

TABLE OF CONTENTS

FWB-BT

1	Features	110
2	Specifications	111
	Technical Specifications	111
	Electrical Specifications	112
3	Electrical data	113
	Electrical Data	113
4	Options	114
	Options	114
5	Capacity tables	115
	Cooling Capacity Tables - 2-pipe	115
	Capacity Correction Factor	117
	Heating Capacity Tables - 2-pipes	119
	Power Consumption	123
6	Dimensional drawings	125
	Dimensional Drawings	125
7	Wiring diagrams	126
	Wiring Diagrams - Single Phase	126
8	Sound data	127
	Sound Power Spectrum - 2-pipe	127
9	Installation	130
	Installation Method	130
10	Operation range	132
	Operation Range	132
11	Hydraulic performance	133
	Water Pressure Drop Cooling - 2-pipe	133
	Water Pressure Drop Heating - 2-pipe	134
	Water Pressure Drop Curve Heating - Additional Heat Exchanger	135

1 Features

- Compact dimensions, can easily be mounted in a narrow ceiling void (unit height: 240mm)
- 3, 4 or 6 stage row cooling coil
- Drain pan to collect the condensate from: heat exchanger and regulating valves
- 7-speed electrical motors (with thermal protection on windings)
- All 7 speeds pre-wired in the factory in the terminal block of the switch box
- The air filter can easily be removed for cleaning



5

1

2 Specifications

2-1 Technical Specifications				FWB02BATN6V3	FWB03BATN6V3	FWB04BATN6V3	FWB05BATN6V3	FWB06BATN6V3	FWB07BATN6V3	FWB08BATN6V3	FWB09BATN6V3	FWB10BATN6V3
Cooling capacity	Total capacity	High	kW	2.61 (1)	3.14 (1)	3.49 (1)	5.08 (1)	5.45 (1)	6.47 (1)	7.57 (1)	8.67 (1)	10.34 (1)
		Nom.	kW	2.01 (1)	2.42 (1)	2.64 (1)	3.99 (1)	4.12 (1)	4.96 (1)	5.41 (1)	6.08 (1)	7.08 (1)
		Low	kW	1.34 (1)	1.50 (1)	1.67 (1)	2.12 (1)	2.43 (1)	2.67 (1)	4.18 (1)	4.64 (1)	5.35 (1)
	Sensible capacity	High	kW	1.88 (1)	2.16 (1)	2.34 (1)	3.6 (1)	3.87 (1)	4.4 (1)	5.23 (1)	5.96 (1)	6.9 (1)
		Nom.	kW	1.46 (1)	1.66 (1)	1.77 (1)	2.84 (1)	2.96 (1)	3.37 (1)	3.78 (1)	4.2 (1)	4.72 (1)
		Low	kW	0.95 (1)	1.02 (1)	1.1 (1)	1.52 (1)	1.67 (1)	1.78 (1)	2.95 (1)	3.21 (1)	3.57 (1)
Heating capacity	2-Pipe	High	kW	5.47 (2)	6.01 (2)	6.47 (2)	10.31 (2)	11.39 (2)	12.28 (2)	15.05 (2)	16.85 (2)	18.78 (2)
		Medium	kW	4.32 (2)	4.66 (2)	4.93 (2)	8.2 (2)	8.92 (2)	9.48 (2)	10.94 (2)	11.97 (2)	12.93 (2)
		Low	kW	2.77 (2)	2.91 (2)	3.00 (2)	4.56 (2)	4.77 (2)	4.94 (2)	8.63 (2)	9.29 (2)	9.85 (2)
	4-Pipe	High	kW	3.14 (2)			5.99 (2)			12.8 (2)		
		Medium	kW	2.68 (2)			5.14 (2)			9.55 (2)		
		Low	kW	1.95 (2)			3.38 (2)			7.67 (2)		
Power input	High		W	79			154			294		
	Low		W	28			64			155		
	Nom.		W	46			121			193		
Casing	Colour			-								
	Material			Galvanised sheet metal								
Dimensions	Unit	Height	mm	239								
		Width	mm	1,039			1,389			1,739		
		Depth	mm	609								
	Packed unit	Height	mm	305								
		Width	mm	1,100			1,450			1,800		
		Depth	mm	650								
Weight	Unit		kg	23	24	26	31	33	35	43	45	48
	Operation weight		kg	24	26	28	33	35	38	45	48	52
	Packed unit		kg	26	27	29	35	37	39	47	50	54
Heat exchanger	Rows	Quantity		3	4	6	3	4	6	3	4	6
	Stages	Quantity		3		4		6		5	6	
	Fin pitch		mm	2.1					2.5	2.1		
	Face area		m²	0.15			0.22			0.29		
	Water volume		l	1.1	1.5	2.2	1.6	2.1	3.2	2.1	2.8	4.2
	Additional heat exchanger	Rows	Quantity		1						2	
Stages		Quantity		2			3			6		
Fin pitch		mm	1.8						2.1			
Face area		m²	0.14			0.24			0.35			
Water volume		l	0.4			0.6			1.7			
Water flow		Cooling	l/h	448	539	598	873	936	1,111	1,299	1,488	1,774
	Heating	l/h	480	527	567	904	999	1,077	1,319	1,479	1,647	
	Additional heat exchanger		l/h	275			526			1,123		
Water pressure drop	Cooling	kPa	8	14	11	15	8	14	21		26	
	Heating	kPa	7	10	8	12	7	10	16	15	18	
	Additional heat exchanger		kPa	3			5			8		
Fan	Type			Centrifugal - forward blades - directly coupled on fan motor								
	Quantity			1			2			3		
	Air flow rate	High	m³/h	400			800			1,200		
		Medium	m³/h	300			600			800		
		Low	m³/h	180			300			600		
	Available pressure	High	Pa	71			65			59		
		Medium	Pa	29			44			43		
		Low	Pa	20			23			29		
Fan motor	Speed	Steps	7 (high:7, medium:4, low:1)									
	Model			Closed induction, B class insulation, winding thermal cut-out								
Sound power level	High		dBA	56			59			69		
	Nom.		dBA	45			52			58		
	Low		dBA	35			37			53		

2 Specifications

2-1 Technical Specifications				FWB02BATN6V3	FWB03BATN6V3	FWB04BATN6V3	FWB05BATN6V3	FWB06BATN6V3	FWB07BATN6V3	FWB08BATN6V3	FWB09BATN6V3	FWB10BATN6V3
Sound pressure level	High		dBA	44.5			47.5			57.5		
	Medium		dBA	33.5			40.5			46.5		
	Low		dBA	23.5			25.5			41.5		
Piping connections	Drain	OD	mm	16								
Insulation material				Class 1 self-extinguishing								
Vibration insulation				Rubber ring for fan motor								
Air filter				Standard filter class EU2								
Water connections	Std. heat exchanger		inch	3/4								
	Add. heat exchanger		inch	3/4						1		
Notes				(1) Cooling: 4 pipe: air 27°CDB, 19°CWB; entering water 7°C; leaving water 12°C								
				(2) Heating: 4 pipe: air 20°CDB; entering water 70°C; leaving water 60°C								
				(3) Air flow at 0P a ESP								

2-2 Electrical Specifications			FWB02BATN6V3	FWB03BATN6V3	FWB04BATN6V3	FWB05BATN6V3	FWB06BATN6V3	FWB07BATN6V3	FWB08BATN6V3	FWB09BATN6V3	FWB10BATN6V3
Power supply	Phase		1~								
	Frequency	Hz	50								
	Voltage	V	230								
Current input	High	A	0.36			0.73			1.28		
	Medium	A	0.21			0.60			0.90		
	Low	A	0.14			0.33			0.70		
Required wire section		mm²	1.5								
Required fuses		A	1			2					
Electric heater	Phase		1								
	Frequency	Hz	50								
	Voltage	V	230								
	Power input	kW	2			2.5			3		
	Current	A	8.7			10.9			13		
Notes			(4) The power consumption for the valve motor is 5W (peak) only during opening.								

3 Electrical data

3 - 1 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	

4TW60298-1

4 Options

4 - 1 Options

FWB	02	03	04	05	06	07	08	09	10	Comments	
Additional heat exchanger	EAH04A6			EAH07A6			EAH10A6				
3-way valve cooling h/e	Factory mounted										
capacity limitation	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										
Power interface	-						EPIA6			*	
Master / Slave Interface	EPIMSA6										
Controller electronic - remote	ECFWER6										

* In combination with ECFWER6, EPIA6 or EPIMSA6 must be installed for FWB 08-10

4TW60299-2A (Sheet 1/2)

FWB		Additional heat exchanger	3-way valve add. h/e	2-way valve add. h/e	Fan stop thermostat	Power interface	Master / Slave Interface	Controller electronic - remote
		EAH.A6	E2MV3.A6	E2MV2.A6	YFSTA6	EPIA6	EPIMSA6	ECFWER6
Additional heat exchanger	EAH.A6		X	X	X *	X	X	X
3-way valve add. h/e	E2MV3.A6	X				X	X	X
2-way valve add. h/e	E2MV2.A6	X				X	X	
Fan stop thermostat	YFSTA6					X *	X *	
Power interface	EPIA6	X	X	X	X *			X
Master / Slave Interface	EPIMSA6	X	X					X
Controller electronic - remote	ECFWER6	X	X			X	X	

* = FWB used for heating only

4TW60299-2A (Sheet 2/2)

5 Capacity tables

5 - 1 Cooling Capacity Tables - 2-pipe

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 m³/h	Total cooling capacity W	Socket cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Socket cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Socket cooling capacity W	Water flow ℓ/h	Water pressure drop kPa	Total cooling capacity W	Socket cooling capacity W	Water flow ℓ/h	Water pressure drop kPa
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	2030	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
FWB09	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

4TW60292-1 (Sheet 1/6)

4TW60292-1 (Sheet 1/6)

5 Capacity tables

5 - 1 Cooling Capacity Tables - 2-pipe

Air temperature (°C DB - °C WB)		27 - 19												8 - 13												9 - 14											
Water temperature (Entering °C - leaving °C)		6 - 11				7 - 12				8 - 13				9 - 14				10 - 15				11 - 16				12 - 13											
Model	Air flow m³/h	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	Total cooling capacity		Sensible cooling capacity		Water flow ℓ/h	Water pressure drop kPa												
		W	W	W	W			W	W	W	W			W	W	W	W			W	W	W	W			W	W	W	W	W							
FWB02	300	2260	1560	388	6	2010	1460	345	5	1710	1340	293	4	1440	1230	247	3	1440	1230	247	3	1440	1230	247	3												
	400	2920	2010	501	9	2610	1880	448	8	2250	1740	386	6	1840	1580	315	4	1840	1580	315	4	1840	1580	315	4												
	500	3530	2430	605	13	3160	2270	542	11	2740	2110	470	8	2270	1930	390	6	2270	1930	390	6	2270	1930	390	6												
	300	2660	1760	456	10	2420	1660	415	9	2150	1540	369	7	1840	1420	317	5	1840	1420	317	5	1840	1420	317	5												
	400	3450	2290	591	16	3140	2160	539	14	2790	2010	479	11	2420	1860	416	8	2420	1860	416	8	2420	1860	416	8												
FWB04	500	4190	2790	719	23	3820	2630	655	19	3400	2450	583	15	2950	2270	507	12	2950	2270	507	12	2950	2270	507	12												
	300	2880	1880	494	8	2640	1770	453	7	2370	1650	407	6	2050	1520	353	4	2050	1520	353	4	2050	1520	353	4												
	400	3790	2490	651	13	3490	2340	598	11	3130	2190	538	9	2750	2030	472	7	2750	2030	472	7	2750	2030	472	7												
	500	4680	3070	802	18	4290	2890	737	16	3860	2700	663	13	3400	2510	584	10	3400	2510	584	10	3400	2510	584	10												
	600	4460	3030	765	12	3990	2840	685	10	3480	2630	597	8	2890	2410	497	6	2890	2410	497	6	2890	2410	497	6												
FWB05	800	5670	3840	972	18	5080	3600	873	15	4460	3350	765	12	3760	3090	646	9	3760	3090	646	9	3760	3090	646	9												
	1000	6780	4580	1162	25	6080	4300	1044	21	5340	4010	918	16	4540	3700	779	12	4540	3700	779	12	4540	3700	779	12												
	600	4680	3200	804	6	4120	2960	706	5	3420	2680	587	3	2970	2510	510	3	2970	2510	510	3	2970	2510	510	3												
	800	6130	4150	1053	9	5450	3870	936	8	4690	3560	805	6	3750	3200	644	4	3750	3200	644	4	3750	3200	644	4												
	1000	7470	5020	1282	13	6670	4680	1144	11	5780	4330	993	8	4770	3940	820	6	4770	3940	820	6	4770	3940	820	6												
FWB07	600	5450	3590	935	11	4960	3370	852	9	4430	3140	760	7	3830	2890	657	6	3830	2890	657	6	3830	2890	657	6												
	800	7100	4680	1218	17	6470	4400	1111	14	5800	4110	995	12	5060	3810	868	9	5060	3810	868	9	5060	3810	868	9												
	1000	8660	5700	1486	24	7900	5370	1355	20	7080	5020	1215	17	6190	4660	1063	13	6190	4660	1063	13	6190	4660	1063	13												
	1000	7260	4840	1245	19	6530	4540	1120	16	5740	4230	985	13	4870	3890	836	9	4870	3890	836	9	4870	3890	836	9												
	1200	8410	5580	1444	25	7570	5230	1299	21	6670	4880	1145	16	5680	4500	976	12	5680	4500	976	12	5680	4500	976	12												
FWB09	1400	9500	6260	1630	31	8550	5880	1468	25	7540	5480	1295	20	6440	5070	1107	15	6440	5070	1107	15	6440	5070	1107	15												
	1000	8190	5440	1404	19	7410	5110	1272	16	6580	4760	1129	13	5660	4390	972	10	5660	4390	972	10	5660	4390	972	10												
	1200	9570	6350	1642	25	8670	5960	1488	21	7710	5570	1323	17	6650	5150	1143	13	6650	5150	1143	13	6650	5150	1143	13												
	1400	10890	7200	1868	31	9860	6770	1693	26	8770	6320	1507	21	7590	5860	1304	16	7590	5860	1304	16	7590	5860	1304	16												
	1000	9510	6190	1632	23	8740	5830	1500	20	7900	5460	1358	16	7000	5080	1202	13	7000	5080	1202	13	7000	5080	1202	13												
FWB10	1200	11260	7320	1931	31	10340	6900	1774	26	9350	6470	1606	22	8290	6020	1423	18	8290	6020	1423	18	8290	6020	1423	18												
	1400	12950	8410	2221	39	11890	7930	2039	34	10750	7430	1846	28	9530	6920	1636	23	9530	6920	1636	23	9530	6920	1636	23												

4TW60292-1 (Sheet 2/6)

4TWW60292-1 (Sheet 2/6)

5 Capacity tables

5 - 2 Capacity Correction Factor

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 - 2 Capacity Correction Factor

	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
	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
FWB03	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
	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										
FWB04	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
	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
FWB05	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
	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						
FWB06	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
	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
FWB07	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
	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						
FWB08	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		
	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
FWB09	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		
	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						
FWB10	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 Capacity tables

5 - 3 Heating Capacity Tables - 2-pipes

19													
Air temperature (°C)		50 - 45				60 - 50				70 - 60			
Model	Air flow m³/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	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
FWB03	400	3120	543	11	4850	424	7	6150	540	10	8340	368	5
	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
FWB05	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
	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
FWB06	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
	600	4930	856	8	7680	671	5	9710	852	7	13260	585	3
FWB07	800	6380	1110	12	9930	868	7	12570	1103	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
FWB10	1000	8270	1439	15	12920	1129	9	16280	1429	14	22270	983	7
	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

4TW60292-1 (Sheet 3/6)

5 Capacity tables

5 - 3 Heating Capacity Tables - 2-pipes

Air temperature (°C)		19											
		50 - 45				60 - 50				70 - 60			
Water temperature (Entering °C - leaving °C)	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	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
EAH07A6	600	2630	457	4	3990	348	3	5270	462	4	6870	303	2
	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
EAH10A6	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
	1400	7350	1278	11	11260	984	6	14600	1281	10	19260	850	5

4TW60292-1 (Sheet 5/6)

5 Capacity tables

5 - 3 Heating Capacity Tables - 2-pipes

Air temperature (°C)		20											
Water temperature (fittering °C - leaving °C)		50 - 45				60 - 50				70 - 60			
Model	Air flow m³/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
FWB08	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)

5 Capacity tables

5 - 3 Heating Capacity Tables - 2-pipes

Air temperature (°C) Water temperature (Entering °C - leaving °C)		20											
		50 - 45				60 - 50				70 - 60			
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

4TW60292-1 (Sheet 6/6)

5 Capacity tables

5 - 4 Power Consumption

FWB02-04

Speed	7		6		5		4		3		2		1	
AP (Pa)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)
0	79	0.359	65	0.299	54	0.248	46	0.21	38	0.179	32	0.153	28	0.133
20	75	0.339	62	0.28	51	0.235	43	0.198	36	0.17	31	0.146	26	0.127
40	70	0.319	57	0.264	48	0.223	40	0.188	34	0.16	28	0.135		
60	66	0.303	54	0.248	44	0.203	36	0.168						
80	60	0.277	47	0.218	38	0.178	34	0.16						
100	51	0.242	41	0.204										

4TW60291-2A (1/3)

FWB05-07

Speed	7		6		5		4		3		2		1	
AP (Pa)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)
0	154	0.727	144	0.686	132	0.638	121	0.593	99	0.484	79	0.397	64	0.323
20	145	0.679	135	0.636	125	0.597	115	0.554	92	0.453	76	0.374	61	0.308
40	135	0.627	125	0.594	115	0.55	107	0.514	86	0.419	69	0.339	57	0.283
60	123	0.575	114	0.535	105	0.497	96	0.456	76	0.367	63	0.304	51	0.25
80	109	0.512	97	0.459	87	0.418	81	0.386	65	0.313	53	0.255		
100	85	0.407	77	0.369	71	0.337	65	0.31	53	0.258				

4TW60291-2A (2/3)

5 Capacity tables

5 - 4 Power Consumption

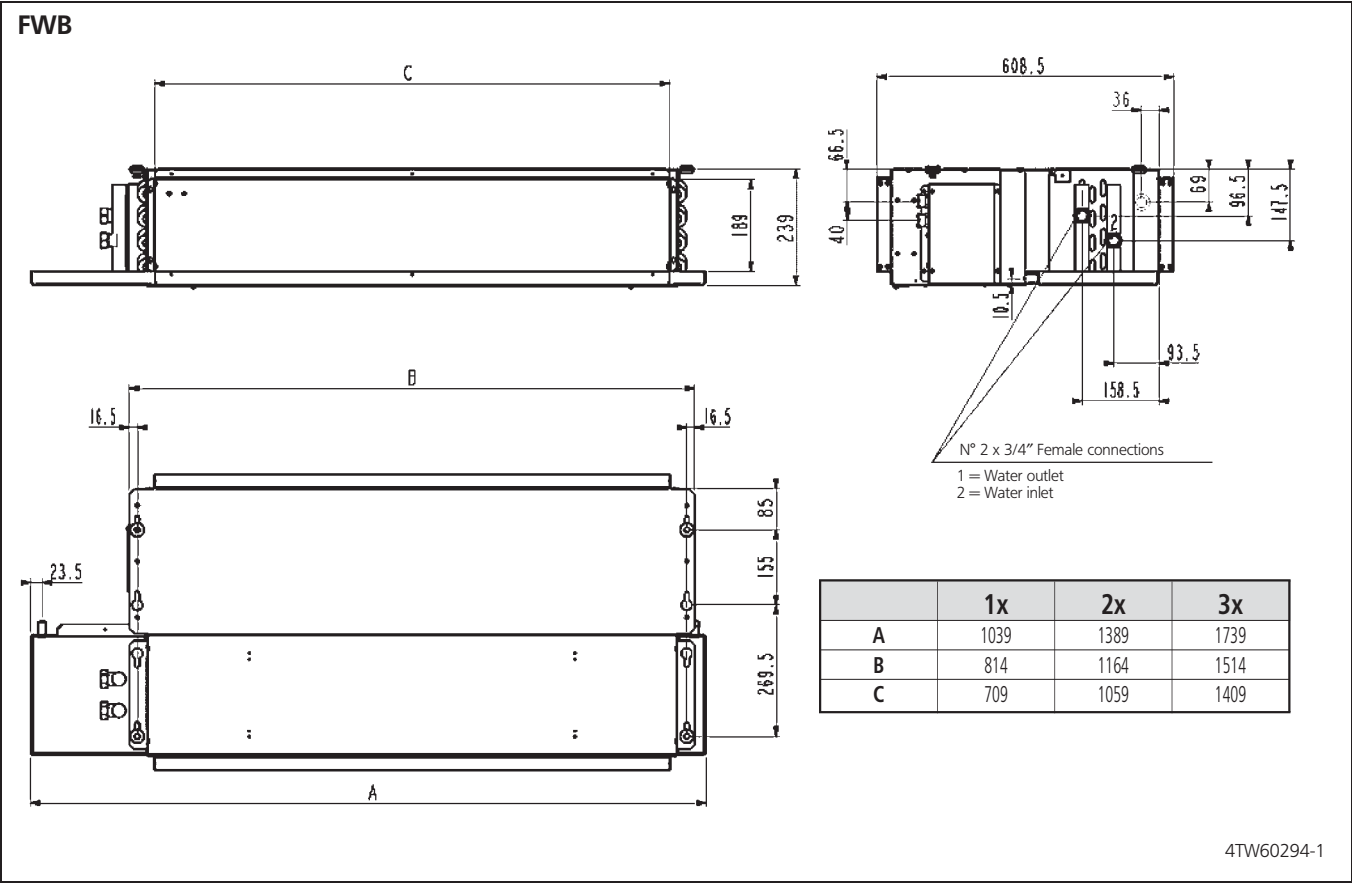
FWB08-10

Speed	7		6		5		4		3		2		1	
AP (Pa)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (A)	Power input (W)	Current (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										

4TW60291-2A (3/3)

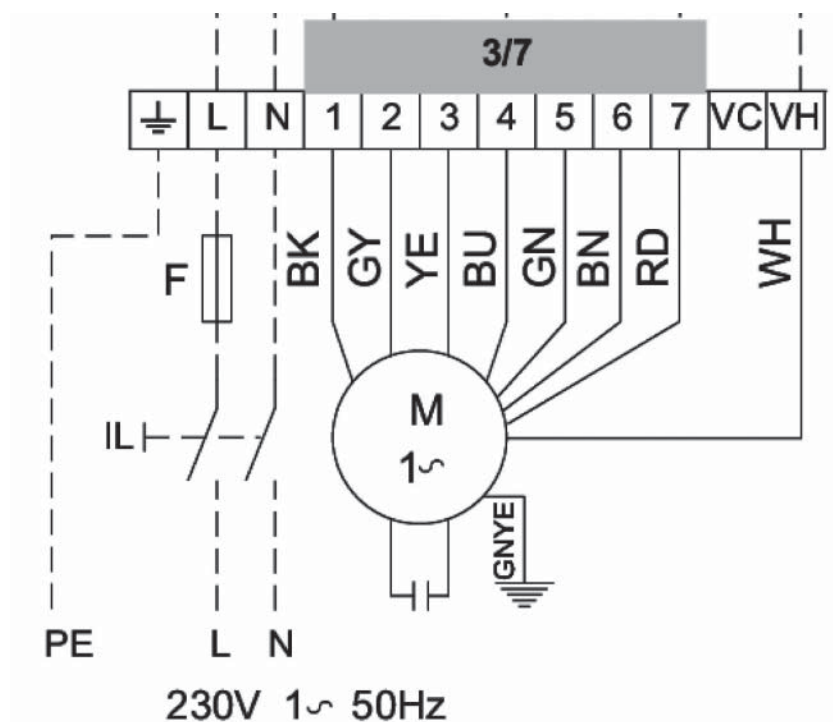
6 Dimensional drawings

6 - 1 Dimensional Drawings



7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase



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

8 Sound data

8 - 1 Sound Power Spectrum - 2-pipe

FWB02-04

		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dBA
7	Lw tot dBA	52	55	53	51	49	43	34	56
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Outlet	48	52	50	48	46	41	31	-
	Structure	35	38	45	34	41	25	17	-
6	Lw tot dBA	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		-
5	Lw tot dBA	46	49	46	44	41	33	23	49
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Outlet	42	46	43	41	39	31	21	-
	Structure	29	31	38	26	33	15		-
4	Lw tot dBA	42	45	43	40	36	26	19	45
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Outlet	38	42	39	37	34	24	16	-
	Structure	26	27	34	23	28			-
3	Lw tot dBA	40	43	40	37	32	22	18	42
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Outlet	36	40	37	34	30	20	15	-
	Structure	23	25	31	20	24			-
2	Lw tot dBA	38	40	37	34	29	16	17	39
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Outlet	34	37	34	31	26	14	14	-
	Structure	21	22	29	17	21			-
1	Lw tot dBA	34	37	33	31	24	13	17	35
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Outlet	30	34	30	27	22	12	14	-
	Structure	17	19	25	13	16			-

NOTES

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 air outlet/inlet is placed near the corner of 2 walls (vertical or floor-ceiling), Q=2 if the air outlet/inlet is placed at the center of the wall (at floor or ceiling but faraway the 2° 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

blank = Not Measurable

8 Sound data

8 - 1 Sound Power Spectrum - 2-pipe

FWB05-07

		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dBA
7	Lw tot dBA	54	59	58	53	50	45	36	59
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Outlet	50	56	54	51	48	43	33	-
	Structure	37	41	49	36	42	27	19	-
	Inlet	52	55	54	49	45	41	32	-
6	Lw tot dBA	52	56	55	50	46	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 dBA	48	55	54	48	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 dBA	46	52	52	46	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 dBA	44	48	46	40	35	24	16	46
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Outlet	40	45	42	37	33	22	13	-
	Structure	27	30	37	23	27			-
	Inlet	42	45	42	36	30	20	12	-
2	Lw tot dBA	40	44	41	35	28	16	14	42
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz		
	Outlet	36	41	38	32	26	14	11	-
	Structure	23	27	33	18	20			-
	Inlet	38	41	37	31	23	11	10	-
1	Lw tot dBA	37	41	37	30	20	11	15	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			-
	Inlet	35	37	33	26	15	6	11	-

NOTES

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 air outlet/inlet is placed near the corner of 2 walls (vertical or floor-ceiling), Q=2 if the air outlet/inlet is placed at the center of the wall (at floor or ceiling but faraway the 2° 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

blank = Not Measurable

8 Sound data

8 - 1 Sound Power Spectrum - 2-pipe

FWB08-10

		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	dBA
7	Lw tot dBA	63	67	65	65	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 dBA	61	64	63	63	59	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 dBA	58	60	61	61	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 dBA	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 dBA	50	53	54	52	49	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 dBA	51	50	52	49	47	38	29	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 dBA	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	-

NOTES

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 air outlet/inlet is placed near the corner of 2 walls (vertical or floor-ceiling), Q=2 if the air outlet/inlet is placed at the center of the wall (at floor or ceiling but faraway the 2° 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

blank = Not Measurable

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 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)

9 Installation

9 - 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 2/2)

10 Operation range

10 - 1 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

5

10

11 Hydraulic performance

11 - 1 Water Pressure Drop Cooling - 2-pipe

Water flow l/h	FWB								
	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

4TW60299-1 (Sheet 1/3)

11 Hydraulic performance

11 - 2 Water Pressure Drop Heating - 2-pipe

Water flow l/h	FWB								
	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				

4TW60299-1 (Sheet 2/3)

11 Hydraulic performance

11 - 3 Water Pressure Drop Curve Heating - Additional Heat Exchanger

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

4TW60299-1 (Sheet 3/3)

