



Fan Coil Units

Commercial and Technical Data



ECDEN10-400



Fan Coil Units

Commercial and Technical Data



EC-DEN10-400

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FWV-FWL-FWM

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1 Specifications

1-1 Nominal capacity and nominal input			FWV-L-M 01CATN/TV	FWV-L-M 02CATN/TV	FWV-L-M 03CATN/TV	FWV-L-M 04CATN/TV	FWV-L-M 06CATN/TV	FWV-L-M 08CATN/TV	FWV-L-M 10CATN/TV	
Power Input	High	W	37	53	56	98	98	182	244	
	Medium	W	28	36	43	61	68	127	169	
	Low	W	21	24	29	38	47	86	109	
Cooling capacity	Total capacity	High	kW	1.54	2.09	2.93	4.33	4.77	6.71	8.02
		Medium	kW	1.24	1.81	2.38	3.27	3.87	5.27	6.24
		Low	kW	1.04	1.45	1.76	2.51	3.17	3.97	4.11
	Sensible capacity	High	kW	1.20	1.51	2.11	3.15	3.65	4.91	5.96
		Medium	kW	0.97	1.31	1.70	2.45	2.92	3.83	4.63
		Low	kW	0.79	1.05	1.26	1.80	2.32	2.84	3.05
Heating capacity (2-pipe)	High	kW	2.14	2.57	3.81	5.63	6.36	7.83	10.03	
	Medium	kW	1.73	2.18	3.08	4.30	5.21	6.23	7.80	
	Low	kW	1.43	1.79	2.28	3.29	4.24	4.77	5.24	

1-1 Nominal capacity and nominal input			FWV-L-M 01CAFN/FV	FWV-L-M 02CAFN/FV	FWV-L-M 03CAFN/FV	FWV-L-M 04CAFN/FV	FWV-L-M 06CAFN/FV	FWV-L-M 08CAFN/FV	FWV-L-M 10CAFN/FV	
Power Input	High	W	37	53	56	98	98	182	244	
	Medium	W	28	36	43	61	68	127	169	
	Low	W	21	24	29	38	47	86	109	
Cooling capacity	Total capacity	High	kW	1.46	1.90	2.87	4.33	4.67	6.64	7.88
		Medium	kW	1.24	1.62	2.33	3.27	3.81	5.23	6.16
		Low	kW	0.99	1.35	1.73	2.48	3.11	3.93	4.07
	Sensible capacity	High	kW	1.14	1.51	2.07	3.15	3.57	4.85	5.85
		Medium	kW	0.97	1.25	1.66	2.45	2.87	3.80	4.57
		Low	kW	0.75	1.10	1.24	1.78	2.28	2.82	3.02
Heating capacity (4-pipe)	High	kW	1.90	2.10	3.08	5.05	5.30	7.91	9.30	
	Medium	kW	1.70	1.78	2.68	4.25	4.65	6.83	7.95	
	Low	kW	1.50	1.56	2.18	3.60	4.04	5.69	6.12	

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1 Specifications

1-2 Technical Specifications				FWV-L-M 01CATN/TV	FWV-L-M 02CATN/TV	FWV-L-M 03CATN/TV	FWV-L-M 04CATN/TV	FWV-L-M 06CATN/TV	FWV-L-M 08CATN/TV	FWV-L-M 10CATN/TV
Dimensions	Unit - FWV	Height	mm	564	564	564	564	564	564	564
		Width	mm	774	774	984	1194	1194	1404	1404
		Depth	mm	226	226	226	226	226	251	251
	Unit - FWL	Height	mm	564	564	564	564	564	564	564
		Width	mm	774	774	984	1194	1194	1404	1404
		Depth	mm	226	226	226	226	226	251	251
	Unit - FWM	Height	mm	535	535	535	535	535	535	535
		Width	mm	584	584	794	1004	1004	1214	1214
		Depth	mm	224	224	224	224	224	249	249
Weight	Machine weight - FWV		kg	19	20	25	30	31	41	41
	Machine weight - FWL		kg	20	21	27	32	33	44	44
	Machine weight - FWM		kg	14	15	19	23	23	32	32
Casing	Material			Plastic + sheet metal						
	Colour			Plastic and metal RAL9010						
Sound level	Sound power	High	dBA	45	50	47	52	56	61	66
		Medium	dBA	39	44	41	43	49	54	59
		Low	dBA	33	38	33	35	43	47	49
Water flow	Cooling		l/h	265	359	504	745	820	1154	1343
	Heating		l/h	265	359	504	745	820	1154	1343
Water pressure drop	Cooling		kPa	13	13	11	12	14	12	19
	Heating		kPa	9	11	9	9	10	9	16
Fan	Type			Centrifugal multi-blade, double suction						
	Air flow rate	High	m ³ /h	319	344	442	706	785	1011	1393
		Medium	m ³ /h	233	271	341	497	605	771	1022
		Low	m ³ /h	178	211	241	361	470	570	642
	Speed			3 steps : high, medium, low						
Quantity			1	1	2	2	2	2	2	
Motor	Type			Closed induction, B class insulation, winding thermal cut-out						
Standard heat exchanger	Rows		mm	2	3	3	3	3	3	3
	Stages		mm	10	10	10	10	10	12	12
	Fin pitch		mm	1.8	1.6	1.6	1.8	1.6	2.1	2.1
	Face area		m ²	0.086	0.086	0.138	0.191	0.191	0.292	0.292
	Water volume		l	0.5	0.7	1	1.4	1.4	2.1	2.1
Air filter			Plastic							
Insulation material			Class 1 self-extinguishing							
Vibration insulation			Rubber ring for fan motor							
Water connections	Std. heat exchanger		inch	1/2	1/2	1/2	1/2	1/2	3/4	3/4
Drain			mm	16	16	16	16	16	16	16
Notes				Cooling capacity is based on room temperature 27° CDB, 19° CWB and entering water temperature 7°C, water temperature rise 5K.						
				Heating capacity is based on: room temperature 20° CDB and entering water temperature 50° C, water flow rate as during cooling.						
				Air flow at 0 Pa ESP						

1 Specifications

1-2 Technical Specifications				FWV-L-M 01CAFN/FV	FWV-L-M 02CAFN/FV	FWV-L-M 03CAFN/FV	FWV-L-M 04CAFN/FV	FWV-L-M 06CAFN/FV	FWV-L-M 08CAFN/FV	FWV-L-M 10CAFN/FV	
Dimensions	Unit - FWV	Height	mm	564	564	564	564	564	564	564	
		Width	mm	774	774	984	1194	1194	1404	1404	
		Depth	mm	226	226	226	226	226	251	251	
	Unit - FWL	Height	mm	564	564	564	564	564	564	564	564
		Width	mm	774	774	984	1194	1194	1404	1404	
		Depth	mm	226	226	226	226	226	251	251	
	Unit - FWM	Height	mm	535	535	535	535	535	535	535	535
		Width	mm	584	584	794	1004	1004	1214	1214	
		Depth	mm	224	224	224	224	224	249	249	
Weight	Machine weight - FWV		kg	20	21	26	32	33	44	44	
	Machine weight - FWL		kg	21	22	28	34	35	46	46	
	Machine weight - FWM		kg	15	16	20	25	25	34	34	
Casing	Material			Plastic + sheet metal							
	Colour			Plastic and metal RAL9010							
Sound level	Sound power	High	dBA	45	50	47	52	56	61	66	
		Medium	dBA	39	44	41	43	49	54	59	
		Low	dBA	33	38	33	35	43	47	49	
Water flow	Cooling		l/h	251	327	494	745	803	1142	1355	
	Heating		l/h	196	182	286	396	465	694	816	
Water pressure drop	Cooling		kPa	13	13	11	12	14	12	19	
	Heating		kPa	7	8	5	10	10	8	9	
Fan	Type			Centrifugal multi-blade, double suction							
	Air flow rate	High	m³/h	307	327	431	690	763	998	1362	
		Medium	m³/h	225	261	332	490	593	765	1007	
		Low	m³/h	174	205	238	356	460	565	636	
	Speed			3 steps : high, medium, low							
Quantity			1	1	2	2	2	2	2		
Motor	Type			Closed induction, B class insulation, winding thermal cut-out							
Standard heat exchanger	Rows		mm	2	3	3	3	3	3	3	
	Stages		mm	10	10	10	10	10	12	12	
	Fin pitch		mm	1.8	1.6	1.6	1.8	1.6	2.1	2.1	
	Face area		m²	0.086	0.086	0.138	0.191	0.191	0.292	0.292	
	Water volume		l	0.5	0.7	1	1.4	1.4	2.1	2.1	
Additional heat exchanger	Rows		mm	1	1	1	1	1	1	1	
	Stages		mm	8	8	8	8	8	10	10	
	Fin pitch		mm	1.6	1.6	1.6	1.6	1.6	1.6	1.6	
	Face area		m²	0.068	0.068	0.11	0.152	0.152	0.243	0.243	
	Water volume		l	0.2	0.2	0.3	0.4	0.4	0.6	0.6	
Air filter				Plastic							
Insulation material				Class 1 self-extinguishing							
Vibration insulation				Rubber ring for fan motor							
Water connections	Std. heat exchanger		inch	1/2	1/2	1/2	1/2	1/2	3/4	3/4	
Drain			mm	16	16	16	16	16	16	16	
Notes				Rating conditions cooling 4 pipe : air 27							
				Rating conditions heating 4 pipe : air 20							
				Air flow at 0 Pa ESP							

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1 Specifications

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1-3 Electrical Specifications			FWV-L-M 01CATN/TV	FWV-L-M 02CATN/TV	FWV-L-M 03CATN/TV	FWV-L-M 04CATN/TV	FWV-L-M 06CATN/TV	FWV-L-M 08CATN/TV	FWV-L-M 10CATN/TV
Current input	High	A	0.17	0.24	0.25	0.44	0.43	0.80	1.12
	Medium	A	0.13	0.16	0.20	0.29	0.31	0.57	0.79
	Low	A	0.10	0.11	0.14	0.19	0.22	0.40	0.55
Required power supply	V / f / Hz	230/1/50							
Required fuses	A	0.5	0.5	0.5	0.5	0.5	1	2	
Required wire section	mm ²	1	1	1	1	1	1	1	
Notes		The power consumption for the valve motor is 5W (peak) only during opening For more details concerning conditional connections, see http://www.daikineurope.com , select E-data Books. Finally click on the document title of your choice							

1-3 Electrical Specifications			FWV-L-M 01CAFN/FV	FWV-L-M 02CAFN/FV	FWV-L-M 03CAFN/FV	FWV-L-M 04CAFN/FV	FWV-L-M 06CAFN/FV	FWV-L-M 08CAFN/FV	FWV-L-M 10CAFN/FV
Current input	High	A	0.17	0.24	0.25	0.44	0.43	0.80	1.12
	Medium	A	0.13	0.16	0.20	0.29	0.31	0.57	0.79
	Low	A	0.10	0.11	0.14	0.19	0.22	0.40	0.55
Required power supply	V / f / Hz	230/1/50							
Required fuses	A	0.5	0.5	0.5	0.5	0.5	1	2	
Required wire section	mm ²	1	1	1	1	1	1	1	
Notes		The power consumption for the valve motor is 5W (peak) only during opening For more details concerning conditional connections, see http://www.daikineurope.com , select E-data Books. Finally click on the document title of your choice							

2 Options

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FWV-FWL-FWM

Description	Daikin	F2	F4	F6	F8	F9	F10	F11	FWV	FWL	FWM	Notes/remarks
FCU unit	FWV+FWL+FWM	1	2	3	4	6	8	10				
Additional single row heat exchanger	ESRH..A6	ESRH02A6		ESRH03A6	ESRH06A6	ESRH10A6			X	X	X	Can not be used in combination with electric heater
Electric heater	EEH..A6	EEH01A6	EEH02A6	EEH03A6	EEH06A6	EEH10A6			X	X	X	Can not be used in combination with additional H/E requires electronic Controller
2-pipe ON-OFF 3 way motor driven valve complete with mounting kit	E2MV..A6	E2MV03A6			E2MV06A6	E2MV10A6			X	X	X	requires electronic Controller or electro-mechanical Control
4-pipe ON-OFF 3 way motor driven valve complete with mounting kit	E4MV..A6	E4MV03A6			E4MV06A6	E4MV10A6			X	X	X	requires electronic Controller
Fan stop thermostat	YFSTA6	YFSTA6							X	X	X	
Air intake & discharge grill + front Filter fixing kit for concealed models	EAIDF..A6	EAIDF02A6		EAID-F03A6	EAIDF06A6	EAIDF10A6					X	
Supporting feet feet (=supporting brackets + covers)	ESFV..A6	ESFV06A6				ESFV10A6			X		X	Covers can not be used for FWM
Supporting feet + grill	ESFVG..A6	ESFVG02A6	ESFVG03A6	ESFVG06A6	ESFVG10A6			X				
Fresh air intake louvers (manual)	EFA..A6	EFA02A6	EFA03A6	EFA06A6	EFA10A6			X				
Rear panel for Vertical mounted models	ERP..A6	ERP2A6	ERP3A6	ERP6A6	ERP10A6			X	X			Only for vertical mounted units
Controller Electro mechanical built in	ECFWMB6	ECFWMB6							X	X	X	
Power interface for connection of up to 4 FCU to a single control panel	EPIMSB6	EPIMSB6							X	X	X	
Vertical Drain Pan	EDPVA6	EDPVA6							X	X	X	
Horizontal Drain Pan	EDPHA6	EDPHA6								X	X	
Fcu Controller - Standard version	FWEC1A	FWEC1A							X	X	X	water probe included
Fcu Controller - Advanced version	FWEC2A	FWEC2A							X	X	X	water probe included
Fcu Controller - Advanced plus version	FWEC3A	FWEC3A							X	X	X	water probe included
Fcu temperature sensor kit	FWTSKA	FWTSKA							X	X	X	
Fcu relative humidity sensor kit	FWHska	FWHska							X	X	X	
On board fcu Controller installation kit	FWECKA	FWECKA							X	X		

4TW60019-2B (1/2)











FWV-FWL-FWM

Description	ESRH..A6	EEH..A6	E2MV..A6	E4MV..A6	YFSTA6	EAIDF..A6	ESFV..A6	ESFVG..A6	EFA..A6	ERP..A6	ECFWMB6	EPIMSB6	EDPVA6	EDPHA6	FWEC1A	FWEC2A	FWEC3A	FWTSKA	FWHska	FWECKA	
Additional single row heat exchanger	X			X		X															
Electric heater		X				X															
2-pipe ON-OFF 3 way motor driven valve complete with mounting kit		X				X															
4-pipe ON-OFF 3 way motor driven valve complete with mounting kit	X					X															
Fan stop thermostat					X																
Air intake & discharge grill + front Filter fixing kit for concealed models	X	X	X	X	X										X	X	X	X	X	X	
Supporting feet feet (=supporting brackets + covers)	X	X	X	X	X										X	X	X	X	X	X	
Supporting feet + grill	X	X	X	X	X										X	X	X	X	X	X	
Fresh air intake louvers (manual)	X	X	X	X	X										X	X	X	X	X	X	
Rear panel for Vertical mounted models	X	X	X	X	X										X	X	X	X	X	X	
Controller Electro mechanical built in			X		X										X	X	X	X	X	X	
Power interface for connection of up to 4 FCU to a single control panel	X	X	X	X	X										X	X	X	X	X	X	
Vertical Drain Pan	X	X	X	X	X										X	X	X	X	X	X	
Horizontal Drain Pan	X	X	X	X	X										X	X	X	X	X	X	
Fcu Controller - Standard version	X	X	X	X	X										X	X	X	X	X	X	
Fcu Controller - Advanced version	X	X	X	X	X										X	X	X	X	X	X	
Fcu Controller - Advanced plus version	X	X	X	X	X										X	X	X	X	X	X	
Fcu temperature sensor kit	X	X	X	X	X										X	X	X	X	X	X	
Fcu relative humidity sensor kit	X	X	X	X	X										X	X	X	X	X	X	
On board fcu Controller installation kit	X	X	X	X	X										X	X	X	X	X	X	

4TW60019-2B (2/2)

3 Control systems

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	Cool/heat changeover			Options		Basic control functions		Control features		
										
2-pipe	X					X	X	X	X	
	X			X		X	X		X	
	X				X	X	X	X	X	
	X			X	X	X	X		X	
		X				X	X	X		
		X		X		X	X			
			X	X	X	X	X	X	X	X
4-pipe	X			X		X	X		X	
	X					X	X	X	X	
			X			X	X	X		X
			X	X		X	X		X	X



Manual cool/heat changeover.



Automatic cool/heat changeover based on water temperature.



Automatic cool/heat changeover based on air temperature.



Control of the 3-way/4pipe ON/OFF valve. The water valve shut-off once the desired temperature is reached.



The controller controls the electric heater as integration or replacement of the hot water heating system. When the operating mode selector switch is turned on "electric heater" and the electric heater is turned on, the fan runs continuously at medium speed. When the operating mode selector switch is turned to "electric heater" and the electric heater is turned on, the fan runs continuously at medium speed.



The fan speed can be set at one of the 3 speeds (low, medium or maximum) by turning the operation mode selector.



The fan speed is switched automatically based on the difference between the temperature set on the thermostat and the room temperature.



Optimised comfort cooling. When the fan coil has reached the desired setpoint, the fan will operate at medium speed and at regular intervals to ensure constant room temperature and lower sound.



The controller prevents the fan coil unit from operating in one mode, if the required water temperature is not achieved to operate in the selected mode.



The dead zone is a temperature interval close to the set temperature. When the air is warmer/cooler than the top/lower limit of the neutral zone, the cooling/heating mode is selected.

4 Capacity tables

4 - 1 Cooling capacity tables - 2-pipe

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		22 - 16													
		6 - 11				7 - 12				8 - 13				9 - 14	
Model	Total cooling capacity	Sensible cooling capacity		Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity	Sensible cooling capacity		Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity	Sensible cooling capacity		Water flow ℓ/h	Water pressure drop kPa
		W	W				W	W				W	W		
FW 01 TIVTV	Max.	880	840	152	5	820	820	730	140	4	730	730	650	111	3
	Med.	720	720	124	4	660	660	610	114	3	610	610	550	95	2
	Min.	640	570	110	3	580	580	540	100	2	540	540	490	84	2
FW 02 TIVTV	Max.	1290	1070	221	6	1090	1090	980	187	4	980	980	880	151	3
	Med.	1120	990	192	5	880	830	860	151	3	860	860	790	135	2
	Min.	910	750	157	3	780	700	730	133	2	730	730	670	114	2
FW 03 TIVTV	Max.	1730	1470	296	5	1480	1480	1370	255	3	1370	1370	1260	216	3
	Med.	1450	1200	249	3	1260	1120	1180	216	3	1180	1180	1080	186	2
	Min.	1240	960	213	3	1090	890	920	186	2	920	820	860	149	1
FW 04 TIVTV	Max.	2480	2170	425	5	2140	2140	1970	368	4	1970	1970	1810	310	3
	Med.	1990	1740	341	3	1720	1630	1620	295	2	1620	1620	1490	256	2
	Min.	1750	1360	300	3	1520	1270	1290	261	2	1290	1170	1230	212	1
FW 06 TIVTV	Max.	2820	2570	484	6	2390	2390	2120	410	4	2120	2120	1930	331	3
	Med.	2150	1990	369	4	1980	1980	1830	340	3	1830	1830	1670	287	2
	Min.	1960	1650	336	3	1700	1550	1590	292	2	1590	1590	1460	250	2
FW 08 TIVTV	Max.	3850	3380	661	5	3290	3290	3040	565	4	3040	3040	2780	478	3
	Med.	3140	2680	539	3	2720	2510	2570	467	3	2570	2570	2360	405	2
	Min.	2730	2130	469	3	2380	1990	2010	409	2	2010	1840	1940	333	1
FW 10 TIVTV	Max.	4790	4200	822	8	4000	4000	3550	687	6	3550	3550	3120	536	4
	Med.	3380	3120	579	4	3130	3130	2890	538	4	2890	2890	2650	455	3
	Min.	2770	2270	474	3	2400	2120	2170	412	2	2170	2170	1990	342	2

4TW60012-1A (Sheet 1/13)

4 Capacity tables

4 - 1 Cooling capacity tables - 2-pipe

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Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		25 - 18						8 - 13						9 - 14									
		6 - 11			7 - 12			8 - 13			9 - 14			6 - 11			7 - 12			8 - 13			9 - 14
Model		Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa		
FW 01 TIVTV	Max.	1480	1110	254	13	1260	1030	217	9	1020	940	175	6	920	920	158	5	920	920	158	5		
	Med.	1190	900	205	9	1010	830	174	6	810	750	139	4	740	740	126	4	740	740	126	4		
	Min.	1000	740	172	6	850	670	145	5	680	610	117	3	620	620	107	3	620	620	107	3		
FW 02 TIVTV	Max.	2020	1410	346	13	1750	1300	300	10	1450	1190	250	7	1120	1060	193	4	970	920	167	3		
	Med.	1750	1230	300	10	1520	1130	260	8	1260	1030	217	6	970	920	167	3	970	920	167	3		
	Min.	1400	980	240	7	1210	910	208	5	1000	820	172	4	820	750	141	3	820	750	141	3		
FW 03 TIVTV	Max.	2820	1970	484	11	2440	1820	419	8	2010	1640	345	6	1660	1660	284	4	1660	1660	284	4		
	Med.	2290	1590	393	7	1970	1460	338	6	1590	1310	273	4	1320	1200	226	3	1320	1200	226	3		
	Min.	1690	1180	290	4	1460	1080	251	3	1300	1020	224	3	1140	950	196	2	1140	950	196	2		
FW 04 TIVTV	Max.	4170	2940	715	12	3590	2710	617	9	2940	2450	504	6	2440	2440	418	4	2440	2440	418	4		
	Med.	3140	2280	538	7	2670	2090	458	5	2080	1860	357	3	1880	1880	322	3	1880	1880	322	3		
	Min.	2390	1670	410	4	2060	1540	354	3	1830	1440	315	3	1600	1350	274	2	1600	1350	274	2		
FW 06 TIVTV	Max.	4600	3400	788	14	3970	3150	682	10	3280	2880	562	7	2690	2690	463	5	2690	2690	463	5		
	Med.	3720	2720	639	9	3200	2510	549	7	2580	2270	443	5	2160	2160	371	4	2160	2160	371	4		
	Min.	3040	2160	522	7	2580	1970	444	5	2050	1760	352	3	1780	1660	306	3	1780	1660	306	3		
FW 08 TIVTV	Max.	6470	4590	1109	11	5590	4230	960	9	4590	3830	788	6	3730	3730	640	4	3730	3730	640	4		
	Med.	5060	3580	868	7	4320	3270	741	6	3360	2890	578	4	2850	2690	489	3	2850	2690	489	3		
	Min.	3780	2640	649	4	3230	2410	554	3	2870	2270	492	3	2500	2120	429	2	2500	2120	429	2		
FW 10 TIVTV	Max.	7730	5560	1325	19	6690	5150	1148	15	5540	4700	951	10	4520	4520	776	7	4520	4520	776	7		
	Med.	6000	4320	1030	12	5150	3980	885	9	4160	3590	714	6	3460	3460	595	5	3460	3460	595	5		
	Min.	3920	2830	672	6	3270	2570	561	4	2900	2420	498	3	2520	2280	433	3	2520	2280	433	3		

4TW6001 2-1A (Sheet 3/13)

4 Capacity tables

4 - 1 Cooling capacity tables - 2-pipe

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		27 - 19															
		6 - 11			7 - 12			8 - 13			9 - 14						
Model		Total cooling capacity W	Single cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Single cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Single cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Single cooling capacity W	Water flow ℓ/h	Water pressure drop kPa
FW 01 TN/TV	Max	1750	1280	301	17	1540	1200	264	13	1310	1120	226	10	1090	1090	188	7
	Med.	1410	1040	242	12	1240	970	213	9	1060	900	181	7	880	880	151	5
	Min.	1180	850	203	9	1040	790	179	7	890	730	152	5	710	670	122	3
FW 02 TN/TV	Max	2350	1610	403	16	2090	1510	359	13	1810	1400	311	10	1510	1290	260	8
	Med.	2030	1400	348	13	1810	1310	311	10	1570	1220	270	8	1320	1120	226	6
	Min.	1630	1120	279	9	1450	1050	249	7	1260	970	216	5	1050	890	180	4
FW 03 TN/TV	Max	3290	2260	564	14	2930	2110	503	11	2540	1950	436	9	2110	1790	362	6
	Med.	2670	1820	459	10	2380	1700	408	8	2060	1570	353	6	1680	1420	289	4
	Min.	1990	1360	341	6	1760	1260	302	5	1500	1150	258	4	1320	1080	227	3
FW 04 TN/TV	Max	4870	3370	835	15	4330	3150	743	12	3750	2920	643	10	3090	2670	530	7
	Med.	3690	2620	632	9	3270	2450	561	8	2800	2260	481	6	2230	2050	383	4
	Min.	2850	1950	489	6	2510	1800	431	5	2100	1640	361	3	1860	1540	319	3
FW 06 TN/TV	Max	5360	3890	919	18	4770	3650	818	14	4140	3400	710	11	3430	3140	589	8
	Med.	4350	3120	747	12	3870	2920	664	10	3340	2710	574	8	2730	2480	469	5
	Min.	3570	2490	613	9	3170	2320	544	7	2710	2140	466	5	2150	1920	370	4
FW 08 TN/TV	Max	7520	5250	1289	15	6710	4910	1152	12	5830	4560	1001	9	4830	4170	829	7
	Med.	5930	4110	1016	10	5270	3830	904	8	4530	3530	778	6	3630	3190	624	4
	Min.	4510	3070	774	6	3970	2840	681	5	3310	2570	569	4	2910	2420	500	3
FW 10 TN/TV	Max	9000	6350	1544	25	8020	5960	1376	20	6960	5560	1196	16	5800	5120	995	11
	Med.	7020	4950	1204	16	6240	4630	1071	13	5390	4300	924	10	4400	3930	756	7
	Min.	4690	3290	804	8	4110	3050	706	6	3430	2780	588	5	2940	2600	505	3

4TW60012-1A (Sheet 5/13)

4 Capacity tables

4 - 1 Cooling capacity tables - 2-pipe

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		30 - 22											
		6 - 11		7 - 12		8 - 13		9 - 14					
Model	Total cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	
FW 01 TIVTV	Max.	2640	453	35	2440	419	30	2240	384	26	2020	1290	21
	Med.	2120	1230	364	1960	337	21	1800	309	18	1630	1050	15
	Min.	1770	1020	304	1640	282	15	1510	259	13	1360	860	11
FW 02 TIVTV	Max.	3430	1920	589	3190	1820	28	2940	1730	24	2680	1630	20
	Med.	2940	1660	505	2740	1580	22	2530	1500	19	2310	1410	16
	Min.	2360	1340	404	2200	1270	15	2030	1200	13	1860	1130	11
FW 03 TIVTV	Max.	4770	2690	818	4450	2550	24	4110	2410	20	3760	2280	17
	Med.	3880	2180	665	3620	2070	16	3350	1960	14	3060	1840	12
	Min.	2890	1630	495	2700	1550	10	2500	1460	9	2290	1370	7
FW 04 TIVTV	Max.	7110	4000	1220	6630	3800	30	6120	3600	22	5580	3400	19
	Med.	5400	3120	926	5030	2960	16	4650	2810	14	4240	2650	12
	Min.	4190	2350	719	3910	2230	10	3620	2110	9	3300	1980	8
FW 06 TIVTV	Max.	7810	4570	1340	7280	4350	30	6720	4130	26	6130	3910	22
	Med.	6350	3690	1090	5920	3510	21	5470	3330	18	4990	3140	15
	Min.	5220	2970	895	4870	2820	15	4500	2670	13	4110	2520	11
FW 08 TIVTV	Max.	10880	6210	1867	10160	5900	29	9400	5600	25	8600	5280	19
	Med.	8610	4890	1478	8040	4650	17	7440	4400	15	6810	4150	12
	Min.	6630	3710	1137	6190	3520	11	5730	3320	9	5230	3120	8
FW 10 TIVTV	Max.	13100	7470	2246	12230	7120	42	11280	6760	36	11110	6840	29
	Med.	10270	5860	1762	9570	5580	27	8840	5290	24	8680	5320	19
	Min.	6950	3950	1193	6480	3750	14	5980	3550	12	5850	3540	9

4TW6001 2-1A (Sheet 7/13)

4 Capacity tables

4 - 2 Cooling capacity tables - 4-pipe

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		22 - 16															
		6 - 11				7 - 12				8 - 13				9 - 14			
Model	Total cooling capacity	Sensible cooling capacity		Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity		Sensible cooling capacity		Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity		Sensible cooling capacity		Water flow ℓ/h	Water pressure drop kPa
		W	W			W	W	W	W			W	W				
FW 01 FWFV	Max.	850	850	146	5	770	770	770	690	118	3	620	620	620	620	107	3
	Med.	670	640	116	3	620	620	570	570	98	2	520	520	520	520	90	2
	Min.	620	550	107	3	560	560	520	520	89	2	470	470	470	470	81	2
FW 02 FWFV	Max.	1160	1080	199	6	990	990	990	900	154	4	810	810	810	810	140	3
	Med.	980	890	167	5	860	860	790	790	136	3	720	720	720	720	124	3
	Min.	870	740	149	4	740	690	690	690	118	2	630	630	630	630	108	2
FW 03 FWFV	Max.	1680	1430	289	4	1460	1460	1460	1350	232	3	1240	1240	1240	1240	213	2
	Med.	1440	1180	246	3	1250	1100	1100	1160	199	2	1070	1070	1070	1070	183	2
	Min.	1230	950	211	3	1080	880	880	910	157	1	850	850	850	850	147	1
FW 04 FWFV	Max.	2420	2120	415	4	2110	2110	2110	1950	335	3	1790	1790	1790	1790	307	3
	Med.	1980	1720	339	3	1710	1610	1610	1610	276	2	1480	1480	1480	1480	254	2
	Min.	1740	1350	298	3	1510	1260	1260	1280	220	1	1220	1220	1220	1220	210	1
FW 06 FWFV	Max.	2750	2500	471	5	2330	2330	2330	2070	356	3	1900	1900	1900	1900	326	3
	Med.	2140	1960	367	4	1960	1960	1960	1810	310	3	1660	1660	1660	1660	284	2
	Min.	1940	1630	334	3	1690	1520	1520	1570	269	2	1440	1440	1440	1440	247	2
FW 08 FWFV	Max.	3790	3330	650	5	3270	3270	3270	3020	518	3	2760	2760	2760	2760	475	3
	Med.	3130	2660	537	3	2710	2490	2490	2560	439	2	2350	2350	2350	2350	403	2
	Min.	2720	2120	467	3	2370	1970	1970	2010	344	1	1930	1930	1930	1930	331	1
FW 10 TWTV	Max.	4690	4120	803	7	3930	3930	3930	3480	597	4	3090	3090	3090	3090	530	3
	Med.	3360	3090	576	4	3110	3110	3110	2870	492	3	2630	2630	2630	2630	451	2
	Min.	2750	2260	472	3	2390	2110	2110	2160	370	2	1980	1980	1980	1980	340	1

4TW60012-1A (Sheet 2/13)

4 Capacity tables

4 - 2 Cooling capacity tables - 4-pipe

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4

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		25 - 18						8 - 13						9 - 14											
		6 - 11			7 - 12			8 - 13			9 - 14			6 - 11			7 - 12			8 - 13			9 - 14		
Model	Total cooling capacity W	sensible cooling capacity W	latent heat ℓ/h	Water pressure drop kPa	Total cooling capacity W	sensible cooling capacity W	latent heat ℓ/h	Water pressure drop kPa	Total cooling capacity W	sensible cooling capacity W	latent heat ℓ/h	Water pressure drop kPa	Total cooling capacity W	sensible cooling capacity W	latent heat ℓ/h	Water pressure drop kPa	Total cooling capacity W	sensible cooling capacity W	latent heat ℓ/h	Water pressure drop kPa	Total cooling capacity W	sensible cooling capacity W	latent heat ℓ/h	Water pressure drop kPa	
FW 01 FWFV	Max.	1400	1060	241	11	1190	980	205	9	960	890	165	6	870	870	149	5	870	870	149	5	870	870	149	5
	Med.	1100	840	188	7	930	770	159	6	740	700	127	4	680	680	116	3	680	680	116	3	680	680	116	3
	Min.	950	700	163	6	800	640	138	4	660	590	113	3	600	600	103	3	600	600	103	3	600	600	103	3
FW 02 FWFV	Max.	1830	1400	315	14	1590	1300	272	11	1310	1200	226	8	1110	1110	190	6	1110	1110	190	6	1110	1110	190	6
	Med.	1560	1160	268	10	1350	1080	231	8	1110	990	191	6	940	940	161	4	940	940	161	4	940	940	161	4
	Min.	1300	950	223	8	1120	870	192	6	920	790	158	4	780	780	134	3	780	780	134	3	780	780	134	3
FW 03 FWFV	Max.	2770	1930	474	10	2390	1780	410	8	1970	1610	337	6	1620	1620	278	4	1620	1620	278	4	1620	1620	278	4
	Med.	2240	1560	384	7	1930	1420	330	5	1550	1270	266	4	1300	1180	224	3	1300	1180	224	3	1300	1180	224	3
	Min.	1660	1160	285	4	1450	1070	249	3	1290	1000	222	3	1130	940	194	2	1130	940	194	2	1130	940	194	2
FW 04 FWFV	Max.	4100	2890	703	11	3530	2660	606	9	2880	2410	494	6	2390	2390	411	4	2390	2390	411	4	2390	2390	411	4
	Med.	3100	2250	532	7	2630	2060	452	5	2070	1840	355	3	1860	1860	320	3	1860	1860	320	3	1860	1860	320	3
	Min.	2360	1650	405	4	2050	1520	351	3	1820	1430	313	3	1590	1340	273	2	1590	1340	273	2	1590	1340	273	2
FW 06 FWFV	Max.	4500	3320	772	13	3890	3080	668	10	3200	2810	550	7	2640	2640	453	5	2640	2640	453	5	2640	2640	453	5
	Med.	3660	2670	628	9	3150	2460	540	7	2530	2220	435	5	2120	2120	365	3	2120	2120	365	3	2120	2120	365	3
	Min.	2990	2120	513	6	2530	1940	435	5	2040	1740	350	3	1770	1640	303	3	1770	1640	303	3	1770	1640	303	3
FW 08 FWFV	Max.	6390	4540	1097	11	5530	4180	949	9	4530	3780	778	6	3680	3680	633	4	3680	3680	633	4	3680	3680	633	4
	Med.	5020	3550	862	7	4290	3240	735	6	3330	2860	571	4	2840	2840	487	3	2840	2840	487	3	2840	2840	487	3
	Min.	3740	2620	642	4	3210	2390	551	3	2860	2520	490	3	2490	2110	427	2	2490	2110	427	2	2490	2110	427	2
FW 10 TWTV	Max.	7590	5460	1301	15	6570	5050	1128	12	5430	4610	932	8	4430	4430	761	6	4430	4430	761	6	4430	4430	761	6
	Med.	5930	4260	1016	10	5090	3930	873	7	4090	3540	702	5	3420	3420	587	4	3420	3420	587	4	3420	3420	587	4
	Min.	3880	2800	665	5	3260	2550	559	3	2890	2410	496	3	2510	2260	431	2	2510	2260	431	2	2510	2260	431	2

4TW6001 2-1A (Sheet 4/13)

4 Capacity tables

4 - 2 Cooling capacity tables - 4-pipe

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		27 - 19															
		6 - 11			7 - 12			8 - 13			9 - 14						
Model		Total cooling capacity W	Single cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Single cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Single cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Single cooling capacity W	Water flow ℓ/h	Water pressure drop kPa
FW 01 FWFV	Max.	1660	1220	285	15	1460	1140	250	12	1240	1060	213	9	1040	1040	178	7
	Med.	1300	970	223	10	1140	900	196	8	970	840	166	6	810	810	139	4
	Min.	1130	810	193	8	990	750	169	6	840	700	144	5	670	640	115	3
FW 02 FWFV	Max.	2140	1600	367	18	1900	1510	326	15	1650	1410	283	11	1300	1300	224	7
	Med.	1820	1330	312	14	1620	1250	278	11	1400	1160	240	9	1160	1070	199	6
	Min.	1510	1080	260	10	1350	1010	231	8	1170	940	200	6	960	860	165	4
FW 03 FWFV	Max.	3220	2210	552	13	2870	2070	493	11	2490	1910	427	8	2060	1750	354	6
	Med.	2610	1780	449	9	2330	1660	400	8	2010	1530	345	6	1640	1390	282	4
	Min.	1960	1340	336	6	1730	1240	297	5	1470	1130	253	3	1310	1070	225	3
FW 04 FWFV	Max.	4780	3310	821	15	4260	3090	730	12	3680	2870	632	9	3030	2620	520	7
	Med.	3640	2590	625	9	3230	2420	554	7	2760	2230	474	6	2200	2010	377	4
	Min.	2820	1920	483	6	2480	1780	425	5	2080	1620	357	3	1850	1530	317	3
FW 06 FWFV	Max.	5250	3800	900	17	4670	3570	802	14	4050	3320	696	11	3360	3060	577	8
	Med.	4280	3060	735	12	3810	2870	653	10	3290	2660	564	7	2680	2430	461	5
	Min.	3510	2440	603	8	3110	2280	534	7	2660	2100	457	5	2100	1880	361	3
FW 08 FWFV	Max.	7430	5190	1275	15	6640	4850	1138	12	5760	4500	990	9	4770	4120	819	7
	Med.	5880	4080	1010	10	5230	3800	898	8	4500	3510	772	6	3600	3160	618	4
	Min.	4470	3050	767	6	3930	2820	675	5	3270	2550	562	3	2900	2400	497	3
FW 10 TWTV	Max.	8840	6240	1516	20	7880	5850	1352	16	6840	5450	1173	12	5690	5020	977	9
	Med.	6930	4890	1190	13	6160	4570	1057	10	5320	4240	912	8	4340	3880	745	6
	Min.	4650	3260	797	6	4070	3020	699	5	3390	2750	581	4	2930	2580	503	3

4TW60012-1A (Sheet 6/13)

4 Capacity tables

4 - 2 Cooling capacity tables - 4-pipe

1
4

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		30 - 22											
		6 - 11		7 - 12		8 - 13		9 - 14					
Model	Total cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	
FW 01 FWFV	Max.	2510	430	32	2320	398	27	2120	364	23	1910	329	19
	Med.	1970	337	21	1820	312	18	1670	286	15	1500	258	13
	Min.	1690	290	16	1570	269	14	1440	246	12	1300	223	10
FW 02 FWFV	Max.	3150	540	35	2920	502	31	2690	462	27	2450	421	23
	Med.	2660	457	27	2480	425	23	2280	392	20	2080	357	17
	Min.	2210	379	19	2060	353	17	1900	326	15	1730	297	12
FW 03 FWFV	Max.	4670	802	26	4360	748	23	4030	692	20	3680	632	17
	Med.	3790	650	18	3540	607	16	3280	562	14	2990	514	12
	Min.	2840	487	11	2660	456	10	2460	422	8	2250	387	7
FW 04 FWFV	Max.	6990	1199	29	6510	1117	25	6010	1032	22	5480	941	18
	Med.	5330	915	18	4970	853	16	4590	789	14	4190	720	12
	Min.	4140	710	11	3860	663	10	3570	613	9	3260	560	7
FW 06 FWFV	Max.	7650	1312	33	7130	1224	29	6580	1130	25	6000	1031	21
	Med.	6250	1073	23	5830	1001	20	5380	925	18	4920	844	15
	Min.	5130	880	16	4790	822	14	4430	760	13	4040	694	11
FW 08 FWFV	Max.	10760	1846	28	10050	1724	25	9290	1596	21	8500	1460	18
	Med.	8550	1467	19	7990	1371	17	7390	1269	14	6760	1161	12
	Min.	6580	1127	12	6140	1054	10	5680	975	9	5180	891	8
FW 10 TWTV	Max.	12880	2208	38	12010	2061	34	11090	1904	29	10110	1737	25
	Med.	10140	1740	25	9450	1622	22	8730	1498	19	7960	1367	16
	Min.	6900	1183	13	6430	1103	11	5930	1018	10	5400	927	8

4TW6001 2-1A (Sheet 8/13)

4 Capacity tables

4 - 3 Capacity tables with glycol for process cooling applications

Cooling mode

Glycol percentage in weight	Freezing temperature (°C)	Capacity correction factor	Pressure drop correction factor
0	0	1	1.00
10	-4	0.93	1.09
20	-10	0.84	1.18
30	-16	0.76	1.27
40	-24	0.76	1.36

Heating mode

Glycol percentage in weight	Freezing temperature (°C)	Capacity correction factor	Pressure drop correction factor
0	0	1	1.00
10	-4	0.98	1.08
20	-10	0.97	1.11
30	-16	0.94	1.22
40	-24	0.91	1.33

4TW60228-1B

Correction factors are based on an average value (at rated water flow rate). This can cause deviation depending on conditions used. The Fan Coil Selection software will provide an accurate result at all conditions.

4 Capacity tables

4 - 4 Heating capacity tables - 2-pipe

1
4

Air temperature (°C) Water temperature (Entering °C - leaving °C)		20											
		45 - 40		60 - 50		70 - 60		90 - 70					
Model		Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa			
FW 01 TN/TV	Max.	1820	317	15	2840	249	10	3710	325	15	4940	218	7
	Med.	1480	256	11	2310	201	7	2990	263	10	4010	177	5
	Min.	1210	211	8	1900	166	5	2470	216	7	3320	147	3
FW 02 TN/TV	Max.	2150	373	12	3360	293	7	4350	382	11	5830	257	5
	Med.	1810	315	9	2840	248	6	3670	322	8	4940	218	4
	Min.	1500	260	6	2350	206	4	3040	267	6	4110	181	3
FW 03 TN/TV	Max.	3200	556	11	5030	439	7	6460	567	11	8760	386	5
	Med.	2580	449	8	4070	356	5	5220	458	7	7110	314	4
	Min.	1910	332	5	3020	264	3	3860	339	4	5290	233	2
FW 04 TN/TV	Max.	4730	823	12	7420	648	8	9570	840	12	12890	569	6
	Med.	3610	628	8	5690	497	5	7300	641	7	9910	437	4
	Min.	2760	480	5	4360	381	3	5590	490	5	7620	336	2
FW 06 TN/TV	Max.	5360	932	15	8410	735	9	10850	952	14	14620	645	7
	Med.	4390	763	11	6900	603	7	8860	778	10	12020	530	5
	Min.	3570	620	7	5630	491	5	7200	632	7	9810	433	3
FW 08 TN/TV	Max.	6490	1129	10	10170	889	6	13130	1152	9	17650	779	4
	Med.	5170	898	7	8100	708	4	10460	918	6	14100	623	3
	Min.	3970	690	4	6230	544	3	8060	707	4	10880	480	2
FW 10 TN/TV	Max.	8400	1460	19	13130	1147	12	17000	1492	18	22760	1005	8
	Med.	6530	1135	12	10220	893	7	13200	1158	11	17740	783	5
	Min.	4390	764	6	6880	602	4	8910	782	6	12020	531	3

4TW6001 2-1A (Sheet 9/13)

4 Capacity tables

4 - 4 Heating capacity tables - 2-pipe

Air temperature (°C) Water temperature (Entering °C - leaving °C)		22															
		45 - 40				60 - 50				70 - 60				90 - 70			
		Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Water pressure drop	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Water pressure drop	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Water pressure drop	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Water pressure drop
Model	FW 01 TIVTV	Max.	1650	287	13	2670	233	9	3530	310	13	4750	210	7			
		Med.	1330	232	9	2160	189	6	2850	250	9	3860	170	5			
		Min.	1100	191	6	1780	156	4	2350	206	7	3190	141	3			
Model	FW 02 TIVTV	Max.	1950	338	10	3150	275	7	4140	363	10	5610	248	5			
		Med.	1640	285	7	2660	233	5	3500	307	8	4760	210	4			
		Min.	1360	236	5	2210	193	4	2890	254	6	3950	174	3			
Model	FW 03 TIVTV	Max.	2900	505	10	4730	413	6	6150	540	10	8430	372	5			
		Med.	2340	407	7	3820	334	4	4970	436	7	6840	302	3			
		Min.	1730	302	4	2840	248	3	3670	322	4	5090	225	2			
Model	FW 04 TIVTV	Max.	4290	746	10	6970	609	7	9110	799	11	12410	548	5			
		Med.	3280	570	6	5340	466	4	6960	610	7	9540	421	3			
		Min.	2500	436	4	4090	357	3	5320	467	4	7330	324	2			
Model	FW 06 TIVTV	Max.	4860	846	13	7900	690	8	10330	906	13	14080	622	6			
		Med.	3980	693	9	6490	567	6	8440	740	9	11570	511	5			
		Min.	3240	562	6	5280	461	4	6850	601	6	9450	417	3			
Model	FW 08 TIVTV	Max.	5890	1024	8	9550	834	5	12500	1097	9	17000	750	4			
		Med.	4680	813	6	7600	664	4	9960	874	6	13580	600	3			
		Min.	3590	625	3	5840	510	2	7670	673	4	10460	462	2			
Model	FW 10 TIVTV	Max.	7610	1323	16	12320	1077	10	16190	1420	16	21920	968	8			
		Med.	5920	1029	10	9600	839	7	12570	1102	10	17080	754	5			
		Min.	3980	692	5	6460	565	3	8490	744	5	11570	511	3			

4TW60012-1A (Sheet 10/13)

4 Capacity tables

4 - 5 Heating capacity tables - 4-pipe

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4

Air temperature (°C) Water temperature (Entering °C - leaving °C)		20											
		45 - 40			60 - 50			70 - 60			90 - 70		
Model	Air flow m ³ /h	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa
FW 01 FWFV	Max.	920	161	6	1420	124	3	1900	167	6	2470	109	3
	Med.	820	143	5	1270	111	3	1700	149	5	2220	98	2
	Min.	720	126	4	1110	97	2	1500	132	4	1950	86	2
FW 02 FWFV	Max.	980	170	8	1500	131	5	2010	176	7	2600	115	3
	Med.	860	150	6	1330	116	4	1780	156	6	2310	102	3
	Min.	750	131	5	1160	101	3	1560	137	5	2020	89	2
FW 03 FWFV	Max.	1470	255	5	2240	196	3	3080	270	5	3960	175	2
	Med.	1260	220	4	1930	169	2	2680	235	4	3420	151	2
	Min.	1030	179	3	1570	137	2	2180	191	3	2780	123	1
FW 04 FWFV	Max.	2460	427	13	3790	331	8	5050	443	12	6580	290	6
	Med.	2070	360	9	3200	280	6	4250	373	9	5560	245	4
	Min.	1750	304	7	2710	237	4	3600	316	7	4730	209	3
FW 06 FWFV	Max.	2580	448	10	3970	347	6	5300	465	10	6890	304	5
	Med.	2260	393	8	3490	305	5	4650	408	8	6060	268	4
	Min.	1970	343	6	3050	266	4	4040	355	6	5290	234	3
FW 08 FWFV	Max.	3890	675	31	6020	526	19	7910	694	30	10410	460	14
	Med.	3360	584	24	5210	456	15	6830	600	23	9020	398	11
	Min.	2800	486	18	4350	380	11	5690	499	17	7540	333	8
FW 10 TWTV	Max.	4560	793	37	7060	617	23	9300	816	36	12210	539	17
	Med.	3910	679	28	6050	529	17	7950	698	27	10470	462	13
	Min.	3010	523	18	4680	409	11	6120	537	17	8100	358	8

4TW60012-1A (Sheet 11/13)

4 Capacity tables

4 - 5 Heating capacity tables - 4-pipe

Air temperature (°C) Water temperature (Entering °C - leaving °C)		22															
		45 - 40				60 - 50				70 - 60				90 - 70			
		Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	
Model	FW 01 FWFV	Max.	830	144	5	1320	115	3	1810	159	5	2370	105	2			
		Med.	740	128	4	1180	103	2	1620	142	4	2130	94	2			
		Min.	650	113	3	1040	91	2	1430	125	3	1870	83	2			
FW 02 FWFV	Max.	870	152	6	1400	122	4	1910	167	7	2500	110	3				
	Med.	770	134	5	1230	108	3	1690	148	6	2220	98	3				
	Min.	670	117	4	1080	94	3	1480	130	4	1940	86	2				
FW 03 FWFV	Max.	1300	227	4	2080	181	3	2930	257	5	3790	167	2				
	Med.	1120	195	3	1790	156	2	2530	222	4	3270	144	2				
	Min.	910	158	2	1450	127	1	2060	181	3	2660	118	1				
FW 04 FWFV	Max.	2210	385	11	3540	310	7	4800	421	11	6320	279	5				
	Med.	1860	324	8	2990	261	5	4040	354	8	5340	236	4				
	Min.	1570	273	6	2520	220	4	3420	300	6	4550	201	3				
FW 06 FWFV	Max.	2320	403	9	3710	324	6	5040	442	9	6630	292	4				
	Med.	2040	354	7	3260	285	4	4420	387	7	5830	257	3				
	Min.	1770	308	5	2840	248	3	3840	337	6	5090	225	3				
FW 08 FWFV	Max.	3510	610	26	5640	493	17	7530	660	27	10020	443	13				
	Med.	3040	528	20	4890	427	13	6500	570	21	8680	383	10				
	Min.	2530	440	15	4080	356	10	5410	475	15	7260	320	7				
FW 10 TWTV	Max.	4120	717	31	6610	578	20	8850	777	33	11750	519	16				
	Med.	3530	614	24	5670	495	16	7570	664	25	10080	445	12				
	Min.	2720	473	15	4380	383	10	5820	511	16	7800	344	8				

4TW60012-1A (Sheet 12/13)

4 Capacity tables

4 - 6 Power consumption - 2-pipe

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FW.01	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	37	0,170	28	0,130	21	0,100
10	37	0,160	26	0,120	21	0,090
20	35	0,150	25	0,110	20	0,088
30	35	0,150	24	0,110		
45	34	0,140				
50	33	0,140				

4TW60011-2A (2/15)

FW.02	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	53	0.240	36	0.160	24	0.110
10	52	0.235	32	0.142	21	0.096
20	48	0.217	31	0.138	21	0.096
30	46	0.208	31	0.138	20	0.092
40	46	0.208	30	0.133		

4TW60011-2A (3/15)

FW.03	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	56	0.252	43	0.200	29	0.138
10	55	0.248	42	0.195	29	0.134
20	53	0.239	41	0.191	29	0.131
30	53	0.239	41	0.191	28	0.130
40	52	0.234	40	0.186		
50	51	0.230				

4TW60011-2A (4/15)

FW.04	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	98	0.440	61	0.287	38	0.192
10	94	0.422	59	0.276	37	0.187
20	92	0.413	57	0.259	36	0.182
30	90	0.404	55	0.254	34	0.172
40	88	0.395	53	0.242	31	0.157
50	85	0.382	50	0.228		
60	81	0.364	45	0.211		
70	76	0.341				
75	74	0.332				

4TW60011-2A (5/15)

SYMBOLS

ESP: External static pressure

4 Capacity tables

4 - 6 Power consumption - 2-pipe

FW.06	Max.		Med.		Min.	
	ESP	Power input	Current	Power input	Current	Power input
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	98	0.430	68	0.310	47	0.220
10	96	0.421	67	0.305	45	0.211
20	94	0.412	64	0.292	44	0.206
30	91	0.399	62	0.283	43	0.201
40	90	0.395	61	0.278	42	0.197
50	89	0.391	59	0.269		
60	86	0.377	56	0.255		
70	82	0.360				

4TW60011-2A (6/15)

FW.08	Max.		Med.		Min.	
	ESP	Power input	Current	Power input	Current	Power input
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	182	0.802	127	0.574	86	0.393
10	178	0.780	124	0.560	83	0.385
20	174	0.761	121	0.547	82	0.377
30	169	0.741	118	0.532	81	0.371
40	166	0.721	116	0.522	80	0.363
50	161	0.698	114	0.509	78	0.354
60	157	0.680	111	0.497	76	0.343
70	153	0.662	108	0.482		
80	147	0.639	104	0.464		
90	142	0.620	101	0.453		
100	137	0.595				

4TW60011-2A (7/15)

FW.10	Max.		Med.		Min.	
	ESP	Power input	Current	Power input	Current	Power input
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	244	1.065	169	0.780	109	0.543
10	240	1.048	165	0.753	108	0.528
20	232	1.010	160	0.735	106	0.513
30	222	0.985	155	0.711	105	0.500
40	214	0.960	151	0.690	104	0.495
50	207	0.925	147	0.673	102	0.485
60	199	0.900	143	0.656	96	0.453
70	192	0.872	139	0.636		
80	188	0.847	135	0.615		
90	183	0.820	129	0.591		
100	176	0.799				

4TW60011-2A (8/15)

SYMBOLS

ESP: External static pressure

4 Capacity tables

4 - 7 Power consumption - 4-pipe

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FW.01	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	37	0.170	28	0.130	21	0.100
10	37	0.160	26	0.120	21	0.090
20	35	0.150	25	0.110	20	0.088
30	35	0.150	24	0.110		
45	34	0.140				
50	33	0.140				

4TW60011-2A (9/15)

FW.02	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	53	0.240	36	0.160	24	0.110
10	52	0.235	32	0.142	21	0.096
20	48	0.217	31	0.138	21	0.096
30	46	0.208	31	0.138	20	0.092
40	46	0.208	30	0.133		

4TW60011-2A (10/15)

FW.03	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	56	0.252	43	0.200	29	0.138
10	55	0.248	42	0.195	29	0.134
20	53	0.239	41	0.191	29	0.131
30	53	0.239	41	0.191	28	0.130
40	52	0.234	40	0.186		
50	51	0.230				

4TW60011-2A (11/15)

FW.04	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	98	0.440	61	0.287	38	0.192
10	94	0.422	59	0.276	37	0.187
20	92	0.413	57	0.259	36	0.182
30	90	0.404	55	0.254	34	0.172
40	88	0.395	53	0.242	31	0.157
50	85	0.382	50	0.228		
60	81	0.364	45	0.211		
70	76	0.341				
75	74	0.332				

4TW60011-2A (12/15)

SYMBOLS

ESP: External static pressure

4 Capacity tables

4 - 7 Power consumption - 4-pipe

FW.06	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	98	0.430	68	0.310	47	0.220
10	96	0.421	67	0.305	45	0.211
20	94	0.412	64	0.292	44	0.206
30	91	0.399	62	0.283	43	0.201
40	90	0.395	61	0.278	42	0.197
50	89	0.391	59	0.269		
60	86	0.377	56	0.255		
70	82	0.360				

4TW60011-2A (13/15)

FW.08	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	182	0.802	127	0.574	86	0.393
10	178	0.780	124	0.560	83	0.385
20	174	0.761	121	0.547	82	0.377
30	169	0.741	118	0.532	81	0.371
40	166	0.721	116	0.522	80	0.363
50	161	0.698	114	0.509	78	0.354
60	157	0.680	111	0.497	76	0.343
70	153	0.662	108	0.482		
80	147	0.639	104	0.464		
90	142	0.620	101	0.453		
100	137	0.595				

4TW60011-2A (14/15)

FW.10	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	244	1.065	169	0.780	109	0.543
10	240	1.048	165	0.753	108	0.528
20	232	1.010	160	0.735	106	0.513
30	222	0.985	155	0.711	105	0.500
40	214	0.960	151	0.690	104	0.495
50	207	0.925	147	0.673	102	0.485
60	199	0.900	143	0.656	96	0.453
70	192	0.872	139	0.636		
80	188	0.847	135	0.615		
90	183	0.820	129	0.591		
100	176	0.799				

4TW60011-2A (15/15)

SYMBOLS

ESP: External static pressure

4 Capacity tables

4 - 8 Capacity correction factor

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FWV - FWL - FWM	ESP	10		20		30		40		50		60	
		F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2
FW.01	Fan speed	0.86	0.91	0.72	0.8	0.56	0.67	-	-	-	-	-	-
	Max.	0.78	0.84	0.56	0.65	0.33	0.41	-	-	-	-	-	-
	Med.	0.71	0.77	0.35	0.4	-	-	-	-	-	-	-	-
FW.02	Min.	0.85	0.89	0.73	0.78	0.61	0.67	0.5	0.57	0.4	0.47	0.31	0.36
	Max.	0.82	0.85	0.63	0.68	0.45	0.5	0.27	0.3	-	-	-	-
	Med.	0.78	0.8	0.55	0.59	0.35	0.37	-	-	-	-	-	-
FW.03	Min.	0.89	0.91	0.77	0.81	0.64	0.69	0.51	0.56	0.36	0.4	0.18	0.21
	Max.	0.82	0.84	0.64	0.67	0.47	0.5	0.29	0.32	-	-	-	-
	Med.	0.75	0.77	0.48	0.5	-	-	-	-	-	-	-	-
FW.04	Min.	0.93	0.95	0.85	0.89	0.77	0.82	0.67	0.73	0.56	0.63	0.42	0.5
	Max.	0.91	0.93	0.81	0.84	0.71	0.75	0.59	0.64	0.46	0.51	0.31	0.35
	Med.	0.84	0.86	0.68	0.71	0.52	0.55	0.34	0.36	-	-	-	-
FW.06	Min.	0.93	0.95	0.85	0.89	0.77	0.81	0.67	0.73	0.56	0.62	0.41	0.47
	Max.	0.92	0.93	0.82	0.86	0.73	0.77	0.61	0.66	0.48	0.53	0.31	0.36
	Med.	0.86	0.88	0.71	0.74	0.56	0.59	0.4	0.43	0.23	0.25	-	-
FW.08	Min.	0.96	0.96	0.91	0.92	0.86	0.88	0.8	0.83	0.74	0.78	0.67	0.71
	Max.	0.95	0.96	0.9	0.92	0.85	0.87	0.79	0.81	0.73	0.76	0.65	0.69
	Med.	0.91	0.92	0.81	0.82	0.71	0.73	0.6	0.62	0.49	0.51	0.37	0.39
FW.10	Min.	0.96	0.97	0.92	0.93	0.87	0.89	0.82	0.85	0.77	0.81	0.72	0.76
	Max.	0.95	0.96	0.9	0.91	0.84	0.86	0.78	0.81	0.71	0.75	0.64	0.68
	Med.	0.92	0.93	0.84	0.86	0.76	0.78	0.67	0.69	0.57	0.6	0.47	0.5

	FW.01		FW.02		FW.03		FW.04		FW.06		FW.08		FW.10	
	medium	low	medium	low	medium	low	medium	low	medium	low	medium	low	medium	low
Total cooling capacity	0.81	0.68	0.87	0.69	0.81	0.60	0.76	0.58	0.81	0.66	0.79	0.59	0.78	0.52
Sensible cooling capacity	0.81	0.66	0.87	0.70	0.81	0.60	0.78	0.57	0.80	0.64	0.78	0.58	0.77	0.51
Heating capacity - 2 pipe	0.81	0.66	0.83	0.68	0.81	0.59	0.76	0.58	0.82	0.66	0.79	0.61	0.78	0.52
Heating capacity - 4 pipe	0.85	0.73	0.89	0.78	0.87	0.71	0.83	0.69	0.88	0.76	0.86	0.72	0.85	0.66

4TW60018-1

Conditions

Cooling
 Air: 27°C DB - 19°C WB - Water: entering 7°C - leaving 12°C
 Heating 2-pipe
 Air: 20°C Water: entering 50°C water flow as for cooling
 Heating 4-pipe
 Air: 20°C Water: entering 70°C - leaving 60°C

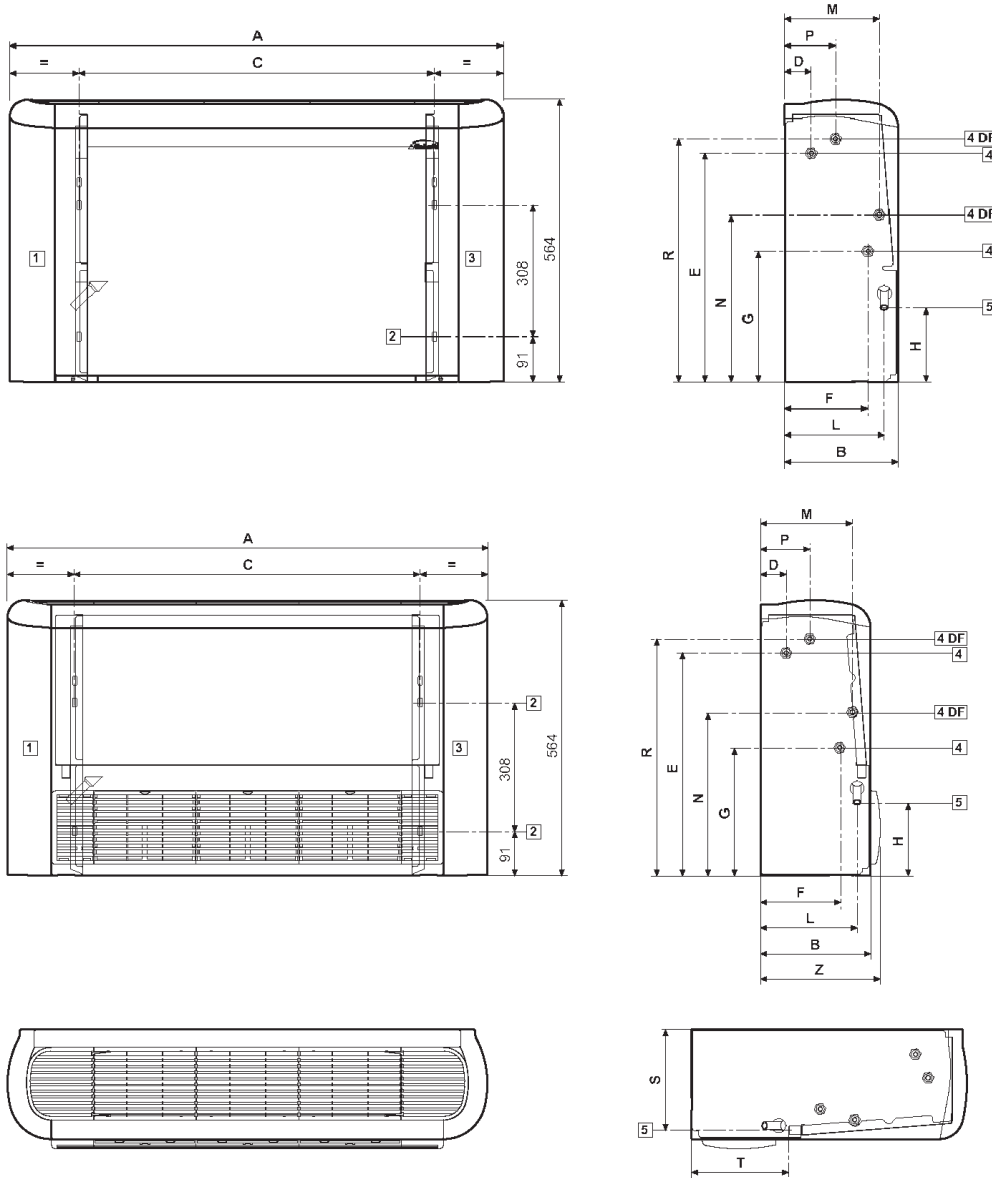
F1 = correction factor for air flow
 F2 = correction factor for capacities

Correction factors are based on an average value. This can cause deviation depending on conditions used. The Fan Coil Selection software will provide an accurate result at all conditions.

5 Dimensional drawing

5 - 1 Dimensional drawing

FWV - FWL



	A	B	C	D	E	F	G	H	L	M	N	P	R	S	T	Z
FWV+FWL 01+02	774	226	498	51	458	163	263	149	198	187	335	99	486	208	198	246
FWV+FWL 03	984	226	708	51	458	163	263	149	198	187	335	99	486	208	198	246
FWV+FWL 04+06	1194	226	918	51	458	163	263	149	198	187	335	99	486	208	198	246
FWV+FWL 08+10	1404	251	1128	48	497	185	259	155	220	195	348	120	478	234	208	271

Legend

- 1 Clear space for hydraulic connections (*)
- 2 Slots for wall / ceiling mounting 9x20mm
- 3 Clear space for electric connections (*)
- 4 Hydraulic connections (4DF = 4 pipe system)
- 5 Condensate drainage for vertical installation
- 6 Air outlet for concealed models
- 7 Air suction for concealed models
- 8 Condensate drainage for horizontal installation
- 9 Air outlet
- 10 Air inlet

Hydraulic connections

Standard heat exchanger: connection female

FW01	FW02	FW03	FW04	FW06	FW08	FW10
1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"

Additional heat exchanger: connection female

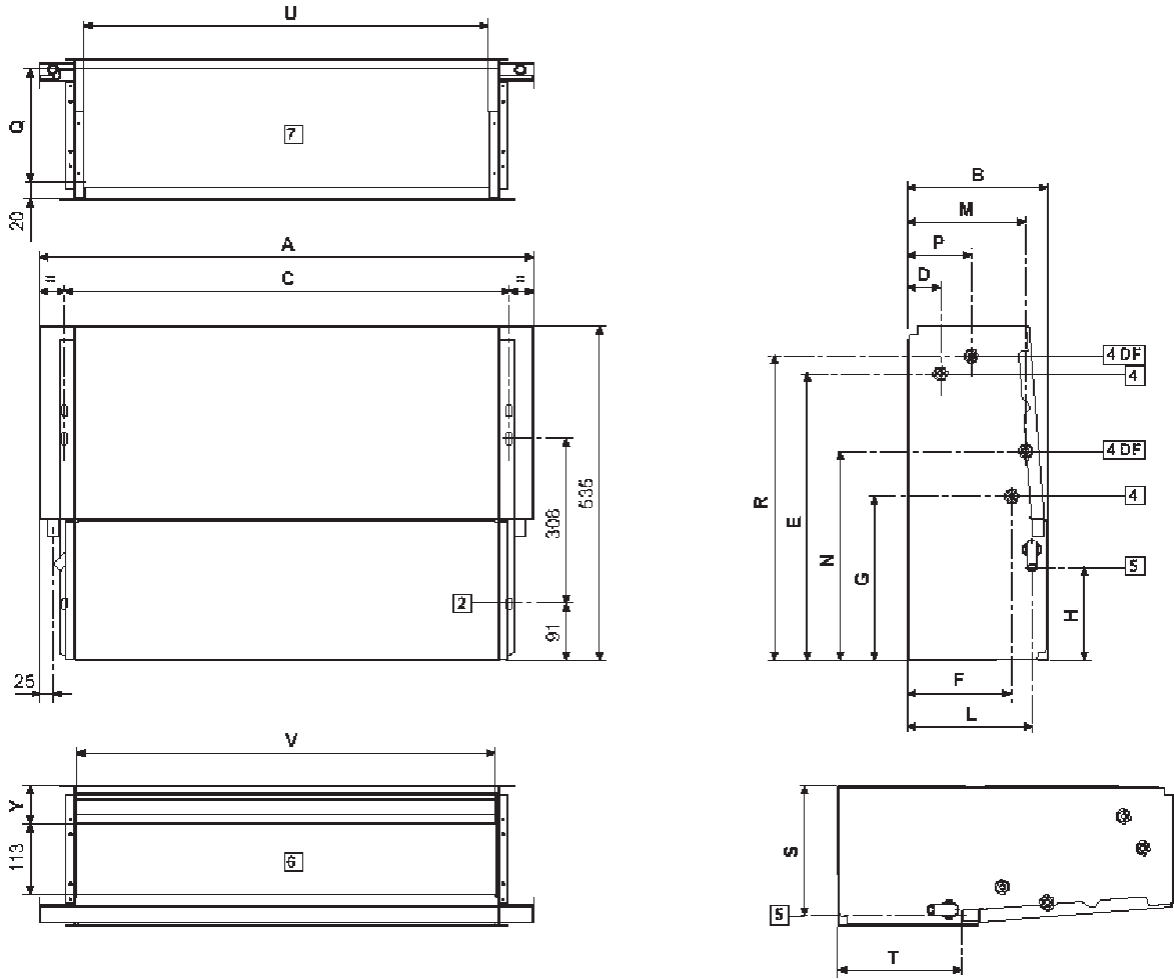
FW01	FW02	FW03	FW04	FW06	FW08	FW10
1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"

(*) Indications applicable to fan coils with hydraulic connections on the left side; in case of right side connections the indications for "clear space" are reversed.

5 Dimensional drawing

5 - 1 Dimensional drawing

FWM



	A	B	C	D	E	F	G	H	L	M	N	P	Q	R	S	T	U	V	W
FWM 01+02	584	224	498	51	458	163	263	149	198	187	335	99	189	486	208	198	436	464	61
FWM 03	794	224	708	51	458	163	263	149	198	187	335	99	189	486	208	198	646	674	61
FWM 04+06	1004	224	918	51	458	163	263	149	198	187	335	99	189	486	208	198	856	884	61
FWM 08+10	1214	249	1128	48	497	185	259	155	220	195	348	120	215	478	234	208	1066	1094	67

Required installation space

Keep at least 100 mm of free space at air inlet for a proper air suction and an easy removal of the filter.
For ducted units the outlet/inlet grill surface must be at least equal to the outlet/inlet surface of the unit to avoid extra noise and strong performance reduction.

Legend

- 1 Clear space for hydraulic connections (*)
- 2 Slots for wall / ceiling mounting 9x20mm
- 3 Clear space for electric connections (*)
- 4 Hydraulic connections (4DF = 4 pipe system)
- 5 Condensate drainage for vertical installation
- 6 Air outlet for concealed models
- 7 Air suction for concealed models
- 8 Condensate drainage for horizontal installation
- 9 Air outlet
- 10 Air inlet

Hydraulic connections

Standard heat exchanger: connection female

FW01	FW02	FW03	FW04	FW06	FW08	FW10
1/2"	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"

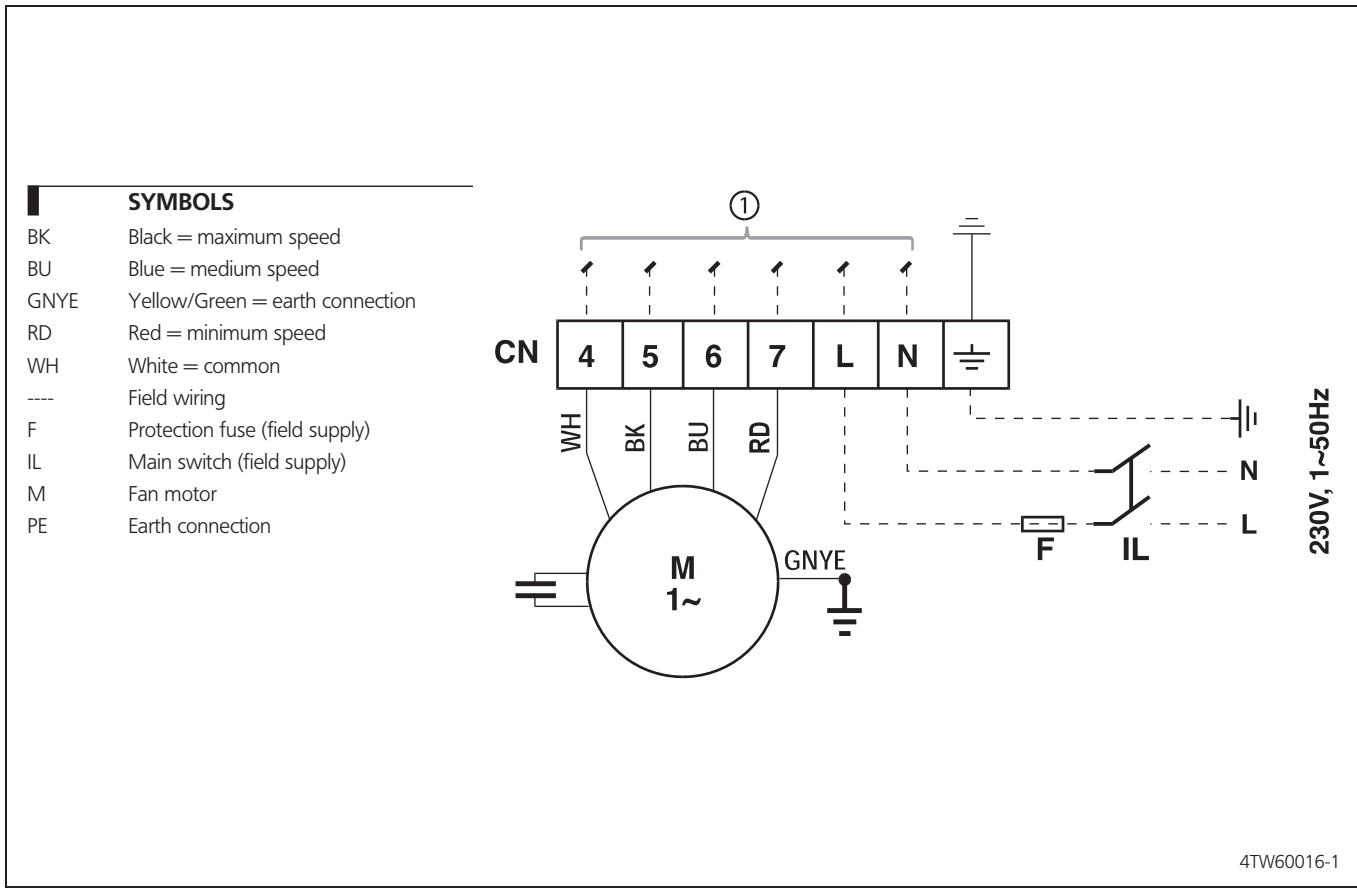
Additional heat exchanger: connection female

FW01	FW02	FW03	FW04	FW06	FW08	FW10
1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"

(*) Indications applicable to fan coils with hydraulic connections on the left side; in case of right side connections the indications for "clear space" are reversed.

6 Wiring diagram

6 - 1 Wiring diagram



7 Sound data

7 - 1 Sound level data

1
7

Sound power level and Spectrum								
FW01 TN/TV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	24.8	39.1	41.7	38.4	33.7	21.6	15.6	45
Med.	19.4	34.1	35.9	30.3	24.3	15.8	15.4	39
Min.	13.6	29.7	29.0	22.0	16.2	15.2	15.2	33
FW02 TN/TV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	28.8	42.7	45.8	43.6	39.3	29.9	17.2	50
Med.	22.9	37.8	40.7	36.2	30.3	19.6	15.4	44
Min.	18.0	33.1	35.4	29.1	22.7	15.5	15.3	38
FW03 TN/TV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	27.8	40.9	43.5	40.4	34.0	23.4	18.0	47
Med.	23.0	36.0	37.9	33.0	25.7	18.4	16.6	41
Min.	15.6	28.8	28.8	22.0	17.2	16.0	15.6	33
FW04 TN/TV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	31.7	45.4	47.7	45.4	41.7	32.0	19.2	52
Med.	23.6	37.6	39.8	34.2	28.7	21.6	16.5	43
Min.	17.8	31.8	31.5	24.4	17.2	16.5	15.4	35
FW06 TN/TV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	36.1	49.3	51.4	50.6	47.4	39.1	24.7	56
Med.	28.9	43.0	45.2	42.3	38.1	28.1	17.9	49
Min.	23.7	37.4	39.8	34.4	28.6	21.9	16.8	43
FW08 TN/TV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	40.0	54.2	55.8	54.7	52.8	46.4	35.2	61
Med.	33.6	47.9	49.2	47.7	45.0	36.3	23.9	54
Min.	27.7	41.7	42.1	40.3	35.5	25.8	21.1	47
FW10 TN/TV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	44.5	58.0	60.1	60.4	58.4	53.6	46.3	66
Med.	38.5	51.7	54.8	53.5	51.5	45.3	34.7	59
Min.	28.8	43.2	44.8	42.6	39.1	29.6	21.9	49
Conditions of measurements	in case of (M) models the sound power is calculated WITHOUT any additional inlet or outlet grill or plenum!							

4TW60017-1A (Sheet 1/2)

To calculate the sound pressure you must define some conditions and use this formula

$$L_p = L_w - 10 \times \text{Log}_{10} \left(\frac{4\pi \times d^2}{Q} \right)$$

Where:

Q = direction factor: is Q=4 if the FCU is installed near 2 walls (vertical or floor-ceiling), Q=2 if the FCU is installed near 1 wall (at floor or ceiling but faraway the 2nd wall)

d = distance (mt) from the sound source and the measure point

LP = Sound pressure (dBA)

Lw = Sound power (dBA)

7 Sound data

7 - 1 Sound level data

Sound power level and Spectrum								
FW01 FN/FV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	24.8	39.1	41.7	38.4	33.7	21.6	15.6	45
Med.	19.4	34.1	35.9	30.3	24.3	15.8	15.4	39
Min.	13.6	29.7	29.0	22.0	16.2	15.2	15.2	33
FW02 FN/FV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	28.8	42.7	45.8	43.6	39.3	29.9	17.2	50
Med.	22.9	37.8	40.7	36.2	30.3	19.6	15.4	44
Min.	18.0	33.1	35.4	29.1	22.7	15.5	15.3	38
FW03 FN/FV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	27.8	40.9	43.5	40.4	34.0	23.4	18.0	47
Med.	23.0	36.0	37.9	33.0	25.7	18.4	16.6	41
Min.	15.6	28.8	28.8	22.0	17.2	16.0	15.6	33
FW04 FN/FV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	31.7	45.4	47.7	45.4	41.7	32.0	19.2	52
Med.	23.6	37.6	39.8	34.2	28.7	21.6	16.5	43
Min.	17.8	31.8	31.5	24.4	17.2	16.5	15.4	35
FW06 FN/FV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	36.1	49.3	51.4	50.6	47.4	39.1	24.7	56
Med.	28.9	43.0	45.2	42.3	38.1	28.1	17.9	49
Min.	23.7	37.4	39.8	34.4	28.6	21.9	16.8	43
FW08 FN/FV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	39.0	53.2	54.8	53.7	51.8	45.4	34.2	60
Med.	33.6	47.9	49.2	47.7	45.0	36.3	23.9	54
Min.	26.7	40.7	41.1	39.3	34.5	24.8	20.1	46
FW10 FN/FV								
Sound Power Levels dB(A)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	44.5	58.0	60.1	60.4	58.4	53.6	46.3	66
Med.	38.5	51.7	54.8	53.5	51.5	45.3	34.7	59
Min.	28.8	43.2	44.8	42.6	39.1	29.6	21.9	49
Conditions of measurements	in case of (M) models the sound power is calculated WITHOUT any additional inlet or outlet grill or plenum!							

4TW60017-1A (Sheet 2/2)

To calculate the sound pressure you must define some conditions and use this formula

$$L_p = L_w - 10 \times \log_{10} \left(\frac{4\pi \times d^2}{Q} \right)$$

Where:

Q = direction factor: is Q=4 if the FCU is installed near 2 walls (vertical or floor-ceiling), Q=2 if the FCU is installed near 1 wall (at floor or ceiling but faraway the 2nd wall)

d = distance (m) from the sound source and the measure point

LP = Sound pressure (dBA)

Lw = Sound power (dBA)

8 Installation

8 - 1 Installation method

Fan coil units should be installed in a position where they heat and cool the room evenly, on walls or ceilings that can bear their weight. Fit any accessories on the standard unit before installing it. Read the relevant technical sheets for the installation and use of the accessories. Keep free space around the fan coil to allow proper operation and ordinary and extraordinary maintenance (see the "9. Dimensional drawings") Provide a panel to reach the unit in case of recessed mounting (Concealed models). Install the remote control panel, if any, in a position that can easily be reached by the user to set the functions and that is suitable for the proper detection of the temperature, if provided.

Therefore avoid:

- positions directly exposed to sunlight;
- positions exposed to hot or cold draughts;
- obstacles preventing the proper temperature detection

If the system is shut down during the winter months, drain off the water from the system to prevent damage due to freezing; if antifreeze solutions are used, check the freezing point using the table shown on technical manual.

Keep at least 100 mm of free space at air inlet for a proper air suction and an easy removal of the filter.

For ducted units the outlet/inlet grill surface must be at least equal to the outlet/inlet surface of the unit to avoid extra noise and strong performance reduction.

BEFORE THE INSTALLATION

Installation and maintenance should be carried out by technical personnel qualified for this type of machine, in compliance with current safety regulations.

For installation and use of possible accessories please refer to the pertinent technical sheets.

In choosing where to install the unit, comply with the following points:

- the heating unit should not be placed immediately under a socket
 - do not install the unit in rooms where inflammable gases are present
 - do not let water is sprayed directly on the unit
 - install the unit on ceilings or walls that bear its weight. Leave enough space all around for proper operation and maintenance of the unit.
- Keep the unit in its packaging until it is ready to be installed, to prevent dust getting inside it.

INSTALLATION WARNING:

On the fan coil install a switch (IL) and/or all remote controls in a position out of the reach of persons who are in a bathtub or shower.

In case of ceiling-mounted models, check that the installation height does not exceed the maximum height shown in 7. Dimensional drawings in order to avoid excessive hot air stratification in the upper part of the room; in case of greater installation heights we suggest to proceed with the back suction from the lower part of the room. The installation heights shown in the figure refer to the maximum running speed.

Carry out the hydraulic connections to the heat exchanger and in case of cooling operation, to the water drainage system. We suggest to provide for the water inlet from the bottom side of the heat exchanger and the outlet on the upper side. Bleed the air from the heat exchanger operating on the air-vent valves (10 hexagon wrench) located beside the water connections of the heat exchanger. For a better water drainage lean the drain pipe downwards at least 3 cm/m avoiding loops or narrowing on its way.

INSTALLATION FOR THE CONCEALED CEILING MODEL

The air outlets should not be placed immediately under a socket. For the concealed ceiling model, perform the connection between the fan coil and the ducts, and place damping material between the duct and the unit. The ducts, in particular the outlet ones, must be insulated. In order to avoid air back suction on the fan coil, keep a minimum distance between the air outlet and recovered air flow as shown in installation manual of the unit. The minimum installation height should not be lower than 1.8 metres from floor level. Provide for an inspection port to the unit.

8 Installation

8 - 1 Installation method

ELECTRICAL CONNECTIONS

Carry out the electrical wiring after having turned the power off in compliance with the relevant local and national regulations following the relevant wiring diagram.

Check that the power supply corresponds to the rated power reported on the unit nameplate.

Each fan coil 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).

USE

To use the fan coil unit, refer to the instructions of the control panel, available as accessory.

Air outlet grids on the cover cabinet (wall mounted and floor/ceiling mounted) can be turned 180° to direct the flow into the room or towards the wall on which the unit is mounted. The grids and the side doors are snapped into the cabinet. Before removing them in order to change their position, cut the power off and wear protective gloves.

MAINTENANCE

For safety reasons before carrying out any maintenance or cleaning operation, switch off the unit turning the selection switch to "Stop" and the power supply switch on position 0 (OFF).

Be careful during any maintenance operation; you could get injured by some metal parts; use protective work gloves. The fan coils do not require any particular maintenance operation: only the periodical cleaning of the air filter should be carried out. It is necessary to carry out a running in period of 100 hours in order to eliminate all mechanical friction. The starting up must be carried out at the maximum speed.

For good operation of the fan coils follow the instructions below:

- keep the air filter clean;
- do not pour liquids into the unit;
- do not introduce metal parts through the air outlet grid;
- keep the air inlet and outlet free at all times.

Each time the machine is turned on after being idle for a long period, ensure there is no air in the heat exchanger. Before using the unit for air conditions, check that:

- condensate drainage is performed correctly;
- the heat exchanger fins are not obstructed by deposits of dirt.

If necessary clean the fins with low pressure compressed air or steam without damaging them.

CLEANING

For safety reasons before carrying out any maintenance or cleaning operation switch off the unit turning the selection switch to "Stop" and the power supply switch on 0 (OFF).

Clean the filter at least once a month and in any case before using the unit (before the heating or the air conditioning season).

For cleaning the air filter proceed as follows (pictures see manual of units):

- Floor models: turn the screws 90°, which secure the filter to the cover cabinet, to 1/4 turn and remove the filter;
- Concealed models: reach the fan coil through the inspection panel and remove the filter, turning the locking brackets 90°;
- Floor ceiling: remove the air filters that are inside the intake grids located on the front panel of the cover cabinet;
- clean the filter with lukewarm water, or in case of dry dust, with compressed air;
- reassemble the filter after having dried it up

It is recommended to replace the air filter yearly, and to use original spare parts; the fan coil model is reported on the nameplate located on the internal part of the side panel of the unit.

To clean the unit cabinet proceed as follows

- use a soft cloth;
- do not pour any liquid on the unit, as this could cause electrical shocks or damage the components inside it;
- do not use any aggressive chemical solvents; do not use very hot water to clean the air outlet grid

Note: this is only based text and should be combined with manuals for relative pictures and additional information.

9 Operation range

Minimum water temperature	+5°C
Maximum water temperature	+95°C
Maximum operating pressure	10 bar
Minimum air inlet temperature	5°C
Maximum air inlet temperature	+43°C
Power supply	230V +-10% / 1~ / 50Hz

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10 Hydraulic performance

10 - 2 Water pressure drop curve evaporator heating 2-pipe

FWV / FWL / FWM							
Water flow l/h	Water pressure drop						
	FW..01	FW..02	FW..03	FW..04	FW..06	FW..08	FW..10
	kPa	kPa	kPa	kPa	kPa	kPa	kPa
50	0.71	0.41	0.19	0.11	0.1	0.05	0.05
100	2.44	1.42	0.66	0.36	0.35	0.16	0.20
200	8.25	4.81	2.25	1.23	1.21	0.56	0.67
300	16.84	9.81	4.6	2.51	2.46	1.14	1.37
400	27.92	16.27	7.63	4.17	4.09	1.9	2.29
500	41.33	24.09	11.3	6.18	6.06	2.82	3.39
600	56.93	33.19	15.57	8.51	8.35	3.89	4.68
800	94.32	55.02	25.82	14.12	13.84	6.44	7.75
1000	139.51	81.4	38.2	20.9	20.5	9.54	11.48
1500	-	165.77	77.83	42.61	41.8	19.46	23.42
2000	-	-	128.9	70.59	69.27	32.27	38.85
2500	-	-	-	104.41	102.47	47.75	57.50
3000	-	-	-	143.74	141.09	65.76	79.22
4000	-	-	-	-	-	108.92	131.28
5000	-	-	-	-	-	161.06	194.20

4TW60019-1A (Sheet 1/3)

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11-2 Water pressure drop curve evaporator heating 2-pipe

FWV / FWL / FWM							
Water flow l/h	Water pressure drop						
	FW..01	FW..02	FW..03	FW..04	FW..06	FW..08	FW..10
	kPa	kPa	kPa	kPa	kPa	kPa	kPa
50	0.61	0.36	0.17	0.09	0.09	0.04	0.04
100	2.02	1.19	0.56	0.31	0.31	0.14	0.17
200	6.72	3.94	1.86	1.02	1.01	0.47	0.58
300	13.6	7.97	3.75	2.07	2.04	0.96	1.16
400	22.45	13.14	6.18	3.41	3.36	1.57	1.91
500	33.14	19.39	9.12	5.02	4.95	2.32	2.81
600	45.55	26.64	12.53	6.89	6.79	3.18	3.86
800	75.27	44.01	20.69	11.38	11.2	5.24	6.36
1000	111.15	64.97	30.54	16.79	16.52	7.72	9.37
1500	-	-	62.01	34.06	33.49	15.64	18.96
2000	-	-	102.52	56.28	55.34	25.84	31.29
2500	-	-	-	83.12	81.71	38.15	46.17
3000	-	-	-	-	112.36	52.45	63.45
4000	-	-	-	-	-	86.7	104.85
5000	-	-	-	-	-	-	154.82

4TW60019-1A (Sheet 2/3)

10 Hydraulic performance

10 - 2 Water pressure drop curve evaporator heating 2-pipe

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FWV / FWL / FWM							
Water flow l/h	Water pressure drop						
	FW..01	FW..02	FW..03	FW..04	FW..06	FW..08	FW..10
	kPa	kPa	kPa	kPa	kPa	kPa	kPa
50	0.68	0.68	0.26	0.23	0.21	0.28	0.28
100	2.27	2.78	0.94	0.93	0.7	1.05	0.95
200	7.56	9.25	3.12	3.1	2.33	3.46	3.14
300	15.3	18.74	6.32	6.26	4.7	6.97	6.32
400	25.27	30.94	10.42	10.32	7.75	11.46	10.39
500	37.29	45.66	15.37	15.21	11.42	16.86	15.29
600	51.26	62.76	21.12	20.89	15.67	23.14	20.98
800	84.72	103.72	34.88	34.47	25.86	38.14	34.56
1000	-	-	51.49	50.87	38.16	56.23	50.94
1500	-	-	-	103.2	77.4	113.95	103.2

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1 Specifications

1-1 Nominal capacity and nominal input			FWD04AATN	FWD06AATN	FWD08AATN	FWD10AATN	FWD012AATN	FWD016AATN	FWD018AATN	
Power Input	High		W	234	349	443	443	714	1197	1197
	Medium		W	173	294	336	336	473	966	966
	Low		W	130	247	261	261	328	704	704
Cooling capacity	Total capacity	High	kW	3.90	6.20	7.80	8.82	11.90	16.40	18.30
	Sensible capacity	High	kW	3.08	4.65	6.52	7.16	9.36	12.80	14.10
Heating capacity (2-pipe)	High		kW	4.05	7.71	9.43	10.79	14.45	19.81	21.92

1-1 Nominal capacity and nominal input			FWD04AAFN	FWD06AAFN	FWD08AAFN	FWD10AAFN	FWD012AAFN	FWD016AAFN	FWD018AAFN	
Power Input	High		W	234	349	443	443	714	1197	1197
	Medium		W	173	294	336	336	473	966	966
	Low		W	130	247	261	261	328	704	704
Cooling capacity	Total capacity	High	kW	3.90	6.20	7.80	8.82	11.90	16.40	18.30
	Sensible capacity	High	kW	3.08	4.65	6.52	7.16	9.36	12.80	14.10
Heating capacity (4-pipe)	High		kW	4.49	6.62	9.21	9.21	15.86	21.15	21.15

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1 Specifications

1-2 Technical Specifications				FWD04AATN	FWD06AATN	FWD08AATN	FWD10AATN	FWD012AATN	FWD016AATN	FWD018AATN
Dimensions	Unit	Height	mm	280	280	280	280	352	352	352
		Width	mm	754	964	1174	1174	1174	1384	1384
		Depth	mm	559	559	559	559	718	718	718
Weight	Machine weight	kg	33	41	47	49	65	77	80	
Casing	Material	Galvanised sheet metal								
	Colour	Not painted (galvanised)								
Sound level	Sound power	High	dBA	66	69	72	72	74	78	78
		Medium	dBA	61	63	67	67	67	73	73
		Low	dBA	54	59	62	62	60	69	69
Water flow	Cooling	l/h	674	1064	1339	1514	2056	2833	3140	
	Heating	l/h	674	1064	1339	1514	2056	2833	3140	
Water pressure drop	Cooling	kPa	17	24	24	16	26	34	45	
	Heating	kPa	14	20	20	13	21	28	37	
Fan	Type	Centrifugal multi-blade, double suction								
	Air flow rate	High	m ³ /h	800	1250	1600	1600	2200	3000	3000
	Available pressure	High	Pa	66	58	68	64	97	145	134
	Speed	3 steps : high, medium, low								
	Quantity			1	2	2	2	2	2	2
Motor	Type	Closed induction, B class insulation, winding thermal cut-out								
Standard heat exchanger	Rows	mm	3	3	3	4	3	4	5	
	Stages	mm	10	10	10	10	14	14	14	
	Fin pitch	mm	2.1	1.8	2.1	2.1	2.1	2.1	2.1	
	Face area	m ²	0.138	0.1905	0.243	0.243	0.3402	0.4137	0.4137	
	Water volume	l	1.06	1.42	1.79	2.38	2.5	4.02	5.03	
Air filter	Acrylic - Filtering class EU2									
Insulation material	Class 1 self-extinguishing									
Vibration insulation	Rubber ring for fan motor									
Water connections	Std. heat exchanger	inch	3/4	3/4	3/4	3/4	1	1	1	
Drain		mm	16	16	16	16	16	16	16	
Notes	Rating conditions cooling 2 pipe: air 27									
	Rating conditions heating 2 pipe : air 20									
	Maximum Power input at 0 Pa ESP									
	Sound level at 0 Pa ESP									

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1 Specifications

1-2 Technical Specifications				FWD04AAFN	FWD06AAFN	FWD08AAFN	FWD10AAFN	FWD012AAFN	FWD016AAFN	FWD018AAFN
Dimensions	Unit	Height	mm	280	280	280	280	352	352	352
		Width	mm	754	964	1174	1174	1174	1384	1384
		Depth	mm	559	559	559	559	718	718	718
Weight	Machine weight		kg	35	43	50	52	71	83	86
Casing	Material	Galvanised sheet metal								
	Colour	Not painted (galvanised)								
Sound level	Sound power	High	dBA	66	69	72	72	74	78	78
		Medium	dBA	61	63	67	67	67	73	73
		Low	dBA	54	59	62	62	60	69	69
Water flow	Cooling		l/h	674	1064	1339	1514	2056	2833	3140
	Heating		l/h	349	581	808	808	1392	1856	1856
Water pressure drop	Cooling		kPa	17	24	24	16	26	34	45
	Heating		kPa	9	15	13	13	12	16	16
Fan	Type	Centrifugal multi-blade, double suction								
	Air flow rate	High	m ³ /h	800	1250	1600	1600	2200	3000	3000
	Available pressure	High	Pa	63	53	63	59	92	138	128
	Speed	3 steps : high, medium, low								
	Quantity			1	2	2	2	2	2	2
Motor	Type	Closed induction, B class insulation, winding thermal cut-out								
Standard heat exchanger	Rows		mm	3	3	3	4	3	4	5
	Stages		mm	10	10	10	10	14	14	14
	Fin pitch		mm	2.1	1.8	2.1	2.1	2.1	2.1	2.1
	Face area		m ²	0.138	0.1905	0.243	0.243	0.3402	0.4137	0.4137
	Water volume		l	1.06	1.42	1.79	2.38	2.50	4.02	5.03
Additional heat exchanger	Rows		mm	1	1	1	1	2	2	2
	Stages		mm	10	10	10	10	12	12	12
	Fin pitch		mm	1.8	1.8	1.8	1.8	2.1	2.1	2.1
	Face area		m ²	0.138	0.1905	0.243	0.243	0.3402	0.4137	0.4137
	Water volume		l	0.35	0.47	0.59	0.59	1.42	1.72	1.72
Air filter	Acrylic - Filtering class EU2									
Insulation material	Class 1 self-extinguishing									
Vibration insulation	Rubber ring for fan motor									
Water connections	Std. heat exchanger		inch	3/4	3/4	3/4	3/4	1	1	1
Drain			mm	16	16	16	16	16	16	16
Notes	Rating conditions 4-pipe: air 27°CDB - 19°CWB - entering water 7°C - leaving water 12°C at nominal air flow and ESP									
	Rating conditions 4-pipe: air 20°CDB - entering water 70°C - leaving water 60°C at nominal air flow and ESP									
	Maximum Power input at 0 Pa ESP									
	Sound level at 0 Pa ESP									

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1 Specifications

1-3 Electrical Specifications			FWD04AATN	FWD06AATN	FWD08AATN	FWD10AATN	FWD12AATN	FWD016AATN	FWD018AATN
Current input	High	A	0.95	1.58	1.97	1.97	3.21	5.37	5.37
	Medium	A	0.74	1.39	1.52	1.52	2.08	4.38	4.38
	Low	A	0.57	1.18	1.20	1.20	1.50	3.26	3.26
Required power supply	V / f / Hz	230/1/50							
Required fuses	A	2	2	2	4	4	6	6	
Required wire section	mm ²	1	1	1.5	1.5	2	2.5	2.5	
Notes		Current input at 0 Pa ESP							
		For more details concerning conditional connections, see http://www.daikineurope.com , select E-data Books. Finally click on the document title of your choice							

1-3 Electrical Specifications			FWD04AAFN	FWD06AAFN	FWD08AAFN	FWD10AAFN	FWD12AAFN	FWD016AAFN	FWD018AAFN
Current input	High	A	0.95	1.58	1.97	1.97	3.21	5.37	5.37
	Medium	A	0.74	1.39	1.52	1.52	2.08	4.38	4.38
	Low	A	0.57	1.18	1.20	1.20	1.50	3.26	3.26
Required power supply	V / f / Hz	230/1/50							
Required fuses	A	2	2	2	4	4	6	6	
Required wire section	mm ²	1	1	1.5	1.5	2	2.5	2.5	
Notes		Current input at 0 Pa ESP							
		For more details concerning conditional connections, see http://www.daikineurope.com , select E-data Books. Finally click on the document title of your choice							

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2 Electrical data

FWD		Power input electric heater	Current Absorption	Power supply
Unit	Electric heater	kW	A	V / ~ / Hz
FWD04	EDEHS04A6	2.0	8.7	230V +- 10% / 1~ / 50Hz
FWD06	EDEHS06A6	3.0	4.3	400V +- 10% / 3~ / 50Hz
	EDEHB06A6	6.0	8.7	
FWD08	EDEHS10A6	4.5	6.5	400V +- 10% / 3~ / 50Hz
	EDEHB10A6	9.0	13.0	
FWD10	EDEHS10A6	4.5	6.5	400V +- 10% / 3~ / 50Hz
	EDEHB10A6	9.0	13.0	
FWD12	EDEHS12A6	4.5	6.5	400V +- 10% / 3~ / 50Hz
	EDEHB12A6	9.0	13.0	
FWD16	EDEHS18A6	9.0	13.0	400V +- 10% / 3~ / 50Hz
	EDEHB18A6	12.0	17.3	
FWD18	EDEHS18A6	9.0	13.0	400V +- 10% / 3~ / 50Hz
	EDEHB18A6	12.0	17.3	

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3 Options

FWD

	FWD	04	06	08	10	12	16	18	Notes/remarks
Electric heater	EDEH(S)(B)..A6	EDEH04A6	EDEH(S)(B)06A6	EDEH(S)(B)10A6		EDEH(S)(B)12A6	EDEH(S)(B)18A6		Requires electronic Controller
2-pipe ON-OFF 3 way motor driven valve complete with mounting kit	ED2MV..A6	ED2MV04A6	ED2MV10A6			ED2MV12A6	ED2MV18A6		For FWD 12 16 18 only motor valve (piping not included)
4-pipe ON-OFF 3 way motor driven valve complete with mounting kit	ED4MV..A6	ED4MV04A6	ED4MV10A6			2 x ED2MV12A6	2 x ED2MV18A6		For FWD 12 16 18 only motor valve (piping not included)
Fan stop thermostat	YFSTA6	YFSTA6							
Motorised fresh air intake louvers	EDMFA..A6	EDMFA04A6	EDMFA06A6	EDMFA10A6		EDMFA12A6	EDMFA18A6		
Auxiliary drain pan (vertical models)	EDDPV..A6	EDDPV10A6				EDDPV18A6			
Fcu Controller - Standard version	FWEC1A	FWEC1A							water probe included
Fcu Controller - Advanced version	FWEC2A	FWEC2A							water probe included
Fcu Controller - Advanced plus version	FWEC3A	FWEC3A							water probe included
Fcu temperature sensor kit	FWTСКА	FWTСКА							
Fcu relative humidity sensor kit	FWHСКА	FWHСКА							
Power interface	EPIB6	EPIB6							
Master slave for connection of up to 4 units	EPIMSB6	EPIMSB6							

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FWD











Description	Electric heater	2-pipe ON-OFF 3 way motor driven valve complete with mounting kit	4-pipe ON-OFF 3 way motor driven valve complete with mounting kit	Fan stop thermostat	Motorised Fresh air intake louvers	Auxiliary drain pan (horizontal models)	Auxiliary drain pan (vertical models)	Fcu Controller - Standard version	Fcu Controller - Advanced version	Fcu Controller - Advanced plus version	Fcu temperature sensor kit	Fcu relative humidity sensor kit	Power interface	Master slave for connection up to 4 units
	EDEH(S)(B)..A6	ED2MV..A6	ED4MV..A6	YFSTA6	EDMFA..A6	EDDPV..A6	EDDPV..A6	FWEC1A	FWEC2A	FWEC3A	FWTСКА	FWHСКА	EPIB6	EPIMSB6
Electric heater	X				X	X	X	X	X	X	X	X	X	X
2-pipe ON-OFF 3 way motor driven valve complete with mounting kit	X	X			X	X	X	X	X	X	X	X	X	X
4-pipe ON-OFF 3 way motor driven valve complete with mounting kit			X		X	X	X	X	X	X	X	X	X	X
Fan stop thermostat				X	X	X							X	X
Motorised fresh air intake louvers	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Auxiliary drain pan (horizontal models)	X	X	X	X	X			X	X	X	X	X	X	X
Auxiliary drain pan (vertical models)	X	X	X	X	X			X	X	X	X	X	X	X
Fcu Controller - Standard version	X	X	X		X	X	X						X*	X*
Fcu Controller - Advanced version	X	X	X		X	X	X						X*	X*
Fcu Controller - Advanced plus version	X	X	X		X	X	X				X	X	X*	X*
Fcu temperature sensor kit	X	X	X		X	X	X	X	X	X		X	X	X
Fcu relative humidity sensor kit	X	X	X		X	X	X		X	X	X		X	X
Power interface	X	X	X	X	X	X	X	X*	X*	X*	X	X		X*
Master slave for connection of up to 4 units	X	X	X	X	X	X	X	X*	X*	X*	X	X	X*	

* = Power interface necessary only for FWD16 and FWD18

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4 Control systems

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	Cool/heat changeover			Options		Basic control functions		Control features		
										
2-pipe	X					X	X	X	X	
	X			X		X	X		X	
	X				X	X	X	X	X	
	X			X	X	X	X		X	
		X				X	X	X		
		X		X		X	X			
			X		X	X	X	X	X	X
4-pipe	X			X		X	X		X	
	X					X	X	X	X	
			X			X	X	X		X
			X	X		X	X		X	X



Manual cool/heat changeover.



Automatic cool/heat changeover based on water temperature.



Automatic cool/heat changeover based on air temperature.



Control of the 3-way/4pipe ON/OFF valve. The water valve shut-off once the desired temperature is reached.



The controller controls the electric heater as integration or replacement of the hot water heating system. When the operating mode selector switch is turned on "electric heater" and the electric heater is turned on, the fan runs continuously at medium speed. When the operating mode selector switch is turned to "electric heater" and the electric heater is turned on, the fan runs continuously at medium speed.



The fan speed can be set at one of the 3 speeds (low, medium or maximum) by turning the operation mode selector.



The fan speed is switched automatically based on the difference between the temperature set on the thermostat and the room temperature.



Optimised comfort cooling. When the fan coil has reached the desired setpoint, the fan will operate at medium speed and at regular intervals to ensure constant room temperature and lower sound.



The controller prevents the fan coil unit from operating in one mode, if the required water temperature is not achieved to operate in the selected mode.



The dead zone is a temperature interval close to the set temperature. When the air is warmer/cooler than the top/lower limit of the neutral zone, the cooling/heating mode is selected.

5 Capacity tables

5 - 1 Cooling capacity tables - 2-pipe / 4-pipe

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		22 - 16															
		6 - 11				7 - 12				8 - 13				9 - 14			
Model	Air flow m ³ /h	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa
FWD04	400	1410	1250	241	3	1240	1240	213	2	1150	1150	197	2	1050	1050	180	2
	600	1850	1720	317	5	1590	1590	273	4	1440	1440	247	3	1310	1310	226	2
	800	2370	2200	406	7	2000	2000	343	5	1790	1790	307	4	1570	1570	269	3
	800	2550	2290	437	5	2190	2190	376	4	2000	2000	343	3	1830	1830	314	3
	1000	3160	2780	542	7	2650	2650	455	5	2360	2360	405	4	2050	2050	352	3
FWD06	1250	3810	3320	653	10	3160	3160	543	7	2830	2830	486	6	2490	2490	427	5
	1200	3470	3470	595	6	3120	3120	535	5	2750	2750	472	4	2500	2500	429	3
	1400	3930	3930	674	7	3550	3550	609	6	3150	3150	541	5	2720	2720	468	4
	1600	4360	4360	748	9	3950	3950	677	7	3520	3520	604	6	3070	3070	528	5
	1200	3830	3830	657	4	3550	3550	610	3	3280	3280	563	3	3000	3000	515	2
FWD10	1400	4320	4320	742	5	3870	3870	663	4	3560	3560	612	3	3260	3260	560	3
	1600	4870	4870	835	6	4380	4380	751	5	3840	3840	660	4	3490	3490	600	3
	1600	5600	5080	961	7	4660	4660	799	5	4130	4130	709	4	3630	3630	624	3
	1900	6550	5940	1123	9	5380	5380	923	6	4810	4810	825	5	4200	4200	721	4
	2000	6840	6210	1174	10	6050	6050	1038	8	5420	5420	931	7	4770	4770	819	5
FWD16	2000	7760	6650	1331	9	5980	5980	1026	6	5350	5350	919	5	4780	4780	820	4
	2500	9350	8100	1604	13	7190	7190	1233	8	6470	6470	1111	7	5730	5730	984	5
	3000	10790	9460	1851	16	8280	8280	1421	10	7480	7480	1284	8	6660	6660	1144	7
	2000	9140	7440	1569	13	7490	6750	1286	9	6060	6060	1041	6	5430	5430	932	5
	2500	10930	9070	1875	18	9040	8290	1551	13	7280	7280	1250	9	6540	6540	1124	7
FWD18	3000	12570	10630	2156	23	10430	9750	1792	17	8400	8400	1443	11	7560	7560	1298	9

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5 Capacity tables

5 - 1 Cooling capacity tables - 2-pipe / 4-pipe

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Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		25 - 18						9 - 14					
		6 - 11			7 - 12			8 - 13			9 - 14		
Model	Air flow m ³ /h	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa
FWD04	400	2170	1620	371	6	1840	1490	317	5	1460	1350	252	3
	600	3010	2270	515	11	2590	2110	443	8	2110	1930	364	6
	800	3740	2860	641	16	3220	2660	554	12	2660	2450	457	9
	1000	4220	3070	724	12	3630	2840	623	9	2960	2580	508	6
FWD06	1250	5980	4330	1026	17	4340	3390	745	13	3580	3100	616	9
	1200	6020	4740	1032	15	5180	4020	889	17	4310	3690	740	13
	1400	6770	5400	1161	19	5840	5040	1004	14	4370	4370	749	9
	1600	7470	6040	1282	22	6470	5650	1109	17	4830	4830	828	10
FWD10	1200	6650	5130	1141	10	5640	4720	968	7	4260	4260	731	4
	1400	7570	5900	1300	12	6470	5460	1109	9	4870	4870	835	6
	1600	8440	6640	1447	15	7240	6170	1242	11	5450	5450	936	7
	1600	8930	6680	1530	16	7730	6200	1328	12	6380	5680	1098	9
FWD12	1900	10220	7720	1753	20	8860	7180	1519	16	7370	6610	1267	11
	2200	11420	8710	1958	24	9920	8120	1703	19	8280	7490	1422	14
	2000	11600	8520	1987	18	10180	7950	1746	15	8640	7340	1483	11
	2500	13770	10270	2362	25	12120	9610	2077	20	10330	8910	1775	15
FWD16	3000	15780	11930	2707	32	13890	11180	2383	25	11870	10410	2038	19
	2000	12920	9310	2218	25	11510	8720	1976	20	9990	8110	1714	15
	2500	15380	11280	2635	33	13700	10600	2351	27	11900	9880	2045	21
	3000	17650	13180	3028	42	15720	12400	2700	34	13670	11590	2347	27
FWD18	3000	17650	13180	3028	42	15720	12400	2700	34	13670	11590	2347	27
	2000	12920	9310	2218	25	11510	8720	1976	20	9990	8110	1714	15
	2500	15380	11280	2635	33	13700	10600	2351	27	11900	9880	2045	21
	3000	17650	13180	3028	42	15720	12400	2700	34	13670	11590	2347	27
4TW60222-1 (Sheet 2/7)													

5 Capacity tables

5 - 1 Cooling capacity tables - 2-pipe / 4-pipe

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		27 - 19															
		6 - 11				7 - 12				8 - 13				9 - 14			
Model	Air flow m ³ /h	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa
FWD04	400	2580	1870	443	8	2280	1750	392	7	1950	1620	335	5	1570	1480	270	3
	600	3560	2600	608	14	3150	2450	540	12	2720	2290	468	9	2250	2110	385	6
	800	4400	3270	756	21	3900	3080	674	17	3390	2890	583	13	2660	2660	457	9
	1000	5200	4180	1015	22	4430	3300	760	13	3830	3070	659	10	3160	2820	544	7
FWD06	1250	6970	4940	1195	29	6200	4650	1064	24	5380	4340	924	19	4500	4020	772	13
	1400	7970	5420	1217	20	6310	5110	1084	17	5460	4790	936	13	4230	4230	727	8
	1600	8790	6160	1368	25	7090	5820	1217	20	6150	5470	1055	16	4760	4760	817	10
	1800	9970	6760	1537	17	7950	6360	1364	13	6840	5930	1174	10	5340	5340	918	7
FWD10	1600	10490	7630	1800	21	8820	7160	1514	16	7640	6700	1310	12	5950	5950	1022	8
	1900	11970	8800	2056	26	10690	8290	1832	22	9310	7760	1598	17	7800	7200	1166	10
	2200	13370	9920	2293	32	11900	9360	2056	26	10410	8780	1786	20	8740	8170	1339	12
	2500	15950	11640	2736	32	14360	11010	2466	27	12670	10360	2178	21	10850	9670	1562	15
FWD12	3000	18260	13510	3136	41	16400	12800	2833	34	14520	12060	2491	27	12450	11290	2138	21
	2000	14790	10490	2538	31	13430	9930	2304	26	11990	9350	2059	21	10440	8740	1793	17
	2500	17610	12710	3020	42	15990	12050	2743	35	14270	11370	2448	29	12430	10660	2135	23
	3000	20150	14820	3456	53	18300	14100	3140	45	16370	13320	2812	37	14270	12520	2452	29

4TW60222-1 (Sheet 3/7)

5 Capacity tables

5 - 2 Capacity tables with glycol for process cooling applications

Cooling mode

Glycol percentage in weight	Freezing temperature (°C)	Capacity correction factor	Pressure drop correction factor
0	0	1	1.00
10	-4	0.93	1.09
20	-10	0.84	1.18
30	-16	0.76	1.27
40	-24	0.76	1.36

Heating mode

Glycol percentage in weight	Freezing temperature (°C)	Capacity correction factor	Pressure drop correction factor
0	0	1	1.00
10	-4	0.98	1.08
20	-10	0.97	1.11
30	-16	0.94	1.22
40	-24	0.91	1.33

4TW60228-1B

Correction factors are based on an average value (at rated water flow rate). This can cause deviation depending on conditions used. The Fan Coil Selection software will provide an accurate result at all conditions.

5 Capacity tables

5 - 3 Heating capacity tables - 2-pipe

Air temperature (°C) Water temperature (Entering °C - leaving °C)		20											
		50 - 45			60 - 50			70 - 60			90 - 70		
Model	Air flow m ³ /h	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa
FWD04TN	400	3010	526	9	3830	335	4	4970	436	6	6660	295	3
	600	4070	709	15	5160	450	7	6700	587	10	8940	396	5
	800	4990	871	22	6300	551	9	8200	720	15	10910	482	7
	1000	5760	1004	18	7320	641	8	9490	832	12	12690	562	6
	1250	6790	1181	23	8600	752	10	11170	979	16	14900	659	7
FWD06TN	1250	7960	1386	31	10050	878	13	13080	1147	21	17400	768	10
	1200	7920	1379	21	10030	878	9	13030	1145	14	17370	767	7
	1400	8830	1541	25	11170	976	11	14520	1274	17	19320	853	8
	1600	9690	1688	29	12220	1069	13	15920	1397	20	21150	932	9
FWD10TN	1200	8940	1559	14	11380	994	6	14730	1292	9	19730	871	4
	1400	10040	1750	17	12740	1112	7	16530	1451	11	22090	976	5
	1600	11080	1930	20	14040	1228	9	18230	1598	13	24330	1073	6
FWD12TN	1600	11760	2048	21	14960	1307	9	19380	1699	14	25930	1145	7
	1900	13350	2326	27	16930	1480	12	21970	1930	18	29340	1296	9
	2200	14830	2585	32	18770	1638	14	24400	2142	21	32520	1436	10
FWD16TN	2000	15010	2617	24	19180	1678	11	24740	2171	16	33240	1465	8
	2500	17750	3092	32	22600	1976	14	29220	2563	22	39140	1728	10
	3000	20270	3528	41	25760	2250	18	33350	2927	27	44570	1966	13
FWD18TN	2000	16300	2837	31	20970	1832	14	26890	2358	21	36350	1606	10
	2500	19430	3384	42	24930	2178	19	32040	2812	28	43180	1904	14
	3000	22340	3892	53	28590	2498	24	36810	3229	36	49510	2185	17

4TW60222-1 (Sheet 4/7)

5 Capacity tables

5 - 3 Heating capacity tables - 2-pipe

2
5

22

Air temperature (°C)		50 - 45			60 - 50			70 - 60			90 - 70		
Water temperature (Entering °C - leaving °C)		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
Model	Air flow	W	ℓ/h	kPa	W	ℓ/h	kPa	W	ℓ/h	kPa	W	ℓ/h	kPa
FWD04TN	400	2780	486	8	3590	313	4	4730	415	6	6410	283	3
	600	3760	655	13	4840	423	6	6380	560	9	8600	380	5
	800	4610	803	19	5910	517	8	7810	685	13	10500	463	6
	1000	5320	929	25	6870	624	11	9040	793	17	12230	540	7
	1250	6270	1091	32	8070	705	15	10630	933	23	14940	633	9
FWD06TN	1200	7340	1279	27	9430	824	12	12450	1092	19	16750	739	6
	1400	7310	1274	18	9420	823	8	12410	1089	13	16730	739	6
	1600	8830	1541	25	10480	915	10	13830	1213	15	18610	821	7
	1800	9690	1688	29	11470	1002	11	15150	1330	18	20370	899	9
	2000	8250	1436	12	10680	933	5	14030	1230	8	19000	839	4
FWD10TN	1400	9270	1614	15	11960	1045	7	15740	1381	10	21720	939	5
	1600	10220	1781	17	13170	1151	8	17350	1523	12	23420	1034	6
	1800	10860	1892	19	14040	1227	8	18440	1619	13	24980	1102	6
	1900	12320	2146	23	15890	1388	10	20920	1835	16	28250	1247	8
	2200	13690	2384	28	17610	1539	13	23220	2038	20	31310	1382	10
FWD12TN	2000	13870	2416	21	18020	1574	10	23560	2067	15	32010	1414	7
	2500	16390	2855	28	21320	1855	13	27820	2442	20	37710	1664	10
	3000	18720	3260	35	24190	2113	16	31750	2787	25	42930	1896	12
	2000	15060	2624	27	19710	1722	12	25610	2248	19	35030	1546	9
	2500	17960	3129	36	23420	2047	17	30520	2677	26	41600	1837	13
FWD16TN	3000	20650	3598	46	26870	2347	21	35060	3077	33	47700	2106	16

4TW60222-1 (Sheet 5/7)

5 Capacity tables

5 - 4 Heating capacity tables - 4-pipe

Air temperature (°C) Water temperature (Entering °C - leaving °C)		20								
		50 - 45		60 - 50		70 - 60		90 - 70		
Model	Air flow m ³ /h	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa
FWD04FN	400	1950	338	7	2370	209	3	3190	281	5
	600	2390	418	11	2930	256	4	3920	346	7
	800	2740	479	13	3360	292	6	4490	396	9
	1000	3280	569	16	4060	356	7	5370	472	10
FWD06FN	800	3650	634	19	4510	392	8	5970	526	13
	1250	4040	704	22	4990	436	9	6620	581	15
	1200	4900	853	15	6040	526	6	8030	706	10
	1400	5280	918	17	6490	569	7	8650	760	12
FWD08FN	1600	5620	979	19	6900	605	8	9210	806	13
	1200	4900	853	15	6040	526	6	8030	706	10
	1400	5280	918	17	6490	569	7	8650	760	12
	1600	5620	979	19	6900	605	8	9210	806	13
FWD10FN	1600	7930	1382	13	9880	864	5	13020	1141	9
	1900	8840	1541	15	10990	961	7	14500	1271	10
	2200	9670	1685	18	12010	1051	8	15860	1393	12
	2000	10020	1746	15	12540	1094	6	16450	1444	10
FWD12FN	2500	11530	2009	19	14400	1260	8	18920	1660	13
	3000	12900	2246	23	16080	1404	10	21150	1854	16
	2000	10020	1746	15	12540	1094	6	16450	1444	10
	2500	11530	2009	19	14400	1260	8	18920	1660	13
FWD16FN	3000	12900	2246	23	16080	1404	10	21150	1854	16
	2000	10020	1746	15	12540	1094	6	16450	1444	10
	2500	11530	2009	19	14400	1260	8	18920	1660	13
	3000	12900	2246	23	16080	1404	10	21150	1854	16

4TW60222-1 (Sheet 6/7)

5 Capacity tables

5 - 4 Heating capacity tables - 4-pipe

2
5

22

Air temperature (°C)		50 - 45						60 - 50						70 - 60						90 - 70					
Water temperature (Entering °C - leaving °C)		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	
Model	Air flow m ³ /h	W	W	ℓ/h	ℓ/h	kPa	kPa	W	W	ℓ/h	ℓ/h	kPa	kPa	W	W	ℓ/h	ℓ/h	kPa	kPa	W	W	ℓ/h	ℓ/h	kPa	kPa
FWD04FN	400	1790	2210	313	194	6	3	3030	266	4	3990	176	2												
	600	2200	2730	385	238	9	4	3730	328	6	4900	216	3												
	800	2520	3130	439	274	12	5	4270	374	8	5590	248	4												
	800	3020	3800	526	331	13	6	5110	446	10	6760	299	4												
	1000	3360	4220	587	367	16	7	5680	500	11	7510	331	5												
	1250	3720	4670	648	408	19	8	6290	552	14	8300	366	6												
FWD08FN	1200	4510	5640	785	493	13	6	7630	670	9	10060	443	4												
	1400	4860	6070	846	529	15	6	8220	720	11	10820	479	5												
	1600	5170	6450	900	565	17	7	8750	767	12	11500	508	6												
FWD10FN	1200	4510	5640	785	493	13	6	7630	670	9	10060	443	4												
	1400	4860	6070	846	529	15	6	8220	720	11	10820	479	5												
	1600	5170	6450	900	565	17	7	8750	767	12	11500	508	6												
	1800	5480	6830	954	600	19	8	9280	810	14	12380	543	8												
FWD12FN	1600	7310	9250	1274	810	11	5	12380	1087	8	16460	727	4												
	1900	8140	9970	1418	908	13	8	13790	1210	9	18310	806	4												
	2200	8910	11250	1552	983	16	7	15090	1325	11	20010	882	5												
FWD16FN	2000	9240	11760	1609	1026	13	6	15650	1372	9	20880	922	4												
	2500	10630	13490	1854	1177	17	7	18000	1580	12	23970	1058	6												
	3000	11890	15070	2070	1318	20	9	20130	1764	14	26760	1181	7												
FWD18TN	2000	9240	11760	1609	1026	13	6	15650	1372	9	20880	922	4												
	2500	10630	13490	1854	1177	17	7	18000	1580	12	23970	1058	6												
	3000	11890	15070	2070	1318	20	9	20130	1764	14	26760	1181	7												

4TW60222-1 (Sheet 7/7)

5 Capacity tables

5 - 5 Power consumption - 2-pipe / 4-pipe

FWD04	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
0	234	0.954	173	0.740	130	0.568
10	228	0.946	169	0.740	122	0.550
20	221	0.940	165	0.731	120	0.530
30	211	0.912	161	0.720	117	0.525
40	203	0.890	157	0.702	114	0.514
50	196	0.857	148	0.655	112	0.496
60	182	0.792	144	0.633	109	0.485
70	173	0.754	140	0.616	107	0.473
80	166	0.710	132	0.573	104	0.456
90	158	0.671	125	0.545	100	0.444
100	153	0.639	120	0.520	95	0.419
120	141	0.594	112	0.477	85	0.375
140	130	0.542	97	0.428	77	0.327
160	115	0.471				

4TW60221-2

SYMBOLS

ESP: External static pressure

FWD06	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
0	349	1.575	294	1.389	247	1.183
10	329	1.530	275	1.322	238	1.150
20	317	1.490	263	1.287	230	1.120
30	303	1.470	256	1.246	225	1.092
40	295	1.430	246	1.194	218	1.065
50	286	1.380	237	1.159	210	1.036
60	274	1.340	228	1.115	204	1.001
70	264	1.306	218	1.078	199	0.974
80	256	1.265	212	1.038	187	0.933
90	246	1.220	200	0.986	180	0.885
100	235	1.170	191	0.951	170	0.849
110	224	1.130	183	0.910	159	0.791
120	212	1.090	167	0.841	145	0.730
130	192	1.010	154.0	0.790	136	0.691
140	178	0.967	140.0	0.725	120	0.623
150	161	0.905	126.0	0.688	114	0.598
160	152	0.880				

4TW60221-2

SYMBOLS

ESP: External static pressure

5 Capacity tables

5 - 5 Power consumption - 2-pipe / 4-pipe

2
5

FWD08	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
0	443	1.971	336	1.515	261	1.204
10	420	1.915	317	1.475	247	1.186
20	404	1.850	301	1.418	238	1.144
30	382	1.808	290	1.366	231	1.106
40	367	1.715	279	1.330	221	1.045
52	353	1.670	262	1.246	212	1.008
60	335	1.582	251	1.189	203	0.972
70	315	1.508	248	1.163	195	0.935
80	302	1.430	233	1.109	186	0.885
90	280	1.350	221	1.045	176	0.839
100	267	1.292	210	0.994	168	0.804
110	254	1.224	198	0.936	155	0.741
120	238	1.166	185	0.889	146	0.705
130	225	1.106	172	0.826	135	0.648
140	203	1.028	155	0.746	126	0.605
150	193	0.970	142	0.682	118	0.576
160	174	0.897				

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SYMBOLS

ESP: External static pressure

FWD10	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
ESP	(W)	(A)	(W)	(A)	(W)	(A)
0	443	1.971	336	1.515	261	1.204
10	420	1.915	317	1.475	247	1.186
20	404	1.850	301	1.418	238	1.144
30	382	1.808	290	1.366	231	1.106
40	367	1.715	279	1.330	221	1.045
52	353	1.670	262	1.246	212	1.008
60	335	1.582	251	1.189	203	0.972
70	315	1.508	248	1.163	195	0.935
80	302	1.430	233	1.109	186	0.885
90	280	1.350	221	1.045	176	0.839
100	267	1.292	210	0.994	168	0.804
110	254	1.224	198	0.936	155	0.741
120	238	1.166	185	0.889	146	0.705
130	225	1.106	172	0.826	135	0.648
140	203	1.028	155	0.746	126	0.605
150	193	0.970	142	0.682	118	0.576
160	174	0.897				

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SYMBOLS

ESP: External static pressure

5 Capacity tables

5 - 5 Power consumption - 2-pipe / 4-pipe

FWD12 ESP	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	714	3.210	473	2.080	328	1.500
10	683	3.100	452	2.070	309	1.485
20	663	3.070	440	2.060	303	1.460
30	646	3.020	430	2.040	299	1.438
40	630	2.990	420	1.970	290	1.403
50	620	2.950	415	1.915	287	1.382
60	604	2.895	402	1.900	278	1.338
70	580	2.800	390	1.860	272	1.306
80	570	2.730	380	1.790	267	1.280
90	550	2.650	370	1.730	257	1.236
100	530	2.600	350	1.650	252	1.213
110	520	2.540	340	1.600	249	1.190
120	490	2.450	330	1.540	244	1.173
130	480	2.390	320	1.480	239	1.139
140	450	2.300	310	1.440	235	1.118
150	440	2.225	300	1.380	230	1.100
160	430	2.210				

4TW60221-2

SYMBOLS

ESP: External static pressure

5 Capacity tables

5 - 5 Power consumption - 2-pipe / 4-pipe

2
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FWD16 ESP	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	1197	5.370	966	4.380	704	3.260
10	1159	5.300	921	4.200	680	3.250
20	1130	5.250	897	4.090	672	3.240
30	1112	5.200	879	4.046	660	3.200
40	1092	5.100	864	3.986	650	3.150
50	1086	5.090	848	3.930	640	3.080
60	1068	5.060	842	3.910	638	3.010
70	1060	5.020	830	3.883	629	2.990
80	1051	5.000	820	3.823	624	2.963
90	1050	4.960	810	3.774	620	2.958
100	1034	4.930	800	3.693	610	2.930
110	1026	4.900	790	3.620	600	2.870
120	1017	4.880	760	3.540	590	2.830
130	1006	4.850	743	3.480	580	2.790
140	997	4.820	730	3.420	570	2.740
150	985	4.790	717	3.400	556	2.690
160	973	4.760	710	3.350	540	2.600
170	963	4.690	703	3.300	532	2.566
180	944	4.620	680	3.200	520	2.470
190	926	4.550	661	3.133		
200	912	4.493	655	3.120		
210	894	4.405				
220	877	4.313				
230	860	4.215				
240	848	4.150				
250	841	4.117				

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SYMBOLS

ESP: External static pressure

5 Capacity tables

5 - 5 Power consumption - 2-pipe / 4-pipe

FWD18 ESP	Max.		Med.		Min.	
	Power input	Current	Power input	Current	Power input	Current
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)
0	1197	5.370	966	4.380	704	3.260
10	1159	5.300	921	4.200	680	3.250
20	1130	5.250	897	4.090	672	3.240
30	1112	5.200	879	4.046	660	3.200
40	1092	5.100	864	3.986	650	3.150
50	1086	5.090	848	3.930	640	3.080
60	1068	5.060	842	3.910	638	3.010
70	1060	5.020	830	3.883	629	2.990
80	1051	5.000	820	3.823	624	2.963
90	1050	4.960	810	3.774	620	2.958
100	1034	4.930	800	3.693	610	2.930
110	1026	4.900	790	3.620	600	2.870
120	1017	4.880	760	3.540	590	2.830
130	1006	4.850	743	3.480	580	2.790
140	997	4.820	730	3.420	570	2.740
150	985	4.790	717	3.400	556	2.690
160	973	4.760	710	3.350	540	2.600
170	963	4.690	703	3.300	532	2.566
180	944	4.620	680	3.200	520	2.470
190	926	4.550	661	3.133		
200	912	4.493	655	3.120		
210	894	4.405				
220	877	4.313				
230	860	4.215				
240	848	4.150				
250	841	4.117				

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SYMBOLS

ESP: External static pressure

5 Capacity tables

5 - 6 Capacity correction factor

2
5

ESP (Pa)	0		20		40		60		80		100		120		140		160		180		200		220		240		
	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	
FWD04	Max.	1.18	1.13	1.09	1.08	1.06	1.02	1.02	0.96	0.97	0.89	0.92	0.80	0.85	0.70	0.77	0.53	0.62	-	-	-	-	-	-	-	-	
	Med.	1.34	1.24	1.28	1.20	1.21	1.15	1.13	1.10	1.04	1.03	0.95	0.82	0.86	0.65	0.71	-	-	-	-	-	-	-	-	-	-	
	Min.	1.44	1.34	1.37	1.29	1.23	1.20	1.16	1.10	1.08	0.97	0.98	0.79	0.82	-	-	-	-	-	-	-	-	-	-	-	-	
FWD06	Max.	1.26	1.19	1.18	1.13	1.09	1.07	0.99	0.99	0.88	0.91	0.75	0.81	0.60	0.68	0.40	0.48	-	-	-	-	-	-	-	-	-	
	Med.	1.37	1.26	1.28	1.20	1.19	1.13	1.08	1.06	0.97	0.83	0.87	0.67	0.73	0.44	0.50	-	-	-	-	-	-	-	-	-	-	
	Min.	1.47	1.34	1.38	1.28	1.28	1.21	1.17	1.13	1.04	1.03	0.90	0.72	0.77	0.45	0.50	-	-	-	-	-	-	-	-	-	-	
FWD08	Max.	1.28	1.20	1.21	1.15	1.13	1.09	1.04	1.03	0.94	0.96	0.83	0.88	0.71	0.77	0.55	0.63	0.30	0.36	-	-	-	-	-	-	-	
	Med.	1.18	1.13	1.11	1.08	1.03	1.02	0.94	0.96	0.85	0.88	0.74	0.79	0.61	0.68	0.42	0.49	-	-	-	-	-	-	-	-	-	
	Min.	1.15	1.11	1.08	1.06	1.00	1.00	0.91	0.93	0.82	0.85	0.70	0.75	0.56	0.62	0.35	0.41	-	-	-	-	-	-	-	-	-	
FWD10	Max.	1.26	1.20	1.18	1.14	1.10	1.08	1.02	1.02	0.92	0.94	0.82	0.85	0.70	0.74	0.54	0.60	0.31	0.38	-	-	-	-	-	-	-	
	Med.	1.17	1.14	1.10	1.08	1.02	1.02	0.94	0.95	0.84	0.87	0.73	0.77	0.60	0.64	0.41	0.46	-	-	-	-	-	-	-	-	-	
	Min.	1.14	1.12	1.07	1.06	0.99	0.99	0.91	0.92	0.81	0.83	0.70	0.72	0.56	0.57	0.35	0.43	-	-	-	-	-	-	-	-	-	
FWD12	Max.	1.35	1.24	1.29	1.21	1.22	1.16	1.15	1.11	1.07	1.06	0.99	0.89	0.89	0.82	0.61	0.68	-	-	-	-	-	-	-	-	-	
	Med.	1.16	1.12	1.10	1.08	1.03	1.03	0.96	0.97	0.88	0.91	0.79	0.83	0.69	0.74	0.56	0.62	0.35	0.40	-	-	-	-	-	-	-	
	Min.	1.02	1.02	0.96	0.97	0.89	0.91	0.82	0.85	0.74	0.78	0.65	0.70	0.54	0.59	0.39	0.43	-	-	-	-	-	-	-	-	-	
FWD16	Max.	1.13	1.10	1.12	1.09	1.10	1.07	1.08	1.06	1.06	1.05	1.04	1.04	1.03	1.02	1.01	0.98	0.99	0.98	0.96	0.98	0.94	0.96	0.92	0.94	0.89	0.92
	Med.	1.11	1.08	1.09	1.07	1.07	1.05	1.04	1.03	1.02	1.02	1.00	1.00	0.97	0.98	0.95	0.96	0.92	0.94	0.89	0.92	0.86	0.89	0.83	0.86	0.79	0.84
	Min.	1.09	1.07	1.06	1.05	1.03	1.03	1.01	1.01	0.98	0.99	0.95	0.96	0.92	0.94	0.89	0.91	0.86	0.88	0.82	0.85	0.78	0.82	0.74	0.78	0.69	0.74
FWD18	Max.	1.12	1.09	1.11	1.08	1.09	1.06	1.07	1.05	1.05	1.04	1.03	1.03	1.01	1.01	0.99	1.00	0.97	0.98	0.95	0.97	0.93	0.95	0.91	0.93	0.88	0.91
	Med.	1.10	1.07	1.07	1.06	1.05	1.04	1.03	1.02	1.01	1.01	0.98	0.99	0.96	0.97	0.93	0.95	0.90	0.92	0.87	0.90	0.84	0.88	0.81	0.85	0.78	0.82
	Min.	1.08	1.06	1.05	1.04	1.03	1.02	1.00	1.00	0.97	0.98	0.94	0.95	0.91	0.93	0.88	0.90	0.84	0.87	0.81	0.84	0.77	0.81	0.72	0.77	0.67	0.72

4TW60228-1A

Conditions

Cooling
Heating 2-pipe
Heating 4-pipe

Air: 27°C DB - 19°C WB - Water: entering 7°C - leaving 12°C
Air: 20°C Water: entering 50°C water flow as for cooling
Air: 20°C Water: entering 70°C - leaving 60°C

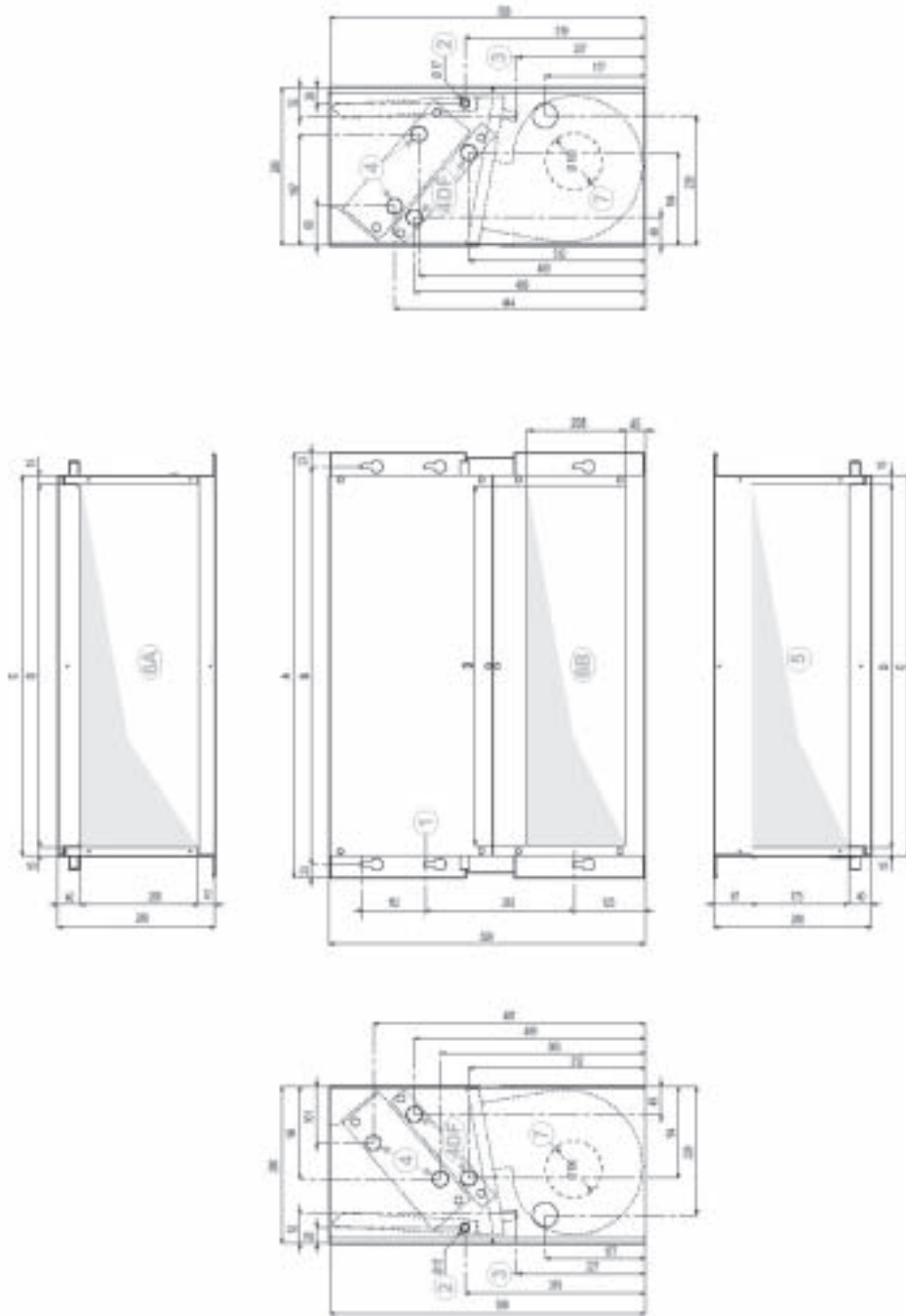
F1 = correction factor for air flow
F2 = correction factor for capacities

The correction factor is applicable also for 4 pipe and heating mode because the differences are negligible.

6 Dimensional drawing

6 - 1 Dimensional drawing

FWD04-06-08-10



Legend

- 1 6 fast-coupling slots
- 2 Condensate drainage for horizontal installation
- 3 Condensate drainage for vertical installation
- 4 Hydraulic connections
4 = standard heat exchanger
4 DF = supplementary heat exchanger
- 5 Air delivery
- 6 Air intake
6A = supply terms
6B = changeable during installation
- 7 Round pre-sheared element (φ 100 mm) for fresh air intake

Hydraulic connections

Standard and additional heat exchanger: connection Male

FWD04	FWD06	FWD08	FWD10	FWD12	FWD16	FWD18
3/4"	3/4"	3/4"	3/4"	1"	1"	1"

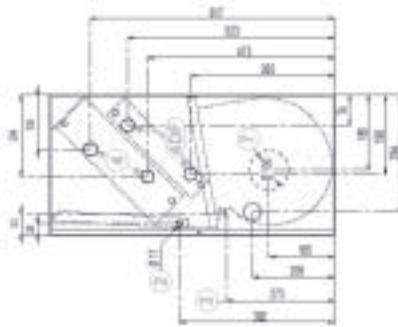
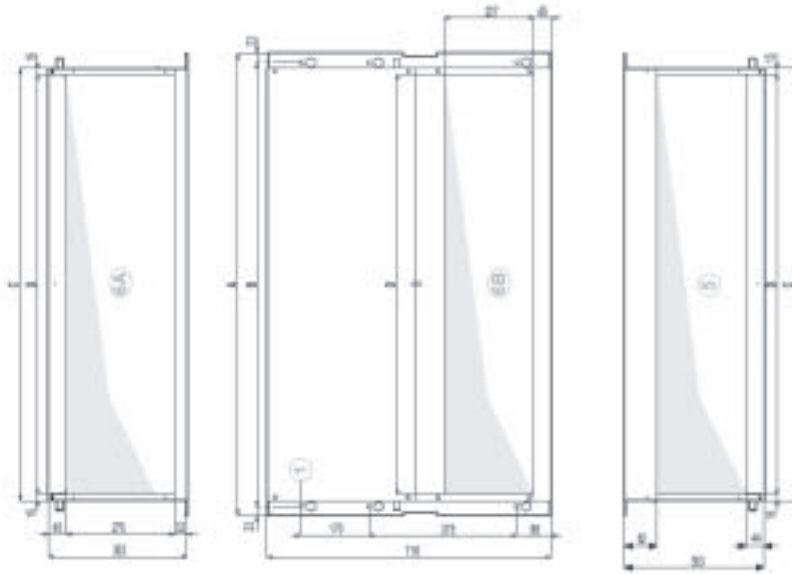
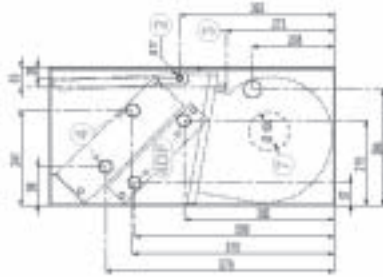
	A	B	C	D
FWD04	754	707	676	646
FWD06	964	917	886	856
FWD08+10	1174	1127	1096	1066

4TW60224-1A (Sheet 1/2)

6 Dimensional drawing

6 - 1 Dimensional drawing

FWD12-16-18



Hydraulic connections

Standard and additional heat exchanger: connection Male

FWD04	FWD06	FWD08	FWD10	FWD12	FWD16	FWD18
3/4"	3/4"	3/4"	3/4"	1"	1"	1"

Legend

- 1 6 fast-coupling slots
- 2 Condensate drainage for horizontal installation
- 3 Condensate drainage for vertical installation
- 4 Hydraulic connections
4 = standard heat exchanger
4 DF = supplementary heat exchanger
- 5 Air delivery
- 6 Air intake
6A = supply terms
6B = changeable during installation
- 7 Round pre-sheared element (ϕ 100 mm) for fresh air intake

	A	B	C	D
FWD12	1174	1127	1096	1066
FWD16+18	1384	1337	1306	1276

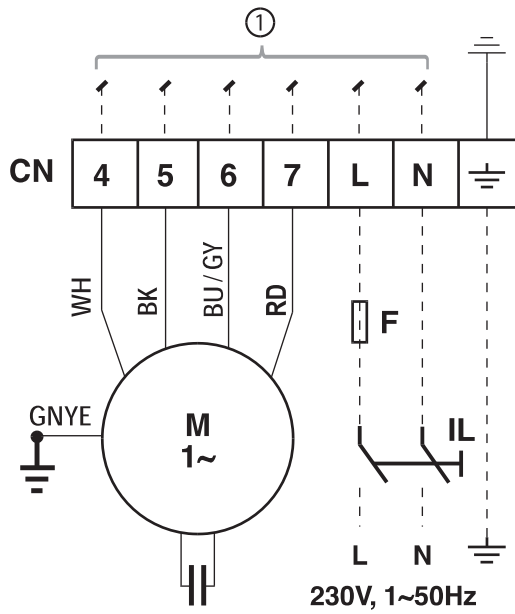
4TW60224-1A (Sheet 2/2)

7 Wiring diagram

7 - 1 Wiring diagram

SYMBOLS

- BK Black = maximum speed
- BU Blue = medium speed
- GNYE Yellow/Green = earth connection
- RD Red = minimum speed
- WH White = common
- Field wiring
- F Protection fuse (field supply)
- IL Main switch (field supply)
- M Fan motor
- PE Earth connection



4TW60226-1

8 Sound data

8 - 1 Sound level data - 2-pipe / 4-pipe

2
8

FWD04		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	L _w tot dB(A)	43.6	47.0	60.0	62.0	60.7	54.8	46.2	66
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	40.4	43.3	55.9	58.4	57.0	51.4	42.9	62.5
	Structure	29.3	38.5	53.6	53.0	52.1	43.8	34.3	58.0
	Inlet	40.4	43.3	55.9	58.4	57.0	51.4	42.9	62.5
Med.	L _w tot dB(A)	40.7	53.8	53.8	57.0	53.6	50.6	43.3	61
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	37.5	50.2	49.7	53.4	49.9	47.2	40.0	57.7
	Structure	26.4	45.3	47.4	47.9	45.0	39.6	31.5	52.9
	Inlet	37.5	50.2	49.7	53.4	49.9	47.2	40.0	57.7
Min.	L _w tot dB(A)	33.8	47.7	47.0	49.8	47.0	41.9	33.5	54
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	30.6	44.1	42.9	46.2	43.3	38.6	30.2	50.7
	Structure	19.5	39.2	40.6	40.8	38.4	30.9	21.6	46.0
	Inlet	30.6	44.1	42.9	46.2	43.3	38.6	30.2	50.7

4TW60227-1 (Sheet 1/7)

Sound power levels measured at ESP = 0 Pa

FWD06		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	L _w tot dB(A)	45.0	56.9	60.8	64.7	63.5	57.7	49.7	69
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	41.8	53.2	56.7	61.2	59.9	54.4	46.4	65.2
	Structure	30.7	48.3	54.4	55.7	55.0	46.7	37.8	60.3
	Inlet	41.8	53.2	56.7	61.2	59.9	54.4	46.4	65.2
Med.	L _w tot dB(A)	41.5	52.6	56.9	59.0	54.7	50.9	40.5	63
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	38.3	49.0	52.7	55.4	51.1	47.6	37.2	59.1
	Structure	27.2	44.1	50.4	50.0	46.2	39.9	28.7	54.6
	Inlet	38.3	49.0	52.7	55.4	51.1	47.6	37.2	59.1
Min.	L _w tot dB(A)	37.0	48.8	53.0	54.4	50.0	48.6	33.5	59
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	33.9	45.1	48.8	50.8	46.3	45.3	30.2	54.9
	Structure	22.8	40.3	46.5	45.3	41.4	37.6	21.6	50.4
	Inlet	33.9	45.1	48.8	50.8	46.3	45.3	30.2	54.9

4TW60227-1 (Sheet 2/7)

Sound power levels measured at ESP = 0 Pa

8 Sound data

8 - 1 Sound level data - 2-pipe / 4-pipe

FWD08		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	L _w tot dB(A)	50.7	62.1	64.8	68.1	66.5	62.5	56.2	72
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	47.5	58.4	60.7	64.5	62.8	59.1	52.9	68.9
	Structure	36.4	53.6	58.4	59.1	57.9	51.5	44.3	64.0
	Inlet	47.5	58.4	60.7	64.5	62.8	59.1	52.9	68.9
Med.	L _w tot dB(A)	45.0	57.5	60.1	62.5	58.9	56.4	49.2	67
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	41.8	53.8	56.0	58.9	55.3	53.0	45.9	63.0
	Structure	30.7	49.0	53.7	53.5	50.4	45.4	37.3	58.4
	Inlet	41.8	53.8	56.0	58.9	55.3	53.0	45.9	63.0
Min.	L _w tot dB(A)	40.5	53.4	55.9	57.5	54.3	50.3	42.4	62
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	37.4	49.7	51.8	53.9	50.6	46.9	39.1	58.2
	Structure	26.3	44.9	49.5	48.4	45.7	39.3	30.5	53.7
	Inlet	37.4	49.7	51.8	53.9	50.6	46.9	39.1	58.2

4TW60227-1 (Sheet 3/7)

Sound power levels measured at ESP = 0 Pa

FWD10		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	L _w tot dB(A)	50.7	62.1	64.8	68.1	66.5	62.5	56.2	72
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	47.5	58.4	60.7	64.5	62.8	59.1	52.9	68.9
	Structure	36.4	53.6	58.4	59.1	57.9	51.5	44.3	64.0
	Inlet	47.5	58.4	60.7	64.5	62.8	59.1	52.9	68.9
Med.	L _w tot dB(A)	45.0	57.5	60.1	62.5	58.9	56.4	49.2	67
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	41.8	53.8	56.0	58.9	55.3	53.0	45.9	63.0
	Structure	30.7	49.0	53.7	53.5	50.4	45.4	37.3	58.4
	Inlet	41.8	53.8	56.0	58.9	55.3	53.0	45.9	63.0
Min.	L _w tot dB(A)	40.5	53.4	55.9	57.5	54.3	50.3	42.4	62
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	37.4	49.7	51.8	53.9	50.6	46.9	39.1	58.2
	Structure	26.3	44.9	49.5	48.4	45.7	39.3	30.5	53.7
	Inlet	37.4	49.7	51.8	53.9	50.6	46.9	39.1	58.2

4TW60227-1 (Sheet 4/7)

Sound power levels measured at ESP = 0 Pa

8 Sound data

8 - 1 Sound level data - 2-pipe / 4-pipe

2
8

FWD12		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	L _w tot dB(A)	52.0	62.5	65.2	70.0	69.2	64.5	58.2	74
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	48.8	58.8	61.1	66.4	65.5	61.1	54.9	70.7
	Structure	37.7	54.0	58.8	61.0	60.6	53.5	46.3	65.7
Med.	Inlet	48.8	58.8	61.1	66.4	65.5	61.1	54.9	70.7
	L _w tot dB(A)	46.2	57.7	59.9	62.8	60.5	57.1	50.0	67
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	43.1	54.0	55.8	59.2	56.9	53.8	46.8	63.5
Min.	Structure	32.0	49.2	53.5	53.8	52.0	46.1	38.2	58.8
	Inlet	43.1	54.0	55.8	59.2	56.9	53.8	46.8	63.5
	L _w tot dB(A)	39.3	50.6	54.2	55.9	53.1	47.8	41.5	60
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
Max.	Outlet	36.1	46.9	50.1	52.4	49.5	44.4	38.2	56.5
	Structure	25.0	42.1	47.8	46.9	44.6	36.8	29.6	52.0
	Inlet	36.1	46.9	50.1	52.4	49.5	44.4	38.2	56.5

4TW60227-1 (Sheet 5/7)

Sound power levels measured at ESP = 0 Pa

FWD16		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	L _w tot dB(A)	61.0	70.5	70.0	72.5	71.1	69.6	63.8	78
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	57.8	66.8	65.9	68.9	67.4	66.2	60.5	74.5
	Structure	46.7	62.0	63.6	63.5	62.5	58.6	51.9	69.4
Med.	Inlet	57.8	66.8	65.9	68.9	67.4	66.2	60.5	74.5
	L _w tot dB(A)	58.3	65.1	67.1	67.9	65.8	64.2	56.7	73
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	55.2	61.4	63.0	64.3	62.1	60.8	53.4	69.8
Min.	Structure	44.1	56.5	60.7	58.9	57.2	53.2	44.8	65.0
	Inlet	55.2	61.4	63.0	64.3	62.1	60.8	53.4	69.8
	L _w tot dB(A)	52.1	61.3	62.3	63.8	62.6	60.7	49.1	69
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
Max.	Outlet	48.9	57.7	58.2	60.3	58.9	57.4	45.8	65.7
	Structure	37.8	52.8	55.9	54.8	54.0	49.7	37.2	60.9
	Inlet	48.9	57.7	58.2	60.3	58.9	57.4	45.8	65.7

4TW60227-1 (Sheet 6/7)

Sound power levels measured at ESP = 0 Pa

8 Sound data

8 - 1 Sound level data - 2-pipe / 4-pipe

FWD18		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	Global Lw
Max.	L _w tot dB(A)	61.0	70.5	70.0	72.5	71.1	69.6	63.8	78
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	57.8	66.8	65.9	68.9	67.4	66.2	60.5	74.5
	Structure	46.7	62.0	63.6	63.5	62.5	58.6	51.9	69.4
	Inlet	57.8	66.8	65.9	68.9	67.4	66.2	60.5	74.5
Med.	L _w tot dB(A)	58.3	65.1	67.1	67.9	65.8	64.2	56.7	73
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	55.2	61.4	63.0	64.3	62.1	60.8	53.4	69.8
	Structure	44.1	56.5	60.7	58.9	57.2	53.2	44.8	65.0
	Inlet	55.2	61.4	63.0	64.3	62.1	60.8	53.4	69.8
Min.	L _w tot dB(A)	52.1	61.3	62.3	63.8	62.6	60.7	49.1	69
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	48.9	57.7	58.2	60.3	58.9	57.4	45.8	65.7
	Structure	37.8	52.8	55.9	54.8	54.0	49.7	37.2	60.9
	Inlet	48.9	57.7	58.2	60.3	58.9	57.4	45.8	65.7

4TW60227-1 (Sheet 7/7)

Sound power levels measured at ESP = 0 Pa

9 Installation

9 - 1 Installation method

BEFORE THE INSTALLATION

The equipment is to be installed and serviced exclusively by technical personnel who are qualified for using this type of machine, in compliance with the relevant local and national regulations.

On receiving the equipment, check its state ensuring that it was not damaged during transport. Refer to the associated technical sheets for the installation and use instructions of any accessories.

INTENDED CONDITIONS OF USE AND OPERATING LIMITS

No responsibility is assumed if the equipment is installed by unqualified personnel, if it is used improperly or under inadmissible conditions, if maintenance is not performed as envisaged in this manual or if original spare parts are not used. For the operating limits please refer to the appropriate chapter. Any other use is considered improper.

Keep the equipment inside the packing until it is ready to be installed so that dust will not infiltrate.

Air sucked by the equipment must always be filtered. Use, when possible, the specific accessories.

If not used during the winter, drain the water from the system to prevent damage caused by the formation of ice. If antifreeze solutions are used, check the freezing point.

Do not change the internal wiring or other parts of the equipment.

INSTALLATION WARNING:

On the fan coil unit install a switch (IL) and/or all remote controls in a position out of the reach of persons who are in a bathtub or shower.

The FWD units may be installed either in horizontal or vertical position. Check that the desired installation complies with one of the diagrams shown in the installation manual, in which both possible configurations, M or AB, are suitable to work for heating and cooling.

AA (INTAKE IN LINE - DELIVERY IN LINE)

AB (AIR SUCTION AT 90° - AIR OUTLET IN LINE)

CONFIGURATION of the unit

The units are always supplied in AA configuration, but the air intake position may be changed during the installation.

FIXING the unit

Fix the standard unit to the ceiling or wall using at least 4 of the 6 slots;

For horizontal installations (ceiling-mounting) it is advisable to use M8 threaded bars, screw anchors suitable for the machine's weight, and to arrange for the positioning of the machine using 2 M8 bolts and a washer the diameter of which is suitable for

Before tightening the check nut, adjust the closing of the main nut so that the equipment will slant correctly, i.e. for facilitating the discharging of the condensate.

The correct slant is achieved by tilting the intake downwards as compared to the delivery, until a difference in level of about 10 mm is obtained from one end to the other. Make the hydraulic connections with the heat exchanger and, for cooling operations, with the condensate discharge.

Use one of the two drains of the auxiliary tank, visible on the outside of the unit's side panels and vertical condensate discharge.

For vertical installations (wall-mounting), fix the unit so that water may flow out toward the condensate discharge used. A slant equivalent to a difference in level of about 5 mm is enough between the two side panels. The two condensate discharge tubes of the main tank are located inside the side panels and may be accessed through a membrane type passage that should be perforated for passing the discharge tube through it. It is advisable not to remove the aforesaid passage because it prevents the sharp edge of the hole on the side panel from damaging the condensate discharge tube over time.

To connect the unit to the condensate discharge line, use a flexible rubber tube and fix it to the chosen discharge tube (f 3/8) by means of a metal clamp (use the discharge that is located on the hydraulic attachments side). To assist the draining of the condensate, slant the discharge tube downwards by at least 30 mm/m making sure that its entire route is clear and free from bends or blockages.

A few rules to follow

Carry out the heat exchanger's air exhaust, with pumps stopped, by means of the air valves located adjacent to the attachments of the heat exchanger itself.

9 Installation

9 - 1 Installation method

When implementing a duct system, it is advisable to place the vibration-damping joints between the ducting and the unit. If you wish to install an electrical resistance module as accessory, the delivery vibration-damping joint should be heat-resistant. The ducting, especially the delivery one, should be insulated with anticondensing material.

Provide an inspection panel adjacent to the equipment for the maintenance and cleaning operations.

Install the control panel on the wall. Choose a position that is easy to access for the setting of the functions and, if contemplated, for the reading of the temperature. Try to avoid positions that are directly exposed to sun rays, or positions subject to direct hot or cold air currents, and do not place obstacles in the way that would prevent the correct reading of the temperature.

ELECTRICAL CONNECTIONS

Carry out the electrical wiring after having turned the power off in compliance with the relevant local and national regulations following the relevant wiring diagram.

Only qualified personnel should carry out the wiring operations.

Each fan coil 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).

Power consumption is shown on the data plate fixed to the unit. Make sure to carefully execute the wiring in function of the combination unit/controller and this according to the correct wiring diagram delivered with every accessory. In order to make the electrical connections you must remove the lower closing panel to access the terminal board. The power cables (power supply and control) must be routed to the terminal board through the membrane passage that is on the side panel of the machine on the side opposite the hydraulic attachments.

WARNING

The COMMON wire of the motor is the WHITE one: if connected incorrectly the motor would be damaged irreparably.

FUNCTIONAL CHECKS

Check that the equipment has been installed so that it guarantees the required slant.

Check that the condensate discharge is not clogged (by rubble deposits, etc.).

Check the seal of the hydraulic connections.

Check that all the wirings are tight (perform the check with voltage OFF).

Make sure air has been purged from the heat exchanger.

Power the equipment and check its working efficiency.

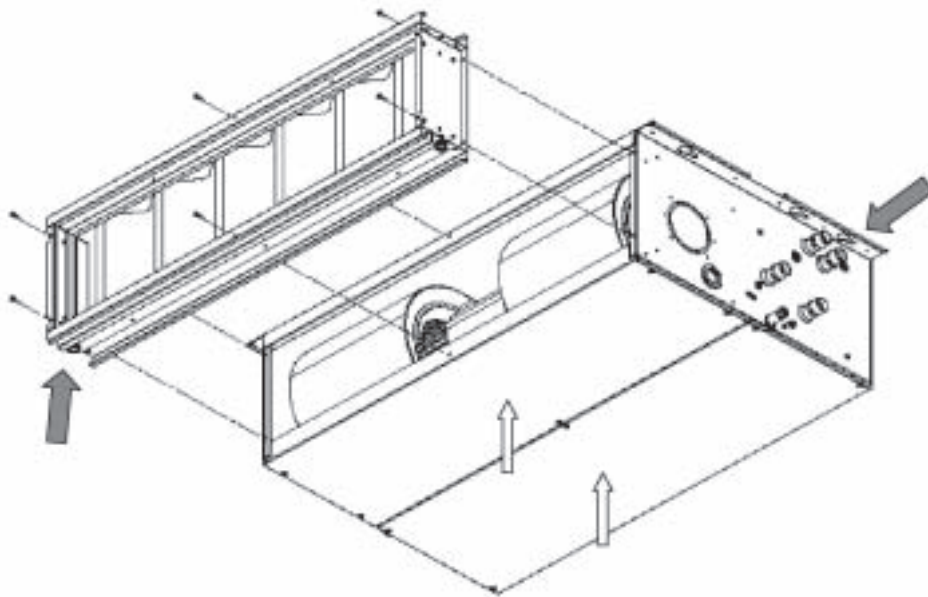
9 Installation

9 - 1 Installation method

1. Ducted unit with filter only

Consider at least:

- 500 mm free space on water connections side (piping & connections)
- 200 mm free space on the opposite side (to unscrew heat exchangers or fan deck in case of repairing)
- Possibility to extract filter for cleaning has to be considered
- Possibility to reach the unit for ordinary and extraordinary maintenance (for instance removing front panels) has to be considered



4TW60229-3

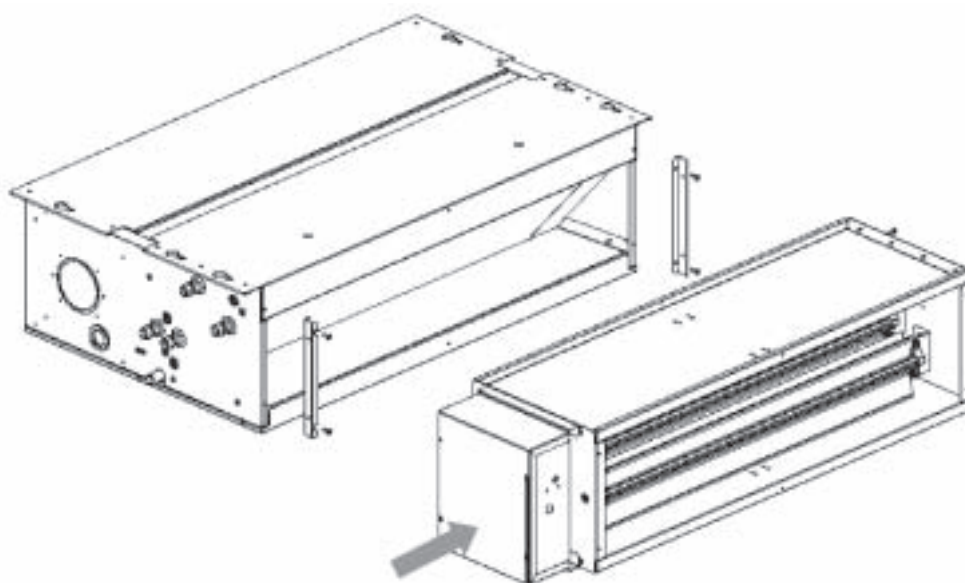
9 Installation

9 - 1 Installation method

2. Ducted unit with filter and electric heater

Consider also:

- 500 mm free space on water connections side (piping & connections), measured from the electrical box of the heating module (refer to option technical leaflet for details - total 620 mm)
- 200 mm free space on the opposite side (to unscrew heat exchangers or fan deck in case of repairing)
- Possibility to extract filter for cleaning has to be considered
- Possibility to reach the unit for ordinary and extraordinary maintenance (for instance removing front panels) has to be considered



4TW60229-3

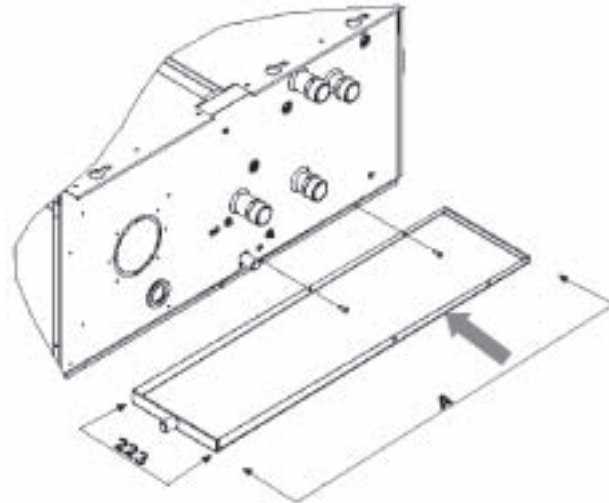
9 Installation

9 - 1 Installation method

3. Ducted unit with filter and valves

Consider also:

- 500 mm free space on water connections side (piping & connections), measured from the valve piping (refer to option technical leaflet for details - total around 720 mm)
- 200 mm free space on the opposite side (to unscrew heat exchangers or fan deck in case of repairing)
- Possibility to extract filter for cleaning has to be considered
- Possibility to reach the unit for ordinary and extraordinary maintenance (for instance removing front panels) has to be considered



4TW60229-3

10 Operation range

Minimum water temperature	+5°C
Maximum water temperature	+95°C
Maximum operating pressure	10 bar
Minimum air inlet temperature	-20°C
Maximum air inlet temperature	+43°C
Power supply	230V +-10% / 1~ / 50Hz

4TW60223-1

11 Hydraulic performance

11 - 2 Water pressure drop curve evaporator heating 2-pipe

2
11

Water flow l/h	FWD						
	Water pressure drop						
	FWD04	FWD06	FWD08	FWD10	FWD12	FWD16	FWD18
	kPa	kPa	kPa	kPa	kPa	kPa	kPa
100	0.59	0.37	0.25	0.13	0.13	0.09	0.1
200	2.02	1.25	0.84	0.45	0.43	0.32	0.35
300	4.12	2.57	1.72	0.92	0.88	0.65	0.71
400	6.83	4.27	2.86	1.53	1.47	1.08	1.19
500	10.12	6.32	4.24	2.27	2.19	1.6	1.76
600	13.94	8.71	5.85	3.14	3.02	2.22	2.44
700	18.28	11.42	7.67	4.12	3.97	2.92	3.2
800	23.12	14.45	9.69	5.21	5.02	3.69	4.06
900	28.45	17.77	11.92	6.41	6.17	4.55	5
1000	34.23	21.39	14.35	7.71	7.43	5.48	6.02
1100	40.48	25.29	16.97	9.11	8.79	6.47	7.11
1200	47.17	29.48	19.78	10.62	10.24	7.54	8.29
1300	54.29	33.94	22.77	12.23	11.78	8.68	9.54
1400	61.84	38.66	25.94	13.93	13.42	9.89	10.87
1500	69.81	43.65	29.28	15.73	15.16	11.16	12.27
1600	78.19	48.9	32.8	17.62	16.98	12.5	13.75
1700	86.97	54.4	36.5	19.6	18.89	13.91	15.3
1800	96.15	60.15	40.36	21.67	20.89	15.38	16.92
1900	105.73	66.15	44.38	23.83	22.97	16.92	18.61
2000	-	72.39	48.57	26.08	25.14	18.52	20.37
2100	-	78.88	52.93	28.42	27.4	20.18	22.19
2200	-	85.6	57.44	30.84	29.73	21.9	24.09
2300	-	92.55	62.11	33.35	32.15	23.68	26.05
2400	-	99.74	66.93	35.94	34.65	25.53	28.08
2500	-	107.16	71.91	38.62	37.23	27.43	30.17
3000	-	-	99.07	53.21	51.3	37.8	41.59
4000	-	-	-	88.2	85.07	62.71	69
5000	-	-	-	-	-	92.83	102.16

4TW60229-1 (Sheet 1/3)

12-2 Water pressure drop curve evaporator heating 2-pipe

Water flow l/h	FWD						
	Water pressure drop						
	FWD04	FWD06	FWD08	FWD10	FWD12	FWD16	FWD18
	kPa	kPa	kPa	kPa	kPa	kPa	kPa
100	0.51	0.32	0.22	0.12	0.11	0.08	0.09
200	1.68	1.07	0.72	0.39	0.38	0.28	0.31
300	3.4	2.16	1.46	0.78	0.76	0.56	0.62
400	5.6	3.56	2.4	1.29	1.25	0.93	1.03
500	8.25	5.24	3.53	1.9	1.84	1.37	1.51
600	11.33	7.18	4.84	2.61	2.53	1.88	2.07
700	14.81	9.39	6.32	3.4	3.3	2.45	2.71
800	18.69	11.83	7.97	4.29	4.16	3.09	3.41
900	22.95	14.52	9.77	5.26	5.1	3.79	4.18
1000	27.57	17.43	11.73	6.32	6.12	4.55	5.02
1100	32.55	20.57	13.85	7.46	7.22	5.36	5.91
1200	37.89	23.94	16.11	8.67	8.4	6.23	6.88
1300	43.56	27.51	18.51	9.97	9.65	7.14	7.9
1400	49.58	31.3	21.06	11.34	10.97	8.14	8.98
1500	55.92	35.29	23.74	12.78	12.37	9.17	10.12
1600	62.58	39.49	26.57	14.3	13.84	10.26	11.32
1700	69.57	43.89	29.52	15.89	15.37	11.4	12.57
1800	76.87	48.49	32.61	17.55	16.98	12.59	13.88
1900	84.48	53.28	35.83	19.28	18.65	13.83	15.24
2000	92.4	58.26	39.18	21.09	20.39	15.12	16.66
2100	100.61	63.43	42.66	22.95	22.2	16.45	18.14
2200	109.13	68.79	46.26	24.89	24.07	17.84	19.66
2300	-	74.34	49.99	26.9	26.01	19.27	21.24
2400	-	80.07	53.84	28.97	28.01	20.75	22.87
2500	-	85.97	57.81	31.1	30.08	22.28	24.55
3000	-	118.18	79.46	42.74	41.32	30.59	33.71
4000	-	-	-	70.61	68.24	50.5	55.63
5000	-	-	-	104.24	100.72	74.51	82.08

4TW60229-1 (Sheet 2/3)

11 Hydraulic performance

11 - 3 Water pressure drop curve evaporator heating 4-pipe

FWD							
Water flow l/h	Water pressure drop						
	FWD04	FWD06	FWD08	FWD10	FWD12	FWD16	FWD18
	kPa	kPa	kPa	kPa	kPa	kPa	kPa
100	0.83	0.71	0.35	0.35	0.13	0.1	0.1
200	2.75	2.36	1.16	1.16	0.42	0.33	0.33
300	5.55	4.76	2.34	2.34	0.85	0.67	0.67
400	9.14	7.84	3.84	3.84	1.39	1.1	1.1
500	13.48	11.54	5.65	5.65	2.05	1.61	1.61
600	18.51	15.83	7.75	7.75	2.81	2.21	2.21
700	24.21	20.7	10.13	10.13	3.66	2.88	2.88
800	30.56	26.1	12.77	12.77	4.62	3.63	3.63
900	37.52	32.04	15.68	15.68	5.66	4.45	4.45
1000	45.09	38.49	18.83	18.83	6.8	5.34	5.34
1100	53.25	45.44	22.22	22.22	8.02	6.29	6.29
1200	61.98	52.88	25.85	25.85	9.33	7.32	7.32
1300	71.27	60.8	29.72	29.72	10.72	8.41	8.41
1400	81.11	69.18	33.81	33.81	12.19	9.56	9.56
1500	91.5	78.03	38.13	38.13	13.74	10.78	10.78
1600	102.41	87.32	42.67	42.67	15.37	12.06	12.06
1700	-	97.06	47.42	47.42	17.08	13.39	13.39
1800	-	107.24	52.39	52.39	18.87	14.79	14.79
1900	-	-	57.57	57.57	20.73	16.25	16.25
2000	-	-	62.96	62.96	22.67	17.76	17.76
2500	-	-	92.92	92.92	33.44	26.19	26.19
3000	-	-	-	-	45.95	35.98	35.98
3500	-	-	-	-	60.12	47.06	47.06
4000	-	-	-	-	75.89	59.4	59.4
4500	-	-	-	-	93.21	72.95	72.95
5000	-	-	-	-	112.04	87.67	87.67

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1 Specifications

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1-1 Nominal capacity and nominal input				FWB02AT	FWB03AT	FWB04AT
Power Input	High		W	106	106	106
	Medium		W	56	56	56
	Low		W	34	34	34
Cooling capacity	Total capacity	High	kW	2.61	3.14	3.49
		Medium	kW	2.01	2.42	2.64
		Low	kW	1.34	1.50	1.67
	Sensible capacity	High	kW	1.88	2.16	2.34
		Medium	kW	1.46	1.66	1.77
		Low	kW	0.95	1.02	1.10
Heating capacity (2-pipe)	High		kW	5.47	6.01	6.47
	Medium		kW	4.32	4.66	4.93
	Low		kW	2.77	2.91	3.00
Heating capacity (4-pipe)	High		kW	3.14	3.14	3.14
	Medium		kW	2.68	2.68	2.68
	Low		kW	1.95	1.95	1.95

1-1 Nominal capacity and nominal input				FWB05AT	FWB06AT	FWB07AT
Power Input	High		W	192	192	192
	Medium		W	143	143	143
	Low		W	76	76	76
Cooling capacity	Total capacity	High	kW	5.08	5.45	6.47
		Medium	kW	3.99	4.12	4.96
		Low	kW	2.12	2.43	2.67
	Sensible capacity	High	kW	3.60	3.87	4.40
		Medium	kW	2.84	2.96	3.37
		Low	kW	1.52	1.67	1.78
Heating capacity (2-pipe)	High		kW	10.31	11.39	12.28
	Medium		kW	8.20	8.92	9.48
	Low		kW	4.56	4.77	4.94
Heating capacity (4-pipe)	High		kW	5.99	5.99	5.99
	Medium		kW	5.14	5.14	5.14
	Low		kW	3.38	3.38	3.38

1-1 Nominal capacity and nominal input				FWB08AT	FWB09AT	FWB10AT
Power Input	High		W	294	294	294
	Medium		W	193	193	193
	Low		W	155	155	155
Cooling capacity	Total capacity	High	kW	7.57	8.67	10.34
		Medium	kW	5.41	6.08	7.08
		Low	kW	4.18	4.64	5.35
	Sensible capacity	High	kW	5.23	5.96	6.90
		Medium	kW	3.78	4.20	4.72
		Low	kW	2.95	3.21	3.57
Heating capacity (2-pipe)	High		kW	15.05	16.85	18.78
	Medium		kW	10.94	11.97	12.93
	Low		kW	8.63	9.29	9.85
Heating capacity (4-pipe)	High		kW	12.80	12.80	12.80
	Medium		kW	9.55	9.55	9.55
	Low		kW	7.67	7.67	7.67

1 Specifications

1-2 Technical Specifications				FWB02AT	FWB03AT	FWB04AT
Dimensions	Unit	Height	mm	239	239	239
		Width	mm	1039	1039	1039
		Depth	mm	609	609	609
	Unit with packing	Height	mm	305	305	305
		Width	mm	1100	1100	1100
		Depth	mm	650	650	650
Weight	Machine weight		kg	23	24	26
	Operation weight		kg	24	26	28
	Gross weight		kg	26	27	29
Casing	Material Galvanised sheet metal					
Sound level	Sound pressure	High	dBA	46.5	46.5	46.5
		Medium	dBA	34.5	34.5	34.5
		Low	dBA	24.5	24.5	24.5
	Sound power	High	dBA	58	58	58
		Medium	dBA	46	46	46
		Low	dBA	36	36	36
Water flow	Cooling		l/h	448	539	598
	Heating		l/h	480	527	567
	Add. heat exchanger		l/h	275	275	275
Water pressure drop	Cooling		kPa	8	14	11
	Heating		kPa	7	10	8
	Add. heat exchanger		kPa	3	3	3
Fan	Type Centrifugal - forward blades - directly coupled on fan					
	Air flow rate	High	m³/h	400	400	400
		Medium	m³/h	300	300	300
		Low	m³/h	180	180	180
	Available pressure	High	Pa	71	71	71
		Medium	Pa	29	29	29
		Low	Pa	20	20	20
	Speed 7 speeds (high = 7, medium = 4, low = 1)					
Quantity			1	1	1	
Motor	Type Closed induction, B class insulation, winding thermal cut-out					
Standard heat exchanger	Rows	mm	3	4	6	
	Stages	mm	3	3	4	
	Fin pitch	mm	2.1	2.1	2.1	
	Face area	m²	0.15	0.15	0.15	
	Water volume	l	1.1	1.5	2.2	
Additional heat exchanger	Rows	mm	1	1	1	
	Stages	mm	2	2	2	
	Fin pitch	mm	1.8	1.8	1.8	
	Face area	m²	0.14	0.14	0.14	
	Water volume	l	0.4	0.4	0.4	
Air filter	Standard filter class EU2					
Insulation material	Class 1 self-extinguishing					
Vibration insulation	Rubber ring for fan motor					
Water connections	Std. heat exchanger		inch	3/4		
	Add. heat exchanger		inch	3/4		
Drain			mm	16	16	16
Notes	Rating conditions cooling 2 pipe: air 27					
	Rating conditions heating 2 pipe: air 20°CDB - entering water 70°C - leaving water 60°C					
	Sound power level according to ISO3741 - sound pressure calculated at 1.5m distance - Q = 2					

3
1

1 Specifications

1-2 Technical Specifications				FWB05AT	FWB06AT	FWB07AT
Dimensions	Unit	Height	mm	239	239	239
		Width	mm	1389	1389	1389
		Depth	mm	609	609	609
	Unit with packing	Height	mm	305	305	305
		Width	mm	1450	1450	1450
		Depth	mm	650	650	650
Weight	Machine weight		kg	31	33	35
	Operation weight		kg	33	35	38
	Gross weight		kg	35	37	39
Casing	Material		Galvanised sheet metal			
Sound level	Sound pressure	High	dBA	48.5	48.5	48.5
		Medium	dBA	40.5	40.5	40.5
		Low	dBA	25.5	25.5	25.5
	Sound power	High	dBA	60	60	60
		Medium	dBA	52	52	52
		Low	dBA	37	37	37
Water flow	Cooling		l/h	873	936	1111
	Heating		l/h	904	999	1077
	Add. heat exchanger		l/h	526	526	526
Water pressure drop	Cooling		kPa	15	8	14
	Heating		kPa	12	7	10
	Add. heat exchanger		kPa	5	5	5
Fan	Type		Centrifugal - forward blades - directly coupled on fan			
	Air flow rate	High	m ³ /h	800	800	800
		Medium	m ³ /h	600	600	600
		Low	m ³ /h	300	300	300
	Available pressure	High	Pa	65	65	65
		Medium	Pa	44	44	44
		Low	Pa	23	23	23
	Speed		7 speeds (high = 7, medium = 4, low = 1)			
Quantity		2	2	2		
Motor	Type		Closed induction, B class insulation, winding thermal cut-out			
Standard heat exchanger	Rows	mm	3	4	6	
	Stages	mm	4	6	6	
	Fin pitch	mm	2.1	2.1	2.5	
	Face area	m ²	0.22	0.22	0.22	
	Water volume	l	1.6	2.1	3.2	
Additional heat exchanger	Rows	mm	1	1	1	
	Stages	mm	3	3	3	
	Fin pitch	mm	1.8	1.8	1.8	
	Face area	m ²	0.24	0.24	0.24	
	Water volume	l	0.6	0.6	0.6	
Air filter	Standard filter class EU2					
Insulation material	Class 1 self-extinguishing					
Vibration insulation	Rubber ring for fan motor					
Water connections	Std. heat exchanger		inch	3/4		
	Add. heat exchanger		inch	3/4		
Drain			mm	16	16	
Notes	Rating conditions cooling 2 pipe: air 27					
	Rating conditions heating 2 pipe: air 20°CDB - entering water 70°C - leaving water 60°C					
	Sound power level according to ISO3741 - sound pressure calculated at 1.5m distance - Q = 2					

3

1

1 Specifications

1-2 Technical Specifications				FWB08AT	FWB09AT	FWB10AT
Dimensions	Unit	Height	mm	239	239	239
		Width	mm	1739	1739	1739
		Depth	mm	609	609	609
	Unit with packing	Height	mm	305	305	305
		Width	mm	1800	1800	1800
		Depth	mm	650	650	650
Weight	Machine weight		kg	43	45	48
	Operation weight		kg	45	48	52
	Gross weight		kg	47	50	54
Casing	Material			Galvanised sheet metal		
Sound level	Sound pressure	High	dBA	57.5	57.5	57.5
		Medium	dBA	46.5	46.5	46.5
		Low	dBA	41.5	41.5	41.5
	Sound power	High	dBA	69	69	69
		Medium	dBA	58	58	58
		Low	dBA	53	53	53
Water flow	Cooling		l/h	1299	1488	1774
	Heating		l/h	1319	1479	1647
	Add. heat exchanger		l/h	1123	1123	1123
Water pressure drop	Cooling		kPa	21	21	26
	Heating		kPa	16	15	18
	Add. heat exchanger		kPa	8	8	8
Fan	Type			Centrifugal - forward blades - directly coupled on fan		
	Air flow rate	High	m³/h	1200	1200	1200
		Medium	m³/h	800	800	800
		Low	m³/h	600	600	600
	Available pressure	High	Pa	59	59	59
		Medium	Pa	43	43	43
		Low	Pa	29	29	29
Speed			7 speeds (high = 7, medium = 4, low = 1)			
Quantity			3	3	3	
Motor	Type			Closed induction, B class insulation, winding thermal cut-out		
Standard heat exchanger	Rows	mm	3	4	6	
	Stages	mm	5	6	6	
	Fin pitch	mm	2.1	2.1	2.1	
	Face area	m²	0.29	0.29	0.29	
	Water volume	l	2.1	2.8	4.2	
Additional heat exchanger	Rows	mm	2	2	2	
	Stages	mm	6	6	6	
	Fin pitch	mm	2.1	2.1	2.1	
	Face area	m²	0.35	0.35	0.35	
	Water volume	l	1.7	1.7	1.7	
Air filter				Standard filter class EU2		
Insulation material				Class 1 self-extinguishing		
Vibration insulation				Rubber ring for fan motor		
Water connections	Std. heat exchanger	inch	3/4			
	Add. heat exchanger	inch	1	1	1	
Drain		mm	16	16	16	
Notes				Rating conditions cooling 2 pipe: air 27		
				Rating conditions heating 2 pipe: air 20°CDB - entering water 70°C - leaving water 60°C		
				Sound power level according to ISO3741 - sound pressure calculated at 1.5m distance - Q = 2		

3
1

1 Specifications

1-3 Electrical Specifications			FWB02AT	FWB03AT	FWB04AT
Current input	High	A	0.51	0.51	0.51
	Medium	A	0.30	0.30	0.30
	Low	A	0.20	0.20	0.20
Required power supply		V / f / Hz	230/1/50		
Required fuses		A	1	1	1
Required wire section		mm ²	1.5	1.5	1.5
Electric heater	Power input	kW	2	2	2
	Current	A	8.7	8.7	8.7
	Power supply	V / f / Hz	230/1/50		
Notes		The power consumption for the valve motor is 5W (peak) only during opening			
		For more details concerning conditional connections, see http://www.daikineurope.com , select E-data Books. Finally click on the document title of your choice			

1-3 ELECTRICAL SPECIFICATIONS			FWB05AT	FWB06AT	FWB07AT
Current input	High	A	0.94	0.94	0.94
	Medium	A	0.70	0.70	0.70
	Low	A	0.40	0.40	0.40
Required power supply		V / f / Hz	230/1/50		
Required fuses		A	2	2	2
Required wire section		mm ²	1.5	1.5	1.5
Electric heater	Power input	kW	2.5	2.5	2.5
	Current	A	10.9	10.9	10.9
	Power supply	V / f / Hz	230/1/50		
Notes		The power consumption for the valve motor is 5W (peak) only during opening			
		For more details concerning conditional connections, see http://www.daikineurope.com , select E-data Books. Finally click on the document title of your choice			

1-3 ELECTRICAL SPECIFICATIONS			FWB08AT	FWB09AT	FWB10AT
Current input	High	A	1.28	1.28	1.28
	Medium	A	0.90	0.90	0.90
	Low	A	0.70	0.70	0.70
Required power supply		V / f / Hz	230/1/50		
Required fuses		A	2	2	2
Required wire section		mm ²	1.5	1.5	1.5
Electric heater	Power input	kW	3	3	3
	Current	A	13	13	13
	Power supply	V / f / Hz	230/1/50		
Notes		The power consumption for the valve motor is 5W (peak) only during opening			
		For more details concerning conditional connections, see http://www.daikineurope.com , select E-data Books. Finally click on the document title of your choice			

2 Electrical data

FWB		Power input electric heater	Current Absorption	Power supply
Unit	Electric heater	kW	A	V / f / Hz
FWB02AT		2.0	8.7	230 - 1 - 50
FWB03AT		2.0	8.7	
FWB04AT		2.0	8.7	
FWB05AT		2.5	10.9	
FWB06AT		2.5	10.9	
FWB07AT		2.5	10.9	
FWB08AT		3.0	13.0	
FWB09AT		3.0	13.0	
FWB10AT		3.0	13.0	

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3 Options

FWB

Description	02	03	04	05	06	07	08	09	10	Comments
Additional heat exchanger	EAH04A6			EAH07A6			EAH10A6			
3-way valve cooling h/e	factory mounted									
3-way valve add. h/e	E2MV307A6						E2MV310A6			
2-way valve cooling h/e	factory mounted									
2-way valve add. h/e	E2MV207A6						E2MC210A6			
Electric heater	factory mounted									
Fan stop thermostat	YFSTA6									
Master slave interface	EPIMSB6									
Fcu Controller - Standard version	FWEC1A									
Fcu Controller - Advanced version	FWEC2A									
Fcu Controller - Advanced plus version	FWEC3A									
Fcu temperature sensor kit	FWTSKA									
Fcu relative humidity sensor kit	FWHska									

4TW60299-2A (1/2)

FWB

Description		Additional heat exchanger	3-way valve add. h/e	2-way valve add. h/e	Fan stop thermostat	Master slave interface	Fcu Controller - Standard version	Fcu Controller - Advanced version	Fcu Controller - Advanced plus version	Fcu temperature sensor kit	Fcu relative humidity sensor kit
		EAH..A6	E2MV3..A6	E2MV2..A6	YFSTA6	EPIMSB6	FWEC1A	FWEC2A	FWEC3A	FWTSKA	FWHska
Additional heat exchanger	EAH..A6		X	X	X*	X	X	X	X	X	X
3-way valve add. h/e	E2MV3..A6	X				X	X	X	X	X	X
2-way valve add. h/e	E2MV2..A6	X				X	X	X	X	X	X
Fan stop thermostat	YFSTA6					X*					
Master slave interface	EPIMSB6	X	X				X	X	X	X	X
Fcu Controller - Standard version	FWEC1A	X	X	X		X				X	
Fcu Controller - Advanced version	FWEC2A	X	X	X		X				X	X
Fcu Controller - Advanced plus version	FWEC3A	X	X	X		X				X	X
Fcu temperature sensor kit	FWTSKA	X	X	X		X	X	X	X		X
Fcu relative humidity sensor kit	FWHska	X	X	X		X		X	X	X	

* = FWB used for heating only

4TW60299-2A (2/2)

4 Capacity tables

4 - 1 Cooling capacity tables - 2-pipe

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		25 - 18															
		6 - 11				7 - 12				8 - 13				9 - 14			
Model	Air flow m ³ /h	Total cooling capacity		Water flow ℓ/h	Water pressure drop kPa	Sensible cooling capacity		Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity		Water flow ℓ/h	Water pressure drop kPa	Sensible cooling capacity		Water flow ℓ/h	Water pressure drop kPa
		W	W			W	W			W	W			W	W		
FWB02	300	1900	1350	326	4	1590	1230	273	3	1410	1150	242	3	1230	1080	211	2
	400	2490	1750	427	7	2130	1610	366	5	1710	1440	294	4	1400	1330	240	3
	500	3020	2120	517	10	2610	1960	448	8	2150	1770	368	5	1760	1760	303	4
	300	2320	1560	398	8	2060	1440	353	6	1760	1320	302	5	1460	1200	250	3
FWB03	400	3020	2080	518	13	2690	1890	461	10	2320	1730	398	8	1890	1560	325	6
	500	3670	2470	630	18	3270	2300	561	15	2830	2120	487	11	2340	1920	402	8
	300	2540	1670	436	6	2270	1550	390	5	2000	1430	344	4	1770	1340	304	3
	400	3360	2210	576	10	3020	2060	518	8	2640	1890	453	7	2190	1710	377	5
FWB05	500	4140	2740	710	15	3730	2550	639	12	3270	2350	561	10	2750	2140	473	7
	600	3810	2650	653	9	3300	2440	566	7	2700	2210	464	5	2170	2170	372	3
	800	4870	3370	834	14	4250	3120	729	11	3560	2850	611	8	2710	2530	465	5
	1000	5830	4020	1000	19	5100	3730	875	15	4300	3420	739	11	3380	3070	581	7
FWB06	600	3870	2740	663	4	3280	2500	562	3	2910	2350	499	3	2530	2200	434	2
	800	5180	3610	889	7	4410	3290	757	5	3360	2870	577	3	2870	2690	493	2
	1000	6360	4380	1091	10	5480	4020	940	8	4450	3610	763	5	3680	3680	632	4
	600	4770	3180	817	8	4230	2940	727	7	3620	2680	622	5	3050	2450	523	4
FWB07	800	6230	4150	1069	13	5560	3860	955	11	4830	3550	829	9	3970	3200	681	6
	1000	7600	5070	1304	19	6800	4720	1167	16	5920	4350	1017	12	4930	3950	847	9
	1000	6250	4250	1072	15	5470	3930	939	12	4600	3590	790	9	3540	3180	607	5
	1200	7260	4910	1245	19	6370	4550	1093	15	5390	4160	926	11	4260	3730	732	7
FWB08	1400	8200	5510	1406	24	7210	5110	1237	19	6130	4690	1052	14	4900	4220	841	9
	1000	7120	4800	1220	15	6290	4450	1080	12	5380	4080	923	9	4280	3640	736	6
	1200	8330	5610	1428	19	7380	5210	1267	16	6340	4780	1089	12	5150	4310	884	8
	1400	9480	6370	1626	24	8410	5920	1443	19	7240	5440	1244	15	5930	4930	1019	10
FWB10	1000	8430	5530	1446	19	7610	5150	1306	15	6710	4760	1153	12	5690	4330	979	9
	1200	9970	6540	1711	25	9010	6100	1546	21	7960	5640	1367	17	6790	5150	1166	12
	1400	11470	7510	1967	32	10360	7010	1778	26	9160	6490	1572	21	7830	5940	1345	16

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4 Capacity tables

4 - 1 Cooling capacity tables - 2-pipe

3
4

Air temperature (°C DB - °C WB) Water temperature (Entering °C - leaving °C)		27 - 19						8 - 13						9 - 14							
		6 - 11		7 - 12		8 - 13		7 - 12		8 - 13		9 - 14		6 - 11		7 - 12		8 - 13		9 - 14	
Model	Air flow m ³ /h	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Sensible cooling capacity W	Water flow ℓ/h	Water pressure drop kPa
FWB02	300	2260	1560	388	6	2010	1460	345	5	1710	1340	293	4	1440	1230	247	3	1230	860	247	3
	400	2920	2010	501	9	2610	1880	448	8	2250	1740	386	6	1840	1580	315	4	1580	1120	315	4
	500	3530	2430	605	13	3160	2270	542	11	2740	2110	470	8	2270	1930	390	6	1930	1380	390	6
	300	2660	1760	456	10	2420	1660	415	9	2150	1540	369	7	1840	1420	317	5	1420	1020	317	5
	400	3450	2290	591	16	3140	2160	539	14	2790	2010	479	11	2420	1860	416	8	1860	1320	416	8
FWB03	500	4190	2790	719	23	3820	2630	655	19	3400	2450	583	15	2950	2270	507	12	2270	1620	507	12
	300	2880	1880	494	8	2640	1770	453	7	2370	1650	407	6	2050	1520	353	4	1520	1080	353	4
	400	3790	2490	651	13	3490	2340	598	11	3130	2190	538	9	2750	2030	472	7	2030	1440	472	7
	500	4680	3070	802	18	4290	2890	737	16	3860	2700	663	13	3400	2510	584	10	2510	1800	584	10
	600	4460	3030	765	12	3990	2840	685	10	3480	2630	597	8	2890	2410	497	6	2410	1740	497	6
FWB05	800	5670	3840	972	18	5080	3600	873	15	4460	3350	765	12	3760	3090	646	9	3090	2220	646	9
	1000	6780	4580	1162	25	6080	4300	1044	21	5340	4010	918	16	4540	3700	779	12	3700	2700	779	12
	600	4680	3200	804	6	4120	2960	706	5	3420	2680	587	3	2970	2510	510	3	2510	1800	510	3
	800	6130	4150	1053	9	5450	3870	936	8	4690	3560	805	6	3750	3200	644	4	3200	2340	644	4
	1000	7470	5020	1282	13	6670	4680	1144	11	5780	4330	993	8	4770	3940	820	6	3940	2840	820	6
FWB07	600	5450	3590	935	11	4960	3370	852	9	4430	3140	760	7	3830	2890	657	6	2890	2140	657	6
	800	7100	4680	1218	17	6470	4400	1111	14	5800	4110	995	12	5060	3810	868	9	3810	2840	868	9
	1000	8660	5700	1486	24	7900	5370	1355	20	7080	5020	1215	17	6190	4660	1063	13	4660	3440	1063	13
	1000	7260	4840	1245	19	6530	4540	1120	16	5740	4230	985	13	4870	3890	836	9	3890	2940	836	9
	1200	8410	5580	1444	25	7570	5230	1299	21	6670	4880	1145	16	5680	4500	976	12	4500	3440	976	12
FWB09	1400	9500	6260	1630	31	8550	5880	1468	25	7540	5480	1295	20	6440	5070	1107	15	5070	3940	1107	15
	1000	8190	5440	1404	19	7410	5110	1272	16	6580	4760	1129	13	5660	4390	972	10	4390	3340	972	10
	1200	9570	6350	1642	25	8670	5960	1488	21	7710	5570	1323	17	6650	5150	1143	13	5150	3940	1143	13
	1400	10890	7200	1868	31	9860	6770	1693	26	8770	6320	1507	21	7590	5860	1304	16	5860	4540	1304	16
	1000	9510	6190	1632	23	8740	5830	1500	20	7900	5460	1358	16	7000	5080	1202	13	5080	3940	1202	13
FWB10	1200	11260	7320	1931	31	10340	6900	1774	26	9350	6470	1606	22	8290	6020	1423	18	6020	4540	1423	18
	1400	12950	8410	2221	39	11890	7930	2039	34	10750	7430	1846	28	9530	6920	1636	23	6920	5140	1636	23

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4 Capacity tables

4 - 2 Capacity tables with glycol for process cooling applications

Cooling mode

Glycol percentage in weight	Freezing temperature (°C)	Capacity correction factor	Pressure drop correction factor
0	0	1	1.00
10	-4	0.93	1.09
20	-10	0.84	1.18
30	-16	0.76	1.27
40	-24	0.76	1.36

Heating mode

Glycol percentage in weight	Freezing temperature (°C)	Capacity correction factor	Pressure drop correction factor
0	0	1	1.00
10	-4	0.98	1.08
20	-10	0.97	1.11
30	-16	0.94	1.22
40	-24	0.91	1.33

4TW60228-1B

Correction factors are based on an average value (at rated water flow rate). This can cause deviation depending on conditions used. The Fan Coil Selection software will provide an accurate result at all conditions.

4 Capacity tables

4 - 3 Heating capacity tables - 2-pipe

3
4

Air temperature (°C) Water temperature (Entering °C - leaving °C)		19											
		50 - 45			60 - 50			70 - 60			90 - 70		
Model	Air flow m ³ /h	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Water flow ℓ/h	Heating capacity W	Water pressure drop kPa	Water flow ℓ/h	Heating capacity W	Water pressure drop kPa	Water flow ℓ/h	Heating capacity W	Water pressure drop kPa
FWB02	300	2230	388	5	3450	301	3	4420	388	5	5950	263	2
	400	2830	493	8	4370	382	5	5600	491	7	7520	332	3
	500	3380	588	10	5220	456	6	6690	587	9	8950	395	5
	300	2420	421	7	3770	329	5	4770	419	7	6500	287	3
	400	3120	543	11	4850	424	7	6150	540	10	8340	368	5
FWB03	500	3780	657	16	5860	512	10	7450	654	14	10070	444	7
	300	2560	445	5	4010	350	3	5040	442	5	6930	306	2
	400	3360	585	9	5260	460	5	6620	581	8	9080	401	4
	500	4140	720	12	6460	565	8	8150	715	11	11140	492	6
	600	4250	739	9	6580	574	6	8400	737	9	11290	498	4
FWB05	800	5340	928	14	8230	719	8	10550	926	13	14110	623	6
	1000	6330	1100	19	9740	851	11	12520	1098	17	16680	737	8
	600	4610	802	5	7150	624	3	9140	802	4	12340	545	2
	800	5900	1026	7	9130	798	5	11660	1023	7	15690	692	3
	1000	7080	1231	10	10940	955	6	14000	1229	9	18770	829	4
FWB07	600	4930	856	8	7680	671	5	9710	852	7	13260	585	3
	800	6380	1110	12	9930	868	7	12570	1108	11	17090	755	5
	1000	7750	1348	17	12040	1053	10	15280	1341	15	20710	914	7
	1000	6770	1177	14	10450	913	9	13380	1174	13	17920	791	6
	1200	7790	1355	18	12010	1049	11	15400	1351	17	20570	908	8
FWB08	1400	8750	1522	22	13470	1177	14	17310	1518	20	23070	1018	10
	1000	7520	1307	14	11660	1018	8	14820	1301	12	20020	884	6
	1200	8740	1520	18	13540	1183	11	17250	1514	16	23240	1026	8
	1400	9910	1723	22	15320	1339	13	19570	1717	20	26290	1160	10
	1000	8270	1439	15	12920	1129	9	16280	1429	14	22270	983	7
FWB10	1200	9770	1698	20	15230	1330	13	19220	1687	18	26230	1157	9
	1400	11210	1948	26	17450	1525	16	22070	1936	23	30030	1326	11

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4 Capacity tables

4 - 3 Heating capacity tables - 2-pipe

Air temperature (°C) Water temperature (Entering °C - leaving °C)		20															
		50 - 45				60 - 50				70 - 60				90 - 70			
		Model	Air flow m ³ /h	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa		
FWB02	300	2130	370	5	3350	292	3	4320	379	4	5840	258	2				
	400	2700	470	7	4240	371	4	5470	480	7	7380	326	3				
	500	3230	562	10	5060	442	6	6530	573	9	8780	388	4				
	300	2310	402	7	3660	320	4	4660	409	6	6380	282	3				
FWB03	400	2980	519	11	4710	412	7	6010	527	10	8190	362	5				
	500	3610	628	15	5690	497	9	7280	638	14	9890	436	7				
	300	2450	426	5	3890	340	3	4930	432	5	6810	301	2				
	400	3220	560	8	5110	446	5	6470	567	8	8920	394	4				
FWB05	500	3960	689	12	6280	549	7	7960	698	11	10940	483	5				
	600	4060	707	9	5820	508	8	8200	720	8	11080	489	4				
	800	5100	886	13	7990	698	8	10310	904	12	13860	612	6				
	1000	6040	1051	17	9450	826	11	12220	1072	16	16380	723	8				
FWB06	600	4410	766	4	6610	578	12	8920	783	4	12110	535	2				
	800	5640	980	7	8850	774	4	11390	999	7	15400	680	3				
	1000	6760	1176	9	10610	927	6	13680	1199	9	18430	814	4				
	600	4710	819	7	7400	646	10	9480	832	7	13020	575	3				
FWB07	800	6110	1062	11	9650	843	7	12280	1077	10	16790	741	5				
	1000	7410	1290	15	11700	1022	10	14920	1309	15	20340	898	7				
	1000	6470	1125	13	10140	886	8	13060	1146	13	17590	776	6				
	1200	7440	1294	17	11650	1018	11	15050	1319	16	20200	892	8				
FWB09	1400	8360	1453	21	13070	1142	13	16900	1483	20	22650	1000	9				
	1000	7190	1249	13	11320	988	8	14480	1271	12	19660	868	6				
	1200	8360	1453	16	13140	1148	10	16850	1479	15	22810	1007	8				
	1400	9470	1646	20	14870	1300	13	19110	1676	19	25810	1140	9				
FWB10	1000	7920	1377	14	12550	1097	9	15900	1395	13	21880	965	7				
	1200	9340	1625	19	14790	1292	12	18780	1647	18	25760	1137	9				
	1400	10720	1864	24	16950	1481	15	21550	1891	22	29490	1302	11				

4TW60292-1 (Sheet 4/6)

4 Capacity tables

4 - 4 Heating capacity tables additional heat exchanger

3
4

Air temperature (°C) Water temperature (Entering °C - leaving °C)		19														
		50 - 45				60 - 50				70 - 60				90 - 70		
Model	Air flow m ³ /h	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa
EAH04A6	300	1350	236	3	2050	179	2	2750	241	3	3550	157	1			
	400	1590	277	4	2410	211	2	3220	282	4	4160	184	2			
	500	1790	312	5	2710	237	3	3610	317	4	4670	206	2			
	600	2630	457	4	3990	348	3	5270	462	4	6870	303	2			
EAH07A6	800	3070	533	6	4660	408	3	6140	538	5	7980	352	2			
	1000	3430	596	7	5210	455	4	6870	602	7	8900	393	3			
	1000	5800	1009	7	8900	778	4	11520	1011	6	15250	673	3			
	1200	6610	1149	9	10120	885	5	13120	1150	8	17330	765	4			
EAH10A6	1400	7350	1278	11	11260	984	6	14600	1281	10	19260	850	5			

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4 Capacity tables

4 - 4 Heating capacity tables additional heat exchanger

Air temperature (°C) Water temperature (Entering °C - leaving °C)		20													
		50 - 45				60 - 50				70 - 60				90 - 70	
Model	Air flow m ³ /h	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa	Heating capacity W	Water flow ℓ/h	Water pressure drop kPa		
EAH04A6	300	1290	224	3	1980	173	2	2680	235	3	3480	153	1		
	400	1510	263	3	2330	203	2	3140	275	3	4080	180	2		
	500	1700	296	4	2620	229	3	3520	309	4	4580	202	2		
EAH07A6	600	2500	434	4	3860	337	2	5140	451	4	6740	298	2		
	800	2920	508	5	4510	394	3	5990	526	5	7830	346	2		
	1000	3270	568	7	5040	441	4	6700	588	6	8740	386	3		
EAH10A6	1000	5540	963	6	8620	753	4	11250	986	6	11250	986	6		
	1200	6310	1096	8	9820	858	5	12800	1123	8	12800	1123	8		
	1400	7020	1220	10	10910	954	6	14260	1250	9	14260	1250	9		

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4 Capacity tables

4 - 5 Power consumption

FWB02-04

Speed	7 (Max.)		6		5		4		3		2		1 (Min.)	
AP	Power input	Current	Power input	Current	Power input	Current	Power input	Current	Power input	Current	Power input	Current	Power input	Current
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)
0	106	0.506	85	0.413	69	0.342	56	0.285	47	0.241	40	0.208	34	0.180
20	100	0.483	81	0.394	66	0.326	54	0.273	45	0.232	38	0.200	32	0.173
40	96	0.463	76	0.374	63	0.309	51	0.260	43	0.222	36	0.192		
60	90	0.438	71	0.355	60	0.296	49	0.250						
80	84	0.415	68	0.340	56	0.282								
100	80	0.399	65	0.326										

4TW60291-2 (2/4)

3

4

FWB05-07

Speed	7 (Max.)		6		5		4		3		2		1 (Min.)	
AP	Power input	Current	Power input	Current	Power input	Current	Power input	Current	Power input	Current	Power input	Current	Power input	Current
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)
0	192	0.944	167	0.842	156	0.789	143	0.736	115	0.592	92	0.487	76	0.408
20	182	0.893	160	0.809	150	0.752	136	0.695	108	0.560	88	0.463	73	0.390
40	170	0.837	150	0.752	141	0.708	130	0.660	103	0.531	85	0.443	70	0.372
60	156	0.778	141	0.708	132	0.664	122	0.618	98	0.504	80	0.420	68	0.360
80	148	0.728	131	0.658	124	0.621	115	0.581	92	0.475	77	0.399		
100	138	0.684	122	0.613	115	0.580	107	0.545	88	0.447				

4TW60291-2 (3/4)

4 Capacity tables

4 - 6 Capacity correction factor

FWB08-10

Speed	7 (Max.)		6		5		4		3		2		1 (Min.)	
AP	Power input	Current	Power input	Current	Power input	Current	Power input	Current	Power input	Current	Power input	Current	Power input	Current
(Pa)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)	(W)	(A)
0	294	1.274	252	1.104	224	0.995	193	0.878	177	0.817	164	0.761	155	0.727
20	278	1.210	240	1.045	211	0.930	181	0.810	168	0.768	155	0.718	149	0.688
40	265	1.157	223	0.985	198	0.872	170	0.763	160	0.723	148	0.680	142	0.650
60	251	1.100	211	0.927	184	0.815	158	0.709	148	0.670	138	0.627	135	0.606
80	236	1.035	200	0.876	172	0.753	145	0.650	138	0.615				
100	224	0.980	186	0.815										

4TW60291-2 (4/4)

4 Capacity tables

4 - 6 Capacity correction factor

3
4

ESP (Pa)	10		20		30		40		50		60		70		80		90		
	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	
FWB02	Fan speed																		
	Min. (1)	0.83	0.85	0.67	0.74	0.51	0.62	0.35	0.46										
	Med. (4)	0.91	0.92	0.82	0.84	0.73	0.76	0.64	0.66	0.56	0.59	0.47	0.53	0.38	0.46	0.29	0.38	0.21	0.29
FWB03	Max. (7)	0.95	0.96	0.89	0.91	0.83	0.86	0.78	0.82	0.72	0.77	0.66	0.71	0.61	0.66	0.55	0.60	0.49	0.54
	Min. (1)	0.83	0.84	0.67	0.69	0.51	0.56	0.35	0.40										
	Med. (4)	0.91	0.92	0.82	0.84	0.73	0.75	0.64	0.67	0.56	0.58	0.47	0.49	0.38	0.42	0.29	0.34	0.21	0.25
FWB04	Max. (7)	0.95	0.95	0.89	0.91	0.83	0.86	0.78	0.81	0.72	0.76	0.66	0.71	0.61	0.65	0.55	0.59	0.49	0.53
	Min. (1)	0.83	0.84	0.67	0.70	0.51	0.55	0.35	0.39										
	Med. (4)	0.91	0.91	0.82	0.83	0.73	0.74	0.64	0.65	0.56	0.57	0.47	0.50	0.38	0.42	0.29	0.33	0.21	0.24
FWB05	Max. (7)	0.95	0.95	0.89	0.90	0.83	0.85	0.78	0.80	0.72	0.74	0.66	0.69	0.61	0.63	0.55	0.57	0.49	0.51
	Min. (1)	0.88	0.88	0.76	0.77	0.64	0.69	0.53	0.61	0.42	0.51	0.31	0.40						
	Med. (4)	0.96	0.96	0.91	0.93	0.86	0.89	0.82	0.84	0.76	0.80	0.71	0.75	0.65	0.69	0.59	0.63	0.53	0.57
FWB06	Max. (7)	0.96	0.97	0.92	0.93	0.87	0.90	0.83	0.86	0.78	0.82	0.73	0.78	0.68	0.74	0.63	0.69	0.58	0.65
	Min. (1)	0.88	0.92	0.76	0.83	0.64	0.74	0.53	0.64	0.42	0.53	0.31	0.40						
	Med. (4)	0.96	0.96	0.91	0.91	0.86	0.87	0.82	0.82	0.76	0.76	0.71	0.70	0.65	0.65	0.59	0.61	0.53	0.57
FWB07	Max. (7)	0.96	0.96	0.92	0.93	0.87	0.89	0.83	0.85	0.78	0.80	0.73	0.76	0.68	0.71	0.63	0.66	0.58	0.61
	Min. (1)	0.88	0.90	0.76	0.81	0.64	0.70	0.53	0.60	0.42	0.48	0.31	0.36						
	Med. (4)	0.96	0.96	0.91	0.92	0.86	0.87	0.82	0.83	0.76	0.78	0.71	0.73	0.65	0.67	0.59	0.61	0.53	0.54
FWB08	Max. (7)	0.96	0.96	0.92	0.93	0.87	0.89	0.83	0.85	0.78	0.81	0.73	0.76	0.68	0.71	0.63	0.67	0.58	0.62
	Min. (1)	0.91	0.92	0.81	0.83	0.71	0.73	0.60	0.62	0.48	0.51	0.35	0.41						
	Med. (4)	0.93	0.94	0.85	0.88	0.77	0.81	0.68	0.73	0.59	0.64	0.49	0.54	0.38	0.42	0.25	0.31		
FWB09	Max. (7)	0.95	0.96	0.89	0.92	0.84	0.88	0.77	0.83	0.71	0.77	0.64	0.71	0.57	0.64	0.49	0.57	0.40	0.48
	Min. (1)	0.91	0.92	0.81	0.82	0.71	0.72	0.60	0.61	0.48	0.51	0.35	0.40						
	Med. (4)	0.93	0.94	0.85	0.87	0.77	0.80	0.68	0.72	0.59	0.63	0.49	0.52	0.38	0.40	0.25	0.30		
FWB10	Max. (7)	0.95	0.96	0.89	0.91	0.84	0.86	0.77	0.81	0.71	0.76	0.64	0.70	0.57	0.63	0.49	0.55	0.40	0.46
	Min. (1)	0.91	0.91	0.81	0.82	0.71	0.72	0.60	0.60	0.48	0.50	0.35	0.38						
	Med. (4)	0.93	0.93	0.85	0.86	0.77	0.78	0.68	0.70	0.59	0.61	0.49	0.51	0.38	0.39	0.25	0.27		
Max. (7)	0.95	0.96	0.89	0.91	0.84	0.86	0.77	0.80	0.71	0.74	0.64	0.68	0.57	0.60	0.49	0.52	0.40	0.43	

4TW60298-1

Conditions

Cooling

Heating 2-pipe

Air: 27°C DB - 19°C WB - Water: entering 7°C - leaving 12°C

Air: 20°C Water: entering 50°C water flow as for cooling

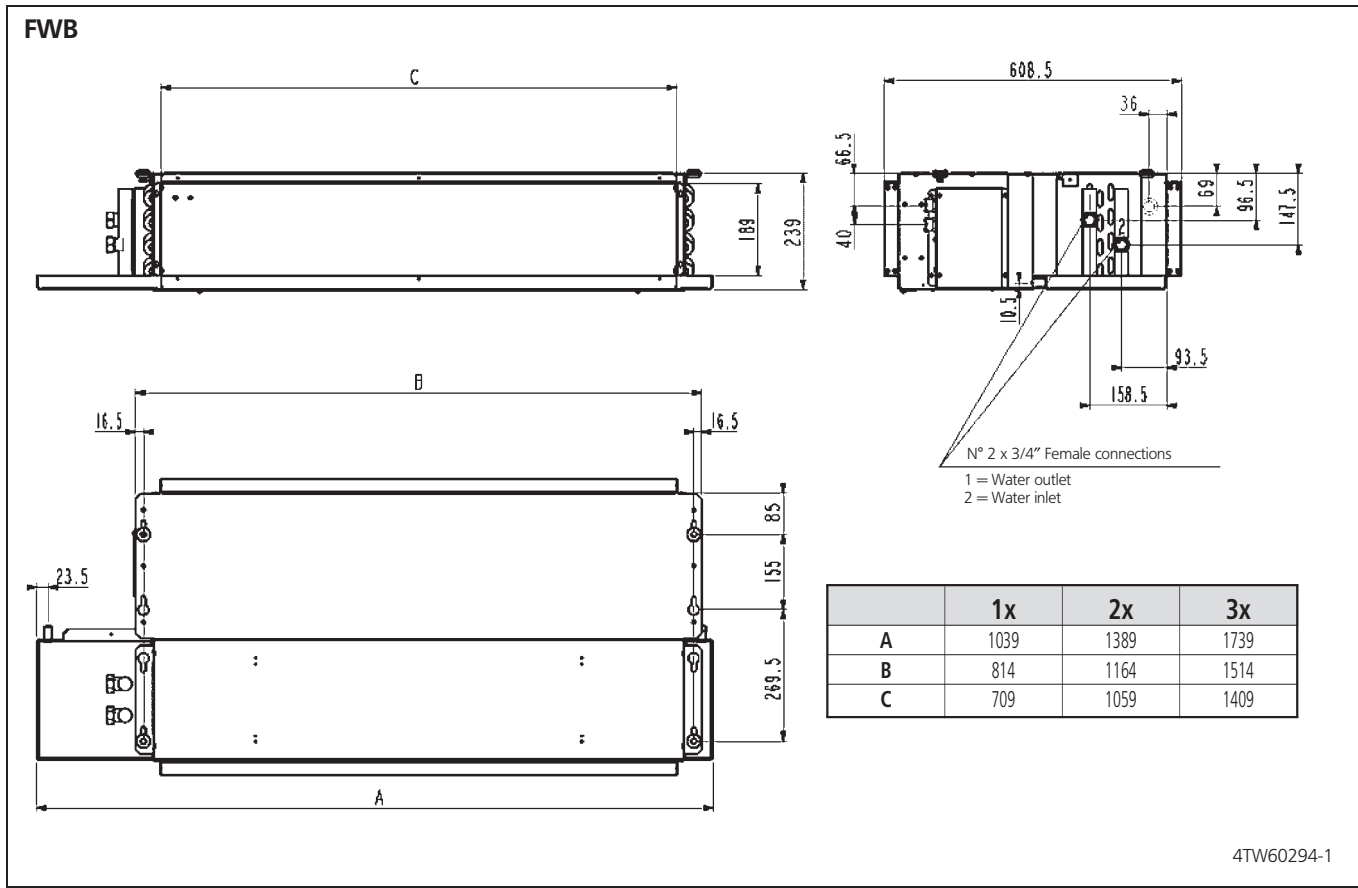
F1 = correction factor for air flow

F2 = correction factor for capacities

Correction factors are based on an average value. This can cause deviation depending on conditions used. The Fan Coil Selection software will provide an accurate result at all conditions.

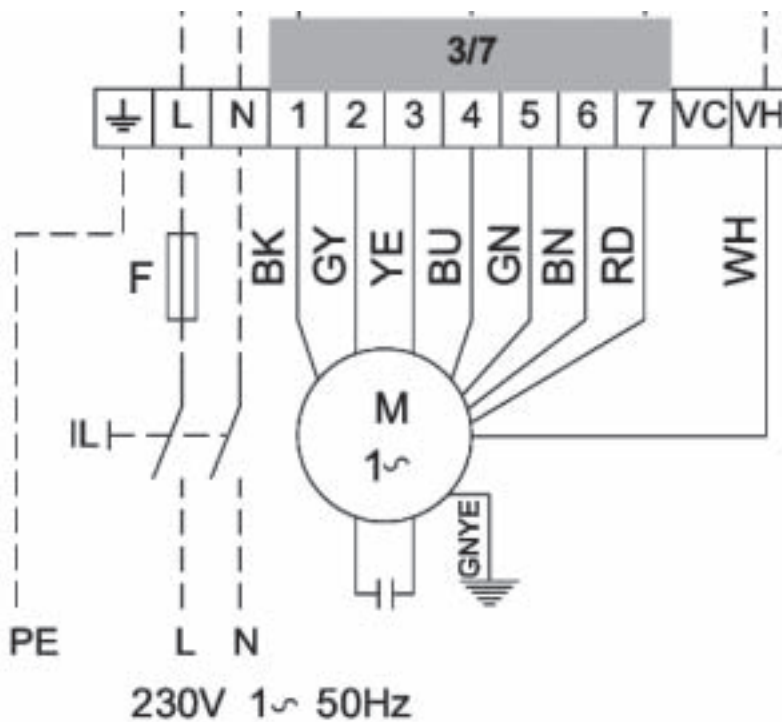
5 Dimensional drawing

5 - 1 Dimensional drawing



6 Wiring diagram

6 - 1 Wiring diagram



SYMBOLS

BK	Black = maximum speed
BU	Blue = medium speed
GNYE	Yellow/Green = earth connection
RD	Red = minimum speed
WH	White = common
---	Field wiring
F	Protection fuse (field supply)
IL	Main switch (field supply)
M	Fan motor
PE	Earth connection

4TW60296-1

7 Sound data

7 - 1 Sound power spectrum - 2-pipe

FWB02-04		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
7	Lw tot dB(A)	54	57	55	53	51	45	36	58
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	50	54	52	50	48	43	33	-
	Structure	37	40	47	36	43	27	19	-
	Inlet	52	54	51	49	45	40	32	-
6	Lw tot dB(A)	50	53	51	48	46	36	25	52
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	46	50	48	46	44	34	23	-
	Structure	33	35	42	31	38	18	8	-
	Inlet	48	50	47	44	41	31	21	-
5	Lw tot dB(A)	47	50	48	44	42	34	23	50
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	43	47	44	42	40	32	21	-
	Structure	30	32	39	27	34	16	6	-
	Inlet	45	46	43	41	37	29	19	-
4	Lw tot dB(A)	44	46	44	41	37	27	20	46
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	39	43	40	38	35	25	17	-
	Structure	27	28	35	24	29	10	3	-
	Inlet	41	43	40	37	32	23	16	-
3	Lw tot dB(A)	41	44	41	38	34	23	19	43
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	37	41	38	35	31	21	16	-
	Structure	24	26	32	21	25	5	2	-
	Inlet	39	40	37	34	28	18	15	-
2	Lw tot dB(A)	39	41	38	35	30	17	18	40
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	35	38	35	32	27	15	15	-
	Structure	22	23	30	18	22	nm	nm	-
	Inlet	37	38	34	31	24	13	14	-
1	Lw tot dB(A)	35	38	34	31	26	15	17	36
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	31	35	31	28	23	13	15	-
	Structure	18	20	26	14	17	nm	nm	-
	Inlet	33	34	30	27	20	10	14	-

4TW60297-1 (Sheet 1/3)

To calculate the sound pressure you must define some conditions and use this formula

$$L_p = L_w - 10 \times \log_{10} \left(\frac{4\pi \times d^2}{Q} \right)$$

Where:

Q = direction factor: is Q=4 if the FCU is installed near 2 walls (vertical or floor-ceiling), Q=2 if the FCU is installed near 1 wall (at floor or ceiling but faraway the 2nd wall)

d = distance (mt) from the sound source and the measure point

LP = Sound pressure (dBA)

Lw = Sound power (dBA)

Conditions of measurements

ISO3741 = The sound power is calculated WITHOUT any additional inlet or outlet grill or plenum.

nm = Not measurable

7 Sound data

7 - 1 Sound power spectrum - 2-pipe

3

7

FWB05-07		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
7	Lw tot dB(A)	55	59	59	54	52	46	37	60
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	51	57	55	52	49	44	34	-
	Structure	38	42	50	37	43	28	20	-
	Inlet	53	56	55	50	46	42	33	-
6	Lw tot dB(A)	52	56	55	50	47	39	29	56
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	48	53	52	47	44	37	27	-
	Structure	35	38	46	33	38	22	12	-
	Inlet	50	52	51	46	41	35	25	-
5	Lw tot dB(A)	49	55	54	47	44	34	24	54
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	44	52	51	45	41	32	21	-
	Structure	32	37	45	30	36	17	7	-
	Inlet	46	51	50	44	38	30	20	-
4	Lw tot dB(A)	46	52	52	45	41	32	21	52
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	42	49	49	43	39	30	18	-
	Structure	29	35	43	28	33	14	4	-
	Inlet	44	49	48	42	36	28	17	-
3	Lw tot dB(A)	45	49	47	41	36	25	16	47
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	41	46	43	38	34	23	14	-
	Structure	28	31	38	24	28	7	nm	-
	Inlet	43	46	43	37	31	21	13	-
2	Lw tot dB(A)	41	45	43	36	30	17	15	43
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	37	42	39	33	27	15	12	-
	Structure	24	28	34	19	21	nm	nm	-
	Inlet	39	42	38	32	24	12	11	-
1	Lw tot dB(A)	37	41	37	30	20	11	14	37
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	33	38	34	27	18	9	12	-
	Structure	20	23	29	13	12	nm	nm	-
	Inlet	35	37	33	26	15	6	11	-

4TW60297-1 (Sheet 2/3)

To calculate the sound pressure you must define some conditions and use this formula

$$L_p = L_w - 10 \times \log_{10} \left(\frac{4\pi \times d^2}{Q} \right)$$

Where:

Q = direction factor: is Q=4 if the FCU is installed near 2 walls (vertical or floor-ceiling), Q=2 if the FCU is installed near 1 wall (at floor or ceiling but faraway the 2nd wall)

d = distance (mt) from the sound source and the measure point

LP = Sound pressure (dBA)

Lw = Sound power (dBA)

Conditions of measurements

ISO3741 = The sound power is calculated WITHOUT any additional inlet or outlet grill or plenum.

nm = Not measurable

7 Sound data

7 - 1 Sound power spectrum - 2-pipe

FWB08-10		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
7	Lw tot dB(A)	63	67	65	64	61	55	49	69
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	59	64	62	62	59	53	46	-
	Structure	46	49	57	47	53	38	32	-
	Inlet	61	63	61	61	56	51	45	-
6	Lw tot dB(A)	61	64	63	63	60	53	46	67
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	57	61	60	60	57	51	43	-
	Structure	44	47	55	46	51	35	29	-
	Inlet	59	61	59	59	54	48	42	-
5	Lw tot dB(A)	58	60	61	60	56	49	41	64
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	54	57	58	58	54	47	39	-
	Structure	41	43	52	43	48	31	24	-
	Inlet	56	57	57	57	51	44	37	-
4	Lw tot dB(A)	52	55	56	54	51	43	34	58
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	48	52	53	51	49	41	31	-
	Structure	35	37	47	37	43	26	17	-
	Inlet	50	51	52	50	45	39	30	-
3	Lw tot dB(A)	50	53	54	51	50	41	31	56
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	46	50	51	49	47	39	28	-
	Structure	33	35	46	34	41	23	14	-
	Inlet	48	49	50	48	44	36	27	-
2	Lw tot dB(A)	51	50	52	49	47	39	28	54
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	47	47	49	47	45	36	26	-
	Structure	34	33	44	32	39	21	11	-
	Inlet	49	47	48	45	42	34	25	-
1	Lw tot dB(A)	46	49	51	48	46	38	28	53
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
	Outlet	42	46	47	45	44	36	25	-
	Structure	29	31	42	31	38	20	11	-
	Inlet	44	46	47	44	41	33	24	-

4TW60297-1 (Sheet 3/3)

To calculate the sound pressure you must define some conditions and use this formula

$$L_p = L_w - 10 \times \log_{10} \left(\frac{4\pi \times d^2}{Q} \right)$$

Where:

Q = direction factor: is Q=4 if the FCU is installed near 2 walls (vertical or floor-ceiling), Q=2 if the FCU is installed near 1 wall (at floor or ceiling but faraway the 2nd wall)

d = distance (mt) from the sound source and the measure point

LP = Sound pressure (dBA)

Lw = Sound power (dBA)

Conditions of measurements

ISO3741 = The sound power is calculated WITHOUT any additional inlet or outlet grill or plenum.

nm = Not measurable

8 Installation

8 - 1 Installation method

BEFORE THE INSTALLATION

The equipment is to be installed and serviced exclusively by technical personnel who are qualified for using this type of machine, in compliance with the relevant local and national regulations.

On receiving the equipment, check its state ensuring that it was not damaged during transport. Refer to the associated technical sheets for the installation and use instructions of any accessories.

INTENDED CONDITIONS OF USE AND OPERATING LIMITS

No responsibility is assumed if the equipment is installed by unqualified personnel, if it is used improperly or under inadmissible conditions, if maintenance is not performed as envisaged in this manual or if original spare parts are not used. For the operating limits please refer to the appropriate chapter. Any other use is considered improper.

Keep the equipment inside the packing until it is ready to be installed so that dust will not infiltrate.

Air sucked by the equipment must always be filtered. Use, when possible, the specific accessories.

If not used during the winter, drain the water from the system to prevent damage caused by the formation of ice. If antifreeze solutions are used, check the freezing point.

Do not change the internal wiring or other parts of the equipment.

INSTALLATION WARNING:

On the thermal-ventilating unit install a switch (IL) and/or all remote controls in a position out of the reach of persons who are in a bathtub or shower.

The FWB units may be installed only in horizontal position. Check that the desired installation complies with one of the diagrams shown in the installation manual.

FIXING the unit

Fix the standard unit to the ceiling or wall using at least 4 of the 6 slots.;

For the installation (ceiling-mounting) it is advisable to use M8 threaded bars, screw anchors suitable for the machine's weight, and to arrange for the positioning of the machine using 2 M8 bolts and a washer the diameter of which is suitable for inserting the slot and for then fixing the unit.

Before tightening the check nut, adjust the closing of the main nut so that the equipment will slant correctly, i.e. for facilitating the discharging of the condensate.

The correct slant is achieved by tilting the intake downwards as compared to the delivery, until a difference in level of about 10 mm is obtained from one end to the other. Make the hydraulic connections with the heat exchanger and, for cooling operations, with the condensate discharge.

Use one of the two drains of the auxiliary tank, visible on the outside of the unit's side panels and vertical condensate discharge.

4TW60299-3 (Sheet 1/2)

3

8

8 Installation

8 - 1 Installation method

A few rules to follow

Carry out the heat exchanger's air exhaust, with pumps stopped, by means of the air valves located adjacent to the attachments of the heat exchanger itself.

When implementing a duct system, it is advisable to place the vibration-damping joints between the ducting and the unit. If you wish to install an electrical resistance module as accessory, the delivery vibration-damping joint should be heat-resistant. The ducting, especially the delivery one, should be insulated with anticondensing material.

Provide an inspection panel adjacent to the equipment for the maintenance and cleaning operations.

Install the control panel on the wall. Choose a position that is easy to access for the setting of the functions and, if contemplated, for the reading of the temperature. Try to avoid positions that are directly exposed to sun rays, or positions subject to direct hot or cold air currents, and do not place obstacles in the way that would prevent the correct reading of the temperature.

ELECTRICAL CONNECTIONS

Make the electrical connections with voltage OFF, in compliance with the relevant local and national regulations.

Exclusively qualified personnel should carry out the wiring operations. **Each fancoil 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).**

Power consumption is shown on the data plate fixed to the unit. Make sure to carefully execute the wiring in function of the combination unit/controller and this according to the correct wiring diagram delivered with every accessory. In order to make the electrical connections you must remove the lower closing panel to access the terminal board. The power cables (power supply and control) must be routed to the terminal board through the cable grip that is on the side panel of the machine on the same side of the hydraulic connections.

WARNING

The COMMON wire of the motor is the WHITE one: if connected incorrectly the motor would be damaged irreparably. See wiring diagrams for color codes.

FUNCTIONAL CHECKS

Check that the equipment has been installed so that it guarantees the required slant.

Check that the condensate discharge is not clogged (by rubble deposits, etc.).

Check the seal of the hydraulic connections.

Check that all the wirings are tight (perform the check with voltage OFF).

Make sure air has been purged from the heat exchanger.

Power the equipment and check its working efficiency.

Installation & service distances for FWB units

Consider at least

- 500 mm free space on water connections side (piping & connections) measured from the boundary of the drain pan.
- 200 mm free space on the opposite side (to unscrew heat exchangers or fan deck in case of repairing)
- Possibility to extract filter for cleaning has to be considered
- Possibility to reach the unit for ordinary and extraordinary maintenance (for instance removing front panels) has to be considered

4TW60229-3 (Sheet 2/4)

9 Operation range

Minimum water temperature	+5°C
Maximum water temperature	+95°C
Maximum operating pressure	10 bar
Minimum air inlet temperature	5°C
Maximum air inlet temperature	+43°C
Power supply	230V +-10% / 1~ / 50Hz

4TW60293-1

10 Water pressure drop curve evaporator

10 - 2 Water pressure drop curve evaporator heating 2-pipe

FWB									
Water flow l/h	Water pressure drop								
	FWB02	FWB03	FWB04	FWB05	FWB06	FWB07	FWB08	FWB09	FWB10
	kPa	kPa	kPa	kPa	kPa	kPa	kPa	kPa	kPa
100	1	1	<1	<1	<1	<1	<1	<1	<1
200	2	2	2	1	<1	1	1	1	1
300	4	5	3	2	1	1	2	1	1
400	6	8	5	4	2	2	3	2	2
500	9	12	8	6	3	4	4	3	3
600	13	16	11	8	3	5	5	4	4
700	17	21	14	10	5	6	7	5	5
800	21	27	18	13	6	8	9	7	6
900	26	33	22	16	7	10	11	8	8
1000	32	40	27	19	9	12	13	10	10
1100	37	47	32	23	10	14	15	12	11
1200	44	55	37	26	12	16	18	14	13
1300	50	64	42	30	14	19	20	16	15
1400	57	72	48	35	15	21	23	18	17
1500	65	82	55	39	17	24	26	21	20
1600	72	92	61	44	20	27	29	23	22
1700	81	102	68	49	22	30	33	26	24
1800	89		75	54	24	33	36	29	27
1900	98		83	59	26	37	40	32	30
2000	107		91	65	29	40	44	34	32
2100			99	71	32	44	48	38	35
2200			107	77	34	48	52	41	38
2300				83	37	51	56	44	41
2400				89	40	55	60	48	45
2500				96	43	60	65	51	48
3000					59	82	89	70	66
3500					77	108	117	92	87
4000					98			117	110

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12-2 Water pressure drop curve evaporator heating 2-pipe

FWB									
Water flow l/h	Water pressure drop								
	FWB02	FWB03	FWB04	FWB05	FWB06	FWB07	FWB08	FWB09	FWB10
	kPa	kPa	kPa	kPa	kPa	kPa	kPa	kPa	kPa
100	<1	1	<1	<1	<1	<1	<1	<1	<1
200	2	2	1	1	<1	1	1	1	<1
300	3	4	3	2	1	1	1	1	1
400	5	7	4	3	1	2	2	2	2
500	8	10	7	5	2	3	3	3	2
600	11	13	9	6	3	4	4	3	3
700	14	17	12	8	4	5	6	5	4
800	17	22	15	11	5	7	7	6	5
900	21	27	18	13	6	8	9	7	7
1000	26	32	22	16	7	10	11	8	8
1100	30	38	26	18	8	12	13	10	9
1200	35	45	30	21	10	13	15	12	11
1300	40	51	34	25	11	15	17	13	13
1400	46	58	39	28	13	17	19	15	14
1500	52	66	44	32	14	20	22	17	16
1600	58	74	49	35	16	22	24	19	18
1700	65	82	55	39	18	25	27	21	20
1800	71	90	60	43	19	27	30	23	22
1900	78	99	66	48	21	30	32	26	24
2000	86	109	73	52	23	33	35	28	27
2100	93		79	57	25	35	39	31	29
2200	101		86	62	28	38	42	33	31
2300	110		93	67	30	41	45	36	34
2400			100	72	32	45	49	39	36
2500			107	77	35	48	52	41	39
3000				106	47	66	72	57	54
3500					62	86	94	74	70
4000					78	109	119	94	89
4500					96			115	109
5000					116				

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10 Water pressure drop curve evaporator

10 - 3 Water pressure drop curve evaporator additional heat exchanger

3
10

FWB			
Water flow l/h	Water pressure drop		
	EAH04A6	EAH07A6	EAH10A6
	kPa	kPa	kPa
100	1	<1	<1
200	2	1	<1
300	4	2	1
400	7	3	1
500	10	5	2
600	13	7	3
700	17	9	3
800	22	11	4
900	27	13	5
1000	32	16	6
1100	38	19	8
1200	44	22	9
1300	51	25	10
1400	58	29	11
1500	66	32	13
1600	73	36	14
1700	82	40	16
1800	90	44	18
1900	99	49	19
2000	108	53	21
2100	118	58	23
2200		63	25
2300		68	27
2400		73	29
2500		79	31
3000		108	43
3500			56
4000			71
4500			87
5000			105

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1 Specifications

1-1 Nominal capacity and nominal input			FWC02AF	FWC03AF	FWC04AF	FWC05AF	FWC06AF	FWC07AT	FWC08AT	FWC10AT	
Power Input	High		W	122	138	153	184	232	127	151	164
	Medium		W	110	111	129	149	190	115	122	139
	Low		W	98	96	113	116	167	102	105	122
Cooling capacity	Total capacity	High	kW	3.81	3.96	4.63	5.01	5.16	6.63	7.50	8.80
		Medium	kW	3.69	3.81	4.40	4.81	4.95	6.00	6.75	7.80
		Low	kW	3.63	3.71	4.31	4.63	4.76	5.10	5.60	6.60
	Sensible capacity	High	kW	3.40	3.52	4.07	4.40	4.54	4.90	5.40	6.40
		Medium	kW	3.17	3.28	3.75	4.10	4.22	4.40	4.90	5.65
		Low	kW	3.11	3.14	3.60	3.87	3.66	3.65	4.00	4.60
Heating capacity (2-pipe)	High		kW						8.40	9.50	11.00
	Medium		kW						7.50	8.45	9.70
	Low		kW						6.40	6.90	8.00
Heating capacity (4-pipe)	High		kW	10.55	10.99	12.51	13.48	13.77			
	Medium		kW	9.99	10.08	10.52	12.46	12.81			
	Low		kW	9.55	9.67	10.96	11.72	12.02			

1-1 Nominal capacity and nominal input			FWC11AT				FWC12AT				
Power Input	High		W	192				253			
	Medium		W	155				208			
	Low		W	121				183			
Cooling capacity	Total capacity	High	kW	9.95				10.80			
		Medium	kW	9.20				10.20			
		Low	kW	7.50				8.60			
	Sensible capacity	High	kW	7.10				7.70			
		Medium	kW	6.60				7.30			
		Low	kW	5.10				6.00			
Heating capacity (2-pipe)	High		kW	12.00				12.90			
	Medium		kW	11.10				12.10			
	Low		kW	8.90				10.20			

1-2 Technical Specifications				FWC02AF	FWC03AF	FWC04AF	FWC05AF	FWC06AF	FWC07AT	FWC08AT	FWC10AT
Dimensions	Unit	Height	mm	335	335	335	335	335	335	335	335
		Width	mm	820	820	820	820	820	820	820	820
		Depth	mm	821	821	821	821	821	821	821	821
	Unit with packing	Height	mm	380	380	380	380	380	380	380	380
		Width	mm	920	920	920	920	920	920	920	920
		Depth	mm	920	920	920	920	920	920	920	920
Weight	Machine weight		kg	31.0	32.0	35.0	38.0	40.0	31.0	32.0	35.0
	Operation weight		kg	34.0	35.0	38.0	41.0	43.0	34.0	35.0	38.0
	Gross weight		kg	32.0	33.0	36.0	39.0	41.0	32.0	33.0	36.0
Casing	Material			Electro-galvanised mild steel (ABS)							
Sound level	Sound pressure	High	dB(A)	42	45	49	51	53	42	45	49
		Medium	dB(A)	39	42	45	48	52	39	42	45
		Low	dB(A)	37	40	43	46	50	37	40	43
	Sound power	High	dB(A)	52	55	60	61	64	52	55	60
		Medium	dB(A)	50	52	56	59	63	50	52	56
		Low	dB(A)	49	50	54	57	57	49	50	54
Water flow	Cooling		l/h	655	681	796	862	888	1,140	1,290	1,514
	Heating		l/h						1,140	1,290	1,514
	Add. heat exchanger		l/h	907	945	1,076	1,159	1,184			
Water pressure drop	Cooling		kPa	3.56	3.78	4.94	5.7	5.96	24.8	30.8	41.6
	Heating		kPa						21.4	26.8	35.3
	Add. heat exchanger		kPa	4.8	5.5	7.2	8.6	8.9			

4
1

1 Specifications

1-2 Technical Specifications				FWC02AF	FWC03AF	FWC04AF	FWC05AF	FWC06AF	FWC07AT	FWC08AT	FWC10AT
Fan	Type			Direct drive turbo fan							
	Air flow rate	High	m ³ /h	1,310	1,380	1,560	1,740	1,840	1,310	1,380	1,560
		Medium	m ³ /h	1,130	1,180	1,320	1,530	1,680	1,130	1,180	1,320
		Low	m ³ /h	1,070	1,070	1,210	1,340	1,540	1,070	1,070	1,210
	Speed			3 steps : high, medium, low							
Quantity			1	1	1	1	1	1	1	1	
Motor	Type			Induction							
Standard heat exchanger	Rows	mm	2	2	2	2	2	2	2	2	
	Stages	mm	2	2	2	2	2	4	4	4	
	Fin pitch	mm	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	
	Face area	m ²	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	
	Water volume	l	2.69	2.69	2.69	2.69	2.69	2.69	2.69	2.69	
Air filter	Washable Sarannet										
Insulation material	PE										
Vibration insulation	Rubber Bush (Fan Motor)										
Water connections	Std. heat exchanger	inch	3/4"								
	Add. heat exchanger	inch	3/4"	3/4"	3/4"	3/4"	3/4"				
Drain		mm	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	
Notes	Rating conditions cooling 2 pipe : air 27										
	Rating conditions heating 2 pipe : air 20										
	Sound power level according to ISO3741										
	Sound pressure measured at 1 m in front of the unit and 0.8 m below the vertical centre line of the unit. (JIS C 9612)										
	Sound pressure measured at 1,4m below the facia (JIS C 9612)										
	Sound pressure measured at 1,5m below the facia (JIS B 8615)										
	Rating conditions heating 4 pipe : air 20										

4
1

1-2 Technical Specifications				FWC11AT			FWC12AT		
Dimensions	Unit	Height	mm	335			335		
		Width	mm	820			820		
		Depth	mm	821			821		
	Unit with packing	Height	mm	380			380		
		Width	mm	920			920		
		Depth	mm	920			920		
Weight	Machine weight		kg	38.0			40.0		
	Operation weight		kg	41.0			43.0		
	Gross weight		kg	39.0			41.0		
Casing	Material			Electro-galvanised mild steel (ABS)					
Sound level	Sound pressure	High	dBA	51			53		
		Medium	dBA	48			52		
		Low	dBA	46			50		
	Sound power	High	dBA	61			64		
		Medium	dBA	59			63		
		Low	dBA	57			61		
Water flow	Cooling	l/h	1,711			1,858			
	Heating	l/h	1,711			1,858			
Water pressure drop	Cooling	kPa	52.2			69.3			
	Heating	kPa	45.2			64.1			
Fan	Type			Direct drive turbo fan					
	Air flow rate	High	m ³ /h	1,740			1,840		
		Medium	m ³ /h	1,530			1,680		
		Low	m ³ /h	1,340			1,540		
	Speed			3 steps : high, medium, low					
Quantity			1			1			
Motor	Type			Induction					

1 Specifications

1-2 Technical Specifications			FWC11AT		FWC12AT	
Standard heat exchanger	Rows	mm	2		2	
	Stages	mm	4		4	
	Fin pitch	mm	1.59		1.59	
	Face area	m ²	0.47		0.47	
	Water volume	l	2.69		2.69	
Air filter			Washable Saranet			
Insulation material			PE			
Vibration insulation			Rubber Bush (Fan Motor)			
Water connections	Std. heat exchanger	inch	3/4"			
Drain		mm	19.05		19.05	
Notes			Rating conditions cooling 2 pipe : air 27			
			Rating conditions heating 2 pipe : air 20			
			Sound power level according to ISO3741			
			Sound pressure measured at 1 m in front of the unit and 0.8 m below the vertical centre line of the unit. (JIS C 9612)			
			Sound pressure measured at 1,4m below the facia (JIS C 9612)			
			Sound pressure measured at 1,5m below the facia (JIS B 8615)			
			Rating conditions heating 4 pipe : air 20			

1-3 Electrical Specifications			FWC02AF	FWC03AF	FWC04AF	FWC05AF	FWC06AF	FWC07AT	FWC08AT	FWC10AT
Current input	High	A	0.53	0.61	0.67	0.80	1.02	0.52	0.64	0.68
	Medium	A	0.48	0.49	0.57	0.65	0.84	0.47	0.51	0.58
	Low	A	0.43	0.43	0.50	0.51	0.74	0.42	0.45	0.51
Required power supply		V / f / Hz	220-240 / 1 / 50							
Required fuses		A	2	2	2	2	2	2	2	2
Required wire section		mm ²	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

1-3 Electrical Specifications			FWC11AT		FWC12AT	
Current input	High	A	0.79		1.06	
	Medium	A	0.64		0.87	
	Low	A	0.50		0.78	
Required power supply		V / f / Hz	220-240 / 1 / 50			
Required fuses		A	2		2	
Required wire section		mm ²	1.5		1.5	

2 Control systems

Control systems for FWC-FWF-FWT

Controller	Application	Operation mode		Basic Controls			Energy saving mode	Timer setting	Air distribution	Faster cooling/heating
		Manual	Automatic	Temperature setting	Automatic Fan Speed	Fan speed: high/medium/low	Sleep mode	ON/OFF	Automatic air swing	Turbo
WRC	2-pipe	x		x	x	x	x	x	option	x
	4-pipe	x	x	x	x	x	x	x	option	x
SRC	2-pipe	x		x	x	x	x	x	option	
	4-pipe	x	x	x	x	x	x	x	x	
MERC	2-pipe	x		x	x	x	x	x	x	
	4-pipe	x	x	x	x	x	x	x	x	

Operation mode:

- Cooling only: Cool, Dry and Fan
- Heating mode: Auto, Cool, Dry, Fan and Heat
- Automode is only available for 4-pipe applications

Temperature Setting: To set the desired room temperature

Fan speed: high, medium, low or automatic

Sleep Mode: energy saving option while optimising comfort conditions by temperature adjustment

Timer setting: to turn ON/OFF the air conditioner at the desired time

Automatic air swing: air distribution according to a specific direction

3 Capacity tables

3 - 1 Cooling capacity tables

Cooling capacities FWC-F (4 pipe)

Air temperature (°C DB - °C WB)		22-16															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWC02AF	High	3.12	3.12	0.54	2.44	2.99	2.99	0.51	2.24	2.85	2.85	0.49	2.05	2.72	2.72	0.47	1.86
	Medium	2.91	2.91	0.50	2.13	2.78	2.78	0.48	1.96	2.66	2.66	0.46	1.79	2.54	2.54	0.44	1.63
	Low	2.85	2.85	0.49	2.06	2.73	2.73	0.47	1.89	2.61	2.61	0.45	1.72	2.49	2.49	0.43	1.57
FWC03AF	High	3.19	3.14	0.55	2.51	3.03	3.03	0.52	2.27	2.93	2.93	0.50	2.12	2.82	2.82	0.49	1.97
	Medium	3.07	2.92	0.53	2.34	2.83	2.83	0.49	1.99	2.73	2.73	0.47	1.85	2.63	2.63	0.45	1.72
	Low	2.99	2.80	0.51	2.22	2.72	2.71	0.47	1.85	2.61	2.61	0.45	1.70	2.52	2.52	0.43	1.58
FWC04AF	High	3.63	3.62	0.62	3.12	3.47	3.47	0.60	2.85	3.34	3.34	0.57	2.63	3.20	3.20	0.55	2.43
	Medium	3.45	3.33	0.59	2.83	3.20	3.20	0.55	2.44	3.07	3.07	0.53	2.25	2.95	2.95	0.51	2.07
	Low	3.38	3.20	0.58	2.72	3.10	3.07	0.53	2.29	2.95	2.95	0.51	2.08	2.83	2.83	0.49	1.92
FWC05AF	High	3.99	3.99	0.69	3.70	3.84	3.84	0.66	3.42	3.67	3.67	0.63	3.13	3.50	3.50	0.60	2.86
	Medium	3.75	3.72	0.64	3.28	3.58	3.58	0.62	2.99	3.42	3.42	0.59	2.74	3.27	3.27	0.56	2.50
	Low	3.61	3.51	0.62	3.05	3.38	3.38	0.58	2.68	3.23	3.23	0.56	2.45	3.08	3.08	0.53	2.24
FWC06AF	High	4.06	4.03	0.70	3.77	3.86	3.86	0.66	3.43	3.70	3.70	0.64	3.14	3.53	3.53	0.61	2.87
	Medium	3.89	3.74	0.67	3.49	3.59	3.59	0.62	2.98	3.44	3.44	0.59	2.73	3.28	3.28	0.56	2.49
	Low	3.74	3.24	0.64	3.23	3.42	3.11	0.59	2.71	3.02	2.98	0.52	2.13	2.84	2.84	0.49	1.89

Air temperature (°C DB - °C WB)		25-18															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWC02AF	High	3.67	3.26	0.63	3.33	3.43	3.12	0.59	2.92	3.16	3.00	0.54	2.49	2.89	2.87	0.50	2.10
	Medium	3.55	3.04	0.61	3.13	3.32	2.91	0.57	2.74	3.06	2.79	0.53	2.34	2.80	2.68	0.48	1.97
	Low	3.49	2.98	0.60	3.04	3.27	2.86	0.56	2.66	3.01	2.74	0.52	2.27	2.76	2.63	0.47	1.91
FWC03AF	High	3.88	3.30	0.67	3.66	3.61	3.20	0.62	3.17	3.31	3.09	0.57	2.68	3.01	2.98	0.52	2.23
	Medium	3.74	3.08	0.64	3.40	3.47	2.98	0.60	2.95	3.18	2.88	0.55	2.49	2.90	2.78	0.50	2.07
	Low	3.64	2.95	0.63	3.23	3.38	2.85	0.58	2.80	3.10	2.75	0.53	2.37	2.82	2.66	0.49	1.97
FWC04AF	High	4.52	3.81	0.78	4.74	4.20	3.67	0.72	4.10	3.87	3.54	0.67	3.50	3.54	3.40	0.61	2.95
	Medium	4.29	3.51	0.74	4.30	3.99	3.38	0.69	3.72	3.68	3.26	0.63	3.18	3.37	3.14	0.58	2.67
	Low	4.21	3.37	0.72	4.13	3.91	3.25	0.67	3.58	3.60	3.13	0.62	3.05	3.30	3.01	0.57	2.57
FWC05AF	High	4.86	4.18	0.84	5.41	4.54	4.02	0.78	4.73	4.16	3.86	0.72	3.99	3.78	3.69	0.65	3.31
	Medium	4.67	3.90	0.80	5.01	4.36	3.75	0.75	4.38	4.00	3.60	0.69	3.69	3.63	3.44	0.63	3.06
	Low	4.49	3.68	0.77	4.65	4.20	3.54	0.72	4.07	3.85	3.39	0.66	3.43	3.50	3.25	0.60	2.85
FWC06AF	High	5.03	4.25	0.86	5.70	4.68	4.09	0.80	4.94	4.24	3.92	0.73	4.09	3.81	3.76	0.66	3.32
	Medium	4.82	3.95	0.83	5.26	4.49	3.80	0.77	4.56	4.07	3.65	0.70	3.78	3.66	3.49	0.63	3.06
	Low	4.64	3.42	0.80	4.88	4.31	3.29	0.74	4.23	3.91	3.16	0.67	3.50	3.51	3.02	0.60	2.84

Air temperature (°C DB - °C WB)		27-19															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWC02AF	High	4.06	3.53	0.70	4.05	3.81	3.40	0.66	3.58	3.54	3.28	0.61	3.10	3.28	3.16	0.56	2.66
	Medium	3.93	3.29	0.68	3.81	3.69	3.17	0.64	3.36	3.43	3.06	0.59	2.92	3.17	2.95	0.55	2.50
	Low	3.87	3.23	0.67	3.69	3.63	3.11	0.62	3.26	3.38	3.00	0.58	2.83	3.12	2.89	0.54	2.43
FWC03AF	High	4.23	3.64	0.73	4.31	3.96	3.52	0.68	3.79	3.66	3.40	0.63	3.25	3.36	3.29	0.58	2.75
	Medium	4.07	3.39	0.70	4.01	3.81	3.28	0.66	3.53	3.52	3.17	0.61	3.02	3.23	3.07	0.56	2.56
	Low	3.96	3.24	0.68	3.81	3.71	3.14	0.64	3.35	3.43	3.04	0.59	2.87	3.15	2.93	0.54	2.43
FWC04AF	High	4.96	4.20	0.85	5.68	4.63	4.07	0.80	4.96	4.30	3.94	0.74	4.28	3.97	3.80	0.68	3.66
	Medium	4.72	3.87	0.81	5.15	4.40	3.75	0.76	4.50	4.09	3.63	0.70	3.89	3.77	3.50	0.65	3.32
	Low	4.62	3.72	0.79	4.95	4.31	3.60	0.74	4.32	4.00	3.48	0.69	3.73	3.69	3.36	0.64	3.19
FWC05AF	High	5.34	4.57	0.92	6.49	5.01	4.40	0.86	5.72	4.62	4.23	0.80	4.88	4.24	4.07	0.73	4.12
	Medium	5.13	4.26	0.88	6.00	4.81	4.10	0.83	5.29	4.44	3.95	0.76	4.52	4.07	3.79	0.70	3.81
	Low	4.94	4.02	0.85	5.58	4.63	3.87	0.80	4.91	4.27	3.72	0.74	4.20	3.92	3.58	0.67	3.54
FWC06AF	High	5.51	4.69	0.95	6.80	5.16	4.54	0.89	5.98	4.73	4.37	0.81	5.03	4.29	4.20	0.74	4.17
	Medium	5.29	4.36	0.91	6.28	4.95	4.22	0.85	5.52	4.53	4.06	0.78	4.65	4.12	3.91	0.71	3.85
	Low	5.08	3.78	0.87	5.82	4.76	3.66	0.82	5.12	4.36	3.52	0.75	4.31	3.96	3.38	0.68	3.57

Air temperature (°C DB - °C WB)		30-22															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWC02AF	High	5.36	3.67	0.92	6.91	5.11	3.43	0.88	6.29	4.85	3.42	0.83	5.65	4.58	3.41	0.79	5.06
	Medium	5.19	3.42	0.89	6.50	4.95	3.20	0.85	5.91	4.69	3.19	0.81	5.32	4.43	3.17	0.76	4.75
	Low	5.11	3.36	0.88	6.30	4.87	3.14	0.84	5.73	4.62	3.13	0.79	5.15	4.36	3.12	0.75	4.61
FWC03AF	High	5.69	4.02	0.98	7.65	5.41	3.92	0.93	6.91	5.11	3.80	0.88	6.17	4.81	3.68	0.83	5.48
	Medium	5.48	3.75	0.94	7.10	5.21	3.65	0.90	6.42	4.92	3.54	0.85	5.73	4.63	3.44	0.80	5.09
	Low	5.34	3.59	0.92	6.75	5.07	3.50	0.87	6.10	4.79	3.39	0.82	5.45	4.51	3.29	0.78	4.83
FWC04AF	High	6.80	4.60	1.17	10.41	6.44	4.47	1.11	9.34	6.05	4.33	1.04	8.27	5.67	4.20	0.98	7.26
	Medium	6.46	4.24	1.11	9.44	6.12	4.12	1.05	8.47	5.75	3.99	0.99	7.50	5.39	3.87	0.93	6.58
	Low	6.33	4.07	1.09	9.07	5.99	3.95	1.03	8.13	5.63	3.83	0.97	7.20	5.27	3.72	0.91	6.33
FWC05AF	High	7.10	4.98	1.22	11.23	6.70	4.80	1.15	10.01	6.27	4.63	1.08	8.77	5.84	4.46	1.00	7.62
	Medium	6.82	4.64	1.17	10.39	6.44	4.47	1.11	9.26	6.02	4.32	1.04	8.11	5.60	4.16	0.96	7.05
	Low	6.57	4.38	1.13	9.65	6.20	4.22	1.07	8.60	5.79	4.07	1.00	7.54	5.39	3.93	0.93	6.55
FWC06AF	High	7.33	5.16	1.26	11.78	6.96	4.99	1.20	10.64	6.53	4.82	1.12	9.37	6.10	4.66	1.05	8.19
	Medium	7.03	4.79	1.21	10.87	6.68	4.64	1.15	9.82	6.27	4.48	1.08	8.65	5.85	4.33	1.01	7.56
	Low	6.76	4.15	1.16	10.08	6.42	4.02	1.11	9.11	6.02							

3 Capacity tables

3 - 1 Cooling capacity tables

Cooling capacities FWC-T (2 pipe)

Air temperature (°C DB - °C WB)		22-16															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa
FWC07AT	High	4.68	4.38	0.81	13.93	4.23	4.15	0.73	11.74	3.72	3.69	0.64	9.44	3.22	3.22	0.55	7.43
	Medium	4.24	3.89	0.73	11.83	3.84	3.69	0.66	9.98	3.37	3.28	0.58	8.02	2.90	2.86	0.50	6.24
	Low	3.62	3.26	0.62	9.08	3.27	3.09	0.56	7.66	2.87	2.75	0.49	6.16	2.47	2.40	0.43	4.78
FWC08AT	High	5.81	4.81	1.00	20.16	5.29	4.57	0.91	17.19	4.71	4.33	0.81	14.12	4.13	4.09	0.71	11.31
	Medium	5.24	4.33	0.90	16.93	4.77	4.12	0.82	14.45	4.24	3.90	0.73	11.87	3.72	3.68	0.64	9.51
	Low	4.34	3.59	0.75	12.42	3.96	3.42	0.68	10.60	3.52	3.24	0.61	8.72	3.09	3.05	0.53	6.98
FWC10AT	High	6.53	5.92	1.12	25.32	5.90	5.65	1.02	21.29	5.37	5.37	0.92	18.13	5.09	5.09	0.88	16.53
	Medium	5.79	5.23	1.00	20.71	5.24	4.99	0.90	17.43	4.74	4.74	0.82	14.73	4.50	4.50	0.77	13.44
	Low	4.90	4.25	0.84	15.66	4.43	4.06	0.76	13.19	3.93	3.86	0.68	10.77	3.66	3.66	0.63	9.55
FWC11AT	High	7.62	6.31	1.31	33.47	7.05	6.01	1.21	29.30	6.42	5.70	1.10	24.94	5.78	5.38	1.00	20.89
	Medium	7.05	5.87	1.21	29.37	6.53	5.59	1.12	25.72	5.94	5.30	1.02	21.90	5.35	5.00	0.92	18.35
	Low	5.75	4.54	0.99	20.87	5.32	4.32	0.92	18.29	4.84	4.10	0.83	15.59	4.37	3.87	0.75	13.07
FWC12AT	High	8.40	6.95	1.45	45.68	7.75	6.65	1.33	39.74	7.07	6.32	1.22	33.91	6.38	5.99	1.10	28.50
	Medium	7.94	6.59	1.37	41.47	7.32	6.31	1.26	36.09	6.67	5.99	1.15	30.80	6.03	5.68	1.04	25.89
	Low	6.68	5.41	1.15	31.05	6.16	5.18	1.06	27.03	5.62	4.92	0.97	23.09	5.07	4.66	0.87	19.43

Air temperature (°C DB - °C WB)		25-18															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa
FWC07AT	High	6.32	4.63	1.09	22.94	5.83	4.40	1.00	20.01	5.28	4.02	0.91	16.92	4.74	3.64	0.81	14.05
	Medium	5.72	4.11	0.98	19.45	5.28	3.91	0.91	16.98	4.79	3.57	0.82	14.36	4.29	3.23	0.74	11.93
	Low	4.88	3.44	0.84	14.91	4.51	3.28	0.78	13.02	4.08	2.99	0.70	11.02	3.66	2.71	0.63	9.16
FWC08AT	High	7.30	5.08	1.26	29.56	6.76	4.85	1.16	25.91	6.16	4.60	1.06	22.06	5.55	4.34	0.96	18.49
	Medium	6.58	4.58	1.13	24.80	6.09	4.37	1.05	21.75	5.55	4.14	0.95	18.53	5.00	3.91	0.86	15.54
	Low	5.46	3.80	0.94	18.15	5.06	3.62	0.87	15.93	4.60	3.44	0.79	13.58	4.15	3.25	0.71	11.40
FWC10AT	High	8.45	6.17	1.45	38.99	7.83	5.90	1.35	34.24	7.14	5.62	1.23	29.23	6.45	5.35	1.11	24.57
	Medium	7.49	5.45	1.29	31.85	6.95	5.21	1.20	27.99	6.34	4.97	1.09	23.90	5.72	4.72	0.99	20.10
	Low	6.34	4.44	1.09	24.04	5.88	4.24	1.01	21.14	5.36	4.04	0.92	18.06	4.84	3.84	0.83	15.20
FWC11AT	High	9.62	6.67	1.66	49.58	8.98	6.38	1.55	44.05	8.31	6.06	1.43	38.48	7.63	5.74	1.31	33.25
	Medium	8.90	6.21	1.53	43.49	8.31	5.93	1.43	38.64	7.69	5.64	1.32	33.76	7.06	5.34	1.22	29.18
	Low	7.26	4.80	1.25	30.84	6.78	4.59	1.17	27.42	6.27	4.36	1.08	23.97	5.76	4.13	0.99	20.73
FWC12AT	High	10.49	7.31	1.81	66.42	9.78	7.00	1.68	58.87	9.02	6.67	1.55	51.19	8.26	6.34	1.42	43.98
	Medium	9.91	6.93	1.70	60.30	9.24	6.64	1.59	53.44	8.52	6.32	1.47	46.47	7.80	6.01	1.34	39.93
	Low	8.34	5.69	1.44	45.09	7.78	5.45	1.34	39.97	7.17	5.19	1.23	34.77	6.57	4.93	1.13	29.90

Air temperature (°C DB - °C WB)		27-19															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa
FWC07AT	High	7.13	5.12	1.23	28.12	6.63	4.90	1.14	24.81	6.07	4.68	1.04	21.30	5.50	4.47	0.95	18.04
	Medium	6.46	4.55	1.11	23.84	6.01	4.35	1.03	21.03	5.50	4.16	0.95	18.07	4.99	3.97	0.86	15.31
	Low	5.51	3.81	0.95	18.26	5.12	3.65	0.88	16.12	4.69	3.49	0.81	13.86	4.25	3.33	0.73	11.75
FWC08AT	High	8.05	5.63	1.39	34.81	7.50	5.40	1.29	30.81	6.88	5.13	1.18	26.57	6.26	4.86	1.08	22.61
	Medium	7.25	5.07	1.25	29.20	6.76	4.86	1.16	25.85	6.20	4.62	1.07	22.30	5.64	4.38	0.97	18.99
	Low	6.02	4.21	1.04	21.35	5.61	4.04	0.96	18.92	5.14	3.84	0.89	16.33	4.68	3.64	0.81	13.92
FWC10AT	High	9.40	6.68	1.62	46.72	8.80	6.40	1.51	41.66	8.10	6.13	1.39	36.10	7.40	5.87	1.27	30.90
	Medium	8.34	5.90	1.44	38.16	7.81	5.65	1.34	34.03	7.18	5.41	1.24	29.50	6.56	5.18	1.13	25.26
	Low	7.05	4.80	1.21	28.78	6.60	4.60	1.14	25.68	6.08	4.41	1.05	22.27	5.55	4.21	0.96	19.09
FWC11AT	High	10.62	7.40	1.83	58.58	9.95	7.10	1.71	52.33	9.25	6.78	1.59	46.14	8.56	6.47	1.47	40.30
	Medium	9.83	6.88	1.69	51.39	9.21	6.61	1.58	45.90	8.56	6.31	1.47	40.48	7.92	6.02	1.36	35.36
	Low	8.01	5.32	1.38	36.43	7.51	5.11	1.29	32.55	6.98	4.88	1.20	28.72	6.46	4.65	1.11	25.10
FWC12AT	High	11.53	8.03	1.99	77.95	10.80	7.70	1.86	69.55	10.00	7.37	1.72	60.90	9.20	7.03	1.58	52.74
	Medium	10.89	7.62	1.87	70.76	10.20	7.30	1.76	63.14	9.44	6.98	1.63	55.28	8.69	6.67	1.50	47.88
	Low	9.17	6.25	1.58	52.92	8.59	5.99	1.48	47.22	7.95	5.73	1.37	41.35	7.32	5.47	1.26	35.83

Air temperature (°C DB - °C WB)		30-22															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m³/hr	Water pressure drop kPa
FWC07AT	High	9.70	5.82	1.67	47.21	9.13	5.60	1.57	42.52	8.53	5.38	1.47	37.80	7.93	5.17	1.37	33.34
	Medium	8.79	5.17	1.51	39.98	8.27	4.97	1.42	36.01	7.73	4.78	1.33	32.02	7.19	4.59	1.24	28.24
	Low	7.49	4.33	1.29	30.55	7.05	4.17	1.21	27.53	6.59	4.01	1.13	24.49	6.13	3.85	1.05	21.61
FWC08AT	High	10.65	6.33	1.83	55.80	10.10	6.10	1.74	50.88	9.45	5.87	1.63	45.33	8.80	5.63	1.51	40.07
	Medium	9.59	5.70	1.65	46.78	9.10	5.49	1.57	42.65	8.51	5.28	1.46	38.01	7.93	5.07	1.36	33.60
	Low	7.96	4.73	1.37	34.15	7.55	4.56	1.30	31.14	7.06	4.38	1.22	27.76	6.58	4.21	1.13	24.55
FWC10AT	High	12.47	7.57	2.15	75.23	11.85	7.30	2.04	68.86	11.17	7.02	1.92	62.08	10.48	6.73	1.80	55.61
	Medium	11.06	6.68	1.90	61.46	10.51	6.44	1.81	56.24	9.91	6.19	1.70	50.70	9.30	5.95	1.60	45.41
	Low	9.35	5.43	1.61	46.32	8.89	5.24	1.53	42.39	8.38	5.04	1.44	38.21	7.86	4.84	1.35	34.23
FWC11AT	High	13.65	8.01	2.35	89.45	12.96	7.70	2.23	81.65	12.20	7.40	2.10	73.60	11.45	7.10	1.97	65.91
	Medium	12.63	7.45	2.17	78.51	11.99	7.16	2.06	71.65	11.29	6.88	1.94	64.57	10.60	6.60	1.82	57.81
	Low	10.30	5.76	1.77	55.67	9.78	5.54	1.68	50.80	9.21	5.32	1.58	45.77	8.64	5.11	1.49	40.98
FWC12AT	High	15.10	8.94	2.60	122.54	14.30	8.61	2.46	111.54	13.50	8.27	2.32	100.95	12.70	7.94	2.19	90.80
	Medium	14.26	8.48	2.45	111.35	13.50	8.16	2.32	101.32	12.75	7.84	2.19	91.68	11.99	7.53	2.06	82.44
	Low	12.00	6.95	2.07	83.39	11.37	6.70	1.96	75.84	10.73	6.44	1.85	68.59	10.09	6.18	1.74	61.66

3 Capacity tables

3 - 2 Capacity tables with glycol for process cooling applications

Glycol correction factor

FWC-F Entering water temperature °C	Cooling capacity				Pressure Drop
	0	20	40	60	
0%	1	1	1	1	1
10%	0.955	0.969	0.973	0.980	1.060
20%	0.929	0.941	0.955	0.964	1.120
30%	0.898	0.913	0.929	0.939	1.180
40%	0.863	0.882	0.899	0.911	1.240

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Glycol correction factor

FWC-T Entering water temperature °C	Cooling capacity				Pressure Drop
	0	20	40	60	
0%	1	1	1	1	1
10%	0.955	0.969	0.973	0.980	1.060
20%	0.929	0.941	0.955	0.964	1.120
30%	0.898	0.913	0.929	0.939	1.180
40%	0.863	0.882	0.899	0.911	1.240

3 Capacity tables

3 - 3 Heating capacity tables

Heating capacities FWC-F (4 pipe)

Air temperature (°C DB - °C WB)		20								
Water temperature (Entering °C - Leaving °C)		50 - 45			60 - 50			70 - 60		
Model	Air Flow m ³ /hr	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWC02AF	High	8.99	1.54	14.26	9.57	0.82	4.11	10.55	0.91	4.77
	Medium	8.55	1.46	12.94	9.05	0.78	3.69	9.99	0.86	4.30
	Low	8.21	1.41	11.98	8.65	0.74	3.39	9.56	0.82	3.95
FWC03AF	High	9.26	1.59	16.03	9.96	0.86	4.71	10.99	0.94	5.47
	Medium	8.60	1.47	13.92	9.12	0.78	3.98	10.08	0.87	4.64
	Low	8.31	1.42	13.00	8.75	0.75	3.67	9.68	0.83	4.29
FWC04AF	High	11.14	1.91	23.46	11.27	0.97	6.13	12.50	1.08	7.20
	Medium	9.87	1.69	18.58	9.89	0.85	4.76	10.97	0.94	5.60
	Low	9.48	1.62	17.18	9.46	0.81	4.38	10.51	0.90	5.15
FWC05AF	High	12.06	2.07	28.23	12.15	1.05	7.31	13.48	1.16	8.59
	Medium	11.21	1.92	24.53	11.23	0.97	6.28	12.46	1.07	7.39
	Low	10.58	1.81	21.95	10.56	0.91	5.58	11.72	1.01	6.56
FWC06AF	High	12.43	2.13	29.68	12.42	1.07	7.56	13.78	1.19	8.88
	Medium	11.59	1.99	25.91	11.55	0.99	6.57	12.82	1.10	7.73
	Low	10.90	1.87	23.02	10.83	0.93	5.81	12.03	1.04	6.84

Air temperature (°C DB - °C WB)		22								
Water temperature (Entering °C - Leaving °C)		50 - 45			60 - 50			70 - 60		
Model	Air Flow m ³ /hr	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWC02AF	High	8.45	1.45	12.67	9.06	0.78	3.70	10.11	0.87	4.40
	Medium	8.04	1.38	11.51	8.56	0.74	3.32	9.56	0.82	3.95
	Low	7.73	1.32	10.66	8.18	0.70	3.04	9.15	0.79	3.63
FWC03AF	High	8.74	1.50	14.36	9.42	0.81	4.24	10.52	0.91	5.04
	Medium	8.12	1.39	12.44	8.63	0.74	3.57	9.65	0.83	4.27
	Low	7.83	1.34	11.61	8.26	0.71	3.29	9.26	0.80	3.94
FWC04AF	High	10.43	1.79	20.67	10.64	0.92	5.49	11.95	1.03	6.59
	Medium	9.24	1.58	16.34	9.33	0.80	4.26	10.48	0.90	5.13
	Low	8.87	1.52	15.11	8.93	0.77	3.91	10.03	0.86	4.71
FWC05AF	High	11.29	1.93	24.87	11.47	0.99	6.54	12.88	1.11	7.87
	Medium	10.49	1.80	21.58	10.60	0.91	5.62	11.91	1.02	6.76
	Low	9.90	1.70	19.30	9.96	0.86	4.99	11.19	0.96	6.00
FWC06AF	High	11.60	1.99	25.96	11.72	1.01	6.76	13.17	1.13	8.14
	Medium	10.82	1.85	22.70	10.90	0.94	5.87	12.25	1.05	7.08
	Low	10.18	1.74	20.18	10.22	0.88	5.19	11.49	0.99	6.26

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3 Capacity tables

3 - 3 Heating capacity tables

Heating capacities FWC-T (2 pipe)

Air temperature (°C DB - °C WB)		20		
Water temperature (Entering °C - Leaving °C)		50 - 45		
Model	Air Flow	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWC07AT	High	9.09	1.56	36.17
	Medium	7.97	1.37	28.98
	Low	6.86	1.18	22.49
FWC08AT	High	9.82	1.68	41.94
	Medium	8.80	1.51	34.83
	Low	7.23	1.24	25.01
FWC10AT	High	11.31	1.94	53.62
	Medium	10.03	1.72	43.78
	Low	8.29	1.42	31.74
FWC11AT	High	12.27	2.10	64.03
	Medium	11.33	1.94	56.05
	Low	9.22	1.58	39.53
FWC12AT	High	13.14	2.25	88.87
	Medium	12.34	2.12	79.96
	Low	10.44	1.79	60.25

Air temperature (°C DB - °C WB)		22		
Water temperature (Entering °C - Leaving °C)		50 - 45		
Model	Air Flow	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWC07AT	High	8.37	1.43	31.43
	Medium	7.34	1.26	25.22
	Low	6.32	1.08	19.63
FWC08AT	High	9.20	1.58	37.51
	Medium	8.22	1.41	31.02
	Low	6.73	1.15	22.17
FWC10AT	High	10.60	1.82	48.06
	Medium	9.39	1.61	39.16
	Low	7.74	1.33	28.27
FWC11AT	High	11.48	1.97	57.31
	Medium	10.61	1.82	50.10
	Low	8.59	1.47	35.14
FWC12AT	High	12.30	2.11	79.54
	Medium	11.55	1.98	71.49
	Low	9.74	1.67	53.65

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3 Capacity tables

3 - 4 Capacity correction factor

Heating correction factor

FWC-F													
Entering Air temperature °C	Entering Water temperature °C												
	37.8	43.3	45.0	48.8	50.0	54.4	60.0	65.5	70.0	71.1	76.7	82.2	87.7
4.4	1.112	1.143	1.153	1.175	1.182	1.207	1.239	1.271	1.296	1.303	1.334	1.365	1.398
7.2	1.044	1.078	1.088	1.112	1.119	1.146	1.181	1.214	1.244	1.252	1.285	1.318	1.355
10.0	0.977	1.014	1.026	1.052	1.060	1.089	1.127	1.164	1.191	1.200	1.236	1.272	1.311
12.7	0.908	0.947	0.959	0.986	0.995	1.026	1.066	1.106	1.138	1.148	1.185	1.226	1.265
15.5	0.839	0.882	0.895	0.924	0.934	0.968	1.011	1.053	1.085	1.095	1.136	1.180	1.222
18.3	0.796	0.830	0.841	0.868	0.876	0.910	0.955	0.996	1.032	1.042	1.087	1.133	1.179
20.0	0.729	0.775	0.790	0.822	0.831	0.869	0.917	0.963	1.000	1.011	1.058	1.105	1.151
21.1	0.685	0.740	0.756	0.792	0.802	0.843	0.892	0.942	0.979	0.990	1.039	1.087	1.134
23.9	0.630	0.681	0.697	0.732	0.743	0.783	0.835	0.886	0.927	0.938	0.990	1.040	1.090
26.7	0.563	0.616	0.632	0.669	0.681	0.724	0.778	0.832	0.874	0.887	0.941	0.995	1.047

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Heating correction factor

FWC07T													
Entering Air temperature °C	Entering Water temperature °C												
	37.8	43.3	45.0	48.8	50.0	54.4	60.0	65.5	70.0	71.1	76.7	82.2	87.7
4.4	1.256	1.343	1.370	1.431	1.450	1.520	1.609	1.696	1.770	1.788	1.876	1.963	2.052
7.2	1.175	1.265	1.293	1.355	1.374	1.446	1.537	1.627	1.699	1.717	1.808	1.896	1.988
10.0	1.087	1.179	1.207	1.271	1.291	1.364	1.458	1.550	1.627	1.645	1.739	1.830	1.924
12.7	1.004	1.142	1.127	1.192	1.213	1.288	1.384	1.478	1.555	1.574	1.667	1.764	1.857
15.5	0.917	1.014	1.044	1.110	1.132	1.209	1.308	1.404	1.483	1.502	1.599	1.698	1.794
18.3	0.849	0.939	0.968	1.033	1.054	1.131	1.232	1.328	1.410	1.430	1.529	1.629	1.730
20.0	0.777	0.877	0.909	0.978	1.000	1.081	1.183	1.284	1.366	1.386	1.489	1.589	1.690
21.1	0.730	0.837	0.870	0.943	0.965	1.048	1.151	1.255	1.338	1.358	1.462	1.563	1.664
23.9	0.657	0.761	0.793	0.865	0.887	0.970	1.076	1.180	1.266	1.286	1.392	1.496	1.600
26.7	0.572	0.678	0.711	0.784	0.807	0.892	1.000	1.106	1.194	1.216	1.324	1.431	1.536

3 Capacity tables

3 - 4 Capacity correction factor

Heating correction factor

FWC08T													
Entering Air temperature °C	Entering Water temperature °C												
	37.8	43.3	45.0	48.8	50.0	54.4	60.0	65.5	70.0	71.1	76.7	82.2	87.7
4.4	1.311	1.366	1.383	1.421	1.433	1.477	1.533	1.588	1.633	1.644	1.698	1.753	1.810
7.2	1.231	1.289	1.307	1.347	1.359	1.406	1.464	1.522	1.567	1.579	1.636	1.693	1.753
10.0	1.145	1.205	1.224	1.266	1.279	1.327	1.389	1.449	1.501	1.513	1.574	1.634	1.696
12.7	1.062	1.126	1.145	1.189	1.203	1.253	1.318	1.381	1.434	1.447	1.508	1.575	1.638
15.5	0.977	1.044	1.064	1.110	1.125	1.178	1.246	1.312	1.368	1.381	1.447	1.516	1.582
18.3	0.920	0.977	0.997	1.040	1.054	1.107	1.177	1.243	1.300	1.314	1.384	1.455	1.526
20.0	0.842	0.913	0.935	0.985	1.000	1.057	1.130	1.202	1.260	1.275	1.347	1.419	1.490
21.1	0.791	0.871	0.895	0.949	0.965	1.025	1.100	1.175	1.234	1.249	1.323	1.396	1.467
23.9	0.725	0.801	0.824	0.877	0.893	0.954	1.031	1.107	1.167	1.183	1.260	1.336	1.411
26.7	0.641	0.720	0.744	0.798	0.816	0.878	0.959	1.037	1.101	1.118	1.198	1.277	1.355

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Heating correction factor

FWC10T													
Entering Air temperature °C	Entering Water temperature °C												
	37.8	43.3	45.0	48.8	50.0	54.4	60.0	65.5	70.0	71.1	76.7	82.2	87.7
4.4	1.344	1.380	1.390	1.415	1.422	1.451	1.486	1.522	1.550	1.556	1.590	1.625	1.663
7.2	1.263	1.301	1.312	1.339	1.347	1.377	1.416	1.454	1.488	1.495	1.532	1.570	1.611
10.0	1.182	1.224	1.237	1.266	1.275	1.308	1.351	1.393	1.424	1.433	1.474	1.515	1.559
12.7	1.098	1.143	1.156	1.187	1.197	1.233	1.278	1.322	1.361	1.370	1.413	1.460	1.505
15.5	1.015	1.064	1.079	1.112	1.123	1.161	1.211	1.259	1.298	1.308	1.355	1.405	1.454
18.3	0.962	1.000	1.014	1.044	1.054	1.092	1.143	1.191	1.234	1.245	1.296	1.349	1.402
20.0	0.880	0.934	0.951	0.988	1.000	1.043	1.098	1.152	1.196	1.207	1.262	1.316	1.369
21.1	0.828	0.892	0.911	0.952	0.965	1.012	1.069	1.126	1.171	1.182	1.239	1.294	1.348
23.9	0.766	0.825	0.843	0.884	0.897	0.944	1.004	1.063	1.108	1.120	1.180	1.238	1.297
26.7	0.685	0.747	0.766	0.809	0.823	0.872	0.936	0.998	1.045	1.059	1.122	1.185	1.245

3 Capacity tables

3 - 4 Capacity correction factor

Heating correction factor

FWC11T													
Entering Air temperature °C	Entering Water temperature °C												
	37.8	43.3	45.0	48.8	50.0	54.4	60.0	65.5	70.0	71.1	76.7	82.2	87.7
4.4	1.330	1.373	1.386	1.416	1.425	1.459	1.503	1.546	1.580	1.590	1.632	1.674	1.720
7.2	1.249	1.295	1.309	1.340	1.350	1.387	1.433	1.479	1.517	1.528	1.573	1.617	1.666
10.0	1.165	1.214	1.229	1.263	1.274	1.313	1.363	1.412	1.452	1.464	1.513	1.561	1.612
12.7	1.086	1.138	1.154	1.190	1.202	1.244	1.297	1.349	1.388	1.400	1.450	1.504	1.556
15.5	1.000	1.055	1.073	1.111	1.123	1.168	1.224	1.280	1.324	1.337	1.391	1.448	1.503
18.3	0.948	0.993	1.008	1.043	1.054	1.099	1.157	1.212	1.258	1.272	1.330	1.390	1.450
20.0	0.867	0.928	0.946	0.988	1.000	1.050	1.111	1.172	1.220	1.233	1.295	1.355	1.416
21.1	0.815	0.885	0.906	0.952	0.965	1.018	1.081	1.146	1.194	1.208	1.272	1.333	1.394
23.9	0.749	0.815	0.835	0.880	0.894	0.947	1.013	1.079	1.130	1.145	1.211	1.276	1.341
26.7	0.668	0.737	0.758	0.806	0.821	0.876	0.946	1.014	1.066	1.082	1.152	1.220	1.287

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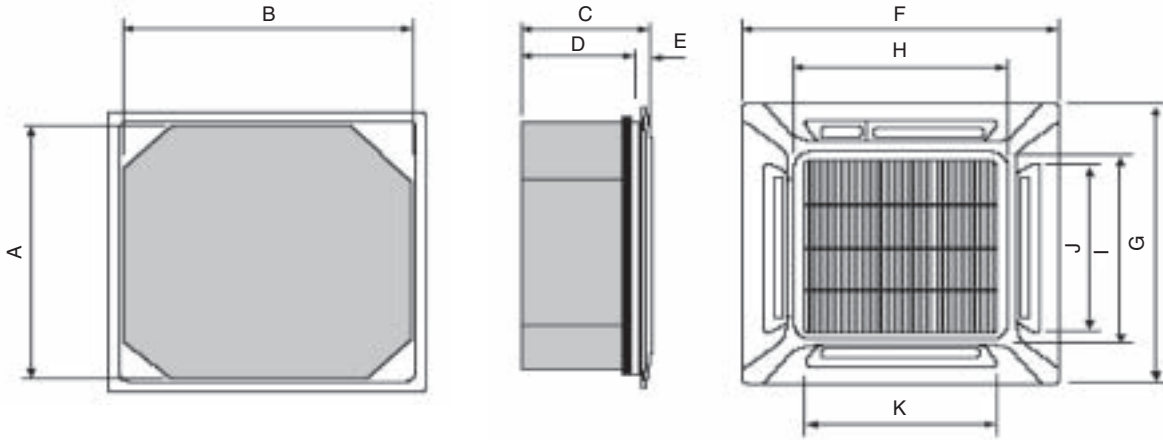
Heating correction factor

FWC12T													
Entering Air temperature °C	Entering Water temperature °C												
	37.8	43.3	45.0	48.8	50.0	54.4	60.0	65.5	70.0	71.1	76.7	82.2	87.7
4.4	1.321	1.370	1.385	1.419	1.430	1.469	1.519	1.568	1.607	1.617	1.665	1.713	1.765
7.2	1.241	1.293	1.309	1.344	1.356	1.397	1.450	1.501	1.542	1.553	1.604	1.655	1.709
10.0	1.158	1.213	1.230	1.268	1.280	1.324	1.380	1.435	1.477	1.488	1.543	1.597	1.654
12.7	1.075	1.132	1.150	1.190	1.203	1.249	1.308	1.366	1.411	1.423	1.479	1.539	1.597
15.5	0.989	1.050	1.069	1.111	1.125	1.173	1.236	1.297	1.346	1.359	1.418	1.481	1.542
18.3	0.933	0.985	1.002	1.041	1.054	1.103	1.167	1.227	1.279	1.293	1.357	1.422	1.488
20.0	0.854	0.920	0.941	0.986	1.000	1.053	1.121	1.187	1.240	1.254	1.321	1.387	1.453
21.1	0.803	0.878	0.900	0.950	0.965	1.021	1.091	1.160	1.214	1.228	1.298	1.364	1.430
23.9	0.736	0.806	0.828	0.877	0.892	0.948	1.020	1.090	1.149	1.164	1.235	1.306	1.376
26.7	0.655	0.729	0.752	0.803	0.819	0.878	0.953	1.026	1.084	1.100	1.175	1.249	1.321

4 Dimensional drawing

4 - 1 Dimensional drawing

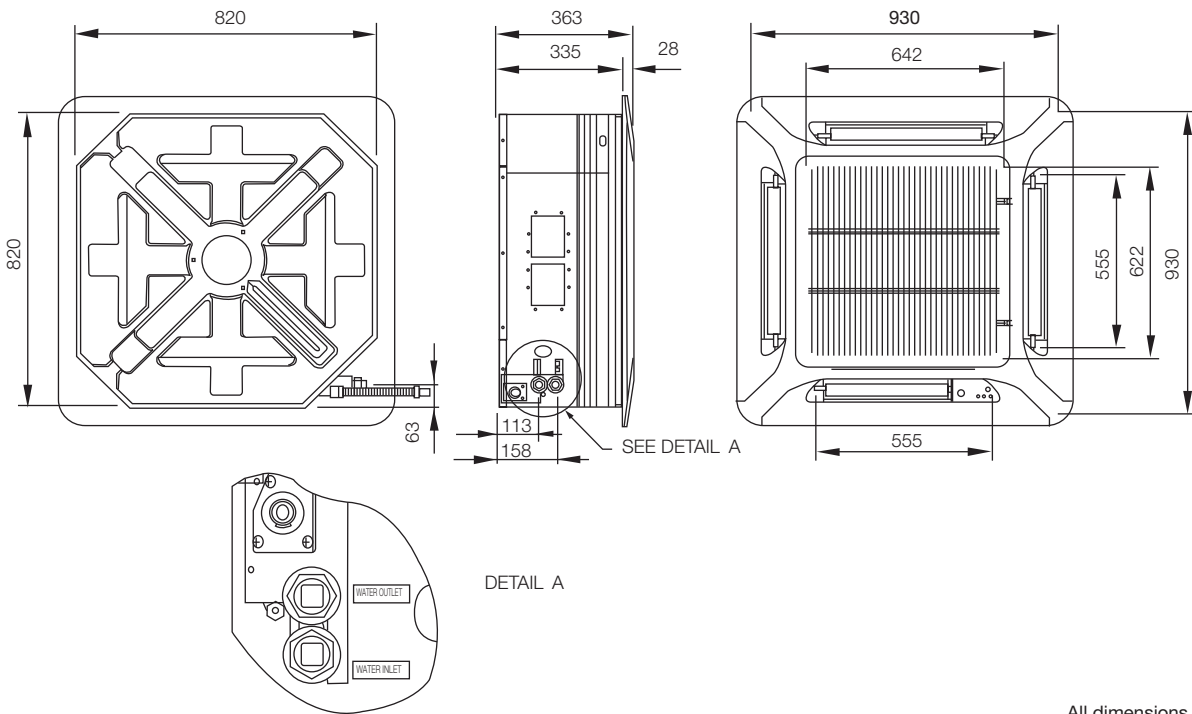
FWC-F



All dimensions are in (mm)

Model	A	B	C	D	E	F	G	H	I	J	K
FWC02AAFNMV1	820	820	363	335	28	930	930	642	622	555	555
FWC03AAFNMV1	820	820	363	335	28	930	930	642	622	555	555
FWC04AAFNMV1	820	820	363	335	28	930	930	642	622	555	555
FWC05AAFNMV1	820	820	363	335	28	930	930	642	622	555	555
FWC06AAFNMV1	820	820	363	335	28	930	930	642	622	555	555

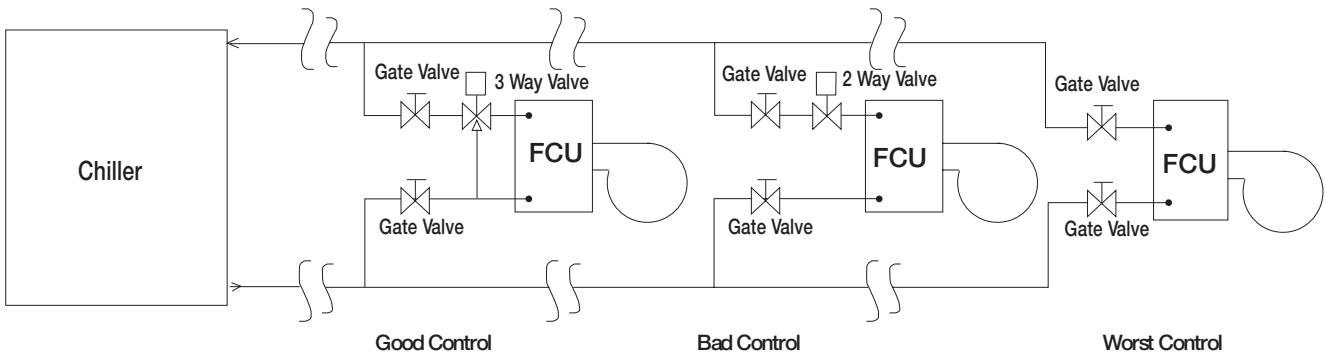
FWC-T



All dimensions are in mm.

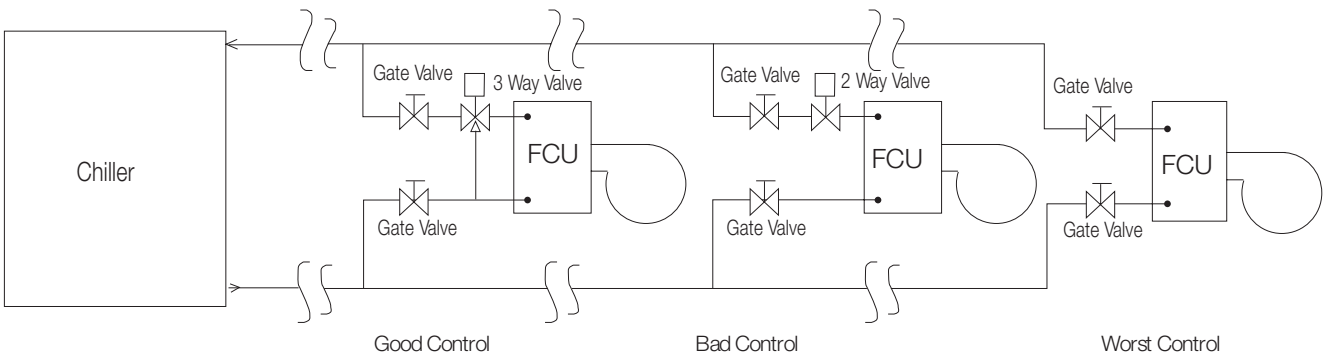
5 Piping diagram

FWC-F (Water piping diagram)



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FWC-T (Water piping diagram)

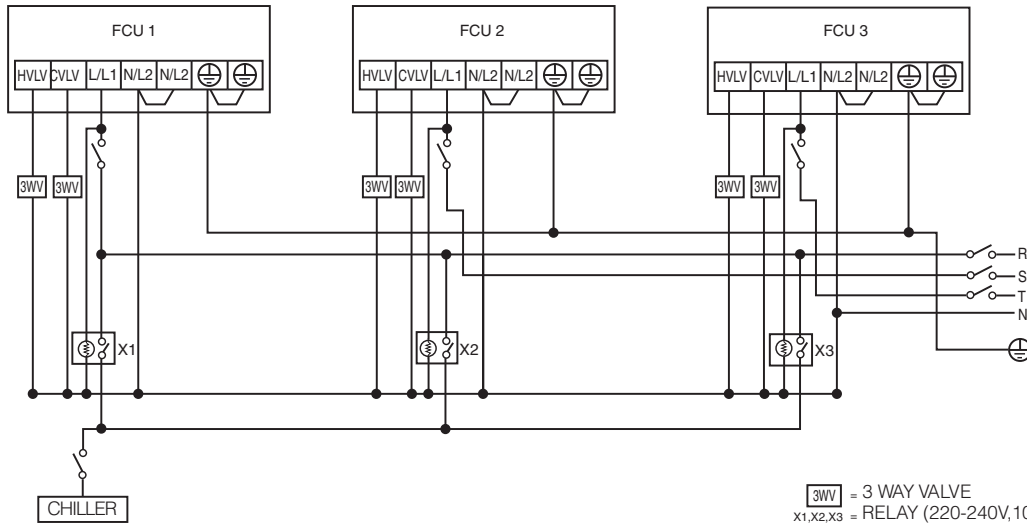


6 Wiring diagram

6 - 1 Wiring diagram

FWC-F

PART NO: 70034071317-02



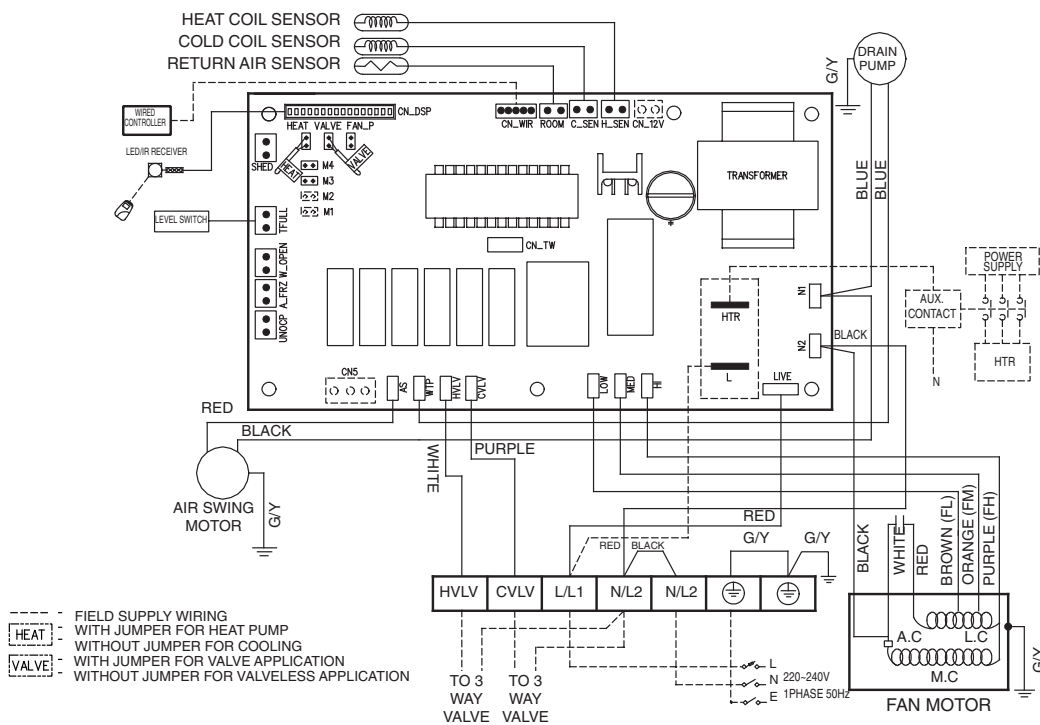
3WV = 3 WAY VALVE
 x1,x2,x3 = RELAY (220-240V,10A)

Note

This is a proposed wiring connection. It may change subject to the chiller unit and must comply with local and national code an regulations.

FWC-F

PART NO: 08 02 4 091942

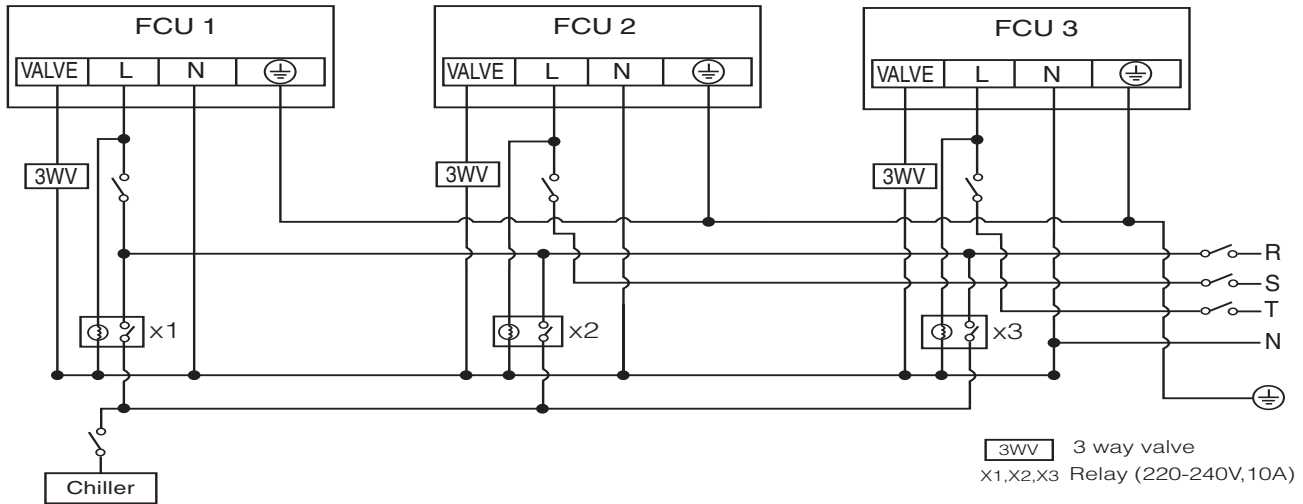


Note: Unit comes in standard heatpump and for valve application.

6 Wiring diagram

6 - 1 Wiring diagram

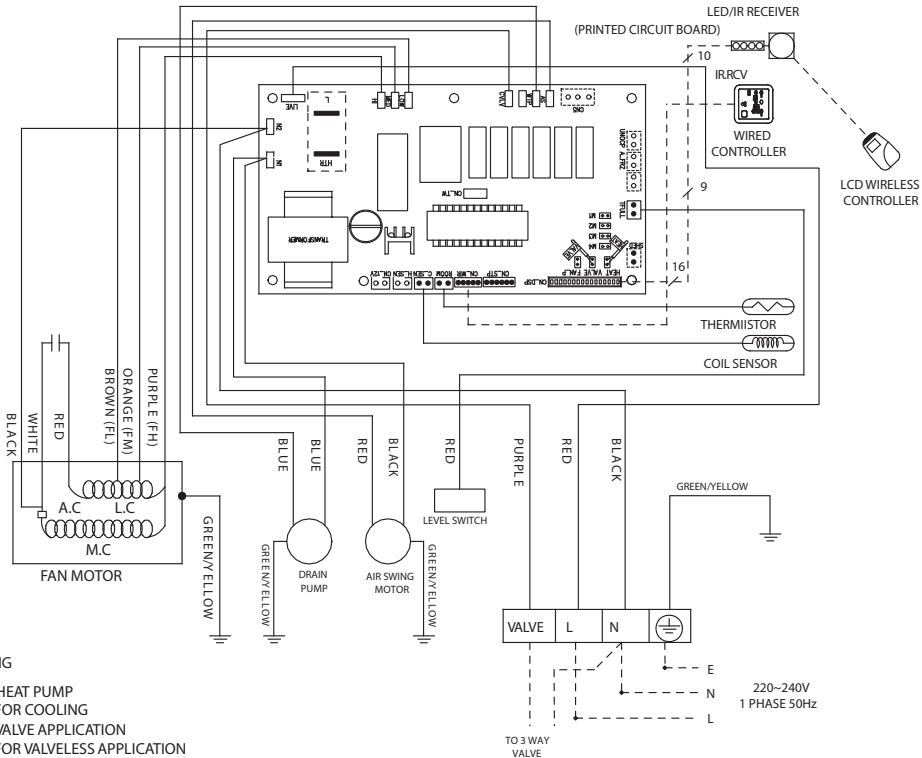
FWC-T



This is proposed wiring connection. It may change subject to the chiller unit and must comply with the local and national code and regulations.

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FWC-T



Note : Unit comes in standard heatpump and for valve application.

7 Sound data

7 - 1 Sound power spectrum

FWC-F (4 PIPE)									
Model	Freq	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125	250	500	1000	2000	4000	8000	
FWC02AF	Hi	59	57	50	46	42	32	28	52
	Me	58	56	47	43	38	31	27	50
	Lo	57	55	46	42	36	30	26	49
FWC03AF	Hi	60	58	52	49	43	37	31	55
	Me	57	55	49	45	39	33	28	52
	Lo	55	53	47	42	37	32	27	50
FWC04AF	Hi	64	62	57	54	47	35	40	60
	Me	60	58	54	49	42	41	39	56
	Lo	59	57	52	47	40	39	37	54
FWC05AF	Hi	64	62	60	56	49	46	37	61
	Me	62	60	58	53	46	42	34	59
	Lo	61	59	57	51	44	38	33	57
FWC06AF	Hi	67	65	63	59	53	52	44	64
	Me	66	64	61	57	51	51	42	63
	Lo	65	63	60	56	49	49	41	61

Microphone position: FWC02&03 1.4m below the the facia
FWC04-03 1.5m below the the facia

FWC-T (2 PIPE)									
Model	Freq	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125	250	500	1000	2000	4000	8000	
FWC07AT	Hi	59	57	50	46	42	32	28	52
	Me	58	56	47	43	38	31	27	50
	Lo	57	55	46	42	36	30	26	49
FWC08AT	Hi	60	58	52	49	43	37	31	55
	Me	57	55	49	45	39	33	28	52
	Lo	55	53	47	42	37	32	27	50
FWC10AT	Hi	64	62	57	54	47	35	40	60
	Me	60	58	54	49	42	41	39	56
	Lo	59	57	52	47	40	39	37	54
FWC11AT	Hi	64	62	60	56	49	46	37	61
	Me	62	60	58	53	46	42	34	59
	Lo	61	59	57	51	44	38	33	57
FWC12AT	Hi	67	65	63	59	53	52	44	64
	Me	66	64	61	57	51	51	42	63
	Lo	65	63	60	56	49	49	41	61

Microphone position: FWC07&08 1.4m below the the facia
FWC10-12 1.5m below the the facia

8 Operation range

FWC-F

OPERATING RANGE

Operating Limits:

Thermal carrier : Water

Water temperature : 5 ~70°C

Maximum water pressure : 16 bar

Air temperature : (as below)

Cooling Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	11.0 / 51.8
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4
Minimum outdoor temperature	16.0 / 60.8	-
Maximum outdoor temperature	46.0 / 114.8	-

Heating Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	-
Maximum indoor temperature	30.0 / 86.0	-
Minimum outdoor temperature	-5.0 / 23.0	-6.0 / 21.2
Maximum outdoor temperature	24.0 / 75.2	18.0 / 64.4

Ts: Dry bulb temperature. Th: Wet bulb temperature.

FWC-T

OPERATING RANGE

Operating Limits:

Thermal carrier : Water

Water temperature : 5 ~50°C

Maximum water pressure : 16 bar

Air temperature : (as below)

Cooling Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	11.0 / 51.8
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4
Minimum outdoor temperature	16.0 / 60.8	-
Maximum outdoor temperature	46.0 / 114.8	-

Heating Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	-
Maximum indoor temperature	30.0 / 86.0	-
Minimum outdoor temperature	-5.0 / 23.0	-6.0 / 21.2
Maximum outdoor temperature	24.0 / 75.2	18.0 / 64.4

Ts: Dry bulb temperature. Th: Wet bulb temperature.

9 Hydraulic performance

9 - 1 Water pressure drop curve evaporator

FWC-F

Water flow m ³ /hr	FWC-F (4PIPE) cooling					
	FWC02AF	FWC03AF	FWC04AF	FWC05AF	FWC06AF	
0.1	0.05	0.05	0.05	0.05	0.05	0.05
0.2	0.35	0.34	0.33	0.33	0.33	0.32
0.3	0.79	0.78	0.75	0.75	0.75	0.74
0.4	1.38	1.36	1.32	1.31	1.31	1.29
0.5	2.12	2.09	2.02	2.01	2.01	1.98
0.6	3.01	2.97	2.87	2.85	2.85	2.81
0.7	4.05	3.99	3.86	3.83	3.83	3.78
0.8	5.23	5.16	4.99	4.94	4.94	4.88
0.9	6.56	6.46	6.26	6.20	6.20	6.12
1.0	8.03	7.92	7.66	7.59	7.59	7.50
1.1	9.65	9.51	9.21	9.12	9.12	9.01
1.2		11.25	10.89	10.79	10.79	10.65
1.3			12.70	12.59	12.59	12.43
1.4				14.52	14.52	14.34
1.5						16.38

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FWC-F

Water flow m ³ /hr	FWC-F (4 PIPE) heating					
	FWC02AF	FWC03AF	FWC04AF	FWC05AF	FWC06AF	
0.1	0.04	0.04	0.05	0.05	0.05	0.05
0.2	0.27	0.28	0.29	0.30	0.30	0.30
0.3	0.61	0.65	0.66	0.68	0.68	0.68
0.4	1.07	1.13	1.16	1.20	1.20	1.19
0.5	1.64	1.74	1.78	1.84	1.84	1.82
0.6	2.32	2.47	2.53	2.61	2.61	2.59
0.7	3.12	3.31	3.40	3.51	3.51	3.48
0.8	4.04	4.28	4.39	4.53	4.53	4.49
0.9	5.06	5.37	5.50	5.68	5.68	5.63
1.0	6.20	6.58	6.74	6.96	6.96	6.90
1.1	7.45	0.06	8.10	8.36	8.36	8.29
1.2	8.81	9.34	9.57	9.89	9.89	9.80
1.3	10.27	10.90	11.17	11.54	11.54	11.43
1.4	11.85	12.58	12.88	13.31	13.31	13.19
1.5	13.54	14.37	14.72	15.20	15.20	15.06
1.6	15.33	16.28	16.67	17.22	17.22	17.06
1.7	17.23	18.30	18.73	19.35	19.35	19.18
1.8	19.24	20.43	20.92	21.61	21.61	21.41
1.9	21.35	22.68	23.21	23.99	23.99	23.77
2.0	23.57	25.04	25.63	26.48	26.48	26.24
2.1	25.89	27.51	28.15	29.09	29.09	28.83
2.2	28.32	30.09	30.79	31.82	31.82	31.53
2.3	30.85	32.78	33.54	34.67	34.67	34.35
2.4	33.49	35.58	36.41	37.63	37.63	37.28
2.5	36.22	38.49	39.38	40.71	40.71	40.33
3.0		54.67	55.90	57.80	57.80	57.26
3.5		73.47	75.09	77.66	77.66	76.93
4.0		94.83	96.86	100.22	100.22	

9 Hydraulic performance

9 - 1 Water pressure drop curve evaporator

FWC-T

Water flow m ³ /hr	FWC-T (2 PIPE) cooling				
	Water pressure drop (kPa)				
	FWC07AT	FWC08AT	FWC10AT	FWC11AT	FWC12AT
0.1	0.06	0.06	0.06	0.07	0.08
0.2	1.21	1.22	1.26	1.29	1.49
0.3	2.64	2.66	2.75	2.81	3.25
0.4	4.33	4.37	4.52	4.61	5.33
0.5	6.29	6.35	6.56	6.70	7.75
0.6	8.51	8.59	8.87	9.06	10.48
0.7	10.98	11.09	11.45	11.69	13.53
0.8	13.70	13.84	14.29	14.59	16.88
0.9	16.67	16.83	17.38	17.75	20.53
1.0	19.87	20.06	20.72	21.16	24.48
1.1	23.31	23.53	24.30	24.81	28.71
1.2	26.97	27.23	28.12	28.71	33.23
1.3	30.85	31.15	32.17	32.85	38.01
1.4	34.95	35.29	36.45	37.21	43.07
1.5	39.26	39.64	40.94	41.80	48.38
1.6	43.78	44.20	45.65	46.61	53.95
1.7	48.50	48.97	50.57	51.63	59.76
1.8	53.41	53.93	55.69	56.86	65.81
1.9	58.52	59.08	61.01	62.29	72.10
2.0		64.42	66.52	67.92	78.62
2.1		69.93	72.22	73.74	85.36
2.2		75.63	78.10	79.74	92.31
2.3			84.16	85.92	99.47
2.4			90.38	92.27	106.83
2.5			96.77	98.79	114.38
3.0					154.84

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FWC-T

Water flow m ³ /hr	FWC-T (2 PIPE) heating				
	Water pressure drop (kPa)				
	FWC07AT	FWC08AT	FWC10AT	FWC11AT	FWC12AT
0.1	0.05	0.05	0.05	0.06	0.07
0.2	1.04	1.06	1.07	1.12	1.38
0.3	2.27	2.32	2.33	2.43	3.00
0.4	3.74	3.80	3.83	3.99	4.93
0.5	5.43	5.53	5.57	5.80	7.17
0.6	7.34	7.47	7.53	7.85	9.70
0.7	9.47	9.65	9.72	10.12	12.51
0.8	11.82	12.04	12.13	12.63	15.61
0.9	14.38	14.64	14.75	15.37	18.99
1.0	17.14	17.45	17.58	18.32	22.64
1.1	20.11	20.47	20.62	21.49	26.55
1.2	23.27	23.68	23.87	24.86	30.73
1.3	26.62	27.09	27.30	28.44	35.15
1.4	30.15	30.70	30.93	32.22	39.82
1.5	33.87	34.48	34.75	36.20	44.73
1.6	37.77	38.45	38.75	40.36	49.88
1.7	41.84	42.59	42.92	44.71	55.25
1.8	46.08	46.90	47.27	49.24	60.85
1.9	50.48	51.38	51.79	53.94	66.66
2.0	55.04	56.02	56.47	58.82	72.68
2.1	59.76	60.81	61.30	63.86	78.91
2.2	64.62	65.76	66.30	69.05	85.33
2.3	69.63	70.86	71.44	74.41	91.95
2.4	74.78	76.10	76.72	79.91	98.75
2.5	80.07	81.47	82.15	85.56	105.73
3.0	108.37	110.25	111.20	115.80	143.10
3.5			143.03	148.93	184.03
4.0			177.05	184.33	

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1 Specifications

1-1 Nominal capacity and nominal input				FWF02AT	FWF03AT	FWF04AT
Power Input	High	W	51	75	78	
	Medium	W	49	74	75	
	Low	W	46	71	71	
Cooling capacity	Total capacity	High	kW	2.34	4.10	4.25
		Medium	kW	2.17	3.81	4.10
		Low	kW	2.03	3.66	3.95
	Sensible capacity	High	kW	1.97	3.06	3.24
		Medium	kW	1.88	2.89	3.12
		Low	kW	1.76	2.70	2.90
Heating capacity (2-pipe)	High	kW	3.22	5.12	5.42	
	Medium	kW	3.07	4.98	5.13	
	Low	kW	2.93	4.68	5.04	

1-2 Technical Specifications				FWF02AT	FWF03AT	FWF04AT
Dimensions	Unit	Height	mm	250	250	250
		Width	mm	570	570	570
		Depth	mm	570	570	570
	Unit with packing	Height	mm	317	317	317
		Width	mm	630	630	630
		Depth	mm	630	630	630
Weight	Machine weight		kg	22.0	23.0	23.0
	Operation weight		kg	23.0	24.0	24.0
	Gross weight		kg	23.0	24.0	24.0
Casing	Material		Electro-galvanised mild steel (ABS)			
Sound level	Sound pressure	High	dBA	44	44	47
		Medium	dBA	43	42	46
		Low	dBA	42	41	44
	Sound power	High	dBA	54	53	56
		Medium	dBA	53	52	55
		Low	dBA	51	50	53
Water flow	Cooling	l/h	402	705	731	
	Heating	l/h	402	705	731	
Water pressure drop	Cooling	kPa	67.3	68.6	68.8	
	Heating	kPa	61.9	70.5	71.2	
Fan	Type		Direct drive turbo fan			
	Air flow rate	High	m³/h	662	662	731
		Medium	m³/h	630	630	695
		Low	m³/h	594	594	662
	Speed		3 steps : high, medium, low			
Quantity		1	1	1		
Motor	Type		Induction			
Standard heat exchanger	Rows	mm	1	2	2	
	Stages	mm	4*(1) + 6*(1)	4	4	
	Fin pitch	mm	1.59	1.27	1.27	
	Face area	m²	0.24	0.309	0.309	
	Water volume	l	0.56	1.15	1.15	
Air filter	Washable Sarannet					
Insulation material	PE					
Vibration insulation	Rubber Bush (Fan Motor)					
Water connections	Std. heat exchanger	inch	3/4			
Drain		mm	19.05	19.05	19.05	

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1 Specifications

1-2 Technical Specifications	FWF02AT	FWF03AT	FWF04AT
Notes	Rating conditions cooling 2 pipe: air 27		
	Rating conditions heating 2 pipe : air 20		
	Sound power level according to ISO3741		
	Sound pressure measured at 1 m in front of the unit and 0.8 m below the vertical centre line of the unit. (JIS C 9612)		
	Sound pressure measured at 1,4m below the facia (JIS C 9612)		
	Sound pressure measured at 1,5m below the facia (JIS B 8615)		
	Rating conditions heating 4 pipe : air 20		

1-3 Electrical Specifications			FWF02AT	FWF03AT	FWF04AT
Current input	High	A	0.22	0.30	0.34
	Medium	A	0.21	0.29	0.32
	Low	A	0.20	0.28	0.30
Required power supply		V / f / Hz	220-240 / 1 / 50		
Required fuses		A	2	2	2
Required wire section		mm ²	1.5	1.5	1.5

2 Control systems

Control systems for FWC-FWF-FWT

Controller	Application	Operation mode		Basic Controls			Energy saving mode	Timer setting	Air distribution	Faster cooling/heating
		Manual	Automatic	Temperature setting	Automatic Fan Speed	Fan speed: high/medium/low	Sleep mode	ON/OFF	Automatic air swing	Turbo
WRC	2-pipe	x		x	x	x	x	x	option	x
	4-pipe	x	x	x	x	x	x	x	option	x
SRC	2-pipe	x		x	x	x	x	x	option	
	4-pipe	x	x	x	x	x	x	x	x	
MERCA	2-pipe	x		x	x	x	x	x	x	
	4-pipe	x	x	x	x	x	x	x	x	

Operation mode:

- Cooling only: Cool, Dry and Fan
- Heating mode: Auto, Cool, Dry, Fan and Heat
- Automode is only available for 4-pipe applications

Temperature Setting: To set the desired room temperature

Fan speed: high, medium, low or automatic

Sleep Mode: energy saving option while optimising comfort conditions by temperature adjustment

Timer setting: to turn ON/OFF the air conditioner at the desired time

Automatic air swing: air distribution according to a specific direction

3 Capacity tables

3 - 1 Cooling capacity tables

Cooling capacities FWF (2 pipe)

Air temperature (°C DB - °C WB)		22-16															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow m ³ /hr	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWF02AT	663	1.73	1.73	0.30	40.81	1.63	1.63	0.28	37.19	1.53	1.53	0.26	33.63	1.43	1.43	0.25	30.30
	630	1.65	1.65	0.28	37.88	1.56	1.56	0.27	34.58	1.46	1.46	0.25	31.33	1.37	1.37	0.24	28.28
	595	1.54	1.54	0.27	34.25	1.46	1.46	0.25	31.33	1.37	1.37	0.24	28.46	1.28	1.28	0.22	25.76
FWF03AT	663	3.14	2.74	0.54	41.93	2.85	2.61	0.49	35.32	2.50	2.48	0.43	27.97	2.34	2.34	0.40	24.88
	630	2.91	2.59	0.50	36.75	2.65	2.46	0.46	31.01	2.34	2.34	0.40	24.86	2.21	2.21	0.38	22.55
	595	2.80	2.42	0.48	34.25	2.55	2.30	0.44	28.93	2.24	2.19	0.38	23.02	2.07	2.07	0.36	20.13
FWF04AT	731	3.17	2.92	0.54	41.49	2.85	2.75	0.49	34.32	2.60	2.60	0.45	29.13	2.46	2.46	0.42	26.12
	695	3.06	2.78	0.53	38.95	2.75	2.62	0.47	32.21	2.48	2.48	0.43	26.63	2.34	2.34	0.40	23.87
	663	2.95	2.65	0.51	36.52	2.65	2.50	0.46	30.19	2.36	2.36	0.41	24.45	2.23	2.23	0.38	21.91

Air temperature (°C DB - °C WB)		25-18															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow m ³ /hr	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWF02AT	663	2.23	1.84	0.38	61.96	2.07	1.75	0.36	54.71	1.83	1.65	0.32	44.52	1.59	1.55	0.27	35.53
	630	2.06	1.75	0.36	54.51	1.92	1.67	0.33	48.24	1.70	1.57	0.29	39.43	1.48	1.47	0.25	31.65
	595	1.93	1.64	0.33	48.86	1.80	1.56	0.31	43.33	1.59	1.47	0.27	35.57	1.38	1.38	0.24	28.72
FWF03AT	663	3.98	2.89	0.69	64.73	3.68	2.76	0.63	56.02	3.35	2.63	0.58	46.87	3.01	2.49	0.52	38.57
	630	3.70	2.73	0.64	56.56	3.42	2.61	0.59	48.99	3.11	2.48	0.54	41.04	2.80	2.35	0.48	33.84
	595	3.55	2.55	0.61	52.61	3.29	2.44	0.57	45.59	2.99	2.32	0.51	38.23	2.69	2.20	0.46	31.55
FWF04AT	731	4.10	3.08	0.71	65.52	3.78	2.92	0.65	56.67	3.42	2.77	0.59	47.16	3.05	2.62	0.52	38.44
	695	3.96	2.93	0.68	61.52	3.65	2.77	0.63	53.21	3.30	2.63	0.57	44.28	2.94	2.49	0.51	36.09
	663	3.82	2.80	0.66	57.69	3.52	2.64	0.61	49.90	3.18	2.51	0.55	41.52	2.84	2.37	0.49	33.83

Air temperature (°C DB - °C WB)		27-19															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow m ³ /hr	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWF02AT	663	2.49	2.05	0.43	75.02	2.34	1.97	0.40	67.23	2.09	1.87	0.36	55.24	1.84	1.77	0.32	44.56
	630	2.31	1.96	0.40	65.80	2.17	1.88	0.37	59.06	1.94	1.78	0.33	48.70	1.70	1.69	0.29	39.46
	595	2.16	1.84	0.37	58.81	2.03	1.76	0.35	52.87	1.81	1.67	0.31	43.74	1.59	1.58	0.27	35.60
FWF03AT	663	4.40	3.19	0.76	77.96	4.10	3.06	0.71	68.15	3.77	2.93	0.65	58.18	3.44	2.79	0.59	49.01
	630	4.09	3.02	0.70	68.06	3.81	2.89	0.66	59.53	3.50	2.76	0.60	50.86	3.19	2.64	0.55	42.90
	595	3.93	2.82	0.68	63.27	3.66	2.70	0.63	55.37	3.36	2.58	0.58	47.33	3.07	2.47	0.53	39.95
FWF04AT	731	4.57	3.41	0.79	79.30	4.25	3.24	0.73	69.62	3.88	3.09	0.67	59.16	3.52	2.94	0.61	49.49
	695	4.41	3.24	0.76	74.45	4.10	3.08	0.71	65.36	3.75	2.94	0.64	55.55	3.39	2.80	0.58	46.47
	663	4.25	3.09	0.73	69.81	3.96	2.94	0.68	61.29	3.61	2.80	0.62	52.09	3.27	2.67	0.56	43.57

Air temperature (°C DB - °C WB)		30-22															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow m ³ /hr	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWF02AT	663	3.22	2.22	0.55	118.75	3.04	2.12	0.52	106.67	2.81	2.02	0.48	92.12	2.57	1.92	0.44	78.72
	630	2.99	2.12	0.51	103.61	2.82	2.02	0.49	93.15	2.60	1.93	0.45	80.58	2.38	1.83	0.41	68.98
	595	2.80	1.98	0.48	92.12	2.64	1.89	0.45	82.91	2.44	1.81	0.42	71.82	2.23	1.72	0.38	61.61
FWF03AT	663	5.97	3.61	1.03	137.44	5.70	3.46	0.98	125.76	5.34	3.33	0.92	110.85	4.98	3.19	0.86	96.88
	630	5.55	3.41	0.95	119.81	5.30	3.27	0.91	109.64	4.96	3.14	0.85	96.66	4.62	3.02	0.80	84.51
	595	5.33	3.19	0.92	111.27	5.09	3.05	0.88	101.83	4.77	2.94	0.82	89.79	4.44	2.82	0.76	78.52
FWF04AT	731	6.12	3.84	1.05	133.54	5.76	3.69	0.99	119.25	5.37	3.53	0.92	104.97	4.98	3.36	0.86	91.55
	695	5.91	3.66	1.02	125.32	5.55	3.51	0.96	111.92	5.18	3.36	0.89	98.52	4.80	3.20	0.83	85.95
	663	5.70	3.49	0.98	117.45	5.36	3.35	0.92	104.90	4.99	3.20	0.86	92.36	4.63	3.05	0.80	80.57

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3 Capacity tables

3 - 2 Capacity tables with glycol for process cooling applications

Glycol correction factor

FWF	Entering water temperature °C	Cooling capacity				Pressure Drop
		0	20	40	60	
	0%	1	1	1	1	1
	10%	0.955	0.969	0.973	0.980	1.060
	20%	0.929	0.941	0.955	0.964	1.120
	30%	0.898	0.913	0.929	0.939	1.180
	40%	0.863	0.882	0.899	0.911	1.240

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3

3 Capacity tables

3 - 3 Heating capacity tables

Heating capacities FWF (2 pipe)

Air temperature (°C DB - °C WB)		20		
Water temperature (Entering °C - Leaving °C)		50 - 45		
Model	Air Flow m ³ /hr	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWF02AT	663	3.51	0.60	124.11
	630	3.40	0.58	117.36
	595	3.28	0.56	109.92
FWF03AT	663	5.40	0.93	110.28
	630	5.32	0.91	107.24
	595	4.99	0.86	95.28
FWF04AT	731	5.81	1.00	124.16
	695	5.46	0.94	111.32
	663	5.40	0.93	109.10

Air temperature (°C DB - °C WB)		22		
Water temperature (Entering °C - Leaving °C)		50 - 45		
Model	Air Flow m ³ /hr	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWF02AT	663	3.27	0.56	109.15
	630	3.17	0.54	103.20
	595	3.05	0.52	96.61
FWF03AT	663	5.02	0.86	96.24
	630	4.94	0.85	93.59
	595	4.64	0.80	83.14
FWF04AT	731	5.38	0.92	108.34
	695	5.06	0.87	97.25
	663	5.01	0.86	95.31

3 Capacity tables

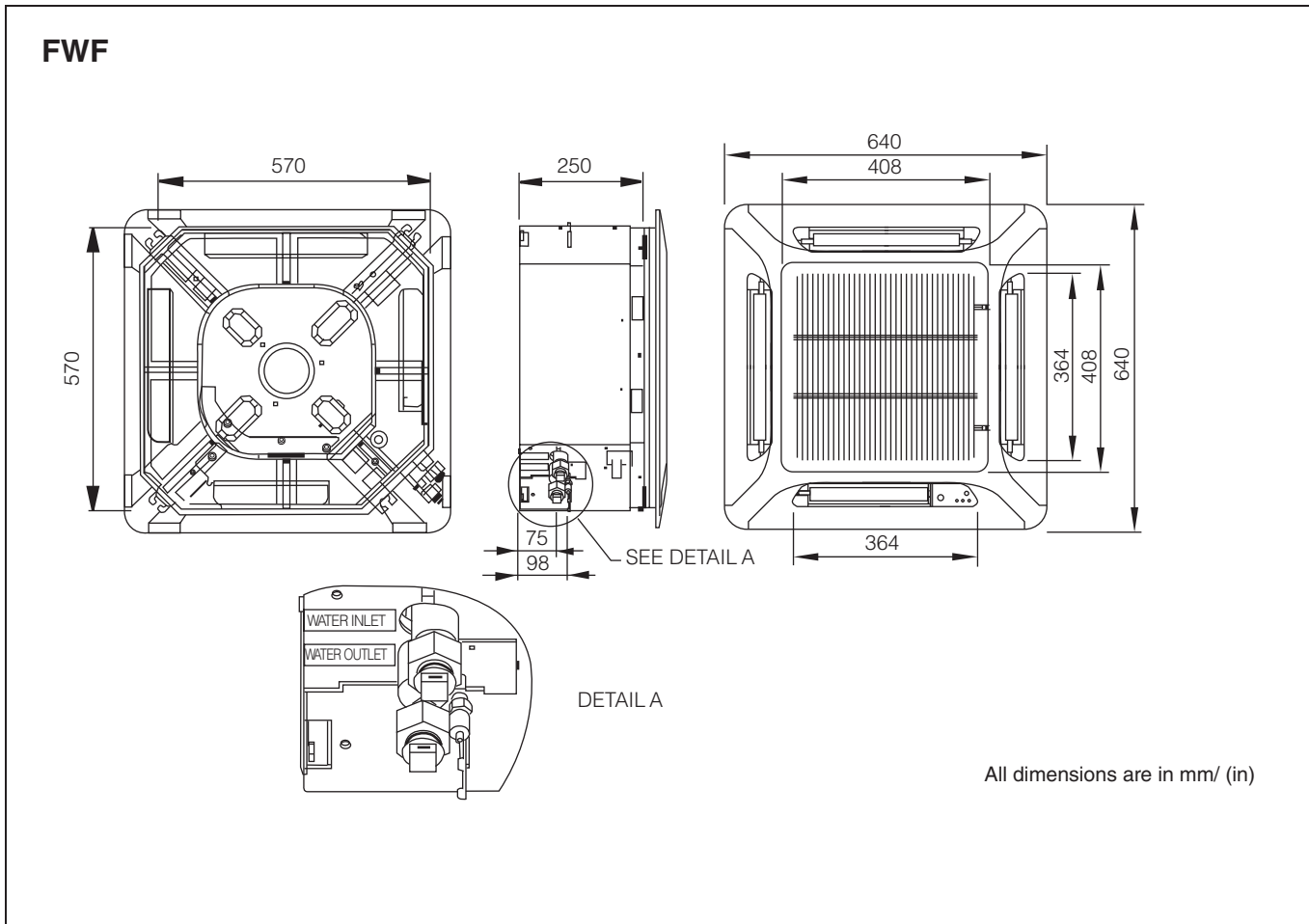
3 - 4 Capacity correction factor

Heating correction factor

FWF													
Entering Air temperature °C	Entering Water temperature °C												
	37.8	43.3	45.0	48.8	50.0	54.4	60.0	65.5	70.0	71.1	76.7	82.2	87.7
4.4	1.338	1.376	1.388	1.414	1.422	1.452	1.491	1.529	1.559	1.569	1.605	1.643	1.683
7.2	1.257	1.297	1.310	1.338	1.347	1.379	1.421	1.462	1.497	1.507	1.547	1.586	1.630
10.0	1.176	1.221	1.235	1.265	1.275	1.311	1.356	1.401	1.433	1.444	1.488	1.531	1.577
12.7	1.093	1.140	1.155	1.187	1.198	1.235	1.284	1.331	1.370	1.381	1.426	1.476	1.523
15.5	1.010	1.061	1.077	1.113	1.124	1.165	1.217	1.268	1.306	1.318	1.368	1.420	1.471
18.3	0.958	0.999	1.013	1.044	1.054	1.095	1.149	1.199	1.242	1.255	1.308	1.363	1.419
20.0	0.877	0.933	0.950	0.989	1.000	1.046	1.103	1.159	1.204	1.216	1.274	1.330	1.386
21.1	0.824	0.890	0.910	0.953	0.965	1.014	1.074	1.134	1.179	1.192	1.251	1.308	1.364
23.9	0.758	0.819	0.838	0.880	0.894	0.943	1.005	1.066	1.115	1.129	1.191	1.252	1.312
26.7	0.677	0.741	0.761	0.806	0.820	0.871	0.937	1.001	1.052	1.067	1.133	1.197	1.259

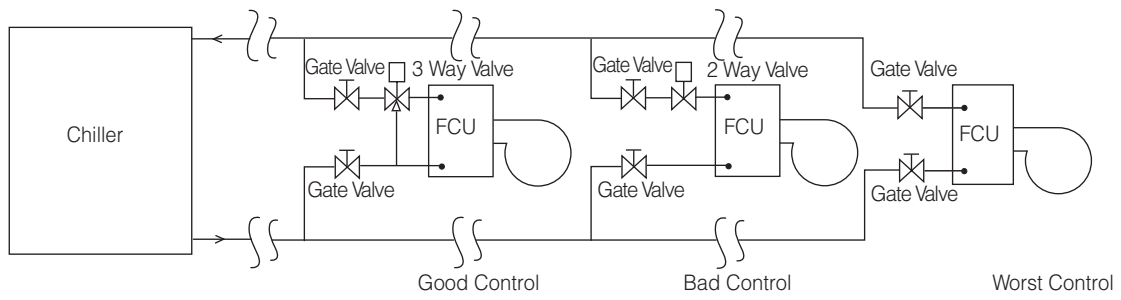
4 Dimensional drawing

4 - 1 Dimensional drawing



5 Piping diagram

FWF (Water piping diagram)

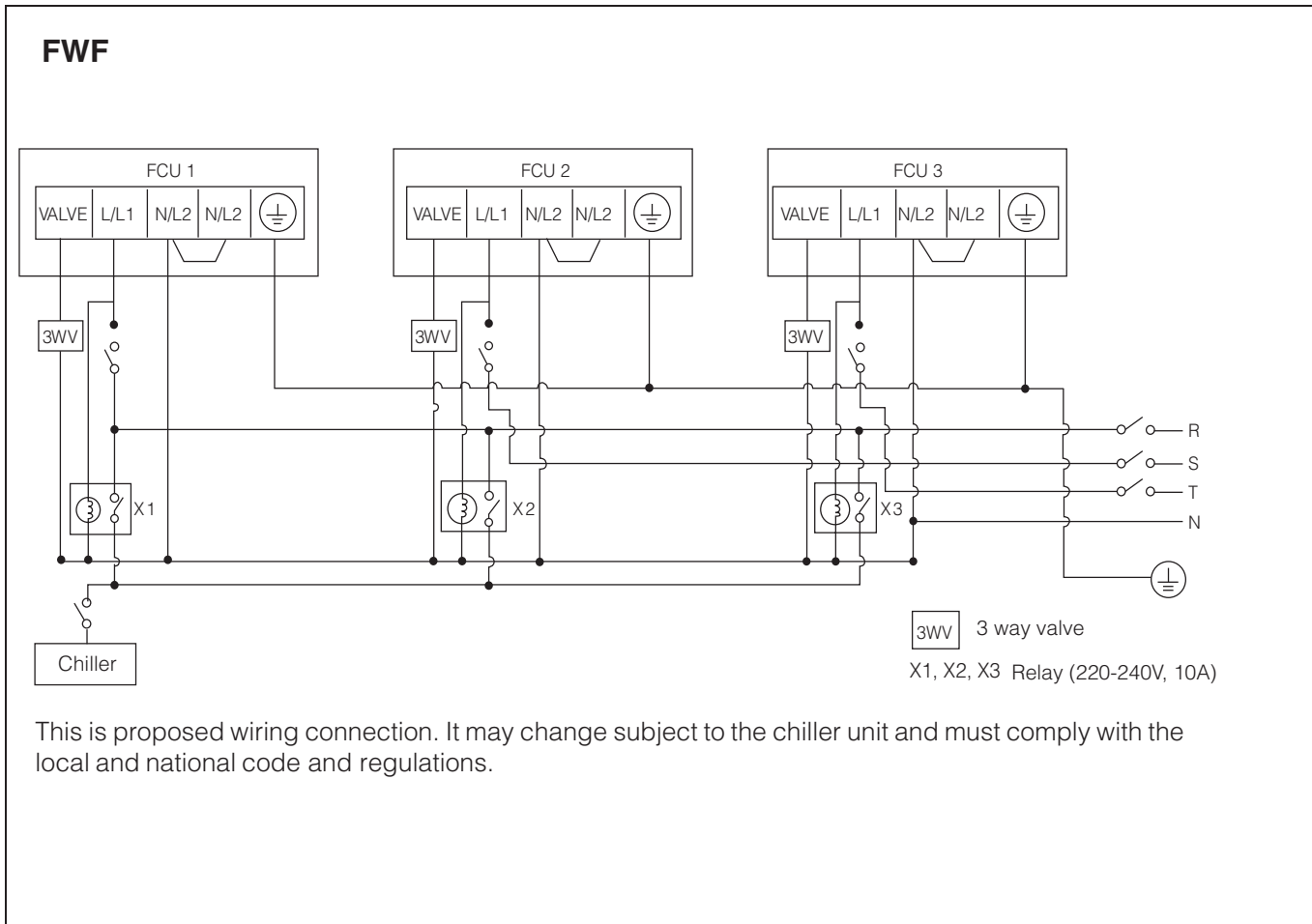


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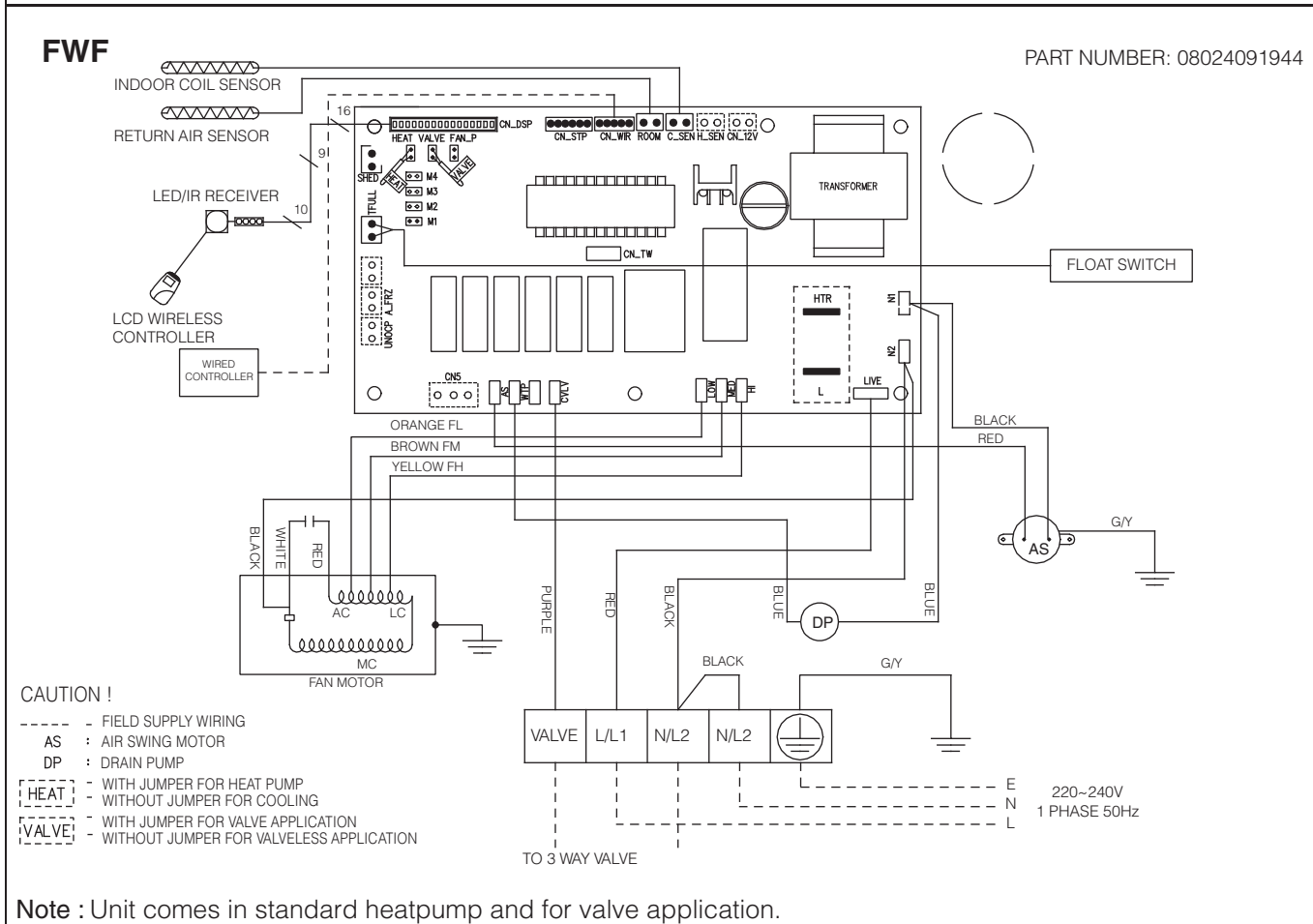
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6 Wiring diagram

6 - 1 Wiring diagram



5
6



Note : Unit comes in standard heatpump and for valve application.

7 Sound data

7 - 1 Sound power spectrum

FWF (2 PIPE)

Model	Freq	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125	250	500	1000	2000	4000	8000	
FWF02AT	Hi	54	57	53	49	42	39	31	54
	Me	53	55	52	48	41	37	30	53
	Lo	52	54	51	46	39	35	28	51
FWF03AT	Hi	55	55	52	48	42	38	30	53
	Me	54	54	51	47	41	37	30	52
	Lo	54	52	49	46	39	34	28	50
FWF04AT	Hi	56	58	54	51	45	47	34	56
	Me	55	57	53	50	43	45	32	55
	Lo	54	55	51	48	41	42	28	53

Microphone position: FWF 1.4m below the fascia

8 Operation range

FWF

OPERATING RANGE

Operating Limits:

Thermal carrier : Water

Water temperature : 5 ~50°C

Maximum water pressure : 16 bar

Air temperature : (as below)

Cooling Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	11.0 / 51.8
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4
Minimum outdoor temperature	16.0 / 60.8	-
Maximum outdoor temperature	46.0 / 114.8	-

Heating Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	-
Maximum indoor temperature	30.0 / 86.0	-
Minimum outdoor temperature	-5.0 / 23.0	-6.0 / 21.2
Maximum outdoor temperature	24.0 / 75.2	18.0 / 64.4

Ts: Dry bulb temperature.

Th: Wet bulb temperature.

9 Hydraulic performance

9 - 1 Water pressure drop curve evaporator

FWF

Water flow m ³ /hr		FWF (2 PIPE) cooling		
		FWF02AT	FWF03AT	FWF04AT
0.1		11.03	4.14	0.11
0.2		22.70	8.46	6.10
0.3		41.19	15.32	14.00
0.4		66.38	24.66	23.80
0.5		98.11	36.43	35.47
0.6		136.24	50.59	48.99
0.7		180.64	67.08	64.34
0.8			85.85	81.50
0.9			106.86	100.45
1.0			130.05	121.17
1.1			155.37	143.64
1.2				167.85

5

9

FWF

Water flow m ³ /hr		FWF (2 PIPE) Heating		
		FWF02AT	FWF03AT	FWF04AT
0.1		10.88	4.05	0.11
0.2		22.29	8.28	6.29
0.3		39.01	14.99	14.45
0.4		61.27	24.13	24.55
0.5		89.30	35.65	36.59
0.6		123.31	49.51	50.54
0.7		163.53	65.65	66.37
0.8			84.02	84.08
0.9			104.58	103.63
1.0			127.27	125.01
1.1			152.06	148.20
1.2			178.88	173.17

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1 Specifications

1-1 Nominal capacity and nominal input				FWT02BT	FWT03BT	FWT04BT	FWT05BT	FWT06BT
Power Input	High		W	24	25	29	66	69
	Medium		W	22	22	23	46	47
	Low		W	20	20	21	39	39
Cooling capacity	Total capacity	High	kW	2.34	2.78	3.22	4.54	5.28
		Medium	kW	2.23	2.68	2.74	4.10	4.95
		Low	kW	2.10	2.20	2.20	3.95	4.25
	Sensible capacity	High	kW	1.74	2.03	2.35	3.65	4.33
		Medium	kW	1.51	1.82	2.00	3.21	3.95
		Low	kW	1.29	1.61	1.70	3.04	3.44
Heating capacity (2-pipe)	High		kW	3.02	3.75	4.10	6.01	6.74
	Medium		kW	2.71	3.31	3.40	5.01	6.18
	Low		kW	2.38	2.64	2.78	4.63	5.33

1-2 Technical Specifications				FWT02BT	FWT03BT	FWT04BT	FWT05BT	FWT06BT
Dimensions	Unit	Height	mm	260	260	260	304	304
		Width	mm	799	899	899	1,062	1,062
		Depth	mm	198	198	198	222	222
	Unit with packing	Height	mm	337	337	337	378	378
		Width	mm	857	957	957	1,130	1,130
		Depth	mm	270	270	270	292	292
Weight	Machine weight		kg	10.0	12.0	12.0	16.0	16.0
	Operation weight		kg	10.0	13.0	13.0	17.0	17.0
	Gross weight		kg	11.0	13.0	13.0	17.0	17.0
Casing	Colour			Pure White				
	Material			High impact polystyrene				
Sound level	Sound pressure	High	dBA	40	39	42	49	50
		Medium	dBA	35	34	36	44	48
		Low	dBA	29	28	29	42	45
	Sound power	High	dBA	53	53	55	61	64
		Medium	dBA	48	47	49	57	61
		Low	dBA	44	43	44	55	59
Water flow	Cooling		l/h	402	478	554	781	908
	Heating		l/h	402	478	554	781	908
Water pressure drop	Cooling		kPa	48.3	64.7	69.3	50.3	69.3
	Heating		kPa	42	58.6	60.6	50.6	70.6
Fan	Type			Direct drive cross flow fan				
	Air flow rate	High	m ³ /h	467	510	586	1,070	1,121
		Medium	m ³ /h	382	425	484	833	985
		Low	m ³ /h	297	340	374	748	799
	Speed			3 steps : high, medium, low				
Quantity			1	1	1	1	1	
Motor	Type			Induction				
Standard heat exchanger	Rows		mm	2	2	2	2	2
	Stages		mm	8	8	8	8*(2)+ 4*(4)	8*(2)+ 4*(4)
	Fin pitch		mm	1.41	1.41	1.41	1.41	1.41
	Face area		m ²	0.20	0.23	0.23	0.33	0.33
	Water volume		l	0.49	0.57	0.57	0.85	0.85
Air filter	Washable Saranet (nano filter)							
Insulation material	PE							
Vibration insulation	CR Rubber (Fan Motor)							
Water connections	Std. heat exchanger		inch	1/2"				
Drain				16	16	16	20	20
Notes	Rating conditions cooling 2 pipe : air 27							
	Rating conditions heating 2 pipe : air 20							
	Sound power level according to ISO3741							
	Sound pressure measured at 1 m in front of the unit and 0.8 m below the vertical centre line of the unit. (JIS C 9612)							
	Rating conditions heating 4 pipe : air 20							

1 Specifications

1-3 Electrical Specifications			FWT02BT	FWT03BT	FWT04BT	FWT05BT	FWT06BT	
Current input	High	A	0.11	0.11	0.13	0.29	0.30	
	Medium	A	0.08	0.09	0.10	0.19	0.25	
	Low	A	0.07	0.08	0.09	0.17	0.24	
Required power supply	V / f / Hz	220-240 / 1 / 50						
Required fuses	A	2	2	2	2	2		
Required wire section	mm ²	1.5	1.5	1.5	1.5	1.5		

2 Control systems

Control systems for FWC-FWF-FWT

Controller	Application	Operation mode		Basic Controls			Energy saving mode	Timer setting	Air distribution	Faster cooling/heating
		Manual	Automatic	Temperature setting	Automatic Fan Speed	Fan speed: high/medium/low	Sleep mode	ON/OFF	Automatic air swing	Turbo
WRC	2-pipe	x		x	x	x	x	x	option	x
	4-pipe	x	x	x	x	x	x	x	option	x
SRC	2-pipe	x		x	x	x	x	x	option	
	4-pipe	x	x	x	x	x	x	x	x	
MERCA	2-pipe	x		x	x	x	x	x	x	
	4-pipe	x	x	x	x	x	x	x	x	

Operation mode:

- Cooling only: Cool, Dry and Fan
- Heating mode: Auto, Cool, Dry, Fan and Heat
- Automode is only available for 4-pipe applications

Temperature Setting: To set the desired room temperature

Fan speed: high, medium, low or automatic

Sleep Mode: energy saving option while optimising comfort conditions by temperature adjustment

Timer setting: to turn ON/OFF the air conditioner at the desired time

Automatic air swing: air distribution according to a specific direction

3 Capacity tables

3 - 1 Cooling capacity tables

Cooling capacities FWT (2 pipe)

Air temperature (°C DB - °C WB)		22-16															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow m ³ /hr	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWT02BT	467	1.77	1.65	0.31	29.86	1.59	1.55	0.27	24.74	1.45	1.45	0.25	21.22	1.35	1.35	0.23	18.83
	382	1.69	1.43	0.29	27.37	1.51	1.35	0.26	22.72	1.31	1.26	0.22	17.84	1.17	1.17	0.20	15.05
	297	1.59	1.23	0.27	24.92	1.43	1.15	0.25	20.73	1.24	1.08	0.21	16.34	1.04	1.00	0.18	12.52
FWT03BT	510	1.94	1.94	0.33	39.75	1.88	1.77	0.32	38.01	1.60	1.60	0.28	30.46	1.43	1.43	0.25	26.15
	425	1.81	1.74	0.31	36.28	1.81	1.59	0.31	36.16	1.44	1.44	0.25	26.26	1.29	1.29	0.22	22.53
	340	1.54	1.54	0.26	29.01	1.49	1.40	0.26	27.66	1.27	1.27	0.22	22.21	1.14	1.14	0.20	19.04
FWT04BT	586	2.44	2.23	0.42	46.36	2.07	2.05	0.36	36.60	1.85	1.85	0.32	31.10	1.65	1.65	0.28	26.35
	484	2.07	1.92	0.36	36.82	1.77	1.77	0.30	29.22	1.59	1.59	0.27	25.18	1.42	1.42	0.24	21.34
	374	1.66	1.60	0.29	26.92	1.47	1.47	0.25	22.55	1.33	1.33	0.23	19.42	1.19	1.19	0.20	16.44
FWT05BT	1070	3.51	3.51	0.60	31.50	3.28	3.28	0.56	27.72	3.01	3.01	0.52	23.70	2.74	2.74	0.47	19.99
	833	3.12	3.12	0.54	25.44	2.91	2.91	0.50	22.40	2.67	2.67	0.46	19.16	2.44	2.44	0.42	16.17
	748	2.93	2.91	0.50	22.79	2.71	2.71	0.47	19.73	2.49	2.49	0.43	16.88	2.27	2.27	0.39	14.25
FWT06BT	1121	4.20	4.20	0.72	45.62	3.96	3.96	0.68	40.82	3.70	3.70	0.64	35.99	3.44	3.44	0.59	31.46
	985	3.89	3.83	0.67	39.69	3.61	3.61	0.62	34.55	3.37	3.37	0.58	30.47	3.14	3.14	0.54	26.64
	799	3.34	3.33	0.57	30.05	3.14	3.14	0.54	26.87	2.94	2.94	0.51	23.71	2.73	2.73	0.47	20.74

Air temperature (°C DB - °C WB)		25-18															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow m ³ /hr	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWT02BT	467	2.27	1.72	0.39	46.09	2.09	1.62	0.36	39.60	1.87	1.52	0.32	32.61	1.66	1.42	0.29	26.34
	382	2.16	1.49	0.37	42.10	1.99	1.40	0.34	36.20	1.78	1.32	0.31	29.86	1.57	1.23	0.27	24.17
	297	2.04	1.27	0.35	38.19	1.88	1.20	0.32	32.88	1.68	1.12	0.29	27.17	1.49	1.05	0.26	22.04
FWT03BT	510	2.70	2.03	0.47	62.62	2.48	1.86	0.43	55.47	2.07	1.69	0.36	43.32	1.67	1.52	0.29	32.13
	425	2.61	1.82	0.45	59.54	2.39	1.66	0.41	52.75	2.00	1.51	0.34	41.21	1.61	1.36	0.28	30.57
	340	2.14	1.61	0.37	45.43	1.96	1.47	0.34	40.30	1.64	1.34	0.28	31.52	1.32	1.21	0.23	23.37
FWT04BT	586	3.19	2.33	0.55	68.53	2.84	2.15	0.49	57.54	2.36	1.95	0.41	43.98	1.88	1.75	0.32	31.74
	484	2.72	2.00	0.47	54.23	2.41	1.85	0.42	45.61	2.01	1.68	0.35	34.94	1.60	1.51	0.28	25.25
	374	2.18	1.67	0.38	39.53	1.94	1.54	0.33	33.30	1.61	1.40	0.28	25.55	1.28	1.26	0.22	18.46
FWT05BT	1070	4.47	3.63	0.77	48.91	4.01	3.40	0.69	40.03	3.69	3.13	0.64	34.36	3.38	2.87	0.58	29.11
	833	4.06	3.23	0.70	41.09	3.65	3.02	0.63	33.65	3.36	2.78	0.58	28.90	3.07	2.55	0.53	24.50
	748	3.87	3.01	0.67	37.70	3.48	2.82	0.60	30.88	3.20	2.60	0.55	26.53	2.93	2.37	0.50	22.49
FWT06BT	1121	5.26	4.33	0.90	68.89	4.71	4.08	0.81	56.22	4.07	3.83	0.70	42.85	3.58	3.58	0.62	33.85
	985	4.93	3.95	0.85	61.22	4.42	3.72	0.76	49.97	3.82	3.49	0.66	38.11	3.27	3.27	0.56	28.66
	799	4.23	3.44	0.73	46.26	3.79	3.24	0.65	37.79	3.27	3.04	0.56	28.86	2.84	2.84	0.49	22.31

Air temperature (°C DB - °C WB)		27-19															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow m ³ /hr	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWT02BT	467	2.52	1.84	0.43	55.56	2.34	1.74	0.40	48.38	2.12	1.64	0.37	40.59	1.91	1.54	0.33	33.52
	382	2.40	1.60	0.41	50.69	2.22	1.51	0.38	44.17	2.02	1.42	0.35	37.10	1.81	1.34	0.31	30.68
	297	2.27	1.37	0.39	45.92	2.10	1.29	0.36	40.05	1.91	1.22	0.33	33.69	1.71	1.14	0.30	27.91
FWT03BT	510	3.11	2.21	0.54	76.19	2.78	2.03	0.48	64.92	2.38	1.86	0.41	52.26	1.98	1.70	0.34	40.53
	425	3.00	1.98	0.52	72.41	2.68	1.82	0.46	61.72	2.29	1.67	0.39	49.71	1.91	1.52	0.33	38.56
	340	2.46	1.76	0.42	55.15	2.20	1.61	0.38	47.08	1.88	1.48	0.32	37.98	1.57	1.35	0.27	29.49
FWT04BT	586	3.57	2.52	0.61	80.72	3.22	2.35	0.55	69.18	2.74	2.15	0.47	54.46	2.25	1.95	0.39	41.06
	484	3.04	2.17	0.52	63.78	2.74	2.03	0.47	54.74	2.33	1.85	0.40	43.19	1.92	1.68	0.33	32.63
	374	2.44	1.81	0.42	46.39	2.20	1.69	0.38	39.89	1.87	1.54	0.32	31.54	1.54	1.40	0.26	23.86
FWT05BT	1070	5.01	3.88	0.86	60.31	4.54	3.65	0.78	50.21	4.35	3.38	0.75	46.26	4.16	3.12	0.72	42.47
	833	4.55	3.45	0.78	50.64	4.13	3.24	0.71	42.18	3.95	3.01	0.68	38.87	3.78	2.77	0.65	35.70
	748	4.34	3.22	0.75	46.45	3.94	3.02	0.68	38.70	3.77	2.80	0.65	35.66	3.60	2.58	0.62	32.76
FWT06BT	1121	5.81	4.60	1.00	82.83	5.28	4.33	0.91	69.21	4.65	4.10	0.80	54.60	4.01	3.86	0.69	41.66
	985	5.45	4.19	0.94	73.59	4.95	3.95	0.85	61.50	4.36	3.74	0.75	48.54	3.76	3.53	0.65	37.05
	799	4.68	3.65	0.80	55.58	4.25	3.44	0.73	46.47	3.74	3.25	0.64	36.71	3.23	3.07	0.56	28.06

Air temperature (°C DB - °C WB)		30-22															
Water temperature (Entering °C - Leaving °C)		6-11				7-12				8-13				9-14			
Model	Air Flow m ³ /hr	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa	Total cooling capacity kW	Sensible cooling capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWT02BT	467	3.32	2.02	0.57	91.81	3.14	1.94	0.54	82.45	2.92	1.84	0.50	72.10	2.71	1.74	0.47	62.48
	382	3.16	1.76	0.54	83.57	2.98	1.68	0.51	75.08	2.78	1.60	0.48	65.69	2.57	1.51	0.44	56.96
	297	2.99	1.50	0.51	75.50	2.82	1.44	0.49	67.86	2.63	1.37	0.45	59.41	2.43	1.29	0.42	51.55
FWT03BT	510	4.11	2.45	0.71	112.66	3.78	2.28	0.65	99.66	3.38	2.11	0.58	84.91	2.98	1.95	0.51	71.02
	425	3.97	2.19	0.68	106.96	3.64	2.04	0.63	94.65	3.26	1.90	0.56	80.68	2.87	1.75	0.49	67.51
	340	3.26	1.94	0.56	81.07	2.99	1.81	0.51	71.85	2.68	1.68	0.46	61.36	2.36	1.54	0.41	51.45
FWT04BT	586	4.54	2.75	0.78	115.11	4.17	2.55	0.72	101.22	3.74	2.38	0.64	85.79	3.30	2.22	0.57	71.36
	484	3.86	2.37	0.66	90.62	3.55	2.20	0.61	79.78	3.18	2.05	0.55	67.73	2.81	1.91	0.48	56.45
	374	3.10	1.97	0.53	65.59	2.85	1.83	0.49	57.85	2.55	1.71	0.44	49.22	2.26	1.59	0.39	41.11
FWT05BT	1070	6.55	4.30	1.13	98.61	6.05	4.05	1.04	84.87	5.48	3.78	0.94	70.71	4.92	3.52	0.85	57.72
	833	5.95	3.82	1.02	82.75	5.50	3.60	0.95	71.31	4.98	3.36	0.86	59.36	4.47	3.13	0.77	48.47
	748	5.68	3.56	0.98	75.87	5.25	3.35	0.90	65.39	4.75	3.13	0.82	54.44	4.26	2.91	0.73	44.46
FWT06BT	1121	7.58	5.10	1.30	134.83	7.08	4.83	1.22									

3 Capacity tables

3 - 2 Capacity tables with glycol for process cooling applications

Glycol correction factor

FWT Entering water temperature °C	Cooling capacity				Pressure Drop
	0	20	40	60	
0%	1	1	1	1	1
10%	0.955	0.969	0.973	0.980	1.060
20%	0.929	0.941	0.955	0.964	1.120
30%	0.898	0.913	0.929	0.939	1.180
40%	0.863	0.882	0.899	0.911	1.240

3 Capacity tables

3 - 3 Heating capacity tables

Heating capacities FWT (2 pipe)

Air temperature (°C DB - °C WB)		20		
Water temperature (Entering °C - Leaving °C)		50 - 45		
Model	Air Flow m ³ /HR	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWT02BT	467	3.20	0.55	74.08
	382	2.85	0.49	60.34
	297	2.48	0.42	46.88
FWT03BT	510	3.98	0.68	96.36
	425	3.46	0.59	79.28
	340	2.78	0.48	58.51
FWT04BT	586	4.31	0.74	92.26
	484	3.59	0.62	70.51
	374	3.00	0.51	54.35
FWT05BT	1070	6.50	1.11	96.71
	833	5.40	0.92	68.73
	748	4.90	0.84	57.56
FWT06BT	1121	7.21	1.24	124.02
	985	6.57	1.13	104.58
	799	5.71	0.98	80.76

Air temperature (°C DB - °C WB)		22		
Water temperature (Entering °C - Leaving °C)		50 - 45		
Model	Air Flow m ³ /HR	Heating capacity kW	Water flow m ³ /hr	Water pressure drop kPa
FWT02BT	467	2.98	0.51	65.12
	382	2.66	0.46	53.06
	297	2.29	0.39	41.06
FWT03BT	510	3.70	0.63	87.15
	425	3.23	0.55	71.85
	340	2.58	0.44	52.81
FWT04BT	586	4.01	0.69	83.01
	484	3.34	0.57	63.43
	374	2.78	0.48	48.63
FWT05BT	1070	6.04	1.03	84.40
	833	5.00	0.86	59.74
	748	4.52	0.77	49.74
FWT06BT	1121	6.68	1.14	107.61
	985	6.10	1.05	91.14
	799	5.29	0.91	70.16

3 Capacity tables

3 - 4 Capacity correction factor

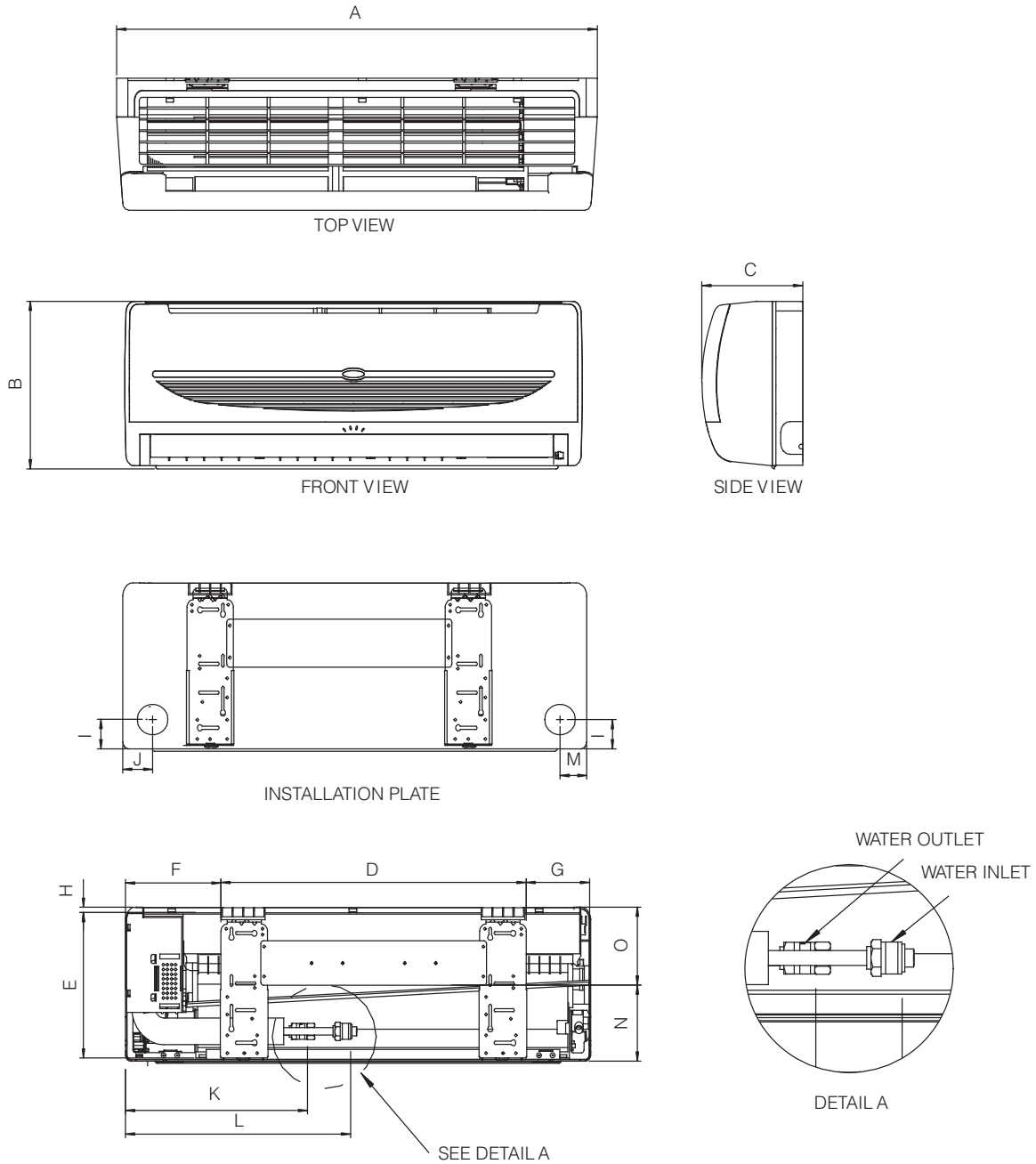
Heating correction factor

Entering Air temperature °C	FWT												
	Entering Water temperature °C												
	37.8	43.3	45.0	48.8	50.0	54.4	60.0	65.5	70.0	71.1	76.7	82.2	87.7
4.4	1.338	1.376	1.388	1.414	1.422	1.452	1.491	1.529	1.559	1.569	1.605	1.643	1.683
7.2	1.257	1.297	1.310	1.338	1.347	1.379	1.421	1.462	1.497	1.507	1.547	1.586	1.630
10.0	1.176	1.221	1.235	1.265	1.275	1.311	1.356	1.401	1.433	1.444	1.488	1.531	1.577
12.7	1.093	1.140	1.155	1.187	1.198	1.235	1.284	1.331	1.370	1.381	1.426	1.476	1.523
15.5	1.010	1.061	1.077	1.113	1.124	1.165	1.217	1.268	1.306	1.318	1.368	1.420	1.471
18.3	0.958	0.999	1.013	1.044	1.054	1.095	1.149	1.199	1.242	1.255	1.308	1.363	1.419
20.0	0.877	0.933	0.950	0.989	1.000	1.046	1.103	1.159	1.204	1.216	1.274	1.330	1.386
21.1	0.824	0.890	0.910	0.953	0.965	1.014	1.074	1.134	1.179	1.192	1.251	1.308	1.364
23.9	0.758	0.819	0.838	0.880	0.894	0.943	1.005	1.066	1.115	1.129	1.191	1.252	1.312
26.7	0.677	0.741	0.761	0.806	0.820	0.871	0.937	1.001	1.052	1.067	1.133	1.197	1.259

4 Dimensional drawing

4 - 1 Dimensional drawing

FWT (02, 03, 04)

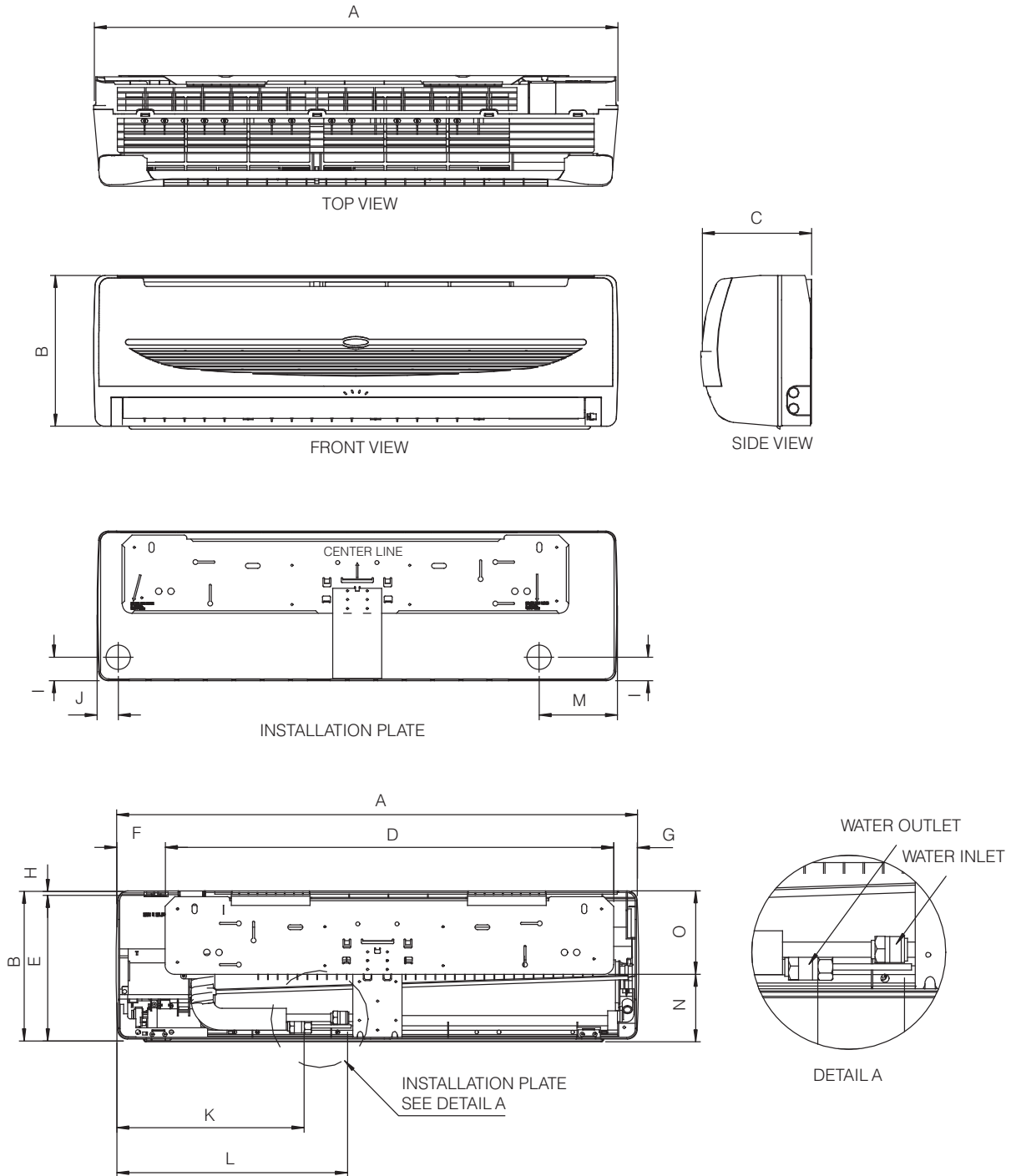


Dimension	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
FWT02BATNMV1	799 (31,5)	260 (10,2)	198 (7,8)	379 (15,0)	246 (9,7)	185 (7,3)	124 (4,9)	8 (0,3)	56 (2,2)	50 (2,0)	350 (13,8)	379 (15,0)	50 (2,0)	128 (5,1)	132 (5,2)
FWT03BATNMV1 / FWT04BATNMV1	899 (35,4)	260 (10,2)	198 (7,8)	590 (23,2)	246 (9,7)	185 (7,3)	124 (4,9)	8 (0,3)	56 (2,2)	50 (2,0)	435 (17,1)	495 (19,5)	50 (2,0)	128 (5,1)	132 (5,2)

4 Dimensional drawing

4 - 1 Dimensional drawing

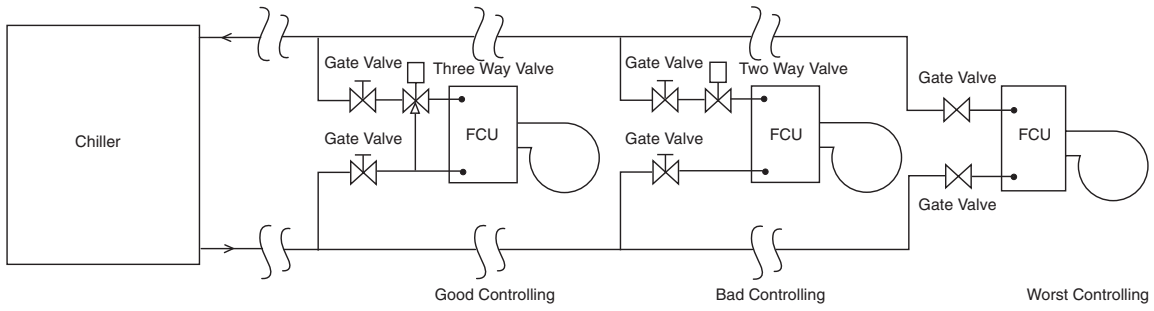
FWT (05, 06)



Dimension	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
FWT05BATNMV1 / FWT06BATNMV1	1060 (41,7)	310 (12,2)	220 (8,6)	912 (35,9)	294 (11,6)	99 (3,9)	51 (2,0)	8 (0,3)	48 (1,9)	43 (1,7)	369 (14,5)	453 (17,8)	160 (6,3)	138 (5,4)	160 (6,3)

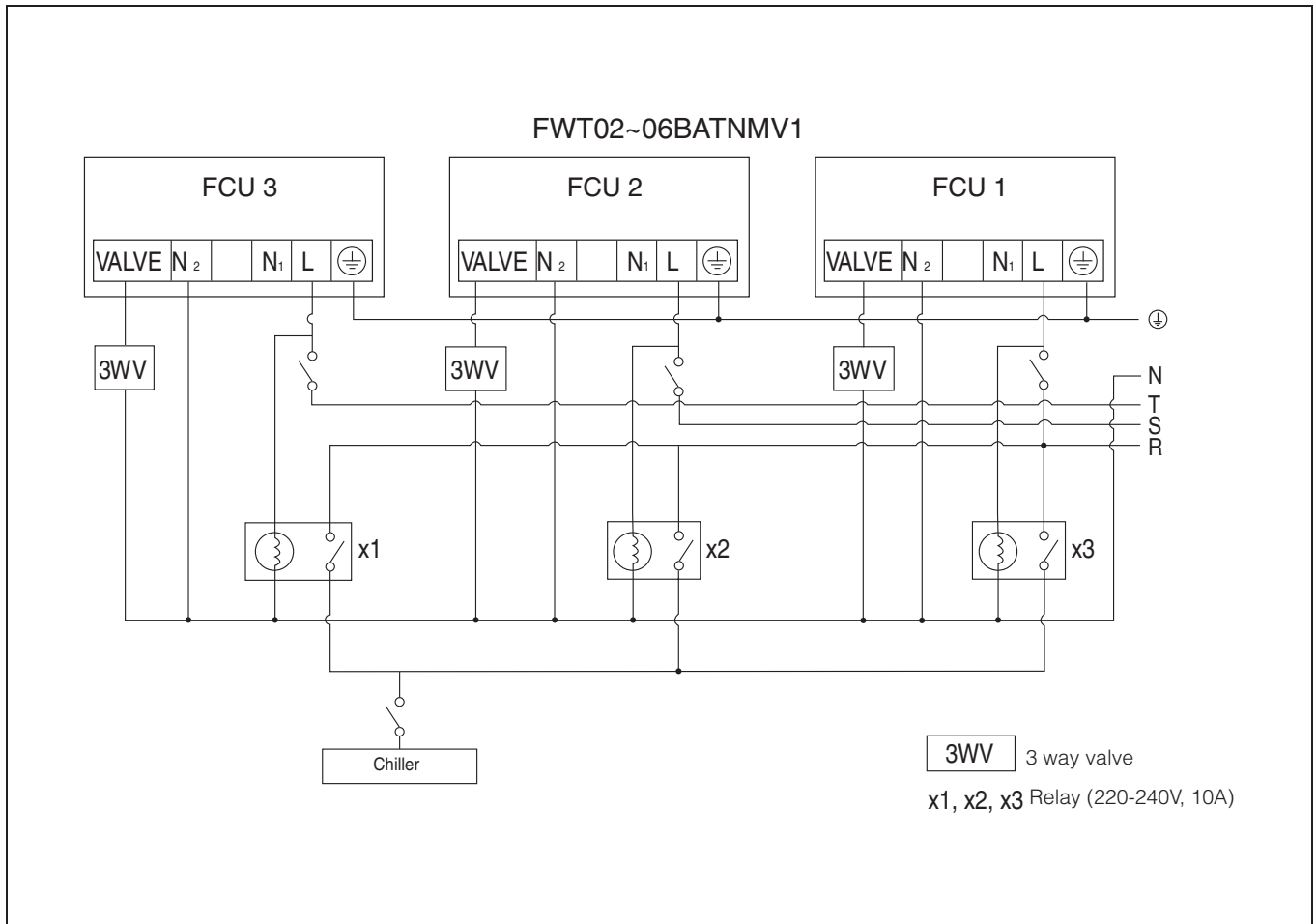
5 Piping diagram

FWT (Water piping diagram)

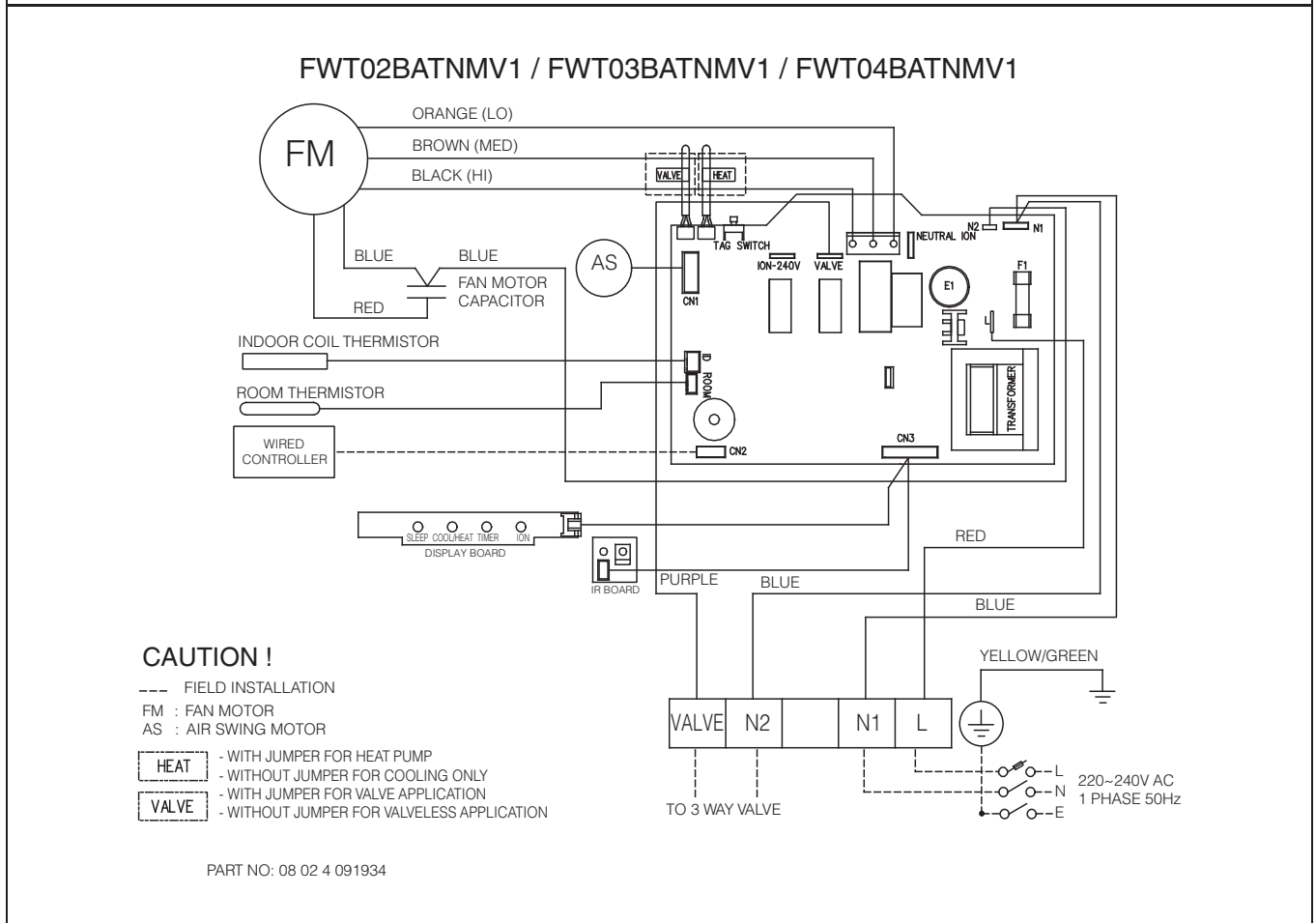


6 Wiring diagram

6 - 1 Wiring diagram

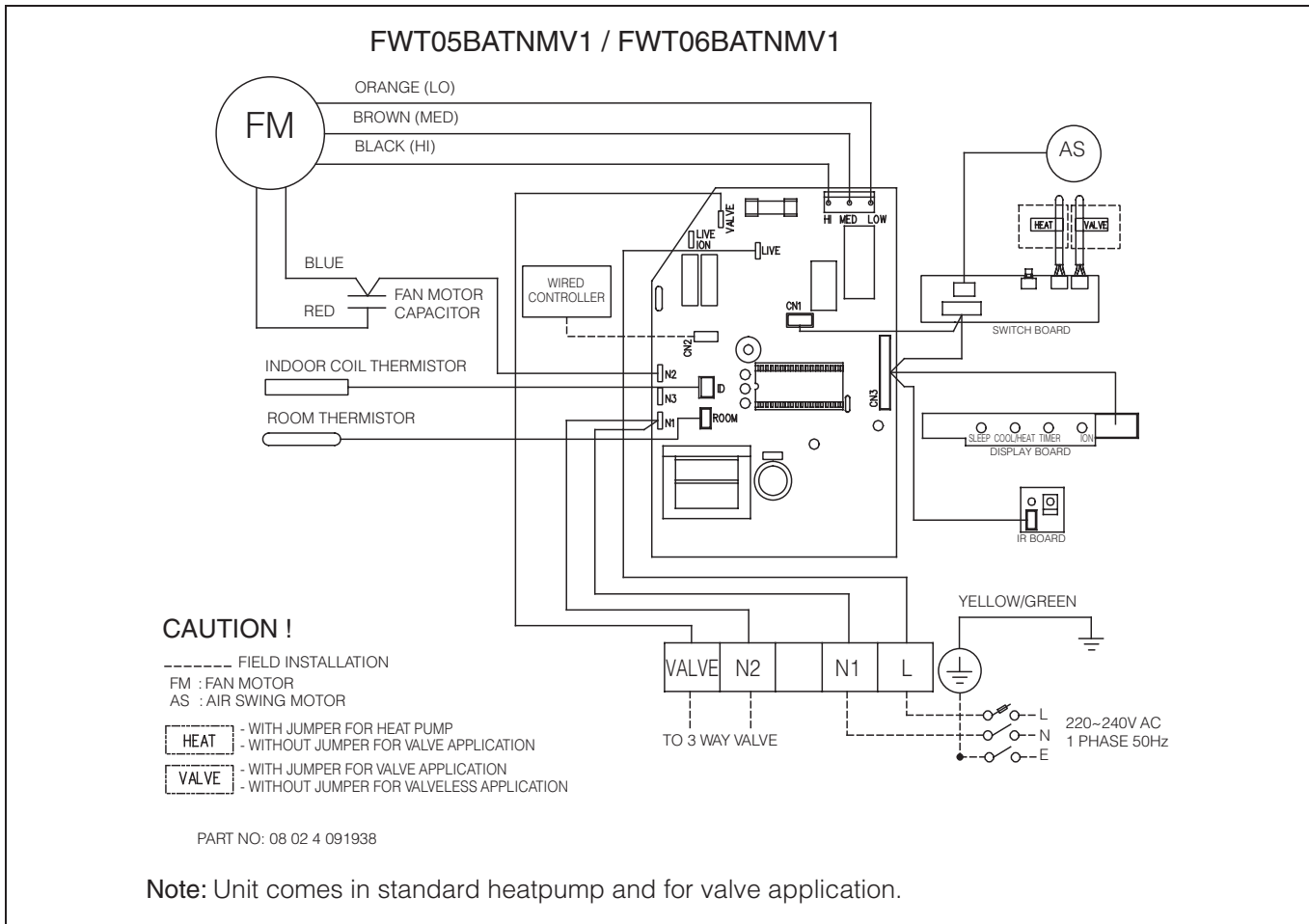


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6 Wiring diagram

6 - 1 Wiring diagram



7 Sound data

7 - 1 Sound power spectrum

FWT (2 PIPE)

Model	Freq	1/1 Octave Sound Power Level (dB, reference 1pW)							Overall (dBA)
		125	250	500	1000	2000	4000	8000	
FWT02BT	Hi	49	48	51	50	42	34	29	53
	Me	47	45	47	44	36	30	28	48
	Lo	46	42	43	40	32	29	27	44
FWT03BT	Hi	50	48	50	50	41	31	28	53
	Me	47	44	46	43	35	29	27	47
	Lo	45	42	43	38	30	27	26	43
FWT04BT	Hi	51	49	52	52	43	33	29	55
	Me	48	45	48	45	37	30	27	49
	Lo	46	43	43	39	31	28	26	44
FWT05BT	Hi	58	60	60	56	50	43	34	61
	Me	56	57	56	53	47	39	32	57
	Lo	54	54	54	50	44	38	31	55
FWT06BT	Hi	57	60	61	57	54	46	38	64
	Me	55	59	60	56	53	44	37	61
	Lo	53	55	57	53	50	42	35	59

Microphone position: FWT 1m in front and 0.8m below the vertical centre line of the unit

8 Operation range

FWT

OPERATING RANGE

Operating Limits:

Thermal carrier : Water
 Water temperature : 5 ~50°C
 Maximum water pressure : 16 bar
 Air temperature : (as below)

Cooling Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	11.0 / 51.8
Maximum indoor temperature	32.0 / 89.6	23.0 / 73.4
Minimum outdoor temperature	16.0 / 60.8	-
Maximum outdoor temperature	46.0 / 114.8	-

Heating Mode

Temperature	Ts °C/°F	Th °C/°F
Minimum indoor temperature	16.0 / 60.8	-
Maximum indoor temperature	30.0 / 86.0	-
Minimum outdoor temperature	-5.0 / 23.0	-6.0 / 21.2
Maximum outdoor temperature	24.0 / 75.2	18.0 / 64.4

Ts: Dry bulb temperature.

Th: Wet bulb temperature.

9 Hydraulic performance

9 - 1 Water pressure drop curve evaporator

FWT

Water flow m ³ /hr	FWT (2 PIPE) cooling				
	Water pressure drop (kPa)				
	FWT02BT	FWT03BT	FWT02BT	FWT03BT	FWT02BT
0.1	1.98	7.14	5.53	1.18	1.24
0.2	10.98	19.72	16.07	4.36	4.56
0.3	24.95	34.27	28.64	8.95	9.36
0.4	43.82	50.71	43.15	14.94	15.62
0.5	67.51	68.94	59.51	22.30	23.32
0.6	95.94	88.87	77.64	31.01	32.42
0.7	129.02	110.43	97.46	41.04	42.91
0.8		133.51	118.88	52.36	54.75
0.9			141.82	64.96	67.92
1.0				78.80	82.39
1.1				93.87	98.15
1.2				110.14	115.16
1.3				127.58	133.40
1.4					152.84
1.5					173.45

6

9

FWT

Water flow m ³ /hr	FWT (2 PIPE) heating				
	Water pressure drop (kPa)				
	FWT02BT	FWT03BT	FWT04BT	FWT05BT	FWT06BT
0.1	2.65	6.47	4.83	1.19	1.26
0.2	10.85	17.86	14.06	4.38	4.64
0.3	23.20	31.04	25.05	9.00	9.54
0.4	39.63	45.92	37.73	15.03	15.92
0.5	60.05	62.44	52.04	22.43	23.76
0.6	84.40	80.49	67.89	31.18	33.03
0.7	112.60	100.01	85.22	41.27	43.71
0.8	144.56	120.92	103.95	52.66	55.77
0.9	180.21	143.13	124.01	65.33	69.19
1.0		166.56	145.33	79.25	83.93
1.1			167.83	94.40	99.98
1.2				110.76	117.31
1.3				128.30	135.88
1.4				147.00	155.68
1.5				166.83	176.68

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1 Specifications

1-1 Nominal capacity and nominal input			FWB02JT	FWB03JT	FWB04JT	FWB05JT	FWB06JT	FWB07JT	FWB08JT	FWB09JT	
Power Input	Superhigh		W	41	61	76	73	106	144	140	157
	High		W	34	53	57	54	86	121	117	134
	Medium		W	29	48	51	48	75	109	106	121
	Low		W	25	45	47	44	68	100	98	113
Cooling capacity	Total capacity	Superhigh	kW	2.18	3.10	4.13	4.59	5.79	6.42	7.56	8.55
		High	kW	1.64	2.67	2.99	3.34	4.81	5.31	6.16	7.26
		Medium	kW	1.42	2.31	2.43	2.67	4.02	4.48	5.13	6.24
		Low	kW	1.21	2.14	1.96	2.11	3.37	3.90	4.29	5.38
	Sensible capacity	Superhigh	kW	1.38	2.27	2.94	3.08	4.22	5.21	5.54	6.08
		High	kW	0.94	1.88	1.95	2.07	3.40	4.15	4.39	5.06
		Medium	kW	0.91	1.55	1.50	1.57	2.75	3.42	3.61	4.25
		Low	kW	0.78	1.35	1.14	1.20	2.22	2.89	2.98	3.57
Heating capacity (2-pipe)	Superhigh		kW	2.94	4.32	5.71	5.92	7.69	9.15	10.09	11.52
	High		kW	2.16	3.62	3.97	4.11	6.30	7.47	8.09	9.64
	Medium		kW	1.92	3.13	3.15	3.34	5.15	6.30	6.78	8.20
	Low		kW	1.64	2.74	2.44	2.65	4.23	5.38	5.77	7.01

1-1 Nominal capacity and nominal input			FWB10JT	FWB11JT	FWB02JF	FWB03JF	FWB04JF	FWB06JF	FWB07JF	FWB08JF	
Power Input	Superhigh		W	201	203	40	58	74	103	141	160
	High		W	164	166	34	51	54	84	117	137
	Medium		W	145	147	28	47	48	74	106	124
	Low		W	132	135	24	44	45	67	99	115
Cooling capacity	Total capacity	Superhigh	kW	9.84	10.66	2.18	3.10	4.09	5.70	6.41	7.40
		High	kW	8.49	8.99	1.67	2.67	3.03	4.88	5.33	6.53
		Medium	kW	7.27	7.74	1.43	2.35	2.42	4.20	4.55	5.71
		Low	kW	6.27	6.68	1.19	2.07	1.98	3.60	3.92	5.02
	Sensible capacity	Superhigh	kW	7.65	7.82	1.36	2.22	2.85	4.16	5.05	5.84
		High	kW	6.37	6.41	0.97	1.83	1.93	3.41	4.01	4.91
		Medium	kW	5.26	5.30	0.89	1.56	1.46	2.81	3.32	4.18
		Low	kW	4.38	4.48	0.75	1.34	1.12	2.34	2.77	3.58
Heating capacity (2-pipe)	Superhigh		kW	13.73	14.13	2.86	4.37	5.44	7.66	9.31	10.59
	High		kW	11.57	11.71	2.12	3.69	3.87	6.40	7.52	9.01
	Medium		kW	9.61	9.79	1.84	3.23	2.97	5.32	6.26	7.79
	Low		kW	8.13	8.31	1.56	2.88	2.40	4.52	5.32	6.84
Heating capacity (4-pipe)	Superhigh		kW			3.07	4.48	5.69	7.66	9.50	10.74
	High		kW			2.49	3.92	4.43	6.70	8.16	9.56
	Medium		kW			1.99	3.57	3.67	5.88	7.12	8.62
	Low		kW			1.68	3.26	3.04	5.25	6.34	7.86

1-1 Nominal capacity and nominal input			FWB10JF	
Power Input	Superhigh		W	200
	High		W	163
	Medium		W	145
	Low		W	133
Cooling capacity	Total capacity	Superhigh	kW	9.59
		High	kW	8.21
		Medium	kW	7.04
		Low	kW	6.08
	Sensible capacity	Superhigh	kW	7.60
		High	kW	6.28
		Medium	kW	5.23
		Low	kW	4.37
Heating capacity (2-pipe)	Superhigh		kW	13.32
	High		kW	11.09
	Medium		kW	9.36
	Low		kW	7.97

7
1

1 Specifications

1-1 Nominal capacity and nominal input				FWB10JF							
Heating capacity (4-pipe)	Superhigh	kW		13.15							
	High	kW		11.68							
	Medium	kW		10.30							
	Low	kW		9.15							

1-2 Technical Specifications				FWB02JT	FWB03JT	FWB04JT	FWB05JT	FWB06JT	FWB07JT	FWB08JT	FWB09JT
Dimensions	Unit	Height	mm	251	251	251	251	251	251	251	251
		Width	mm	814	984	1,114	1,114	1,314	1,564	1,564	1,664
		Depth	mm	590	590	590	590	590	590	590	590
	Unit with packing	Height	mm	254	254	254	254	254	254	254	254
		Width	mm	824	994	1,124	1,124	1,324	1,574	1,574	1,674
		Depth	mm	600	600	600	600	600	600	600	600
Weight	Machine weight	kg	20.0	23.0	28.0	31.0	33.0	44.0	48.0	52.0	
	Operation weight	kg	20.7	24.0	29.1	32.5	34.4	45.8	50.4	54.6	
	Gross weight	kg	22.8	26.4	31.6	34.6	37.2	48.9	52.9	57.4	
Casing	Material	Galvanised sheet metal									
Sound level	Sound pressure	Superhigh	dBA	38	42	41	41	43	43	43.5	45.5
		High	dBA	35.5	40	37	38	40	40	39.5	43
		Medium	dBA	32	37	33	34	38	38	38	41
		Low	dBA	31	35	32	32.5	35.5	36	36	39
	Sound power	Superhigh	dBA	51.5	55	54.5	55	56	56	57	59
		High	dBA	47.5	52	49	50	52	52	52	55
		Medium	dBA	43	48	43.5	45	48.5	48.5	49	52
		Low	dBA	41	45.5	42.5	43	46	46	46	49
Water flow	Cooling	l/h	386	549	739	803	1,022	1,109	1,383	1,523	
	Heating	l/h	386	549	738	802	1,020	1,107	1,336	1,524	
Water pressure drop	Cooling	kPa	10.91	8.34	15.64	11.22	31.31	12.56	7.62	9.83	
	Heating	kPa	8.86	6.76	12.84	9.21	25.87	11.13	6.57	8.60	
Fan	Type	Direct driven centrifugal fan (forward-curved blades); hot-galvanised steel									
	Air flow rate	Superhigh	m³/h	331	548	715	667	982	1,241	1,238	1,323
		High	m³/h	262	428	431	428	757	945	950	1,066
		Medium	m³/h	219	357	323	325	596	756	764	882
		Low	m³/h	187	304	248	255	476	628	633	733
	Available pressure	High	Pa	30	30	30	30	30	30	30	30
	Speed	4 steps: super high, high, medium, low									
Quantity				1	1	2	2	2	3	3	3
Motor	Type	Single phase capacitor running									
Standard heat exchanger	Rows	mm	3	3	3	4	3	3	4	4	
	Stages	mm	2	3	3	4	3	6	8	8	
	Fin pitch	mm	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
	Face area	m²	0.09	0.13	0.15	0.15	0.19	0.24	0.24	0.26	
	Water volume	l	0.69	0.95	1.14	1.52	1.44	1.82	2.42	2.62	
Air filter	Washable Nylon in 8mm Aluminium frame										
Insulation material	PE										
Water connections	Std. heat exchanger	inch	3/4								
Drain		mm	714	884	1014	1014	1214	1464	1464	1564	
Notes	Rating conditions cooling 2 pipe: air 27										
	Rating conditions heating 2 pipe: air 21×C DB - entering water 60×C										
	Sound pressure level according to GB/T 19232 Fan-coil unit (national standard)										
	Sound pressure measured at 1m in front of the unit and 1m below the vertical centre line of the unit										

1-2 Technical Specifications				FWB10JT	FWB11JT	FWB02JF	FWB03JF	FWB04JF	FWB06JF	FWB07JF	FWB08JF
Dimensions	Unit	Height	mm	251	251	251	251	251	251	251	251
		Width	mm	1,924	1,924	814	984	1,114	1,314	1,564	1,664
		Depth	mm	590	590	590	590	590	590	590	590
	Unit with packing	Height	mm	254	254	254	254	254	254	254	254
		Width	mm	1,934	1,934	824	994	1,124	1,324	1,574	1,674
		Depth	mm	600	600	600	600	600	600	600	600

1 Specifications

1-2 Technical Specifications				FWB10JT	FWB11JT	FWB02JF	FWB03JF	FWB04JF	FWB06JF	FWB07JF	FWB08JF
Weight	Machine weight	kg		50.0	56.0	22.0	27.0	31.0	36.0	48.0	52.0
	Operation weight	kg		52.4	59.1	22.9	28.3	32.5	37.9	50.4	54.6
	Gross weight	kg		55.9	61.9	24.8	30.4	34.6	40.2	52.9	57.4
Casing	Material	Galvanised sheet metal									
Sound level	Sound pressure	Superhigh	dBA	46	46.5	38	42	41	43	43.5	45.5
		High	dBA	43.5	44	35	40	38	40	39.5	43
		Medium	dBA	41	41.5	33	37	34	38	38	41
		Low	dBA	39	39.5	31	35	32.5	35.5	36	39
	Sound power	Superhigh	dBA	59.5	60	52	55	55	56	57	59
		High	dBA	55.5	56	47	52	50	52	52	55
		Medium	dBA	51.5	52	44	48	45	49	49	52
	Low	dBA	49.5	50	41	46	43	46	46	49	
Water flow	Cooling	l/h		1,764	1,910	386	530	724	986	1,138	1,296
	Heating	l/h		1,764	1,911	387	530	725	985	1,139	1,299
	Add. heat exchanger	l/h				269	391	493	663	820	924
Water pressure drop	Cooling	kPa		21.71	16.81	10.95	8.24	15.67	29.95	9.24	12.49
	Heating	kPa		18.56	14.46	8.94	6.64	12.84	24.16	7.89	9.67
	Add. heat exchanger	kPa				10.66	24.73	41.72	81.63	25.31	31.33
Fan	Type	Direct driven centrifugal fan (forward-curved blades); hot-galvanised steel									
	Air flow rate	Superhigh	m³/h	1,837	1,695	327	526	684	944	1,200	1,379
		High	m³/h	1,463	1,341	220	424	437	747	898	1,112
		Medium	m³/h	1,171	1,210	218	350	326	597	737	920
		Low	m³/h	946	1,093	184	301	251	489	599	777
	Available pressure	High	Pa	30	30	30	30	30	30	30	30
	Speed	4 steps: super high, high, medium, low									
Quantity			4	4	1	1	2	2	3	3	
Motor	Type	Single phase capacitor running									
Standard heat exchanger	Rows	mm	3	4	4 (3+1)	4 (3+1)	4 (3+1)	4 (3+1)	4 (3+1)	4 (3+1)	
	Stages	mm	6	8	2	3	3	3	6	6	
	Fin pitch	mm	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
	Face area	m²	0.32	0.32	0.09	0.13	0.15	0.19	0.24	0.26	
	Water volume	l	2.36	3.14	0.92	1.26	1.52	1.92	2.42	2.62	
Additional heat exchanger	Stages	mm			2	2	2	2	4	4	
	Fin pitch	mm			2.3	2.3	2.3	2.3	2.3	2.3	
	Face area	m²			0.09	0.13	0.15	0.19	0.24	0.26	
Air filter	Washable Nylon in 8mm Aluminium frame										
Insulation material	PE										
Water connections	Std. heat exchanger	inch	3/4								
Drain		mm	1824	1824	714	884	1014	1214	1464	1564	
Notes	Rating conditions cooling 2 pipe: air 27										
	Rating conditions heating 2 pipe: air 21×C DB - entering water 60×C										
	Sound pressure level according to GB/T 19232 Fan-coil unit (national standard)										
	Sound pressure measured at 1m in front of the unit and 1m below the vertical centre line of the unit										

1-2 Technical Specifications				FWB10JF						
Dimensions	Unit	Height	mm	251						
		Width	mm	1,924						
		Depth	mm	590						
	Unit with packing	Height	mm	254						
		Width	mm	1,934						
		Depth	mm	600						
Weight	Machine weight	kg	56.0							
	Operation weight	kg	59.1							
	Gross weight	kg	61.9							
Casing	Material	Galvanised sheet metal								

7
1

1 Specifications

1-2 Technical Specifications				FWB10JF	
Sound level	Sound pressure	Superhigh	dBA	46.5	
		High	dBA	44	
		Medium	dBA	41.5	
		Low	dBA	39.5	
	Sound power	Superhigh	dBA	60	
		High	dBA	56	
		Medium	dBA	52	
		Low	dBA	50	
Water flow	Cooling	l/h	1,660		
	Heating	l/h	1,660		
	Add. heat exchanger	l/h	1,142		
Water pressure drop	Cooling	kPa	19.38		
	Heating	kPa	16.50		
	Add. heat exchanger	kPa	50.03		
Fan	Type	Direct driven centrifugal fan (forward-curved blades); hot-galvanised steel			
	Air flow rate	Superhigh	m³/h	1,738	
		High	m³/h	1,385	
		Medium	m³/h	1,115	
		Low	m³/h	916	
	Available pressure	High	Pa	30	
	Speed	4 steps: super high, high, medium, low			
Quantity	4				
Motor	Type	Single phase capacitor running			
Standard heat exchanger	Rows	mm	4 (3+1)		
	Stages	mm	8		
	Fin pitch	mm	2.3		
	Face area	m²	0.32		
	Water volume	l	3.14		
Additional heat exchanger	Stages	mm	4		
	Fin pitch	mm	2.3		
	Face area	m²	0.32		
Air filter	Washable Nylon in 8mm Aluminium frame				
Insulation material	PE				
Water connections	Std. heat exchanger	inch	3/4		
Drain		mm	1824		
Notes	Rating conditions cooling 2 pipe: air 27				
	Rating conditions heating 2 pipe: air 21×C DB - entering water 60×C				
	Sound pressure level according to GB/T 19232 Fan-coil unit (national standard)				
	Sound pressure measured at 1m in front of the unit and 1m below the vertical centre line of the unit				

1-3 Electrical Specifications			FWB02JT	FWB03JT	FWB04JT	FWB05JT	FWB06JT	FWB07JT	FWB08JT	FWB09JT
Current input	Superhigh	A	0.19	0.28	0.35	0.33	0.48	0.65	0.64	0.71
	High	A	0.15	0.24	0.26	0.25	0.39	0.55	0.53	0.61
	Medium	A	0.13	0.22	0.23	0.22	0.34	0.50	0.48	0.55
	Low	A	0.11	0.20	0.21	0.20	0.31	0.45	0.45	0.51
Required power supply	V/f/Hz	220-240 / 1 / 50								
Required fuses	A	3	3	3	3	3	3	3	3	3
Required wire section	mm²	1	1	1	1	1	1	1	1	1

1-3 Electrical Specifications			FWB10JT	FWB11JT	FWB02JF	FWB03JF	FWB04JF	FWB06JF	FWB07JF	FWB08JF
Current input	Superhigh	A	0.91	0.92	0.18	0.26	0.34	0.47	0.64	0.73
	High	A	0.75	0.75	0.15	0.23	0.25	0.38	0.53	0.62
	Medium	A	0.66	0.67	0.13	0.21	0.22	0.34	0.48	0.56
	Low	A	0.60	0.61	0.11	0.20	0.20	0.30	0.45	0.52
Required power supply	V/f/Hz	220-240 / 1 / 50								
Required fuses	A	3	3	3	3	3	3	3	3	3
Required wire section	mm²	1	1	1	1	1	1	1	1	1

1 Specifications

1-3 ELECTRICAL SPECIFICATIONS			FWB10JF
Current input	Superhigh	A	0.91
	High	A	0.74
	Medium	A	0.66
	Low	A	0.60
Required power supply	V/f/Hz		220-240 / 1 / 50
Required fuses	A		3
Required wire section	mm ²		1

2 Nomenclature

FWB-J (Nomenclature)

Digit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	F	W	B	0 1	0 1 2 3 4 5 6 7 8 9	A C J K	A B	S T U V W E F G H L	N T V D	6 M C	V	1 3 A L J	- E F G	- E F M P Q R	- R S T	
															Options	

Digit	Character	Description	Digit	Character	Description
1-2	FW	Water fancoil	11-12		Power supply
3		Type:		V1	220-240V - 1 phase
	V	Vertical		V3	230V - 1 phase
	L	Flexi casing		VA	220-240V - 1 phase - 60 Hz
	M	Flexi no casing		VL	220V - 1 phase - 60 Hz
	B	Medium ESP duct		VJ	208 - 230V - 1 phase - 60 Hz
	D	Duct	13		Electric heater / fan stop thermostat
	T	Wall mounted		-	No heater / no fan stop thermostt
	C	Cassette		E	Electric heater
	F	60x60 cassette		F	Fan stop thermostat
4-5	01->18	Size		G	Electric heater / fan stop thermostat
6	A/C/J/K	Series	14		Controller
7	A,...	Minor model change		-	No controller
8		Coil type:		E	electr. contr.
	S	Coil type: 2-pipe 12 Pa		F	electr. contr. with network
	T	Coil type: 2-pipe standard ESP		M	electro mech. contr.
	U	Coil type: 2-pipe 60 Pa		P	Power interface
	V	Coil type: 2-pipe 80 Pa		Q	P+E
	W	Coil type: 2-pipe 50 Pa		R	P+M
	E	Coil type: 4-pipe 12 Pa	15		Water connection
	F	Coil type: 4-pipe standard ESP		-	LL
	G	Coil type: 4-pipe 60 Pa		R	RR
	H	Coil type: 4-pipe 80 Pa		S	RL
	L	Coil type: 4-pipe 50 Pa		T	LR
9		Valves		A	left connection with horizontal drip tray
	N	without valves		B	right connection with horizontal drip tray
	T	with 2-way valves		D	right connection with vertical drip tray
	V	with 3-way valves			
	D	with simplified 3-way valves			
10	6	Italy			
	C	China			
	M	Malaysia			

3 Options

FWB-J

VALVES KIT

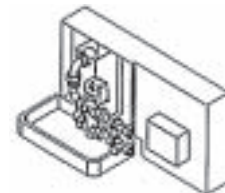
The 3-way motorized ON/OFF valve kit, connected to the Daikin controllers, permits to set the room temperature by cutting off the water flow to the heat exchanger.

The kit is available in various fittings for all FWB units, both for 2-pipe and for 4-pipe systems.

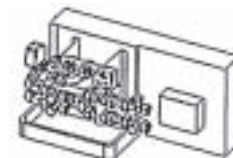
The KIT Consist Of

- **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: 220-240 V,
 - activation: ON/OFF,
 - total opening time: 4 minutes.
- **Hydraulic kit** for the installation of the valve on the heat exchanger, complete with 2 regulating valves for adjusting the water flow and for closing the water circuit when performing maintenance to the unit.
- **Bushing** for routing the cables of the actuator inside the unit.

Thermal insulation to prevent condensation on the valve kit when it operates in cooling mode (only the valve of the standard heat exchanger can work in cooling mode).



Valve Kit for 2-Pipe system



Valve Kit for 4-Pipe system

The flow resistance of the connecting valve/hydraulic kit assembly is obtained from the following formula:

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

Where:

P_w is the flow resistance expressed in kg/cm^2

Q_w is the water flow rate expressed in m^3/h

K_v is the flow rate identified in the table

Valve	K_v Direct Passage	K_v By-Pass
1/2"	1.7	1.2
3/4"	2.8	1.8

3 Options

Valve kits for FWB-J (accessories)

MCWHN	3-way valve 4-pipe for FWB-JF
MCWCN	3-way valve 2-pipe for FWB-JT

4 Capacity tables

4 - 1 Capacity tables with glycol for process cooling applications

FWB-J (Glycol Correction Factors)

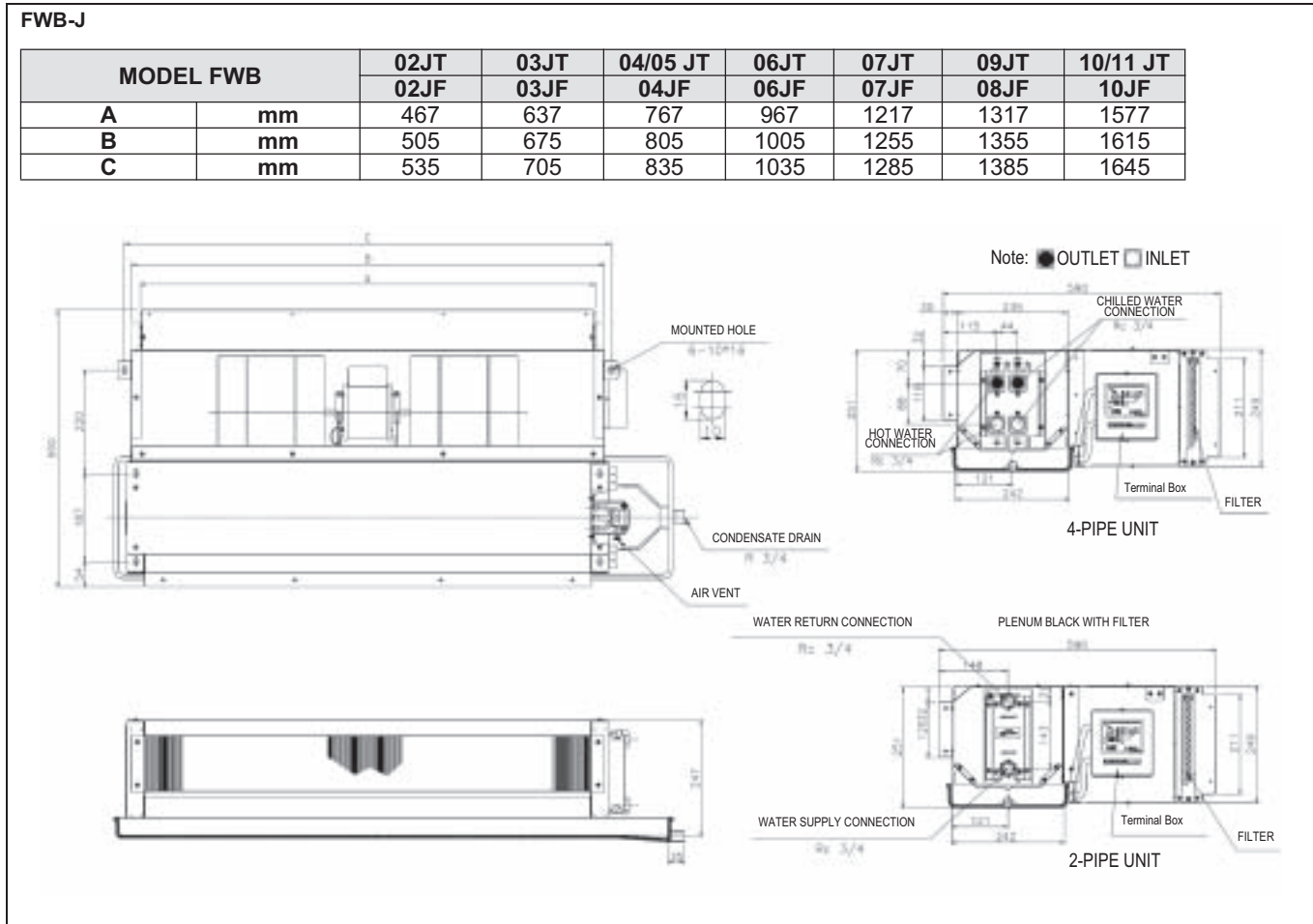
Glycol percentage in weight (%)	Freezing temperature (°C)	Capacity correction factor		Pressure drop correction factor	
		Cooling	Heating	Cooling	Heating
0	0	1	1	1	1
10	-4	0.93	0.98	1.09	1.08
20	-10	0.84	0.97	1.18	1.11
30	-16	0.76	0.94	1.27	1.22
40	-24	0.76	0.91	1.36	1.33

NOTE

1 Correction factors are based on an average value (at rated water flow rate). This can cause deviation depending on conditions used.

5 Dimensional drawing

5 - 1 Dimensional drawing

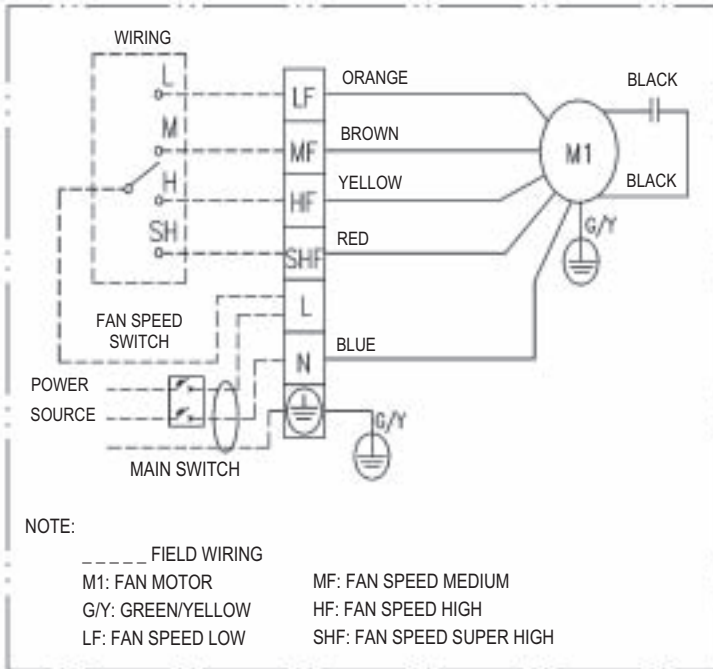


6 Wiring diagram

6 - 1 Wiring diagram

FWB02-06J

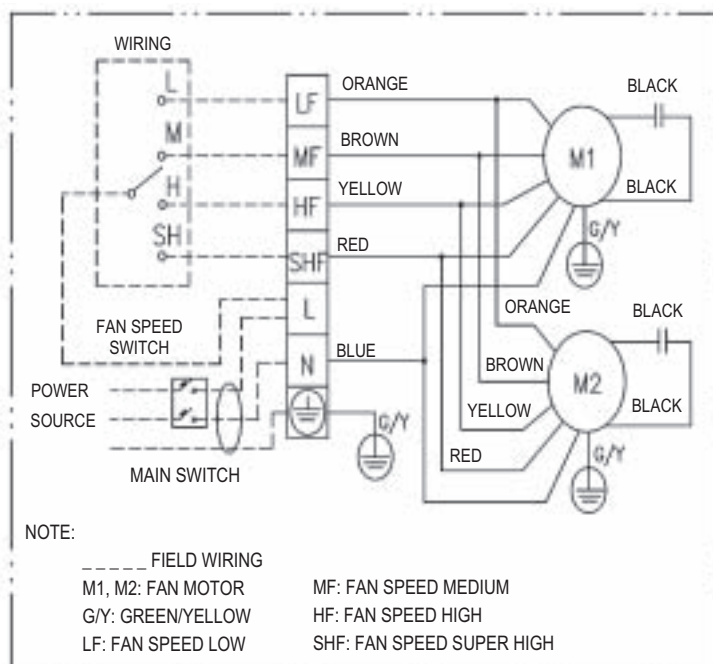
MODELS	FWB 02J~06J T/F
	2 PIPES & 4 PIPES



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FWB07-11J

MODELS	FWB 07J~11J T/F
	2 PIPES & 4 PIPES



7 Sound data

7 - 1 Sound pressure spectrum

FWB-JT (2 Pipes) Sound Pressure Level [Lp]

Models FWB	Fan Speed	Octave Band Frequency[dB(A)]								Total [dB(A)]
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
02JT	S.High	40.3	39.6	38.6	38.1	31.8	27.6	20.4	20.2	38.0
	High	39.9	36.9	36.3	36.0	28.6	22.4	17.4	15.2	35.5
	Medium	36.6	30.6	31.6	33.2	25.0	16.6	14.9	14.1	32.0
	Low	35.4	30.1	31.0	32.2	23.4	14.7	12.7	11.3	31.0
03JT	S.High	39.1	40.1	41.6	42.3	36.3	29.0	20.0	15.2	42.0
	High	38.0	39.4	39.6	40.8	34.0	27.1	19.2	14.8	40.0
	Medium	35.1	38.6	37.7	36.5	32.8	22.5	15.8	13.5	37.0
	Low	34.8	34.8	34.0	33.6	32.1	19.8	13.7	11.4	35.0
04JT	S.High	39.9	40.0	39.9	39.9	34.0	35.0	23.5	19.7	41.0
	High	36.1	36.8	35.9	35.1	31.5	30.8	19.3	17.0	37.0
	Medium	32.0	33.1	32.6	31.9	27.6	25.0	16.0	14.2	33.0
	Low	31.3	32.0	31.4	31.0	26.3	23.9	14.3	13.1	32.0
05JT	S.High	39.9	40.0	39.9	39.9	34.0	35.0	23.5	19.7	41.0
	High	37.1	37.8	36.9	38.1	32.5	31.8	20.3	18.0	38.0
	Medium	32.6	33.7	32.9	32.8	28.2	25.6	16.6	14.8	34.0
	Low	32.1	32.8	31.9	31.3	27.1	24.7	15.1	13.9	32.5
06JT	S.High	46.6	43.2	41.4	41.7	39.4	30.9	23.3	20.2	43.0
	High	42.4	42.3	40.5	39.4	35.0	27.3	19.1	18.5	40.0
	Medium	40.3	40.9	39.0	37.3	33.1	25.6	16.3	15.2	38.0
	Low	39.7	38.5	36.8	35.9	28.4	23.2	14.4	13.9	35.5
07JT	S.High	45.1	44.6	42.6	42.5	36.5	34.4	26.0	24.8	43.0
	High	44.8	41.0	41.4	40.1	31.8	29.7	21.4	20.8	40.0
	Medium	41.0	38.7	39.6	37.7	30.0	28.1	20.7	20.2	38.0
	Low	40.3	37.3	36.6	36.6	28.0	22.5	18.2	18.0	36.0
08JT	S.High	45.4	44.9	42.9	42.8	37.0	34.7	26.3	25.1	43.5
	High	44.4	40.6	41.0	39.7	31.2	29.3	21.0	20.4	39.5
	Medium	41.0	38.7	39.6	37.7	30.0	28.1	20.7	20.2	38.0
	Low	40.3	37.3	36.6	36.6	28.0	22.5	18.2	18.0	36.0
09JT	S.High	45.0	43.7	45.1	45.8	38.0	36.3	28.5	25.5	45.5
	High	44.0	41.0	42.3	42.9	35.4	33.4	25.2	23.8	43.0
	Medium	40.1	38.0	39.8	41.1	33.6	31.2	22.3	19.9	41.0
	Low	43.8	40.2	37.3	39.1	32.1	28.6	20.5	18.4	39.0
10JT	S.High	46.3	48.6	46.9	45.0	39.9	37.2	28.1	27.4	46.0
	High	43.5	45.0	45.2	41.2	36.6	35.8	26.3	25.0	43.5
	Medium	41.4	44.4	42.7	38.5	32.1	28.9	20.1	19.7	41.0
	Low	41.0	44.2	40.7	38.3	30.2	28.9	20.6	20.2	39.0
11JT	S.High	46.3	48.6	46.9	45.0	41.3	37.2	28.1	27.4	46.5
	High	43.5	45.0	45.6	41.6	37.1	35.9	26.3	25.0	44.0
	Medium	43.0	46.0	44.3	40.1	33.7	30.5	21.7	21.3	41.5
	Low	41.7	44.9	41.4	39.0	30.9	29.6	21.3	20.9	39.5

Power Supply: 240V/1Ph/50Hz

7 Sound data

7 - 1 Sound pressure spectrum

FWB-JF (4 Pipes) Sound Pressure Level [Lp]

Models FWB	Fan Speed	Octave Band Frequency[dB(A)]								Total [dB(A)]
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
02JF	S.High	40.3	39.6	38.5	38.1	31.8	27.6	20.4	20.2	38.0
	High	39.6	36.6	35.9	35.6	28.3	22.1	17.1	14.9	35.0
	Medium	37.5	31.5	32.7	34.1	25.9	17.5	15.8	15.0	33.0
	Low	35.5	30.2	31.0	32.3	23.5	14.8	12.8	11.4	31.0
03JF	S.High	39.1	40.1	41.9	42.3	36.3	29.0	20.0	15.2	42.0
	High	38.0	39.4	39.5	41.0	34.0	27.1	19.2	14.8	40.0
	Medium	35.1	38.6	37.5	36.7	32.8	22.5	15.8	13.5	37.0
	Low	34.8	34.8	34.0	33.6	32.1	19.8	13.7	11.4	35.0
04JF	S.High	39.9	40.0	39.9	39.9	34.0	35.0	23.5	19.7	41.0
	High	37.1	37.8	36.9	38.1	32.5	31.8	20.3	18.0	38.0
	Medium	32.6	33.7	32.9	32.8	28.2	25.6	16.6	14.8	34.0
	Low	32.1	32.8	31.9	31.3	27.1	24.7	15.1	13.9	32.5
06JF	S.High	46.6	43.2	42.4	41.7	39.4	30.9	23.3	20.2	43.0
	High	42.4	42.3	40.5	39.4	35.3	27.3	19.1	18.5	40.0
	Medium	40.3	40.9	39.0	37.3	33.3	25.6	16.3	15.2	38.0
	Low	39.7	38.5	36.9	35.9	28.4	23.2	14.4	13.9	35.5
07JF	S.High	45.4	44.9	42.9	42.8	37.0	34.7	26.3	25.1	43.5
	High	44.4	40.6	41.0	39.7	31.2	29.3	21.0	20.4	39.5
	Medium	41.0	38.7	39.6	37.7	30.0	28.1	20.7	20.2	38.0
	Low	40.3	37.3	36.6	36.6	28.0	22.5	18.2	18.0	36.0
08JF	S.High	45.0	43.7	45.1	45.8	38.0	36.3	28.5	25.5	45.5
	High	44.0	41.0	42.3	42.9	35.4	33.4	25.2	23.8	43.0
	Medium	40.1	38.0	39.8	41.1	33.6	31.2	22.3	19.9	41.0
	Low	43.8	40.2	37.3	39.1	32.1	28.6	20.5	18.4	39.0
10JF	S.High	46.3	48.6	46.9	45.0	41.3	37.2	28.1	27.4	46.5
	High	43.5	45.0	45.6	41.6	37.1	35.9	26.3	25.0	44.0
	Medium	43.0	46.0	44.3	40.1	33.7	30.5	21.7	21.3	41.5
	Low	41.7	44.9	41.4	39.0	30.9	29.6	21.3	20.9	39.5

Power Supply: 240V/1Ph/50Hz

7 Sound data

7 - 2 Sound power spectrum

FWB-JT (2 Pipes) Sound Power Level [Lw]

Models FWB	Fan Speed	Octave Band Frequency[dB(A)]								Total [dB(A)]
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
02JT	S.High	48.6	51.3	50.9	50.6	42.9	44.9	38.8	32.9	51.5
	High	48.2	45.3	46.6	47.4	40.0	38.7	33.9	23.5	47.5
	Medium	45.0	38.4	41.4	43.6	35.0	30.5	28.9	22.6	43.0
	Low	41.5	37.4	38.4	41.5	34.9	26.9	23.9	20.6	41.0
03JT	S.High	47.4	51.8	54.8	54.6	47.4	46.3	38.4	27.9	55.0
	High	46.3	47.8	49.2	52.1	45.4	43.4	35.7	23.1	52.0
	Medium	42.5	45.4	45.8	47.0	42.6	36.2	29.6	22.0	48.0
	Low	40.7	42.0	42.9	42.6	43.1	31.9	24.9	20.7	45.5
04JT	S.High	47.2	50.7	51.6	51.2	45.1	50.3	41.9	32.4	54.5
	High	44.4	44.7	45.1	45.9	42.7	44.5	35.8	25.3	49.0
	Medium	38.8	39.3	39.9	41.5	37.4	38.1	29.6	22.7	43.5
	Low	37.4	39.3	37.6	40.6	37.0	36.1	25.5	22.4	42.5
05JT	S.High	47.2	50.7	51.6	51.2	45.1	50.3	41.9	32.4	54.5
	High	45.2	45.5	45.9	46.7	43.5	45.3	36.6	26.1	50.0
	Medium	39.3	39.3	39.9	41.5	37.8	38.1	29.6	23.3	44.5
	Low	37.9	39.8	38.1	41.1	37.5	36.6	26.0	22.9	43.0
06JT	S.High	54.9	54.9	56.1	54.0	50.5	48.2	41.7	32.9	56.0
	High	50.7	50.7	52.1	50.5	46.4	43.6	35.6	26.8	52.0
	Medium	47.7	47.7	48.5	47.6	42.9	39.3	30.1	23.7	48.5
	Low	45.8	45.8	46.2	45.3	39.9	35.4	25.6	23.2	46.0
07JT	S.High	56.3	57.1	55.5	52.8	51.6	48.9	41.3	33.4	56.0
	High	53.9	53.1	53.1	49.9	46.9	43.1	34.8	25.5	52.0
	Medium	51.2	51.0	50.6	46.3	42.9	39.7	31.9	24.8	48.5
	Low	50.9	49.1	46.5	45.0	40.7	33.8	28.0	22.6	46.0
08JT	S.High	56.6	57.4	55.8	53.1	51.8	49.2	41.6	33.7	56.5
	High	53.5	52.7	52.7	49.5	46.3	42.7	34.4	25.1	51.5
	Medium	51.2	51.0	50.6	46.1	42.7	39.7	31.9	24.8	48.5
	Low	43.8	44.1	46.2	44.6	40.2	33.6	27.5	22.4	46.0
09JT	S.High	56.2	56.2	58.0	56.1	54.0	50.8	43.8	34.1	58.5
	High	53.1	53.1	54.0	52.7	50.5	46.8	38.6	28.5	55.0
	Medium	50.3	50.3	50.8	49.7	47.1	42.8	33.5	24.5	51.5
	Low	47.3	47.0	47.9	47.1	44.3	39.7	29.8	22.8	49.0
10JT	S.High	57.5	61.1	59.8	55.3	55.3	51.7	43.4	36.0	59.5
	High	52.6	57.1	56.7	51.0	50.5	49.2	39.7	29.7	55.5
	Medium	51.6	56.7	53.7	48.1	46.5	40.8	31.3	24.3	51.5
	Low	51.6	56.0	51.6	46.7	42.9	40.2	30.4	24.8	49.5
11JT	S.High	57.9	61.5	60.2	55.7	55.7	52.1	43.8	36.4	60.0
	High	52.6	57.1	56.7	51.4	50.5	49.3	39.7	29.7	56.0
	Medium	53.2	58.3	55.3	48.1	46.5	40.8	32.9	25.9	52.0
	Low	45.7	52.2	52.5	47.5	43.6	41.2	31.1	25.8	50.0

Power Supply: 240V/1Ph/50Hz

7 Sound data

7 - 2 Sound power spectrum

FWB-JF (4 Pipes) Sound Power Level [Lw]

Models FWB	Fan Speed	Octave Band Frequency[dB(A)]								Total [dB(A)]
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
02JF	S.High	48.6	51.3	50.9	50.6	42.9	44.9	38.8	32.9	51.5
	High	47.8	44.9	45.6	47.0	39.6	38.3	33.5	23.1	47.0
	Medium	46.1	39.5	42.5	44.7	36.1	31.6	30.0	23.7	44.0
	Low	41.6	37.5	38.5	41.6	35.5	27.0	24.0	20.7	41.0
03JF	S.High	47.4	51.8	54.8	54.6	47.4	46.3	38.4	27.9	55.0
	High	46.3	47.8	49.2	52.1	45.1	43.4	35.7	23.1	52.0
	Medium	42.5	45.4	45.8	47.0	42.4	36.2	29.6	22.0	48.0
	Low	40.7	42.0	42.9	42.6	43.1	31.9	24.9	20.7	45.5
04JF	S.High	47.2	50.7	51.6	51.2	45.1	50.3	41.9	32.4	54.5
	High	45.2	45.5	45.9	46.7	43.5	45.3	36.6	26.1	50.0
	Medium	39.3	39.3	39.9	41.5	37.8	38.1	29.6	23.3	44.5
	Low	37.9	39.8	38.1	41.1	37.5	36.6	26.0	22.9	43.0
06JF	S.High	54.9	54.9	56.1	54.0	50.5	48.2	41.7	32.9	56.0
	High	50.7	50.7	52.1	50.5	46.4	43.6	35.6	26.8	52.0
	Medium	47.7	47.7	48.5	47.6	42.9	39.3	30.1	23.7	48.5
	Low	45.8	45.8	46.2	45.3	40.4	35.4	25.6	23.2	46.0
07JF	S.High	56.6	57.4	55.8	53.1	51.8	49.2	41.6	33.7	56.5
	High	53.5	52.7	52.7	49.5	46.3	42.7	34.4	25.1	51.5
	Medium	51.2	51.0	50.6	46.1	42.7	39.7	31.9	24.8	48.5
	Low	43.8	44.1	46.2	44.6	40.2	33.6	27.5	22.4	46.0
08JF	S.High	56.2	56.2	58.0	56.1	54.0	50.8	43.8	34.1	58.5
	High	53.1	53.1	54.0	52.7	50.5	46.8	38.6	28.5	55.0
	Medium	50.3	50.3	50.8	49.7	47.1	42.8	33.5	24.5	51.5
	Low	47.3	47.0	47.9	47.1	44.3	39.7	29.8	22.8	49.0
10JF	S.High	57.9	61.5	60.2	55.7	55.7	52.1	43.8	36.4	60.0
	High	52.6	57.1	56.7	51.4	50.5	49.3	39.7	29.7	56.0
	Medium	53.2	58.3	55.3	48.1	46.5	40.8	32.9	25.9	52.0
	Low	45.7	52.2	52.5	47.5	43.6	41.2	31.1	25.8	50.0

Power Supply: 240V/1Ph/50Hz

8 Operation range

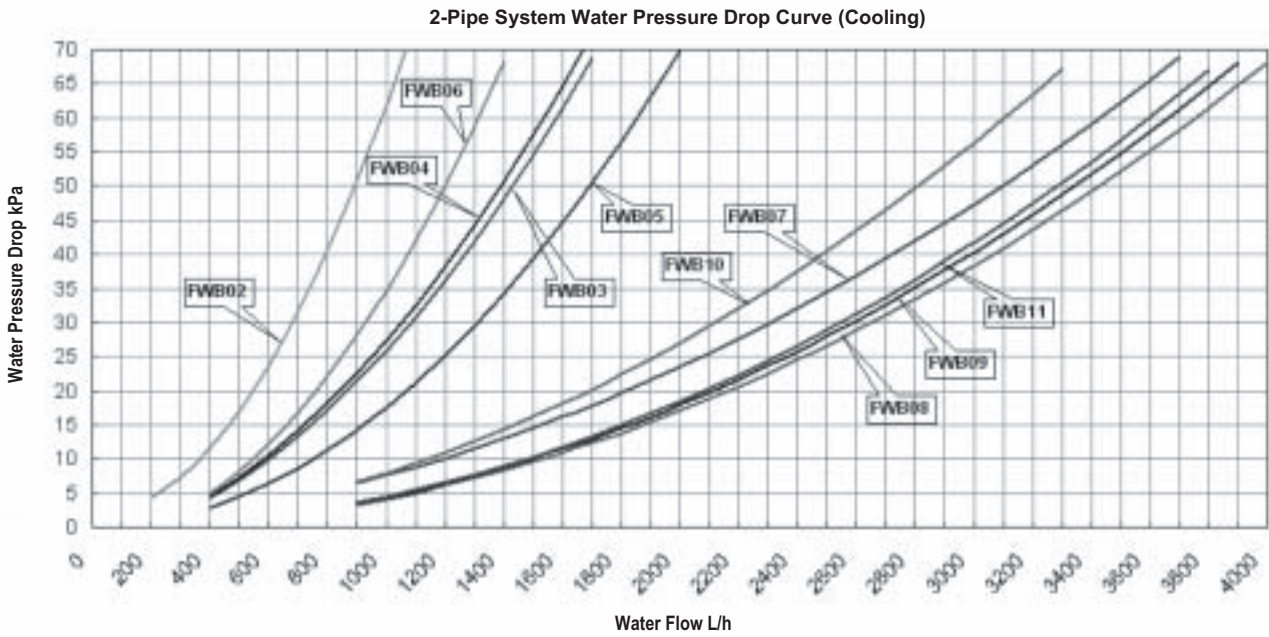
FWB-J

OPERATING LIMITS	
Maximum water-side pressure	16 bar
Minimum entering water temperature	3°C
Maximum entering water temperature	95°C
Minimum air inlet temperature	5°C
Maximum air inlet temperature	43°C
Power supply	220-240V/ 1Ph / 50Hz

9 Hydraulic performance

9 - 1 Water pressure drop curve evaporator

FWB-JT

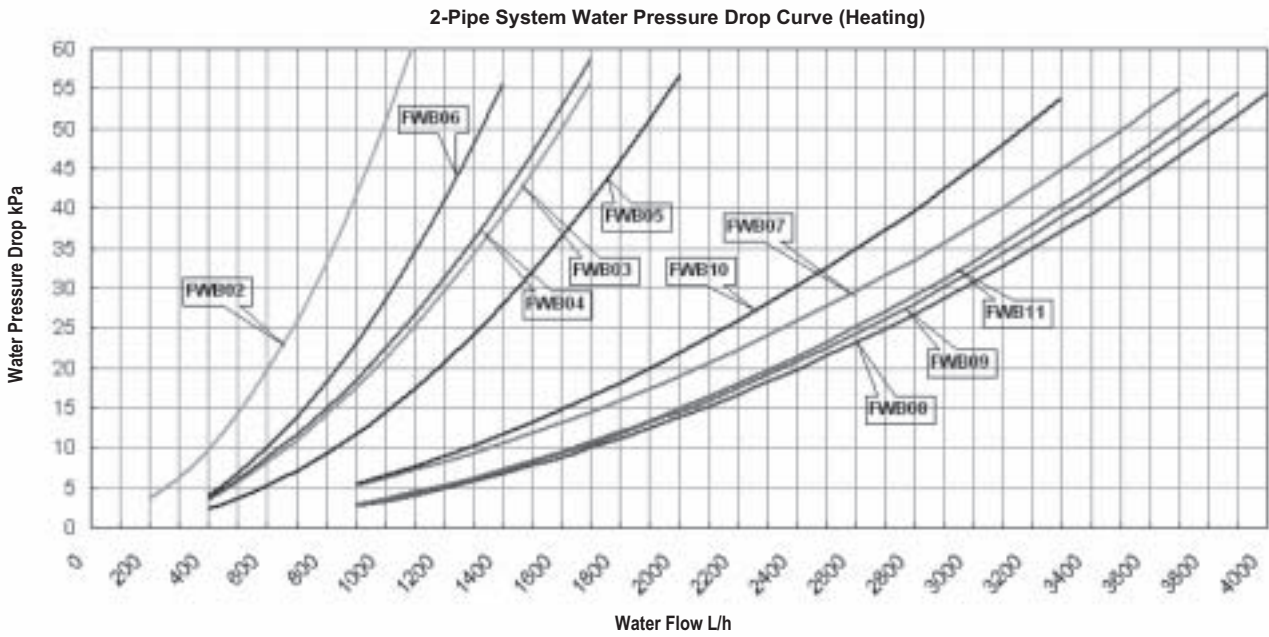


NOTE

The pressure drop is only for the coil and excludes water connections and valves.

7
9

FWB-JT



NOTE

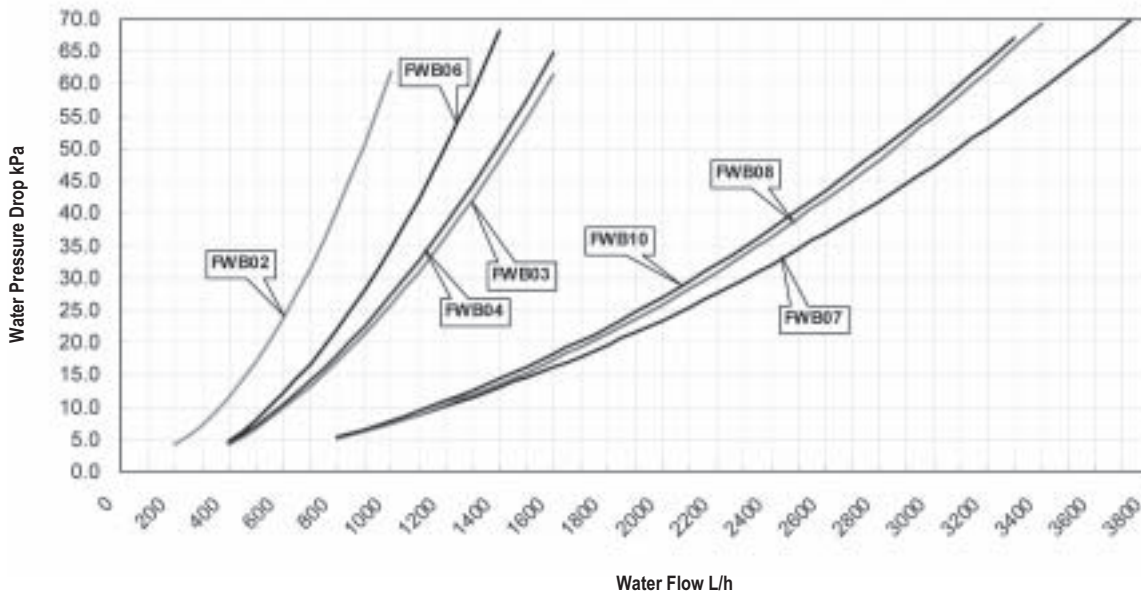
The pressure drop is only for the coil and excludes water connections and valves.

9 Hydraulic performance

9 - 1 Water pressure drop curve evaporator

FWB-JF

4-Pipe System Cooling Coil Water Pressure Drop Curve (Cooling)

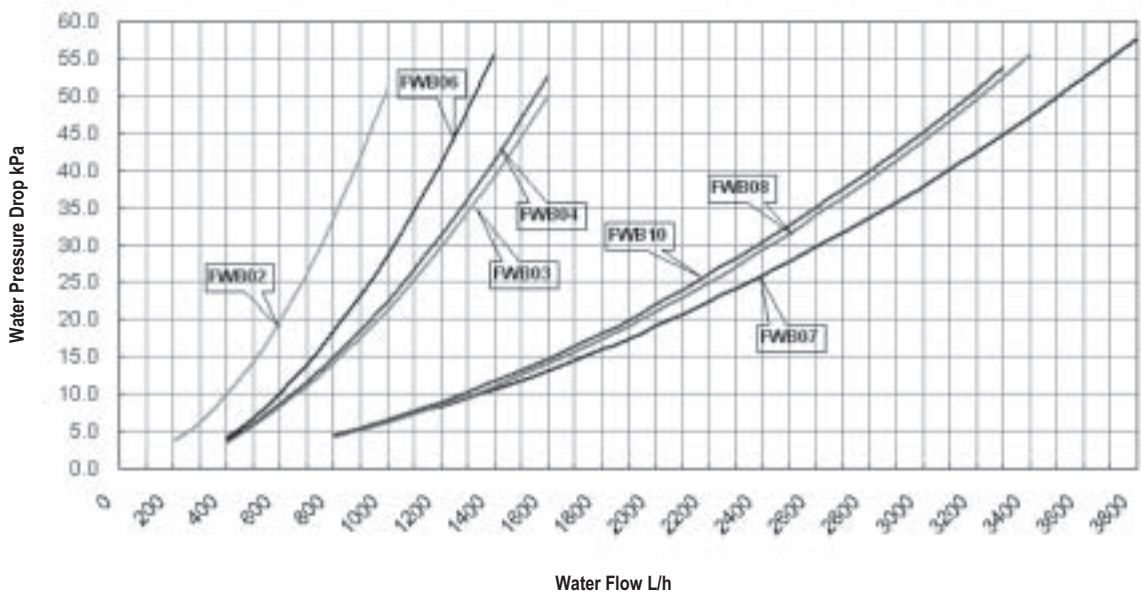


NOTE

The pressure drop is only for the coil and excludes water connections and valves.

FWB-JF

4-Pipe System Cooling Coil Water Pressure Drop Curve (Heating)



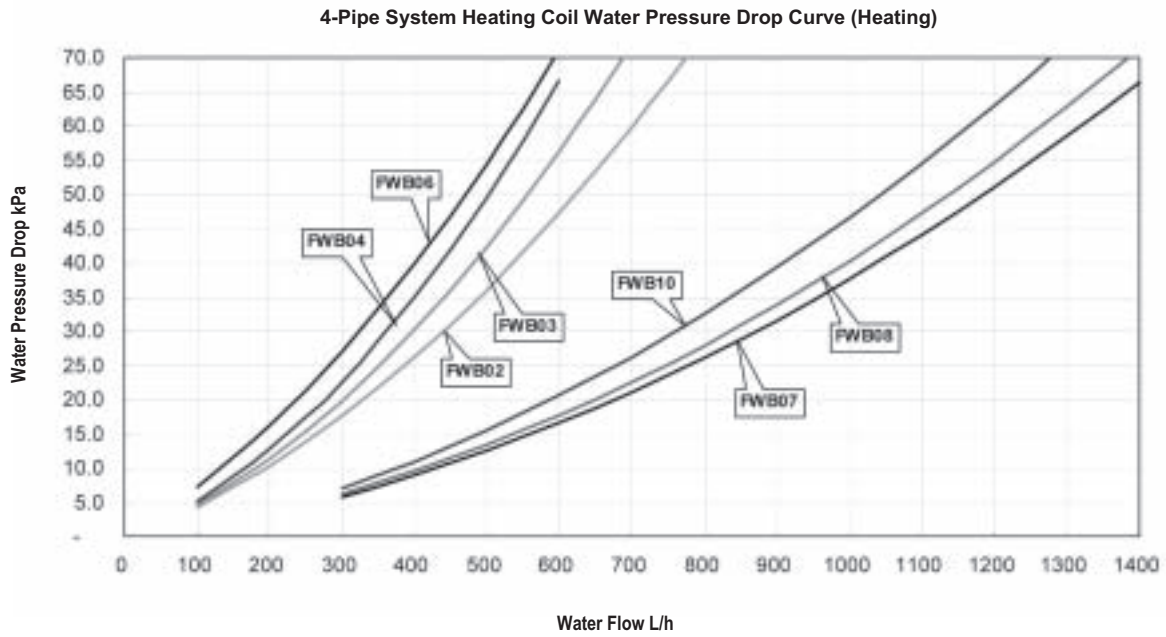
NOTE

The pressure drop is only for the coil and excludes water connections and valves.

9 Hydraulic performance

9 - 1 Water pressure drop curve evaporator

FWB-JF



NOTE

The pressure drop is only for the coil and excludes water connections and valves.

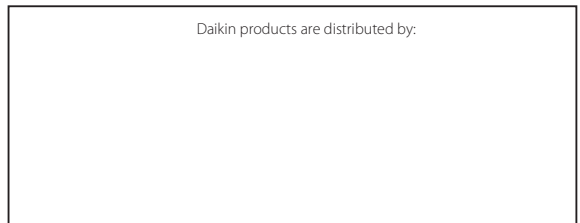


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