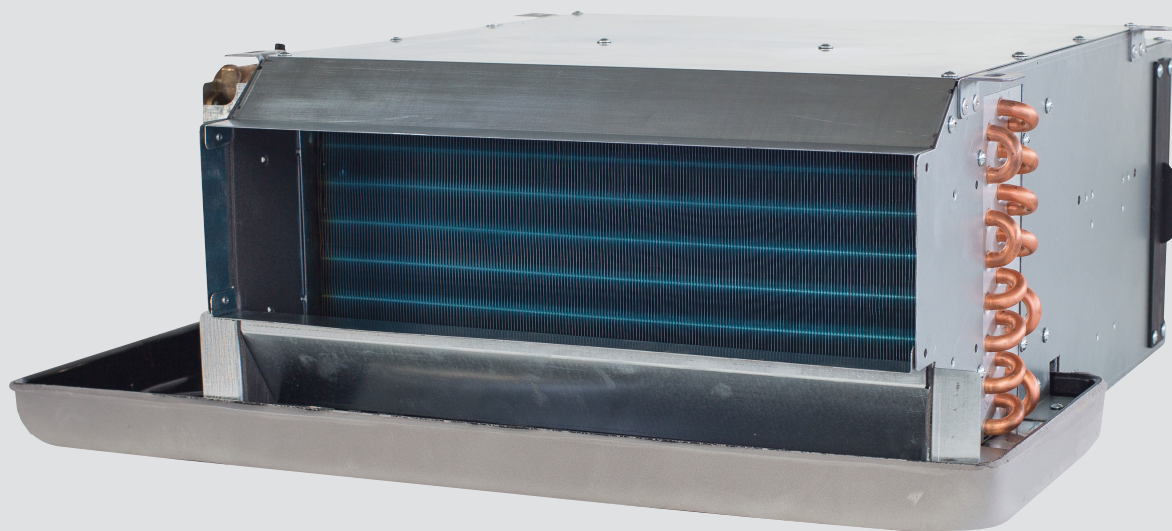


Applied Systems Technical Data

FWE-CF



- > FWE02CF
- > FWE03CF
- > FWE04CF
- > FWE06CF
- > FWE07CF
- > FWE08CF

- > FWE10CF

TABLE OF CONTENTS

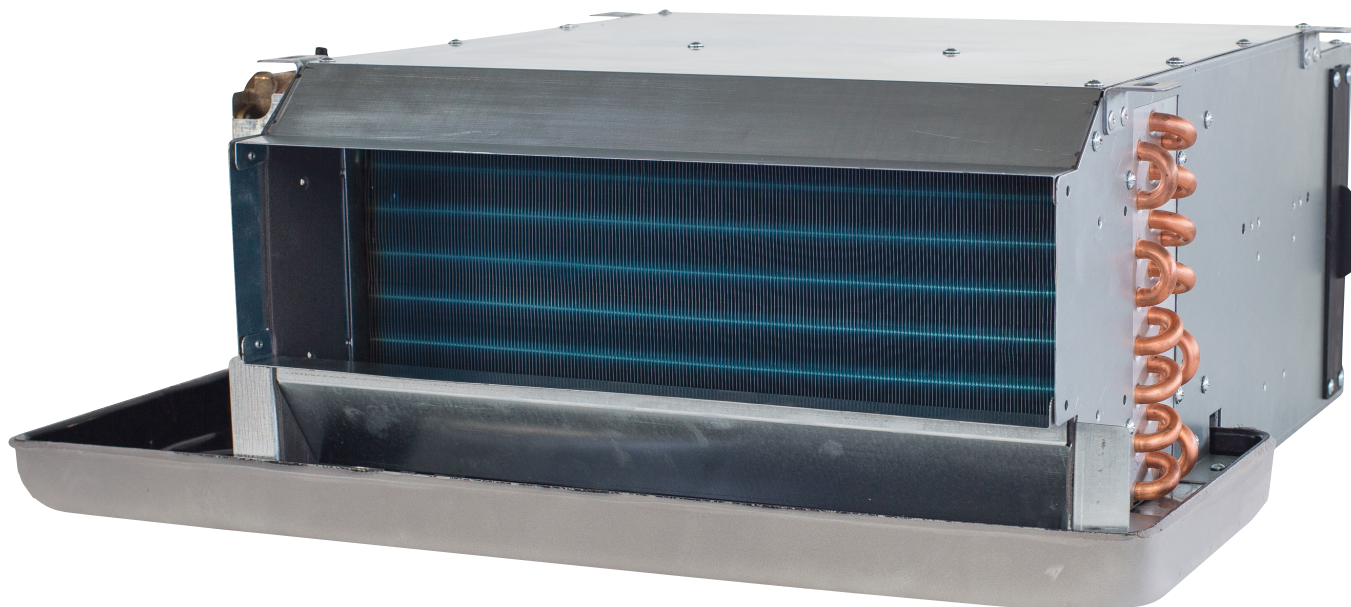
FWE-CF

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1 Features

AC fan motor unit for horizontal concealed mounting

- 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					FWE02CF	FWE03CF	FWE04CF	FWE06CF	FWE07CF	FWE08CF	FWE10CF		
Cooling capacity	Total capacity	Super high	kW	2.10	3.16	3.98	6.05	6.78	7.79	9.91			
		High	kW	1.76	2.69	3.22	5.20	5.61	6.79	8.61			
		Low	kW	0.85	1.40	1.63	2.72	3.10	3.88	4.88			
		Nom.	kW	1.56	2.36	2.70	4.47	4.91	5.98	7.49			
	Sensible capacity	Super high	kW	1.55	2.37	3.19	4.49	5.16	5.91	7.45			
		High	kW	1.28	1.99	2.53	3.81	4.20	5.09	6.39			
		Low	kW	0.66	1.18	1.35	2.02	2.47	3.05	3.65			
		Nom.	kW	1.13	1.73	2.10	3.23	3.64	4.44	5.49			
Heating capacity	4-Pipe	Super high	kW	2.3	3.53	4.56	6.17	7.6	8.52	10.4			
		High	kW	1.94	3.06	3.76	5.37	6.42	7.52	9.16			
		Medium	kW	1.75	2.74	3.22	4.69	5.72	6.72	8.07			
		Low	kW	1.02	1.72	2.03	2.88	3.92	4.59	5.42			
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		
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	18	22	25	30	40	41	49		
	Operation weight			kg	18	22	25	30	40	41	49		
	Packed unit			kg	20	24	28	33	43	45	53		
Casing	Colour				Metal								
	Material				Galvanised metal								
Decoration panel	Dimensions	Packed unit	Width	mm	-								
Heat exchanger	Type				Seamless copper tubing, mechanically bonded to rippled and corrugated aluminium fins.								
	Inside length	Cooling	mm	450	625	755	955	1,205	1,305	1,565			
		Heating	mm	450	625	755	955	1,205	1,305	1,565			
	Outside length	Cooling	mm	493	668	798	998	1,248	1,348	1,608			
		Heating	mm	493	668	798	998	1,248	1,348	1,608			
	Passes	Quantit	Cooling	12	8			4					
		Y	Heating	12	8			4					
	Rows	Quantity			3								
	Stages	Quantity			2	3			6				
		Cooling			2	3			6				
		Heating			2	3			6				
	Empty tubeplate hole	Quantity			0								
	Fin pitch				mm	2.1							
	Face area				m²	6.0	8.4	10.1	12.8	16.2	17.3	21.0	
	Face area - Dimensions	Cooling	m²	6.0	8.4	10.1	12.8	16.2	17.3	21.0			
Heating		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		
Additional heat exchanger	Rows	Quantity			1								
	Stages	Quantity			1								
	Fin pitch			mm	2.1								
	Face area			m²	2.01	2.79	3.38	4.27	5.39	5.76	7.01		
	Water volume			l	0.25	0.34	0.41	0.52	0.66	0.71	0.85		
Water flow	Cooling			l/h	360	540	720	1,044	1,188	1,332	1,728		
	Additional heat exchanger			l/h	108	180	216	324	432	468	576		
Water pressure drop	Cooling			kPa	14.5	11.4	21.6	46.3	14.6	19.1	32.7		
	Additional heat exchanger			kPa	3.6	8.8	15.6	31.8	58.6	74.6	123		

2 Specifications

2-1 Technical Specifications				FWE02CF	FWE03CF	FWE04CF	FWE06CF	FWE07CF	FWE08CF	FWE10CF
Fan	Type			Centrifugal (Blade: Forward - curve)						
	Quantity			1		2		3		4
	Air flow rate	Super high	m³/h	416.13	626.11	834.52	1,193.03	1,547.59	1,741.82	2,166.07
		High	m³/h	302.41	501.23	571.11	905.11	1,173.36	1,386.46	1,728.98
		Medium	m³/h	232.05	370.86	376.72	617.57	845.83	1,000.94	1,198.80
	Low	m³/h	142	256	257.48	414.34	569	684.16	804.37	
Fan motor	Speed	Steps		4						
	Output		W	10	16	20	30	26	40	60
Air filter	Type			Aluminium Frame Nylon Filter G2						
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						
	Add. heat exchanger		inch	3/4						
Control systems	Wired remote control			FWEC1A / FWEC2A / FWEC3A						
Allowed water temperature	Min.		°C	3.00						
	Max.		°C	70.00						

2-2 Electrical Specifications			FWE02CF	FWE03CF	FWE04CF	FWE06CF	FWE07CF	FWE08CF	FWE10CF
Power supply	Type		AC						
	Phase		1~						
	Frequency	Hz	50						
	Voltage	V	220-240						
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
Required wire section		mm²	1						
Required fuses		A	4						

Notes

Cooling: 4 pipe: air 27°CDB, 19°CWB; entering water 7°C; leaving water 12°C

Heating: 4 pipe: air 20°CDB, entering water 50°C, leaving water 40°C

All declared values are for ESP "0 Pa"

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

Fan power output = power delivered to air by fan

3 Nomenclature

3 - 1 Nomenclature

FWE-CT/CF

Model name designation

Product code

Options

FWE 02 C5 F V1B R

Empty - Left connection
R - Right connection
T - 2-ways valve mounted left connection
U - 2-ways valve mounted right connection
V - 3-ways valve mounted left connection
W - 3-ways valve mounted right connection

T - 2 pipe model
F - 4 pipe model

Capacity information

rev.01_1

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.

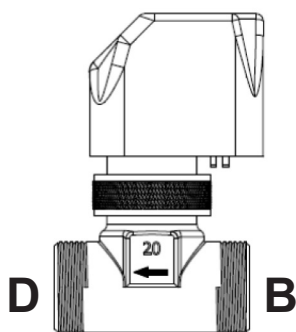


Figure 1

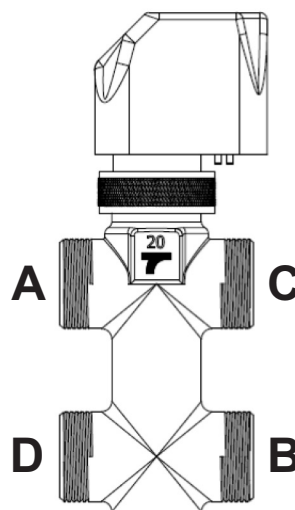


Figure 2

- 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.

4 Options

4 - 1 Options

FWE-CT/CF

4

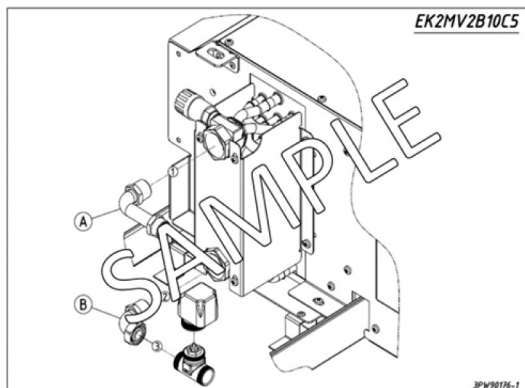


Figure for
4 pipe / 2 way valve model piping connection diagram

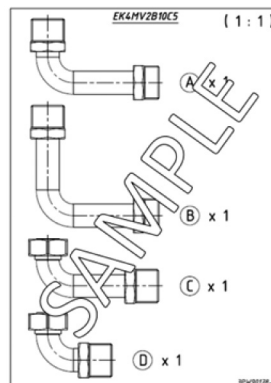


Figure for
4 pipe / 2 way valve model pipe description schema

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:

$$P_w = (Q_w / K_v)^2$$

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

Where:

P_w is the flow resistance expressed in kg/cm².

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

K_v is the flow rate identified in the table.

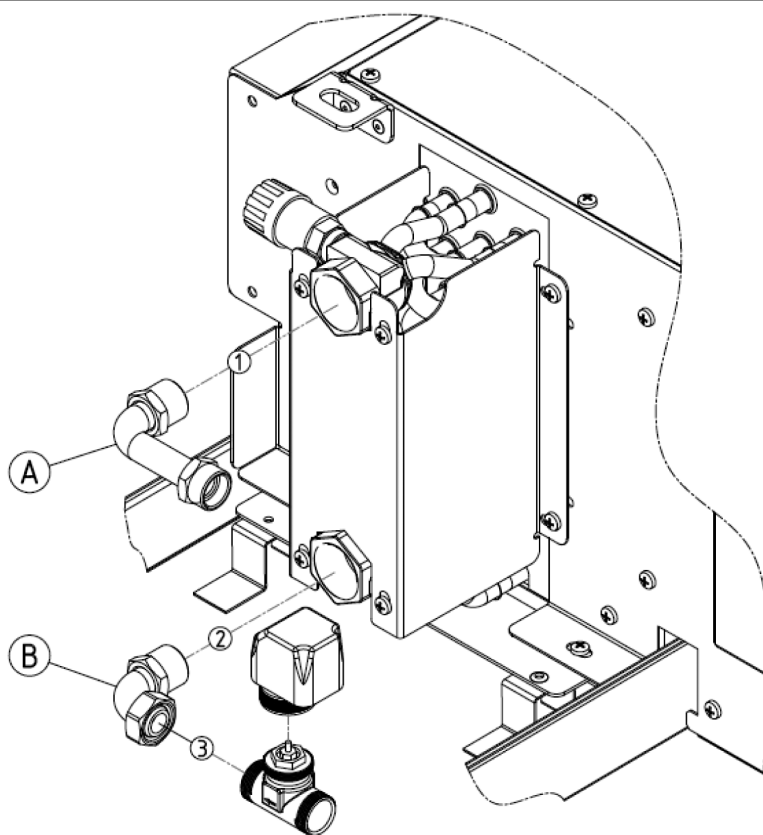
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4 Options

4 - 1 Options

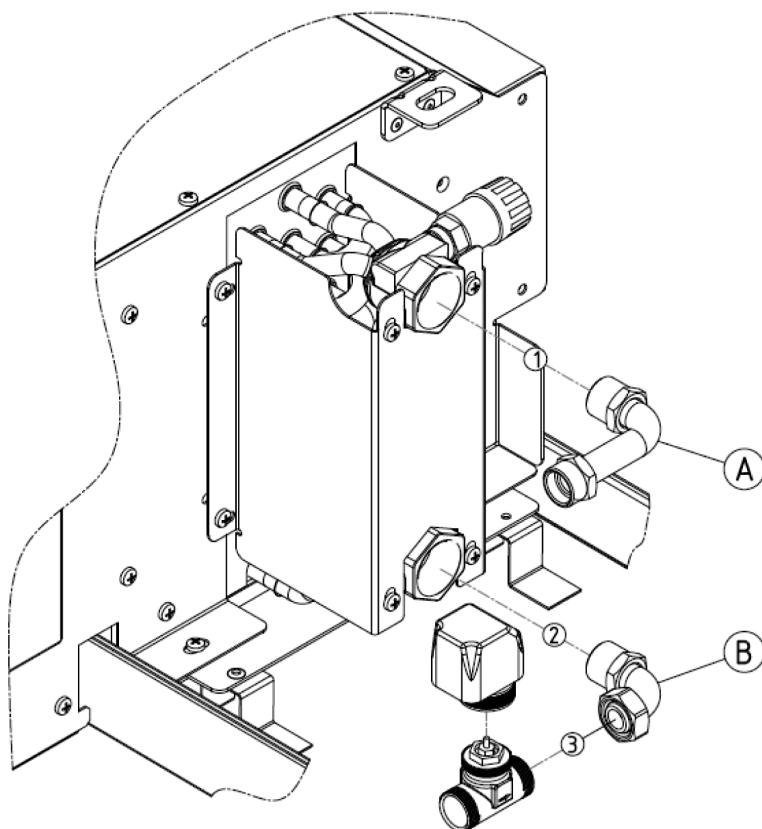
FWE-CT/CF

EK2MV2B10C5



3PW90176-1

EK2MV2B10C5



3PW90176-1

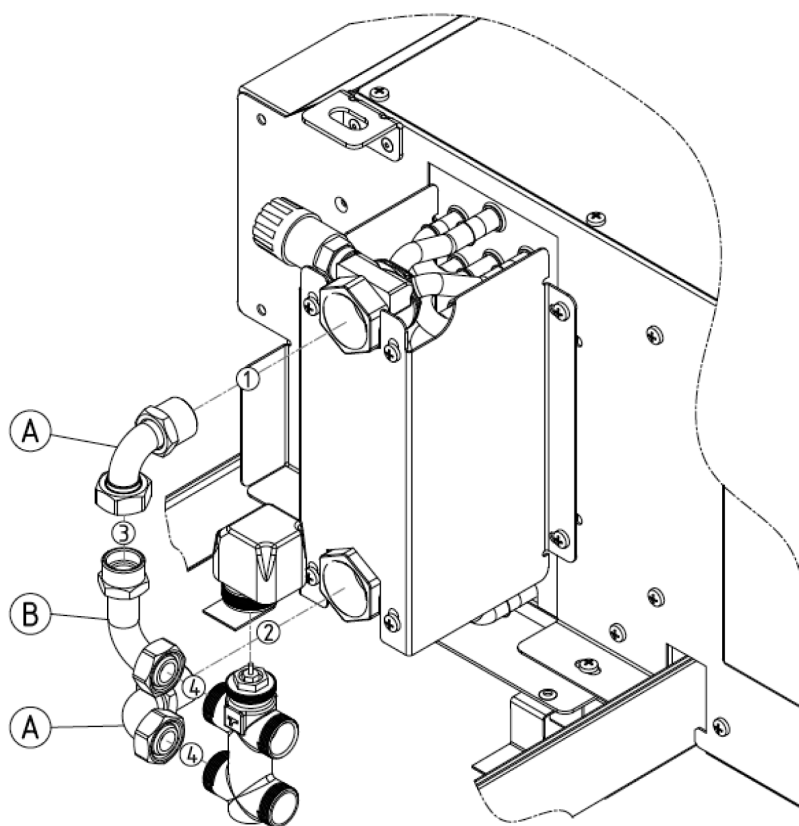
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4 Options

4 - 1 Options

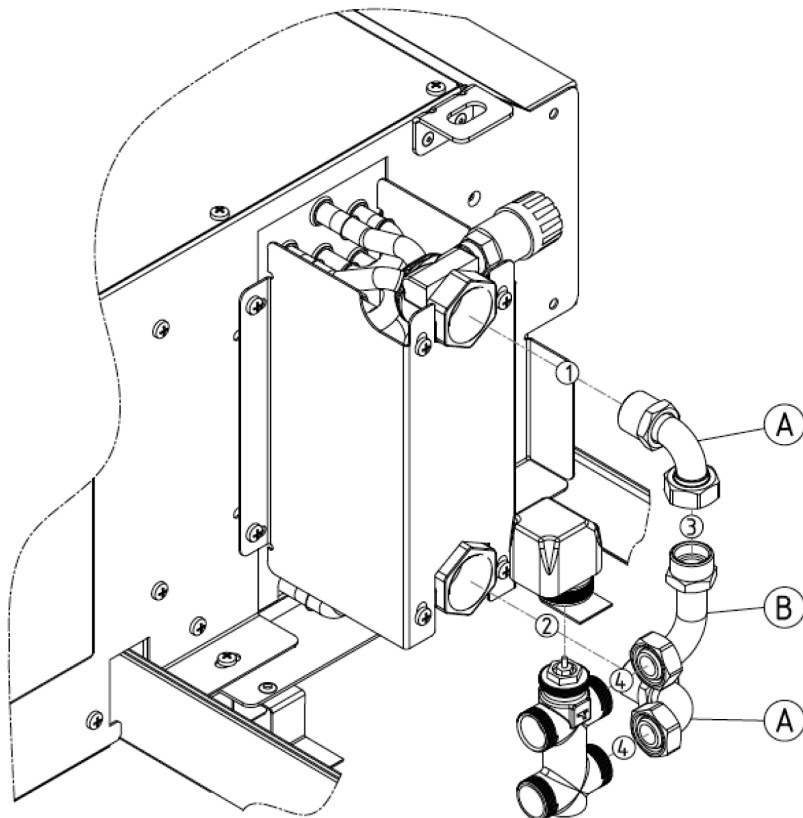
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3PW90175-1

EK2MV3B10C5



3PW90175-1

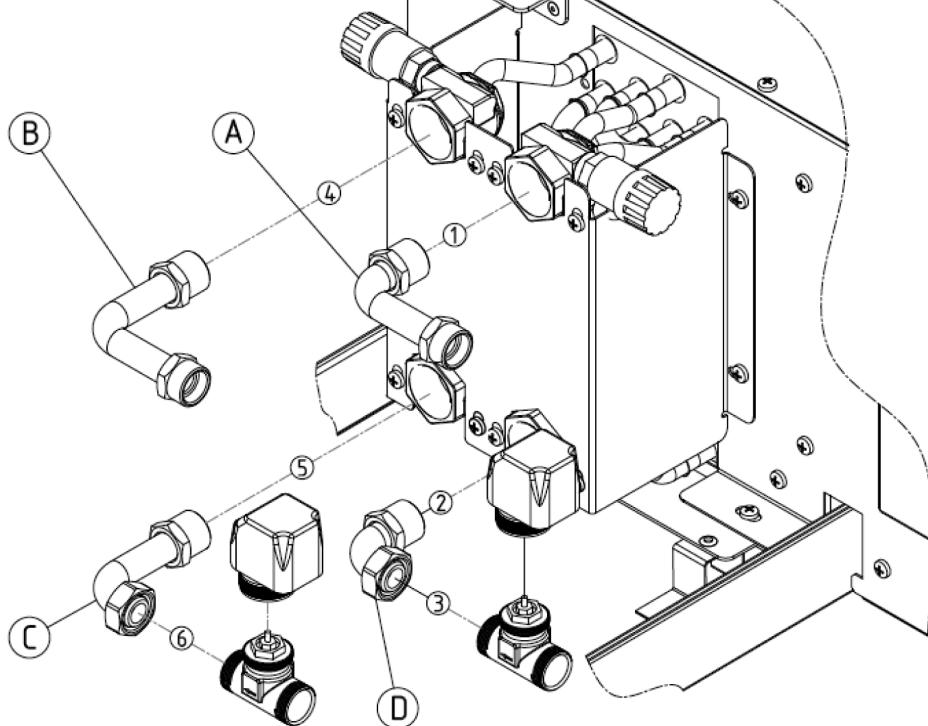
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4 Options

4 - 1 Options

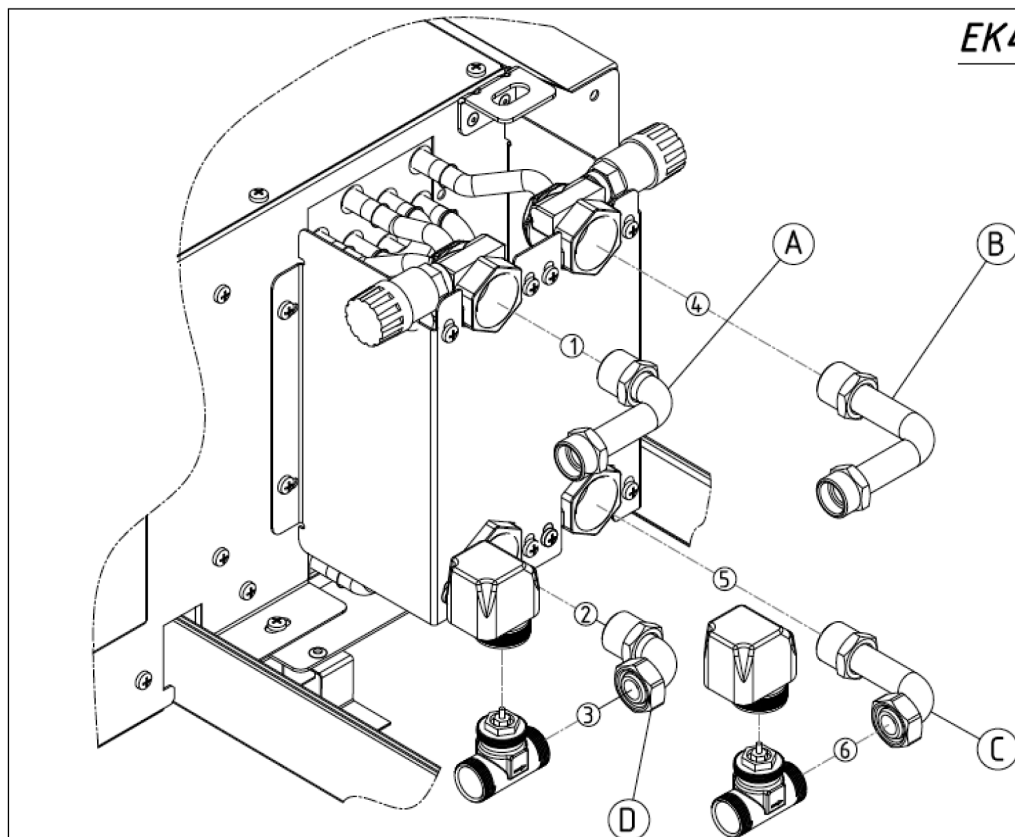
FWE-CT/CF

EK4MV2B10C5



3PW90174-1

EK4MV2B10C5



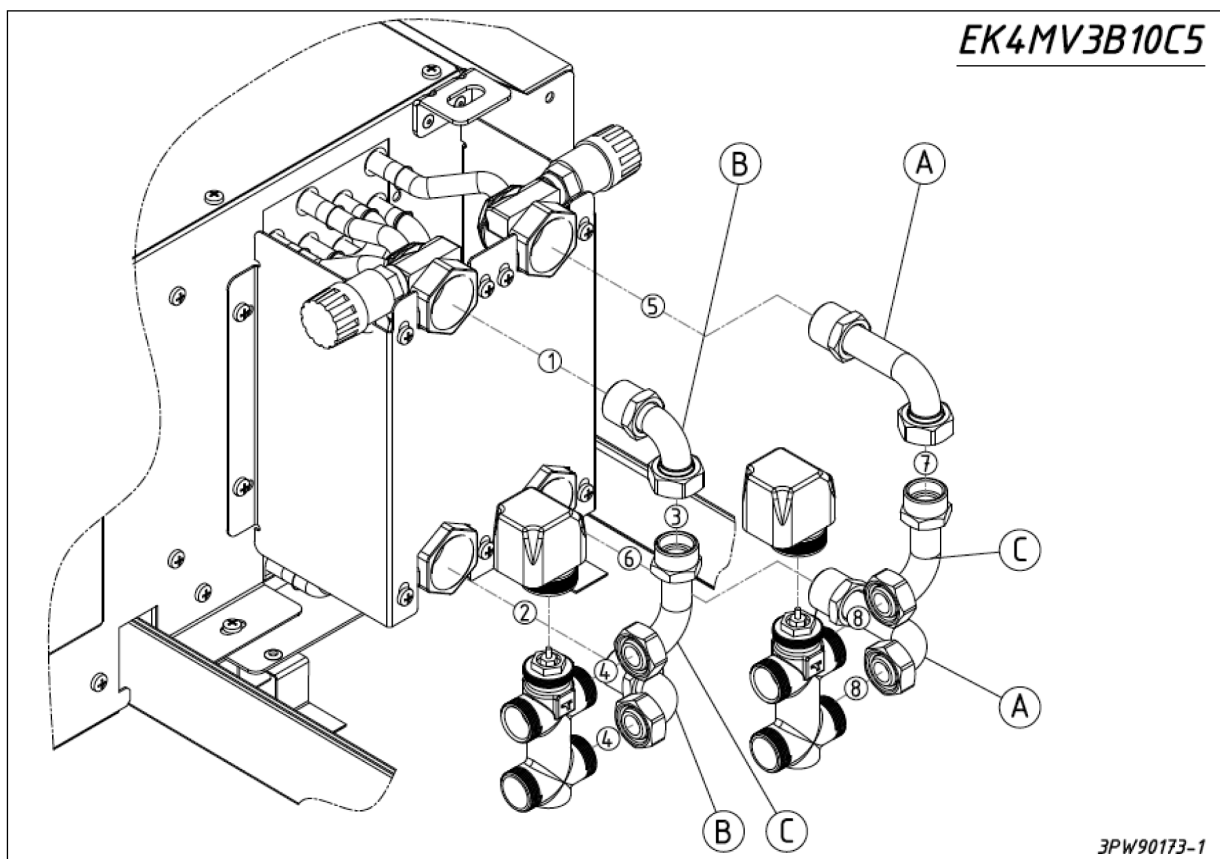
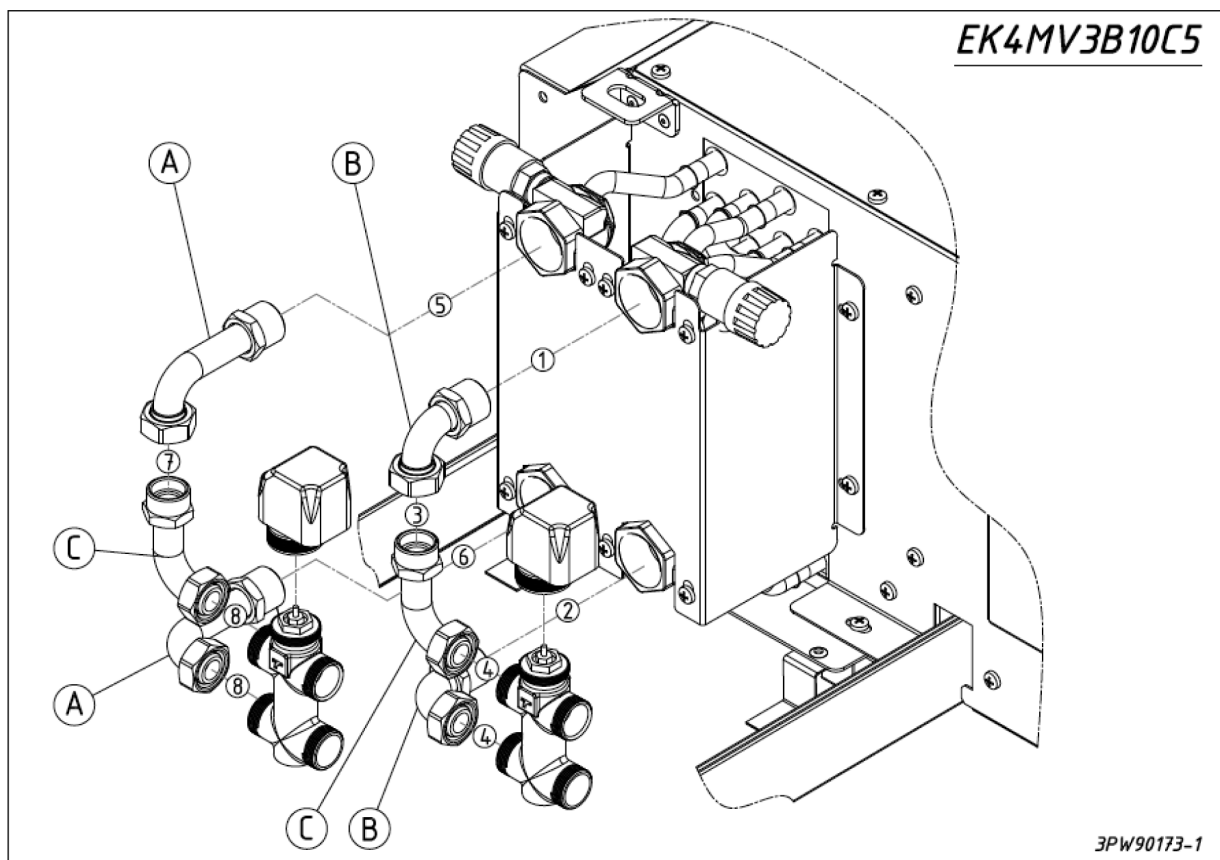
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rev.00_5

4 Options

4 - 1 Options

FWE-CT/CF



rev.00_6

4 Options

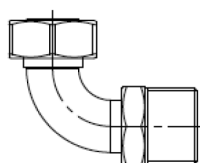
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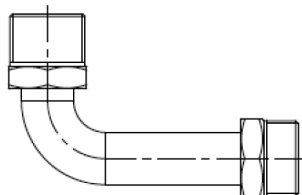
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EK2MV2B10C5

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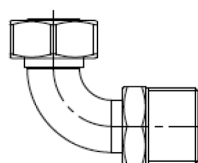


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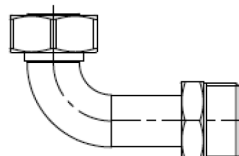
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EK2MV3B10C5

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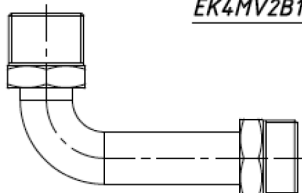


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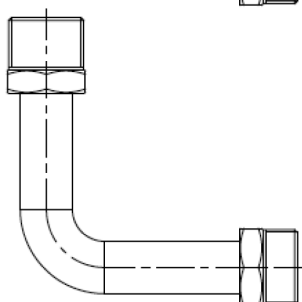
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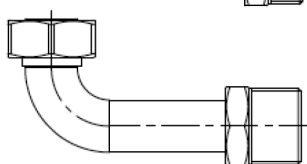
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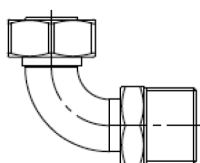
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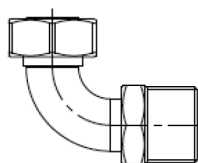


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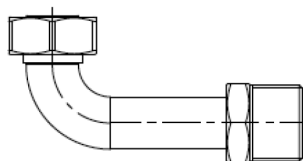
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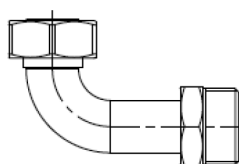
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Ⓑ x 2



Ⓒ x 2

3PW90177-1

rev.00_7

Capacity tables

5 - 1 Cooling Capacity Tables

FWE-CT/CF

Cooling mode capacity table - 2 pipes

Ambient temperature DBWB °C		6/11°C				7/12°C				25/18°C				8/13°C				9/14°C			
Water inlet/outlet temp.																					
Model	Airflow	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop
	m ³ /h	W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa
FWE 02	150	0.9	0.7	148	3.2	0.6	0.6	109	1.4	0.6	0.5	99	1.3	0.5	0.5	91	1.1	150	0.9	0.7	148
	238	1.3	1.0	231	6.7	1.1	0.9	197	5.0	0.9	0.8	161	3.6	0.9	0.8	148	3.1	238	1.3	1.0	231
	311	1.7	1.3	287	9.7	1.4	1.2	247	7.4	1.2	1.1	206	5.4	1.1	1.0	190	4.6	311	1.7	1.3	287
	430	2.1	1.6	366	14.7	1.8	1.5	315	11.2	1.6	1.4	269	8.5	1.4	1.3	249	7.4	430	2.1	1.6	366
FWE 03	256	1.4	1.1	241	3.0	1.0	0.9	176	1.3	0.9	0.9	162	1.2	0.9	0.9	149	1.0	256	1.4	1.1	241
	385	2.1	1.6	352	5.8	1.7	1.4	298	4.3	1.5	1.3	251	3.2	1.3	1.3	230	2.7	385	2.1	1.6	352
	518	2.6	2.0	446	8.7	2.2	1.8	380	6.6	1.9	1.7	326	5.0	1.8	1.6	300	4.3	518	2.6	2.0	446
	638	3.0	2.4	520	11.4	2.6	2.2	444	8.6	2.3	2.0	387	6.7	2.1	2.0	357	5.8	638	3.0	2.4	520
FWE 04	284	1.8	1.3	303	4.9	1.5	1.2	259	3.7	1.2	1.0	203	2.5	1.0	1.0	168	1.3	284	1.8	1.3	303
	413	2.4	1.8	416	8.5	2.1	1.6	360	6.6	1.7	1.5	300	4.8	1.6	1.4	268	3.9	413	2.4	1.8	416
	619	3.3	2.5	567	14.5	2.9	2.3	492	11.3	2.4	2.1	414	8.3	2.2	2.0	378	7.0	619	3.3	2.5	567
	910	4.3	3.3	744	23.4	3.8	3.1	644	18.0	3.2	2.8	552	13.7	3.0	2.7	511	11.9	910	4.3	3.3	744
FWE 06	426	2.8	2.0	473	12.1	2.4	1.8	416	9.6	2.1	1.7	356	7.3	1.7	1.5	298	5.3	426	2.8	2.0	473
	630	3.7	2.7	642	20.5	3.3	2.5	564	16.2	2.8	2.3	483	12.3	2.4	2.2	417	9.5	630	3.7	2.7	642
	926	5.0	3.7	850	33.5	4.3	3.4	744	26.3	3.7	3.1	636	19.8	3.3	3.0	568	16.2	926	5.0	3.7	850
	1195	5.9	4.4	1013	45.5	5.2	4.1	884	35.6	4.4	3.8	754	26.7	4.0	3.6	690	22.7	1195	5.9	4.4	1013
FWE 07	569	3.1	2.4	522	3.5	2.2	2.0	374	1.5	2.0	1.9	349	1.4	1.9	1.9	320	1.2	569	3.1	2.4	522
	851	4.4	3.4	747	6.5	3.7	3.1	630	4.8	3.2	2.9	541	3.6	2.9	2.8	495	3.1	851	4.4	3.4	747
	1188	5.6	4.4	964	10.2	4.8	4.1	821	7.6	4.2	3.8	718	6.0	3.9	3.6	661	5.1	1188	5.6	4.4	964
	1559	6.8	5.4	1166	14.4	5.8	5.0	995	10.7	5.2	4.7	888	8.7	4.8	4.5	819	7.5	1559	6.8	5.4	1166
FWE 08	688	3.8	2.9	659	5.4	3.2	2.7	557	4.0	2.7	2.4	460	2.8	2.4	2.3	420	2.4	688	3.8	2.9	659
	1016	5.3	4.0	902	9.4	4.5	3.7	773	7.1	3.8	3.4	654	5.3	3.5	3.3	603	4.5	1016	5.3	4.0	902
	1413	6.7	5.2	1148	14.5	5.7	4.8	985	10.9	5.0	4.5	855	8.4	4.6	4.3	789	7.3	1413	6.7	5.2	1148
	1753	7.8	6.1	1329	18.8	6.7	5.6	1141	14.2	5.9	5.3	1007	11.3	5.4	5.1	930	9.7	1753	7.8	6.1	1329
FWE 10	808	4.9	3.6	832	8.9	4.2	3.3	722	6.9	3.5	3.0	604	5.0	3.1	2.8	533	4.0	808	4.9	3.6	832
	1202	6.6	4.9	1131	15.4	5.7	4.5	983	11.9	4.8	4.2	829	8.7	4.4	4.0	749	7.3	1202	6.6	4.9	1131
	1735	8.6	6.5	1469	24.5	7.4	6.0	1275	18.9	6.3	5.5	1081	14.0	5.8	5.3	1001	12.1	1735	8.6	6.5	1469
	2177	10.0	7.7	1710	32.2	8.6	7.1	1482	24.7	7.5	6.6	1281	18.9	6.9	6.3	1186	16.4	2177	10.0	7.7	1710

Ambient temperature DBWB °C		6/11°C								7/12°C				27/19°C				8/13°C				9/14°C			
Water inlet/outlet temp.																									
Model	Airflow	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop	Total cooling capacity	Sensible cooling capacity	Water flow	Water pressure drop				
	m³/h	W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa	W	W	l/h	kPa				
FWE 02	150	1.1	0.8	181	4.4	0.9	0.7	156	3.4	0.7	0.6	116	1.5	0.6	0.6	107	1.3	150	1.1	0.8	181				
	238	1.6	1.2	270	8.7	1.4	1.1	237	6.9	1.2	1.0	203	5.3	1.0	0.9	176	4.1	238	1.6	1.2	270				
	311	1.9	1.4	333	12.5	1.7	1.3	294	10.0	1.5	1.2	253	7.6	1.3	1.2	223	6.1	311	1.9	1.4	333				
	430	2.5	1.9	424	18.9	2.2	1.7	373	15.1	1.9	1.6	321	11.5	1.7	1.5	291	9.6	430	2.5	1.9	424				
FWE 03	256	1.7	1.3	293	4.2	1.5	1.2	252	3.3	1.2	1.0	199	2.2	1.0	1.0	176	1.3	256	1.7	1.3	293				
	385	2.4	1.8	413	7.7	2.1	1.7	362	6.0	1.8	1.5	307	4.5	1.6	1.5	275	3.7	385	2.4	1.8	413				
	518	3.0	2.3	520	11.4	2.7	2.1	456	9.0	2.3	2.0	390	6.8	2.1	1.9	355	5.7	518	3.0	2.3	520				
	638	3.5	2.7	605	14.8	3.1	2.5	531	11.7	2.6	2.3	454	8.9	2.4	2.2	419	7.7	638	3.5	2.7	605				
FWE 04	284	2.1	1.5	352	6.4	1.8	1.4	311	5.1	1.6	1.3	268	3.9	1.3	1.2	223	2.8	284	2.1	1.5	352				
	413	2.8	2.0	479	10.9	2.5	1.9	425	8.8	2.1	1.8	369	6.8	1.8	1.6	314	5.1	413	2.8	2.0	479				
	619	3.8	2.8	653	18.6	3.4	2.6	578	14.9	2.9	2.4	502	11.6	2.6	2.3	440	9.1	619	3.8	2.8	653				
	910	5.0	3.8	856	29.9	4.4	3.5	757	23.9	3.8	3.3	655	18.4	3.5	3.1	594	15.4	910	5.0	3.8	856				
FWE 06	426	3.1	2.2	539	15.1	2.8	2.1	483	12.4	2.5	1.9	425	9.9	2.1	1.8	364	7.5	426	3.1	2.2	539				
	630	4.3	3.1	732	25.8	3.8	2.9	654	21.0	3.3	2.7	574	16.6	2.9	2.5	492	12.6	630	4.3	3.1	732				
	926	5.7	4.1	970	42.2	5.0	3.9	864	34.2	4.4	3.6	756	26.9	3.8	3.4	655	20.8	926	5.7	4.1	970				
	1195	6.8	5.0	1156	57.6	6.0	4.7	1028	46.4	5.2	4.3	897	36.3	4.6	4.1	796	29.2	1195	6.8	5.0	1156				
FWE 07	569	3.7	2.7	630	4.8	3.2	2.5	544	3.7	2.6	2.3	440	2.5	2.4	2.2	405	2.2	569	3.7	2.7	630				
	851	5.1	3.9	877	8.6	4.5	3.6	767	6.8	3.8	3.3	650	5.0	3.4	3.2	591	4.2	851	5.1	3.9	877				
	1188	6.6	5.0	1125	13.5	5.7	4.7	985	10.6	4.9	4.3	840	7.9	4.5	4.2	780	6.9	1188	6.6	5.0	1125				
	1559	7.9	6.1	1358	18.9	6.9	5.7	1189	14.8	6.0	5.3	1030	11.3	5.6	5.1	962	10.0	1559	7.9	6.1	1358				
FWE 08	688	4.5	3.3	772	7.1	4.0	3.1	678	5.6	3.4	2.8	576	4.2	2.9	2.7	506	3.3	688	4.5	3.3	772				
	1016	6.1	4.6	1048	12.3	5.4	4.3	922	9.7	4.6	3.9	792	7.4	4.1	3.7	710	6.0	1016	6.1	4.6	1048				
	1413	7.8	5.9	1331	18.8	6.8	5.5	1170	14.9	5.9	5.1	1005	11.3	5.4	4.9	924	9.6	1413	7.8	5.9	1331				
	1753	9.0	6.9	1540	24.5	7.9	6.4	1353	19.3	6.8	6.0	1163	14.6	6.3	5.8	1088	12.9	1753	9.0	6.9	1540				
FWE 10	808	5.6	4.0	957	11.4	5.0	3.8	851	9.2	4.3	3.5	740	7.1	3.6	3.2	623	5.2	808	5.6	4.0	957				
	1202	7.6	5.6	1299	19.7	6.7	5.2	1153	15.8	5.8	4.8	1002	12.2	5.1	4.5	870	9.5	1202	7.6	5.6	1299				
	1735	9.9	7.4	1688	31.4	8.7	6.9	1494	25.1	7.6	6.4	1297	19.4	6.8	6.0	1162	15.8	1735	9.9	7.4	1688				
	2177	11.5	8.7	1966	32.8	10.1	8.1	1737	32.9	8.8	7.5	1506	25.3	8.0	7.2	1378	21.4	2177	11.5	8.7	1966				

5 Capacity tables

5 - 2 Heating Capacity Tables

FWE-CT/CF

Heating mode capacity table - 2 pipes

Ambient temperature DB/MWB °C		50/45°C				19/15°C				70/60°C			
Water inlet/outlet temp.													
Model	Airflow	Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop
	m ³ /h	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa
FWE 02	150	1.40	240.00	5.50	1.80	154.00	2.40	2.30	195.00	3.60			
	238	2.10	358.00	11.20	2.70	228.00	4.90	3.40	291.00	7.30			
	311	2.60	449.00	16.70	3.30	285.00	7.20	4.20	364.00	10.90			
	430	3.40	584.00	26.70	4.30	370.00	11.50	5.50	473.00	17.40			
FWE 03	256	2.30	398.00	5.70	3.00	254.00	2.50	3.80	324.00	3.70			
	385	3.30	565.00	10.60	4.20	359.00	4.60	5.30	459.00	6.90			
	518	4.20	722.00	16.50	5.30	457.00	7.10	6.80	585.00	10.70			
	638	4.90	852.00	22.20	6.30	538.00	9.50	8.00	691.00	14.50			
FWE 04	284	2.60	448.00	7.70	3.30	287.00	3.40	4.20	365.00	5.00			
	413	3.60	621.00	13.70	4.60	396.00	6.00	5.90	504.00	9.00			
	619	5.10	870.00	25.10	6.40	553.00	10.80	8.20	706.00	16.40			
	910	6.80	1179.00	43.50	8.70	745.00	18.50	11.10	955.00	28.30			
FWE 06	426	3.80	661.00	17.30	4.90	425.00	7.60	6.30	538.00	11.40			
	630	5.40	926.00	31.60	6.90	591.00	13.80	8.70	752.00	20.70			
	926	7.40	1267.00	55.70	9.40	806.00	24.00	12.00	1028.00	36.30			
	1195	9.00	1546.00	79.80	11.40	980.00	34.10	14.60	1253.00	52.00			
FWE 07	569	5.00	868.00	7.00	6.40	553.00	3.00	8.20	705.00	4.60			
	851	7.10	1219.00	13.10	9.00	773.00	5.60	11.50	989.00	8.60			
	1188	9.30	1597.00	21.40	11.70	1008.00	9.00	15.10	1295.00	14.00			
	1559	11.40	1969.00	23.60	14.40	1238.00	13.20	18.50	1592.00	20.50			
FWE 08	688	6.00	1035.00	10.00	7.70	660.00	4.30	9.80	841.00	6.60			
	1016	8.30	1434.00	18.20	10.60	910.00	7.70	13.50	1163.00	11.90			
	1413	10.80	1866.00	29.50	13.70	1179.00	12.40	17.60	1512.00	19.20			
	1753	12.80	2200.00	30.10	16.10	1385.00	16.70	20.70	1780.00	26.00			
FWE 10	808	7.10	1227.00	14.80	9.10	784.00	6.40	11.60	997.00	9.70			
	1202	9.90	1711.00	27.10	12.70	1088.00	11.60	16.20	1389.00	17.80			
	1735	13.00	2294.00	35.80	16.90	1452.00	19.60	21.60	1859.00	30.30			
	2177	15.80	2727.00	49.00	20.00	1721.00	26.80	25.70	2206.00	31.90			

Ambient temperature DB/MWB °C		50/45°C				20/15°C				70/60°C			
Water inlet/outlet temp.													
Model	Airflow	Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop
	m ³ /h	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa
FWE 02	150	1.30	231.00	5.20	1.70	149.00	2.30	2.20	191.00	3.50			
	238	2.00	345.00	10.50	2.60	221.00	4.60	3.30	284.00	7.00			
	311	2.50	432.00	15.60	3.20	277.00	6.90	4.10	356.00	10.50			
	430	3.30	562.00	25.00	4.20	359.00	10.90	5.40	462.00	16.70			
FWE 03	256	2.20	384.00	5.30	2.90	247.00	2.40	3.70	316.00	3.60			
	385	3.20	544.00	9.90	4.00	348.00	4.30	5.20	448.00	6.60			
	518	4.00	695.00	15.40	5.20	444.00	6.70	6.70	572.00	10.30			
	638	4.80	821.00	20.80	6.10	522.00	9.00	7.90	674.00	13.90			
FWE 04	284	2.50	432.00	7.20	3.20	279.00	3.20	4.10	356.00	4.80			
	413	3.50	598.00	12.80	4.50	385.00	5.70	5.70	493.00	8.60			
	619	4.90	838.00	23.50	6.20	536.00	10.20	8.00	689.00	15.70			
	910	6.60	1136.00	40.60	8.40	723.00	17.50	10.90	933.00	27.10			
FWE 06	426	3.70	638.00	16.20	4.80	412.00	7.30	6.10	526.00	10.90			
	630	5.20	892.00	29.60	6.70	574.00	13.10	8.50	734.00	19.80			
	926	7.10	1221.00	52.10	9.10	782.00	22.70	11.70	1004.00	34.80			
	1195	8.70	1490.00	74.60	11.10	951.00	32.30	14.20	1223.00	49.80			
FWE 07	569	4.90	836.00	6.60	6.20	536.00	2.90	8.00	689.00	4.40			
	851	6.80	1174.00	12.20	8.70	750.00	5.30	11.20	966.00	8.20			
	1188	8.90	1537.00	20.00	11.40	978.00	8.50	14.70	1264.00	13.40			
	1559	11.00	1896.00	29.40	14.00	1201.00	12.40	18.10	1555.00	19.70			
FWE 08	688	5.80	997.00	9.40	7.40	640.00	4.10	9.60	822.00	6.30			
	1016	8.00	1381.00	17.00	10.30	883.00	7.30	13.20	1136.00	11.40			
	1413	10.40	1797.00	27.50	13.30	1143.00	11.70	17.20	1476.00	18.40			
	1753	12.30	2119.00	28.10	15.60	1344.00	15.80	20.20	1738.00	24.90			
FWE 10	808	6.90	1182.00	13.80	8.80	761.00	6.10	11.30	974.00	9.30			
	1202	9.60	1649.00	25.30	12.30	1056.00	11.00	15.80	1356.00	17.00			
	1735	12.80	2210.00	33.40	16.40	1409.00	18.60	21.10	1815.00	29.00			
	2177	15.30	2627.00	45.70	19.40	1670.00	25.40	25.10	2155.00	30.50			

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5 Capacity tables

5 - 2 Heating Capacity Tables

FWE-CT/CF

Heating mode capacity table - Additional heat exchanger

Ambient temperature DBWB °C		50/45°C			19/15°C 60/50°C			70/60°C		
Water inlet/outlet temp.		Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop
Model	Airflow m³/h	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa
FWE 02	142	0.80	141.00	4.80	1.00	88.00	2.00	1.30	114.00	3.10
	232	1.20	201.00	9.00	1.40	124.00	3.70	1.90	162.00	5.80
	302	1.40	241.00	12.40	1.70	149.00	5.10	2.30	194.00	8.00
	416	1.70	297.00	18.20	2.10	183.00	7.40	2.80	239.00	11.70
FWE 03	256	1.40	241.00	14.40	1.70	150.00	6.00	2.30	195.00	9.30
	371	1.80	313.00	22.90	2.30	195.00	9.50	2.90	252.00	14.80
	501	2.20	383.00	33.00	2.80	238.00	13.70	3.60	308.00	21.30
	626	2.60	443.00	42.90	3.20	275.00	17.70	4.10	356.00	27.60
FWE 04	257	1.50	256.00	17.60	1.90	161.00	7.50	2.40	207.00	11.40
	377	2.00	338.00	28.90	2.50	211.00	12.10	3.20	273.00	18.70
	571	2.60	449.00	48.20	3.30	280.00	20.10	4.20	362.00	31.10
	835	3.30	574.00	75.20	4.20	357.00	31.10	5.40	462.00	48.50
FWE 06	414	2.30	390.00	42.40	2.80	245.00	17.90	3.70	314.00	27.40
	618	3.00	515.00	70.20	3.80	323.00	29.40	4.80	416.00	45.30
	905	3.90	664.00	110.90	4.80	415.00	46.20	6.20	535.00	71.50
	1193	4.60	790.00	152.20	5.70	493.00	63.10	7.40	636.00	98.10
FWE 07	569	3.10	526.00	83.30	3.80	331.00	35.30	4.90	424.00	53.90
	846	4.00	692.00	136.90	5.00	434.00	57.50	6.50	558.00	88.50
	1173	5.00	858.00	202.20	6.30	538.00	84.50	8.00	691.00	130.50
	1548	5.90	1022.00	277.60	7.40	639.00	115.60	9.60	823.00	179.00
FWE 08	684	3.60	614.00	115.90	4.50	386.00	49.00	5.80	496.00	75.00
	1001	4.60	797.00	185.60	5.80	500.00	78.00	7.50	643.00	120.00
	1386	5.70	985.00	272.60	7.20	617.00	113.90	9.20	793.00	175.90
	1742	6.60	1136.00	353.00	8.30	711.00	147.10	10.60	914.00	227.60
FWE 10	804	4.20	729.00	177.70	5.30	459.00	75.40	6.80	588.00	115.00
	1199	5.60	959.00	291.70	7.00	603.00	122.90	9.00	773.00	188.60
	1729	7.10	1216.00	449.10	8.90	763.00	188.20	11.40	980.00	289.90
	2166	8.10	1398.00	578.90	10.20	876.00	241.70	13.10	1126.00	373.40

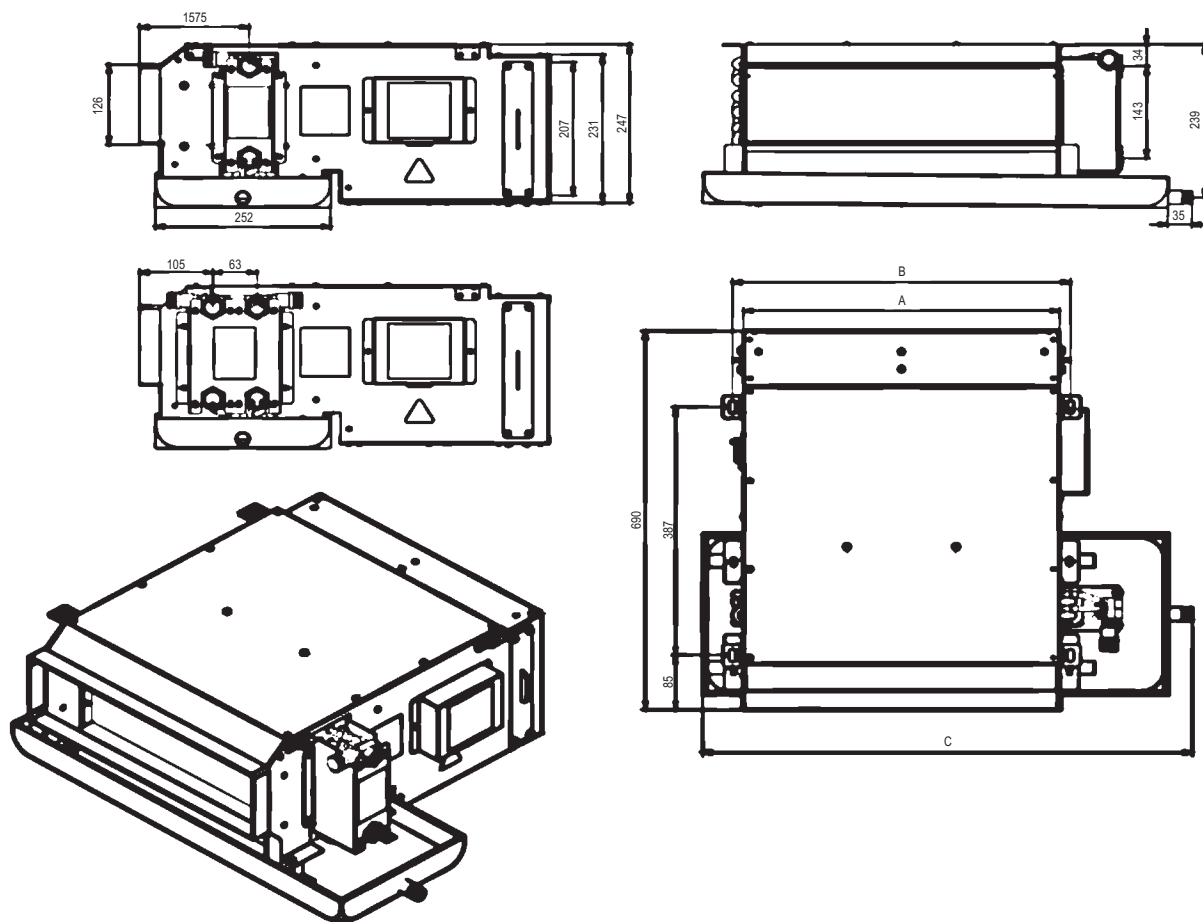
Ambient temperature DBWB °C		50/45°C			20/15°C 60/50°C			70/60°C		
Water inlet/outlet temp.		Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop	Heating capacity	Water flow	Water pressure drop
Model	Airflow m³/h	kW	l/h	kPa	kW	l/h	kPa	kW	l/h	kPa
FWE 02	142	0.80	136.00	4.50	1.00	85.00	1.90	1.30	111.00	3.00
	232	1.10	193.00	8.40	1.40	120.00	3.50	1.80	158.00	5.50
	302	1.30	231.00	11.60	1.70	144.00	4.80	2.20	189.00	7.70
	416	1.70	286.00	16.90	2.10	177.00	7.00	2.70	233.00	11.20
FWE 03	256	1.30	232.00	13.40	1.70	146.00	5.70	2.20	190.00	8.90
	371	1.70	301.00	21.40	2.20	189.00	9.00	2.90	246.00	14.20
	501	2.10	369.00	30.80	2.70	231.00	12.90	3.50	301.00	20.40
	626	2.50	426.00	40.00	3.10	266.00	16.70	4.00	348.00	26.40
FWE 04	257	1.40	247.00	16.50	1.80	156.00	7.10	2.40	202.00	10.90
	377	1.90	325.00	27.00	2.40	205.00	11.50	3.10	266.00	17.90
	571	2.50	432.00	45.00	3.20	272.00	19.00	4.10	353.00	29.80
	835	3.20	553.00	70.20	4.00	346.00	29.40	5.30	451.00	46.40
FWE 06	414	2.20	375.00	39.60	2.80	237.00	17.00	3.60	307.00	26.30
	618	2.90	496.00	65.60	3.60	313.00	27.90	4.70	406.00	43.40
	905	3.70	640.00	103.60	4.70	403.00	43.70	6.10	522.00	68.50
	1193	4.40	761.00	142.00	5.60	478.00	59.70	7.20	621.00	93.90
FWE 07	569	2.90	506.00	77.90	3.70	321.00	33.50	4.80	415.00	51.70
	846	3.90	667.00	127.90	4.90	421.00	54.50	6.30	545.00	84.80
	1173	4.80	827.00	188.90	6.10	522.00	80.10	7.90	675.00	125.00
	1548	5.70	984.00	259.30	7.20	620.00	109.40	9.40	804.00	171.50
FWE 08	684	3.40	592.00	108.30	4.40	375.00	46.50	5.60	484.00	71.90
	1001	4.50	768.00	173.50	5.60	486.00	73.90	7.30	627.00	114.90
	1386	5.50	949.00	254.70	7.00	599.00	107.90	9.00	775.00	168.50
	1742	6.40	1094.00	329.80	8.00	690.00	139.30	10.40	893.00	218.10
FWE 10	804	4.10	702.00	166.20	5.20	446.00	71.50	6.70	575.00	110.30
	1199	5.40	924.00	272.70	6.80	585.00	116.50	8.80	755.00	180.30
	1729	6.80	1172.00	419.70	8.60	741.00	178.30	11.10	957.00	277.80
	2166	7.80	1347.00	540.80	9.90	850.00	229.00	12.80	1100.00	357.80

rev.01_2

6 Dimensional drawings

6 - 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"

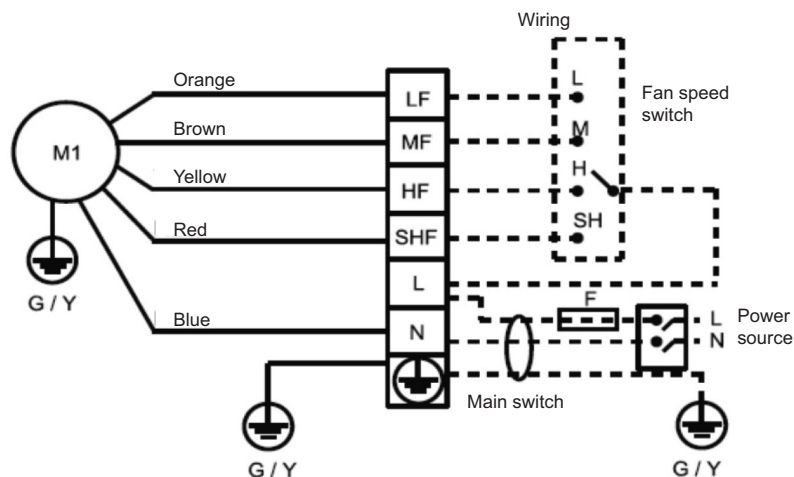
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7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase

FWE02,03,04,06CT/CF

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



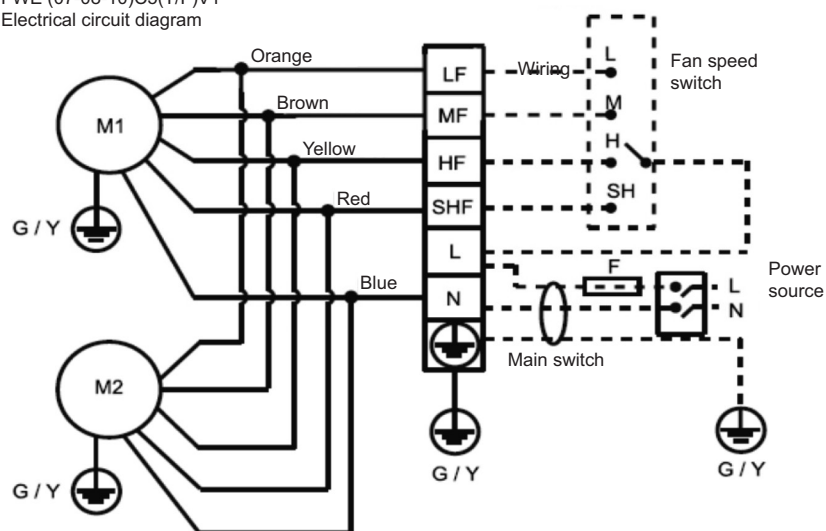
NOTES

- = 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

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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

8 Installation

8 - 1 Installation Method

FWE-CT/CF

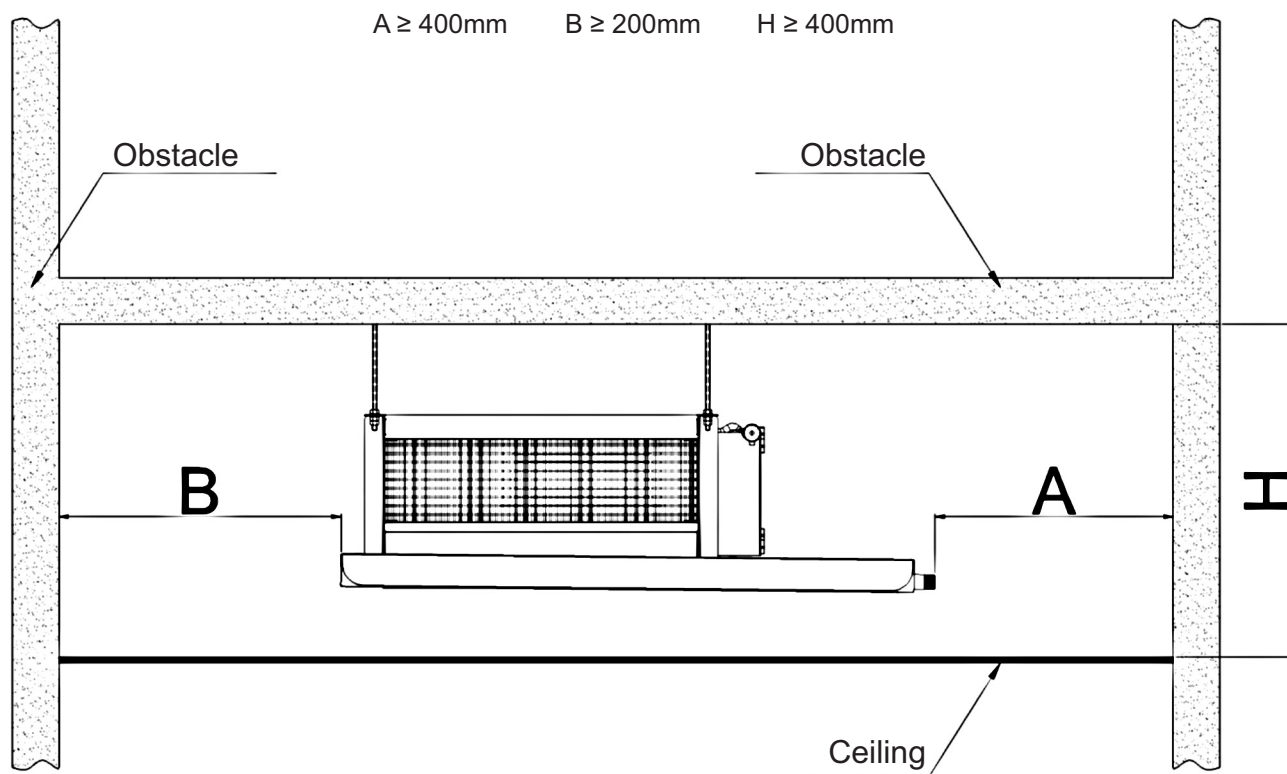


Figure 2

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 be 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.

rev.00_2

8 Installation

8 - 1 Installation Method

FWE-CT/CF

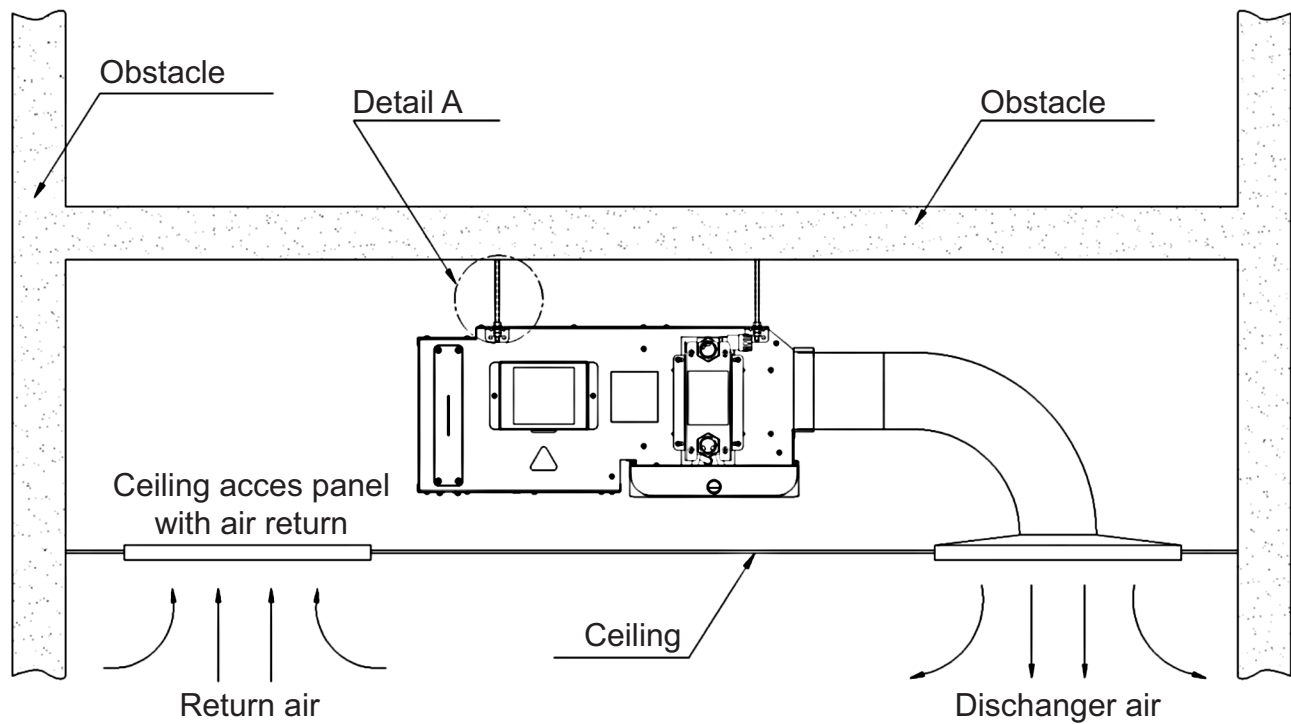


Figure 3

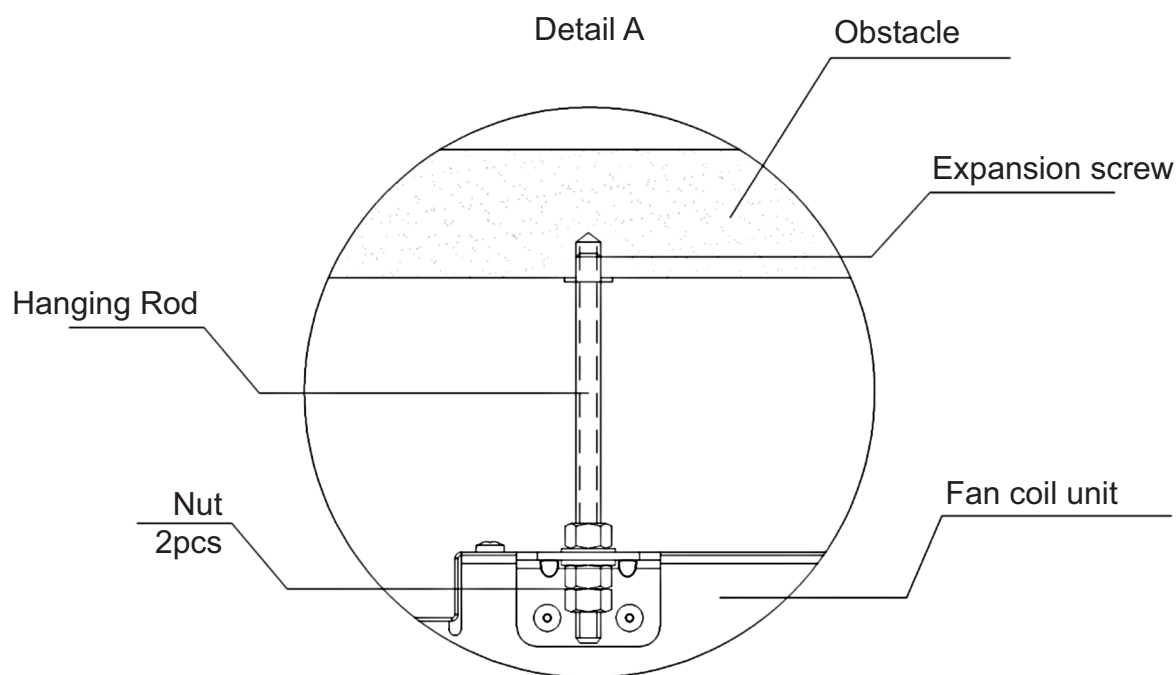


Figure 4

rev.00_3

8 Installation

8 - 1 Installation Method

8

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.

rev.00_4

8 Installation

8 - 1 Installation Method

FWE-CT/CF

FWE Model ducted fan coil units installation method

Caution for installation of unit

- 1 Do the following checks before installation and operation.
- 2 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 shows the required minimum space.)
- 3 Make sure you have the adequate space for piping and electrical connections.
- 4 Make sure that the carrier rods can withstand the weight of the unit.
- 5 For proper operation of the unit and the condensed water discharge, installation of the unit should be done in the horizontal.
- 6 Channel external static pressure, is designed to be within the range of static pressure.
- 7 The installer must supply service valves and insulation for water piping in accordance with the local code and regulation.
- 8 People who carry out installation, ensure the service valves local codes and set up according to the rules.
- 9 Before installation and service transactions are done, main switch of the unit should be verified in switch off position.

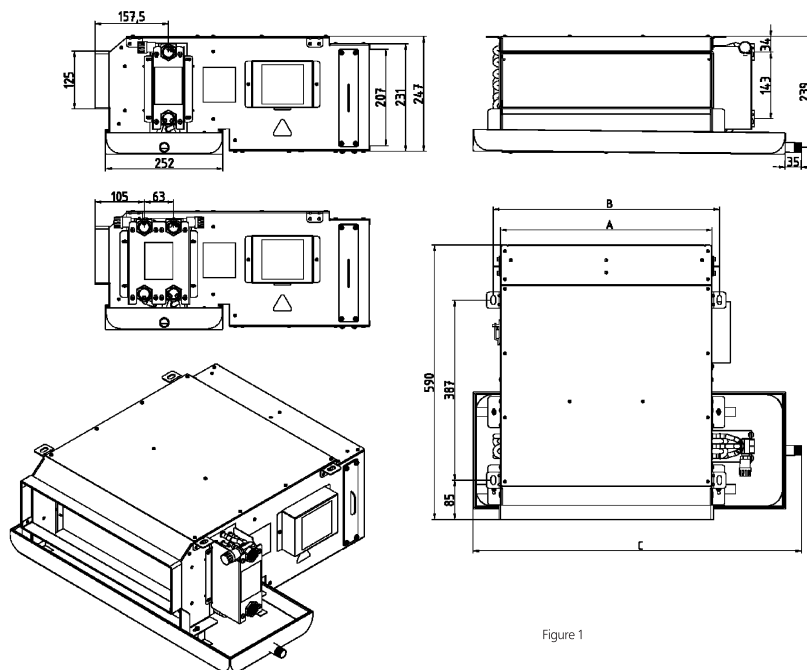


Figure 1

Model	Unit dimensions			Water inlet (inch)	Water outlet (inch)	Drain (inch)
	A (mm)	B (mm)	C (mm)			
FWE02CS(T/FV)1B	454	486	705	R3/4"	R3/4"	R3/4"
FWE03CS(T/FV)1B	629	661	875	R3/4"	R3/4"	R3/4"
FWE04CS(T/FV)1B	759	791	1005	R3/4"	R3/4"	R3/4"
FWE06CS(T/FV)1B	959	991	1205	R3/4"	R3/4"	R3/4"
FWE07CS(T/FV)1B	1209	1241	1455	R3/4"	R3/4"	R3/4"
FWE08CS(T/FV)1B	1309	1341	1555	R3/4"	R3/4"	R3/4"
FWE10V5(T/FV)1B	1569	1601	1815	R3/4"	R3/4"	R3/4"

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9 Operation range

9 - 1 Operation Range

FWE-CT/CF

Water Side	
Max. Pressure	16.4 kg/cm ²
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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10 Hydraulic performance

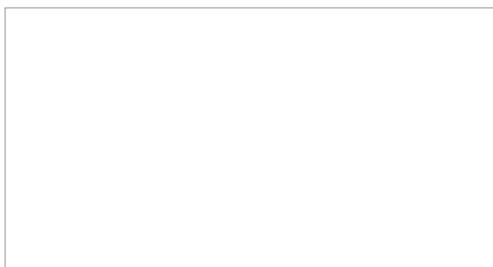
10 - 1 Water Pressure Drop Curve Evaporator

FWE-CT/CF

Water flow	Water inlet/outlet temp. = 70/60°C Heating mode Water pressure drop										Water inlet/outlet temp. = 12/7°C Cooling mode Water pressure drop										Water inlet/outlet temp. = 70/60°C Additional heat exchanger Water pressure drop									
	FWE02	FWE03	FWE04	FWE06	FWE07	FWE08	FWE10	FWE02	FWE03	FWE04	FWE06	FWE07	FWE08	FWE10	FWE02	FWE03	FWE04	FWE06	FWE07	FWE08	FWE10									
	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s	l/s									
100	1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	2	3	3	4	4	4	5									
200	4	2	2	2	<1	<1	<1	5	2	2	2	2	<1	<1	8	10	11	12	14	15	17									
300	7	3	3	4	<1	1	1	10	4	5	5	5	1	1	18	20	22	25	29	30	34									
400	12	5	6	6	2	2	2	17	7	8	9	2	2	2	30	34	37	42	48	51	57									
500	18	8	8	10	2	2	3	25	11	12	13	3	3	4	45	51	56	63	73	76	86									
600	26	11	12	13	3	3	4	34	15	16	18	4	5	5	63	71	78	88	101	106	119									
700	34	14	16	17	4	5	5	45	19	21	24	6	6	7	83	95	103	117												
800	43	18	20	22	6	6	6	57	24	26	30	7	8	8	106	121														
900	53	23	24	27	7	7	8	70	30	32	37	9	7	10																
1000	64	27	30	33	8	9	9	85	36	39	44	11	11	12																
1100	77	32	35	40	10	10	11	101	42	46	52	13	13	15																
1200	90	38	41	46	12	12	13	49	54	61	15	15	16	17																
1300	104	44	48	53	14	14	15	57	62	70	17	18	20																	
1400		50	55	61	16	16	17	65	71	80	20	21	22																	
1500		57	62	69	18	18	20	74	80	91	22	23	25																	
1600		64	70	78	20	21	22	83	90	102	25	26	28																	
1700		72	78	87	22	23	25	92	101		28	29	32																	
1800		80	86	97	25	26	28	102			31	32	35																	
1900		88	95	107	28	28	31				34	36	39																	
2000		87	95		22	23	26				29	30	34																	
2100		95	104		24	26	28				32	33	37																	
2200		103			27	28	30				34	36	40																	
2300					29	30	33				37	39	43																	
2400					31	32	36				40	42	46																	
2500					34	35	38				43	45	50																	
3000					47	49	54				60	62	69																	
3500					56	58	65				72	75	84																	
4000					71	75	83				91	96	107																	

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