

TECHNICAL DATA SHEET



TMA FC

AIR COOLED CHILLER WITH
CENTRIFUGAL COMPRESSORS,
AXIAL FANS AND FREE COOLING
FOR OUTDOOR INSTALLATION



TMA FC 190 - 1.200 kW

TMA FC

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation



Centrifugal compressors
Dry expansion evaporator (HFO-1234ze)
AC or EC axial fans both 800 and 910 mm
Free Cooling



R134a

HFO
1234ze

General Description

With this design, high efficiency heat exchangers are positioned in front of the condenser coils. The system works whenever ambient conditions are low enough to cool the chilled water without using refrigeration compressors.

The system is especially effective when chilled water temperatures are relatively high (i.e. above the standard 6/12 °C temperature). In some cases, data centres for example, chilled water temperatures can be as high as 18 °C which means that the opportunity for ambient air cooling is greatly increased.

TMA FC is available in LN (low noise) or LLN (low low noise) for installation in a plant rooms where sound levels must be kept to a minimum.

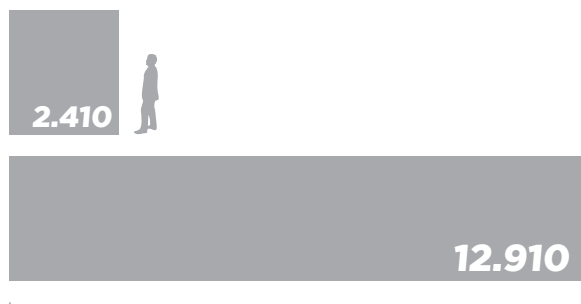
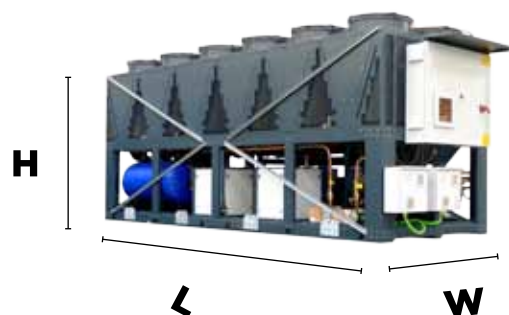
Typical units dimensions

Length (**L**): from 2.410 to 12.910 mm

Width (**W**): 2.250 mm

Height (**H**): 2.790 mm

Operating Weightt: from 2.320 kg to 11.253 kg



Length from 2.410 mm to 12.910 mm. The bigger sizes are delivered in two sections.

TMA FC with EC fans 800 mm

R134a

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA FC with EC fans 800 mm		TMA 1A 190A EC FC	TMA 1A 220A EC FC	TMA 1A 260A EC FC	TMA 1A 300A EC FC	TMA 1B 350A EC FC	TMA 1B 400A EC FC
CHILLER PERFORMANCE							
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a
Total cooling capacity	kW	190	220	260	300	350	400
Nominal power input	kW	61,2	69,1	83,2	94,1	107,7	124,6
E.E.R.	Coef.	3,10	3,18	3,13	3,19	3,25	3,21
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	4,23	4,35	4,36	4,52	4,63	4,62
Noise Pressure Level	dB(A)	58,00	59,00	59,00	60,00	62,00	62,00
Distance	m	10,00	10,00	10,00	10,00	10,00	10,00
WORKING CONDITIONS							
Compressors type (*1)	Type	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free
Compressors number	n°	1	1	1	1	1	1
Inlet water temperature	°C	12,0	12,0	12,0	12,0	12,0	12,0
Outlet water temperature	°C	6,0	6,0	6,0	6,0	6,0	6,0
Free cooling Ambient Temperature	°C	0,0	0,0	0,0	0,0	0,0	0,0
Free cooling capacity	kW	190	220	260	300	350	400
Condenser & Free coling coil type (*2)	Type	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil
Evaporator type (*3)	Type	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE
Power circuit voltage	V/Ph/Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
Control circuit voltage	V/Ph/Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50
Total power input	kW	61,2	69,1	83,2	94,1	107,7	124,6
Total running current	A	95,7	108,6	131,7	149,4	176,4	202,9
Total max current	A	151,2	156,8	156,8	162,4	232,4	238,0
Total starting current	A	16,2	21,8	21,8	27,4	27,4	33,0
DIMENSIONS							
Length with cabinet	mm	2410	3460	3460	4510	4510	5560
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2790	2790	2790	2790	2790	2790
Shipping weight	kg	2160	2880	2890	3610	3720	4440
Operating weight	kg	2320	3057	3063	3802	3969	4705
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) F.P.Coil: Finned pipe coil							
(*3) S&T or BPHE: Shell and Tube - Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA FC with EC fans 800 mm

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA 2A 450A EC FC	TMA 2A 500A EC FC	TMA 2A 550A EC FC	TMA 2A 600A EC FC	TMA 2B 700A EC FC	TMA 2B 800A EC FC	TMA 3A 900A EC FC	TMA 3B 1000A EC FC	TMA 3B 1100A EC FC	TMA 3B 1200A EC FC	
R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	
450	500	550	600	700	800	900	1000	1100	1200	
140,8	159,8	175,7	189,9	215,4	249,2	286,6	313,3	354,6	384,0	
3,20	3,13	3,13	3,16	3,25	3,21	3,14	3,19	3,10	3,13	
A	A	A	A	A	A	A	A	A	A	
4,61	4,64	4,50	4,63	4,88	4,62	4,57	4,65	4,75	4,67	
62,00	62,00	62,00	62,00	65,00	65,00	64,00	66,00	66,00	66,00	
10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	
Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	
2	2	2	2	2	2	3	3	3	3	
12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	
6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
450	500	550	600	700	800	900	1000	1100	1200	
F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	
S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	
400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	
230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	
140,8	159,8	175,7	189,9	215,4	249,2	286,6	313,3	354,6	384,0	
221,6	252,6	278,6	301,8	352,8	405,8	455,5	513,7	578,4	624,3	
313,6	313,6	319,2	319,2	464,8	476,0	481,6	691,6	697,2	697,2	
132,6	148,1	163,9	175,5	203,8	235,9	329,2	368,0	413,0	443,6	
6610	6610	7660	7660	8710	10810	11860	11860	12910	12910	
2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	
2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	
5290	5490	6210	6240	7010	8430	9490	9560	10290	10320	
5566	5887	6623	6645	7431	8890	10150	10213	10958	10977	

TMA FC with EC fans 800 mm

HFO
1234ze

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA FC with EC fans 800 mm		TMA 1Z 200A EC FC	TMA 1Z 250A EC FC	TMA 1Z 300A EC FC	TMA 1Z 350A EC FC	TMA 2Z 400A EC FC	TMA 2Z 500A EC FC
CHILLER PERFORMANCE							
Refrigerant		HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze
Total cooling capacity	kW	200	250	300	350	400	500
Nominal power input	kW	59,0	72,4	88,3	104,5	118,3	144,8
E.E.R.	Coef.	3,39	3,45	3,40	3,35	3,38	3,45
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	4,45	4,55	4,80	4,92	4,72	4,94
Noise Pressure Level	dB(A)	61,00	61,00	61,00	62,00	63,00	64,00
Distance	m	10,00	10,00	10,00	10,00	10,00	10,00
WORKING CONDITIONS							
Compressors type (*1)	Type	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free
Compressors number	n°	1	1	1	1	2	2
Inlet water temperature	°C	12,0	12,0	12,0	12,0	12,0	12,0
Outlet water temperature	°C	6,0	6,0	6,0	6,0	6,0	6,0
Free cooling Ambient Temperature	°C	0,0	0,0	0,0	0,0	0,0	0,0
Free cooling capacity	kW	200	250	300	350	400	500
Condenser & Free coling coil type (*2)	Type	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil
Evaporator type (*3)	Type	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE
Power circuit voltage	V/Ph/Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
Control circuit voltage	V/Ph/Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50
Total power input	kW	59,0	72,4	88,3	104,5	118,3	144,8
Total running current	A	98,8	119,5	144,3	169,8	197,8	239,0
Total max current	A	226,8	226,8	232,4	238,0	448,0	453,6
Total starting current	A	21,8	21,8	27,4	33,0	117,9	141,3
DIMENSIONS							
Length with cabinet	mm	3460	3460	4510	5560	5560	6610
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2790	2790	2790	2790	2790	2790
Shipping weight	kg	2910	2920	3710	4460	4820	5540
Operating weight	kg	3083	3089	3959	4713	5194	5931
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) F.P.Coil: Finned pipe coil							
(*3) S&T or BPHE: Shell and Tube - Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA FC with EC fans 800 mm

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA 2Z 600A EC FC	TMA 2Z 700A EC FC	TMA 3Z 800A EC FC	TMA 3Z 900A EC FC	TMA 3Z 1000A EC FC	TMA 3Z 1050A EC FC					
HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze					
600	700	800	900	1000	1050					
176,6	209,0	226,4	261,4	318,0	320,7					
3,40	3,35	3,53	3,44	3,14	3,27					
A	A	A	A	A	A					
4,97	4,90	4,87	5,12	4,98	4,99					
64,00	65,00	65,00	66,00	66,00	66,00					
10,00	10,00	10,00	10,00	10,00	10,00					
Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free					
2	2	3	3	3	3					
12,0	12,0	12,0	12,0	12,0	12,0					
6,0	6,0	6,0	6,0	6,0	6,0					
0,0	0,0	0,0	0,0	0,0	0,0					
600	700	800	900	1000	1050					
F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil					
S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE					
400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50					
230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50					
176,6	209,0	226,4	261,4	318,0	320,7					
288,6	339,6	373,1	427,3	516,3	520,5					
464,8	476,0	686,0	691,6	697,2	697,2					
171,7	202,8	272,4	310,4	371,6	374,4					
8710	10810	10810	11860	12910	12910					
2250	2250	2250	2250	2250	2250					
2790	2790	2790	2790	2790	2790					
6980	8670	8860	9580	10320	10440					
7408	9308	9491	10225	10977	11253					

TMA FC with AC fans 800 mm

R134a

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA FC with AC fans 800 mm		TMA 1A 190A AC FC	TMA 1A 220A AC FC	TMA 1A 260A AC FC	TMA 1A 300A AC FC	TMA 1B 350A AC FC	TMA 1B 400A AC FC
CHILLER PERFORMANCE							
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a
Total cooling capacity	kW	190	220	260	300	350	400
Nominal power input	kW	61,2	69,1	83,2	94,1	107,7	124,6
E.E.R.	Coef.	3,10	3,18	3,13	3,19	3,25	3,21
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	4,01	3,94	3,95	3,82	4,07	4,12
Noise Pressure Level	dB(A)	58,00	59,00	59,00	60,00	62,00	62,00
Distance	m	10,00	10,00	10,00	10,00	10,00	10,00
WORKING CONDITIONS							
Compressors type (*1)	Type	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free
Compressors number	n°	1	1	1	1	1	1
Inlet water temperature	°C	12,0	12,0	12,0	12,0	12,0	12,0
Outlet water temperature	°C	6,0	6,0	6,0	6,0	6,0	6,0
Free cooling Ambient Temperature	°C	0,0	0,0	0,0	0,0	0,0	0,0
Free cooling capacity	kW	190	220	260	300	350	400
Condenser & Free coling coil type (*2)	Type	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil
Evaporator type (*3)	Type	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE
Power circuit voltage	V/Ph/Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
Control circuit voltage	V/Ph/Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50
Total power input	kW	61,2	69,1	83,2	94,1	107,7	124,6
Total running current	A	99,3	114,0	137,1	156,6	183,6	211,9
Total max current	A	154,8	162,2	162,2	169,6	239,6	247,0
Total starting current	A	19,8	27,2	27,2	34,6	34,6	42,0
DIMENSIONS							
Length with cabinet	mm	2410	3460	3460	4510	4510	5560
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2790	2790	2790	2790	2790	2790
Shipping weight	kg	2160	2880	2890	3610	3720	4440
Operating weight	kg	2320	3057	3063	3802	3969	4705
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) F.P.Coil: Finned pipe coil							
(*3) S&T or BPHE: Shell and Tube - Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA FC with AC fans 800 mm

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA 2A 450A AC FC	TMA 2A 500A AC FC	TMA 2A 550A AC FC	TMA 2A 600A AC FC	TMA 2B 700A AC FC	TMA 2B 800A AC FC	TMA 3A 900A AC FC	TMA 3B 1000A AC FC	TMA 3B 1100A AC FC	TMA 3B 1200A AC FC	
R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	
450	500	550	600	700	800	900	1000	1100	1200	
145,1	159,8	175,7	189,9	215,4	249,2	286,6	313,3	354,6	384,0	
3,10	3,13	3,13	3,16	3,25	3,21	3,14	3,19	3,10	3,13	
A	A	A	A	A	A	A	A	A	A	
3,93	3,94	3,87	3,92	4,07	4,12	3,87	4,07	4,07	4,17	
62,00	62,00	62,00	62,00	65,00	65,00	64,00	66,00	66,00	66,00	
10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	
Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	
2	2	2	2	2	2	3	3	3	3	
12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	
6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
450	500	550	600	700	800	900	1000	1100	1200	
F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	
S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	
400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	1100	400-3-50	
230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	
145,1	159,8	175,7	189,9	215,4	249,2	286,6	313,3	354,6	384,0	
237,6	263,4	291,2	314,4	367,2	423,8	475,3	533,5	600,0	645,9	
317,0	324,4	331,8	331,8	479,2	494,0	501,4	711,4	718,8	718,8	
142,3	158,9	176,5	188,1	218,2	253,9	349,0	387,8	434,6	465,2	
5560	6610	7660	7660	8710	10810	11860	11860	12910	12910	
2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	
2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	
4590	5490	6210	6240	7010	8430	9490	9560	10290	10320	
4843	5887	6623	6645	7431	8890	10150	10213	10958	10977	

TMA FC with AC fans 800 mm

HFO
1234ze

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA FC with AC fans 800 mm		TMA 1Z 200A AC FC	TMA 1Z 250A AC FC	TMA 1Z 300A AC FC	TMA 1Z 350A AC FC	TMA 2Z 400A AC FC	TMA 2Z 500A AC FC
CHILLER PERFORMANCE							
Refrigerant		HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze
Total cooling capacity	kW	200	250	300	350	400	500
Nominal power input	kW	59,0	72,4	88,3	104,5	118,3	144,8
E.E.R.	Coef.	3,39	3,45	3,40	3,35	3,38	3,45
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	3,98	4,09	4,04	4,08	3,93	4,11
Noise Pressure Level	dB(A)	61,00	61,00	61,00	62,00	63,00	64,00
Distance	m	10,00	10,00	10,00	10,00	10,00	10,00
WORKING CONDITIONS							
Compressors type (*1)	Type	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free
Compressors number	n°	1	1	1	1	1	2
Inlet water temperature	°C	12,0	12,0	12,0	12,0	12,0	12,0
Outlet water temperature	°C	6,0	6,0	6,0	6,0	6,0	6,0
Free cooling Ambient Temperature	°C	0,0	0,0	0,0	0,0	0,0	0,0
Free cooling capacity	kW	200	250	300	350	400	500
Condenser & Free coling coil type (*2)	Type	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil
Evaporator type (*3)	Type	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE
Power circuit voltage	V/Ph/Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
Control circuit voltage	V/Ph/Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50
Total power input	kW	59,0	72,4	88,3	104,5	118,3	144,8
Total running current	A	104,2	124,9	151,5	178,8	206,8	249,8
Total max current	A	232,2	232,2	239,6	247,0	457,0	464,4
Total starting current	A	27,2	27,2	34,6	42,0	126,9	152,1
DIMENSIONS							
Length with cabinet	mm	3460	3460	4510	5560	5560	6610
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2790	2790	2790	2790	2790	2790
Shipping weight	kg	2910	2920	3710	4460	4820	5540
Operating weight	kg	3083	3089	3959	4713	5194	5931
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) F.P.Coil: Finned pipe coil							
(*3) S&T or BPHE: Shell and Tube - Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA FC with AC fans 800 mm

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA 2Z 600A AC FC	TMA 2Z 700A AC FC	TMA 3Z 800A AC FC	TMA 3Z 900A AC FC	TMA 3Z 1000A AC FC	TMA 3Z 1050A AC FC					
HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze					
600	700	800	900	1000	1050					
176,6	209,0	226,4	261,4	318,0	320,7					
3,40	3,35	3,53	3,44	3,14	3,27					
A	A	A	A	A	A					
4,04	4,06	4,13	4,17	4,21	4,27					
64,00	65,00	65,00	66,00	66,00	66,00					
10,00	10,00	10,00	10,00	10,00	10,00					
Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free					
2	2	3	3	3	3					
12,0	12,0	12,0	12,0	12,0	12,0					
6,0	6,0	6,0	6,0	6,0	6,0					
0,0	0,0	0,0	0,0	0,0	0,0					
600	700	800	900	1000	1050					
F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil					
S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE					
400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50					
230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50					
176,6	209,0	226,4	261,4	318,0	320,7					
303,0	357,6	391,1	447,1	537,9	542,1					
479,2	494,0	704,0	711,4	718,8	718,8					
186,1	220,8	290,4	330,2	393,2	396,0					
8710	10810	10810	11860	12910	12910					
2250	2250	2250	2250	2250	2250					
2790	2790	2790	2790	2790	2790					
6980	8670	8860	9580	10320	10440					
7408	9308	9491	10225	10977	11253					

TMA FC with AC fans 910 mm

R134a

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA FC with AC fans 910 mm		TMA 1A 190B AC FC	TMA 1A 220B AC FC	TMA 1A 260B AC FC	TMA 1A 300B AC FC	TMA 1B 350B AC FC	TMA 1B 400B AC FC
CHILLER PERFORMANCE							
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a
Total cooling capacity	kW	190	220	260	300	350	400
Nominal power input	kW	64,0	75,1	87,4	97,4	113,3	131,2
E.E.R.	Coef.	2,97	2,93	2,97	3,08	3,09	3,05
Energy class		B	B	B	B	B	B
E.S.E.E.R.	Coef.	3,69	3,71	3,54	3,70	3,65	3,81
Noise Pressure Level	dB(A)	60,00	60,00	62,00	62,00	64,00	64,00
Distance	m	10,00	10,00	10,00	10,00	10,00	10,00
WORKING CONDITIONS							
Compressors type (*1)	Type	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free
Compressors number	n°	1	1	1	1	1	1
Inlet water temperature	°C	12,0	12,0	12,0	12,0	12,0	12,0
Outlet water temperature	°C	6,0	6,0	6,0	6,0	6,0	6,0
Free cooling Ambient Temperature	°C	0,0	0,0	0,0	0,0	0,0	0,0
Free cooling capacity	kW	190	220	260	300	350	400
Condenser & Free coling coil type (*2)	Type	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil
Evaporator type (*3)	Type	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE
Power circuit voltage	V/Ph/Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
Control circuit voltage	V/Ph/Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50
Total power input	kW	64,0	75,1	87,4	97,4	113,3	131,2
Total running current	A	105,3	123,6	146,1	162,5	195,6	223,6
Total max current	A	160,8	160,8	171,2	171,2	251,6	251,6
Total starting current	A	25,8	25,8	36,2	36,2	46,6	46,6
DIMENSIONS							
Length with cabinet	mm	2410	2410	3460	3460	4510	4510
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2790	2790	2790	2790	2790	2790
Shipping weight	kg	2160	2180	2890	2900	3720	3740
Operating weight	kg	2320	2335	3063	3069	3969	3983
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) F.P.Coil: Finned pipe coil							
(*3) S&T or BPHE: Shell and Tube - Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA FC with AC fans 910 mm

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA 2A 450B AC FC	TMA 2A 500B AC FC	TMA 2A 550B AC FC	TMA 2A 600B AC FC	TMA 2B 700B AC FC	TMA 2B 800B AC FC	TMA 3A 900B AC FC	TMA 3B 1000B AC FC	TMA 3B 1100B AC FC	TMA 3B 1200B AC FC	
R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	
450	500	550	600	700	800	900	1000	1100	1200	
153,2	167,7	185,6	199,7	226,6	262,4	297,1	323,8	366,5	403,4	
2,94	2,98	2,96	3,00	3,09	3,05	3,03	3,09	3,00	2,97	
B	B	B	B	B	B	B	B	B	B	
3,70	3,69	3,58	3,50	3,65	3,81	3,56	3,77	3,76	3,83	
63,00	64,00	65,00	65,00	67,00	67,00	67,00	68,00	68,00	68,00	
10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	
Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	
2	2	2	2	2	2	3	3	3	3	
12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	
6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
450	500	550	600	700	800	900	1000	1100	1200	
F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	
S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	
400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	
230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	
153,2	167,7	185,6	199,7	226,6	262,4	297,1	323,8	366,5	403,4	
252,2	278,2	310,0	335,4	391,2	447,2	497,9	556,1	625,6	683,2	
321,6	332,0	342,4	352,8	503,2	503,2	524,0	734,0	744,4	744,4	
151,9	170,1	191,2	209,1	242,2	270,2	371,6	410,4	460,2	498,6	
4510	5560	6610	7660	8710	8710	10810	10810	11860	11860	
2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	
2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	
3880	4780	5500	6240	7010	7030	8780	8860	9590	9620	
4111	5154	5891	6645	7431	7445	9418	9491	10235	10254	

TMA FC with EC fans 910 mm

R134a

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA FC with EC fans 910 mm		TMA 1A 190B EC FC	TMA 1A 220B EC FC	TMA 1A 260B EC FC	TMA 1A 300B EC FC	TMA 1B 350B EC FC	TMA 1B 400B EC FC
CHILLER PERFORMANCE							
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a
Total cooling capacity	kW	190	220	260	300	350	400
Nominal power input	kW	64,5	74,5	87,3	99,5	112,6	134,0
E.E.R.	Coef.	2,95	2,95	2,98	3,02	3,11	2,99
Energy class		B	B	B	B	A	B
E.S.E.E.R.	Coef.	3,97	4,01	4,18	4,28	4,29	4,29
Noise Pressure Level	dB(A)	61,00	61,00	62,00	62,00	64,00	64,00
Distance	m	10,00	10,00	10,00	10,00	10,00	10,00
WORKING CONDITIONS							
Compressors type (*1)	Type	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free
Compressors number	n°	1	1	1	1	1	1
Inlet water temperature	°C	12,0	12,0	12,0	12,0	12,0	12,0
Outlet water temperature	°C	6,0	6,0	6,0	6,0	6,0	6,0
Free cooling Ambient Temperature	°C	0,0	0,0	0,0	0,0	0,0	0,0
Free cooling capacity	kW	190	220	260	300	350	400
Condenser & Free coling coil type (*2)	Type	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil
Evaporator type (*3)	Type	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE
Power circuit voltage	V/Ph/Hz	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50
Control circuit voltage	V/Ph/Hz	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50
Total power input	kW	64,5	74,5	87,3	99,5	112,6	134,0
Total running current	A	100,6	117,1	137,6	157,7	183,7	217,2
Total max current	A	157,6	157,6	166,4	166,4	245,2	245,2
Total starting current	A	22,6	22,6	31,4	31,4	40,2	40,2
DIMENSIONS							
Length with cabinet	mm	2410	2410	3460	3460	4510	4510
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2790	2790	2790	2790	2790	2790
Shipping weight	kg	2160	2180	2890	2900	3720	3740
Operating weight	kg	2320	2335	3063	3069	3969	3983
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) F.P.Coil: Finned pipe coil							
(*3) S&T or BPHE: Shell and Tube - Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA FC with EC fans 910 mm

Air cooled chiller with centrifugal compressors, axial fans and Free Cooling for outdoor installation

TMA 2A 450B EC FC	TMA 2A 500B EC FC	TMA 2A 550B EC FC	TMA 2A 600B EC FC	TMA 2B 700B EC FC	TMA 2B 800B EC FC	TMA 3A 900B EC FC	TMA 3B 1000B EC FC	TMA 3B 1100B EC FC	TMA 3B 1200B EC FC	
R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	
450	500	550	600	700	800	900	1000	1100	1200	
154,0	171,2	184,8	199,4	225,2	259,0	304,1	330,8	374,2	403,6	
2,92	2,92	2,98	3,01	3,11	3,09	2,96	3,02	2,94	2,97	
B	B	B	B	A	B	B	B	B	B	
4,28	4,32	4,23	4,18	4,63	4,38	4,22	4,36	4,45	4,52	
64,00	65,00	65,00	66,00	67,00	67,00	67,00	69,00	69,00	69,00	
10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	10,00	
Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	Oil Free	
2	2	2	2	2	2	3	3	3	3	
12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	
6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	
0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
450	500	550	600	700	800	900	1000	1100		
F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	F.P.Coil	
S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	S&T or BPHE	
400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	400-3-50	
230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	230-1-50	
154,0	171,2	184,8	199,4	225,2	259,0	304,1	330,8	374,2	403,6	
242,4	270,2	292,2	315,6	367,4	420,2	481,9	540,1	608,0	653,9	
315,2	324,0	332,8	341,6	490,4	490,4	508,0	718,0	726,8	726,8	
143,8	162,1	177,5	193,6	223,9	250,3	355,6	394,4	442,6	473,2	
4510	5560	6610	7660	8710	8710	10810	10810	11860	11860	
2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	
2790	2790	2790	2790	2790	2790	2790	2790	2790	2790	
3880	4780	5500	6240	7010	7030	8780	8860	9590	9620	
4111	5154	5891	6645	7431	7445	9418	9491	10235	10254	