"	R3/4"
FWE10C5(T/F)V1B	1569	1601	1815	R3/4"	R3/4"	R3/4"

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7 Installation

7 - 1 Installation Method

FWE-CT/CF

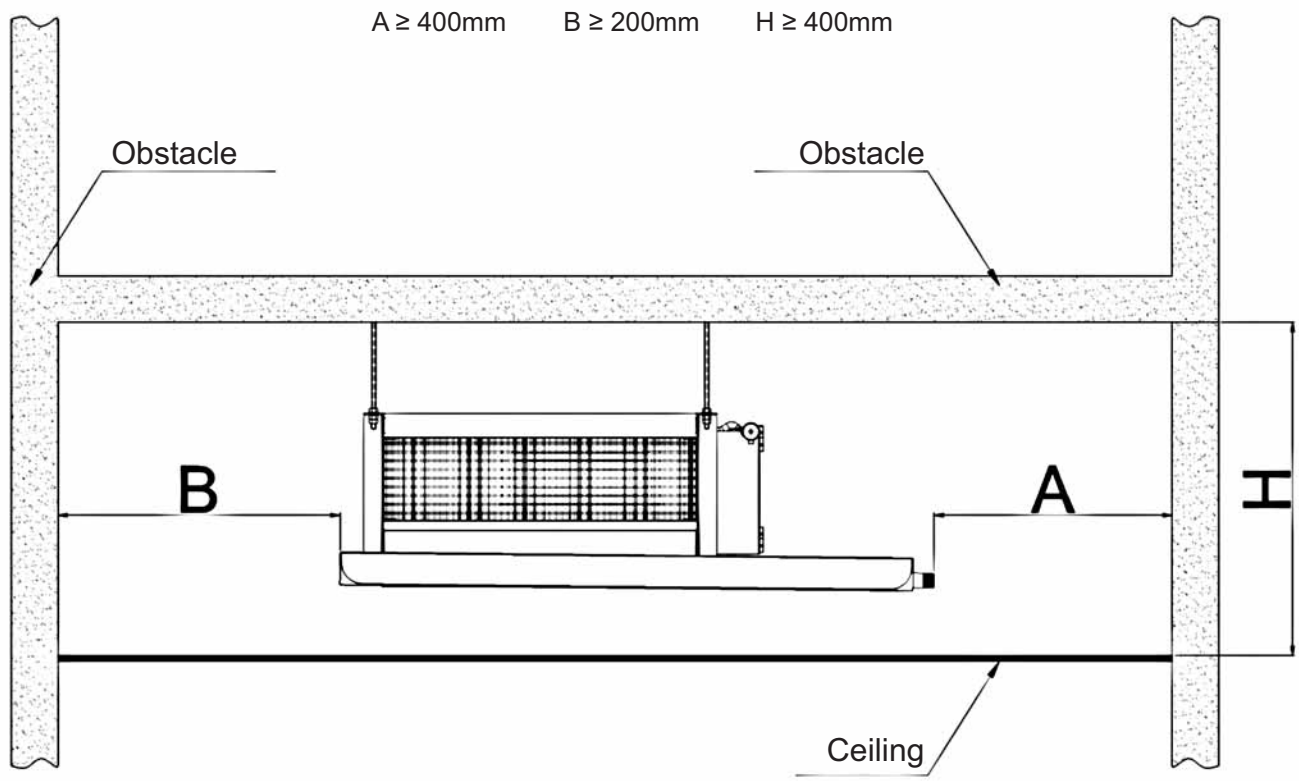

Figure 2

2 Unit Installation

- The unit is designed to be installed concealed ceiling and the like. Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.
- There are holes on top of the unit for hanging. Please refer to figure 1, figure 3, figure 4.
- Make sure that the top of the unit is level.
- Use proper insulation material only.
- Chilled water pipes and all parts on the pipes should be insulated.
- It is also necessary to insulate air ducts.
- Adhesive for insulation should able to work between -18˚C and 94˚C.
- During the installation make sure that the top side of the units is located horizontally. The drain pan is designed with a little gradient to facilitate drain.

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7 Installation

7 - 1 Installation Method

FWE-CT/CF

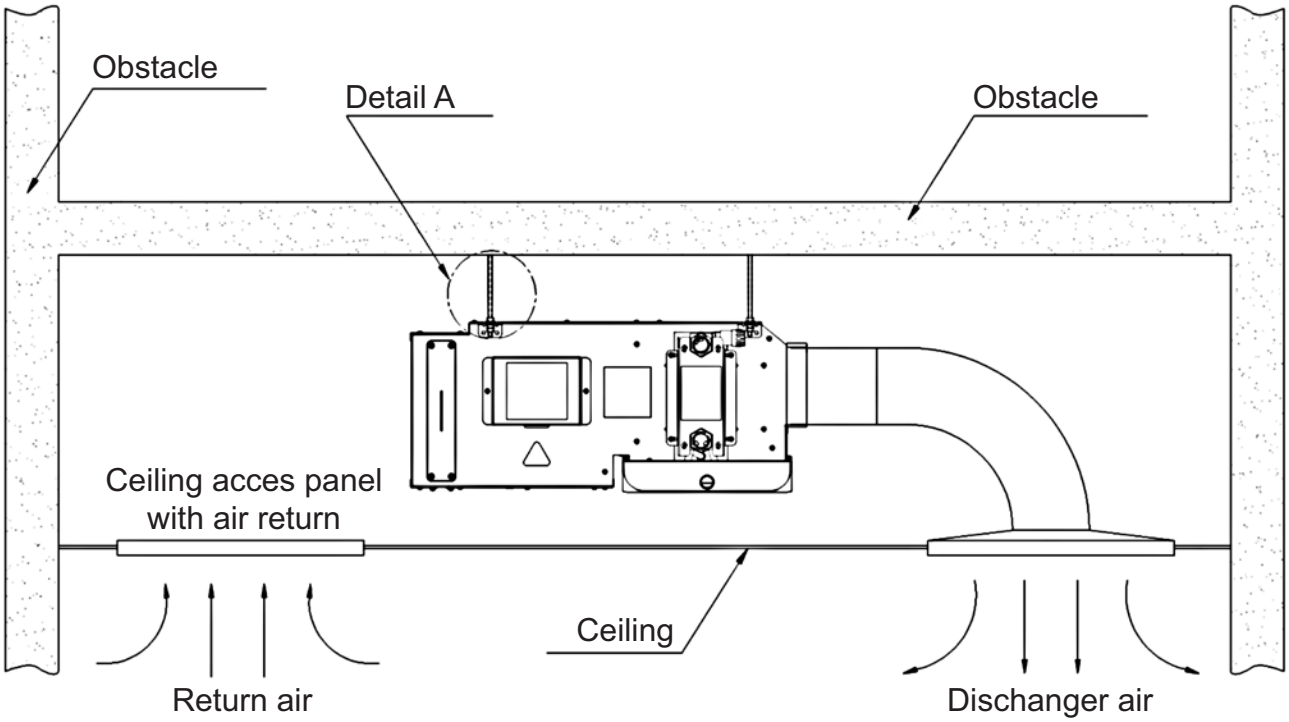

Figure 3

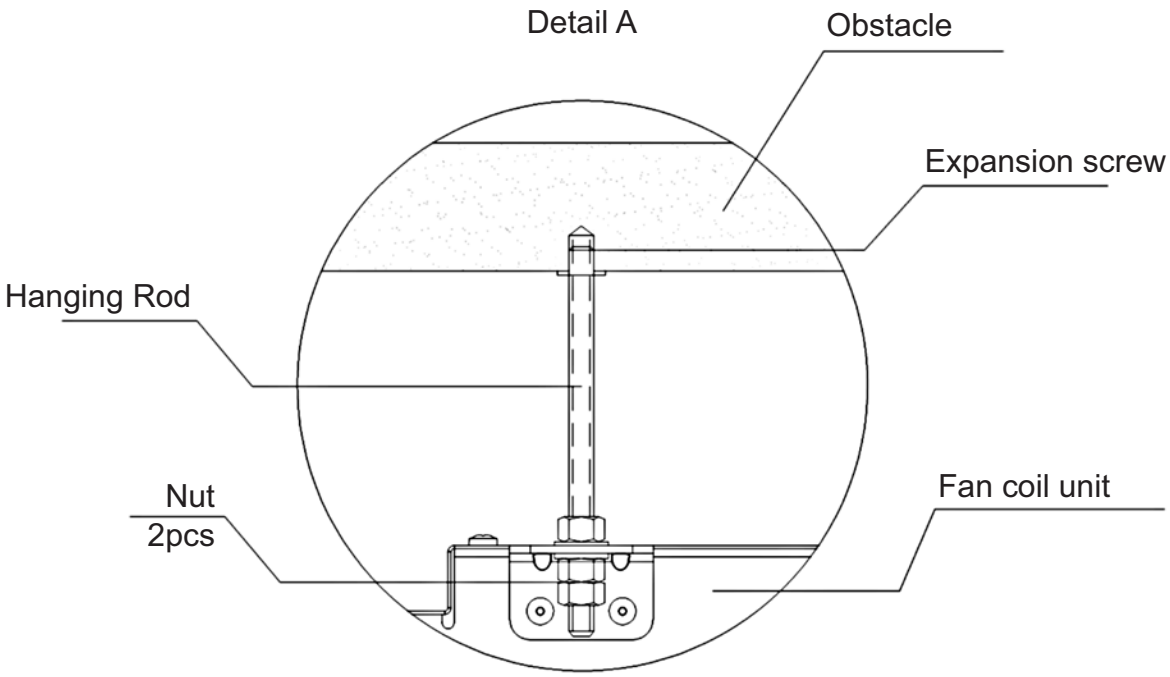

Figure 4

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7 Installation

7 - 1 Installation Method

FWE-CT/CF

3 Air Duct Connection

- Circulatory air pressure drop should be within External Static Pressure.
- Galvanized steel air ducts are suitable.
- Make sure there is no leak of air.
- Air duct should be fire-proof, refer to national and local regulations of the country where the unit is installed.

4 Pipe Connections

- When the water inlet and outlet connections are made, make sure that there is no hot or cold water on the system and the valves.
- In case of contact with the hot water, burns may occur on contact area.
- Use appropriate fittings for water connections. Refer to the specifications.
- The lower connection is the water inlet while the upper is the outlet.
- Seal must be used in water connections against leakage.
- Drain pipe can be PVC or steel.
- The suggested slope of the drain pipe is minimum 1:50.

5 Wiring

- All wiring connection must be done according to the wiring diagram on the units and inside the manual.
- The units must be grounded well.
- All field wiring must be installed in accordance with the national regulations that apply.
- Power supply cable must be equivalent to H05RN-F (2451EC57) as minimum requirement.
- Ensure that appropriate voltage value and cables are supplied to the units.
- While making this unit's electrical connections, there must not be any energy on the main supply cable and main switch has to be switched off.
- During the installation of electrical connections, make sure the cables are connected firmly.
- An appropriate strain relief unit must be used to attach the power wires to the terminal box.

8 Operation range

8 - 1 Operation Range

FWE-CT/CF

Water Side	
Max. Pressure	16.4 kg/cm²
Max. Water Inlet Temp.	70˚C (Heating Mode)
Min. Water Inlet Temp.	3˚C (Cooling Mode)

Ambient Side	
Max. Temp.	36˚C (Cooling Mode), 30˚C (Heating Mode)
Min. Temp.	16˚C (Cooling Mode), 10˚C (Heating Mode)

Power Supply	
Nominal Voltage	220 – 240 V / 50 Hz / ~1
Voltage Limits	± 10 % V / ± 2 Hz

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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.

Daikin Europe N.V. participates in the Eurovent Certification programme for Air conditioners (AC), Liquid Chilling Packages (LCP) and Fan coil units (FCU). Check ongoing validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com"

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