

TECHNICAL DATA SHEET



TMA ES

AIR COOLED CHILLER WITH
CENTRIFUGAL COMPRESSORS,
AXIAL FANS AND EVAPORATIVE
SYSTEM FOR OUTDOOR
INSTALLATION



TMA ES Range 200 - 2.500 kW

TMA ES Range

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation



Centrifugal compressors
Flooded evaporator (R134a)
Dry expansion evaporator (HFO-1234ze)
AC or EC axial fans both 800 and 910 mm
Adiabatic system



R134a

HFO
1234ze

General Description

Turbomiser can be equipped with an innovative evaporative system which results in considerable energy savings. Exploiting the natural process of adiabatic cooling, hot and dry air normally drawn into air cooled condensers passes through a wetted media before reaching the actual condenser coil.

The evaporation effect reduces the air temperature by as much as 8 °C increasing the efficiency of the condensers. With lower condensing temperatures the efficiency of the refrigeration system is improved.

During low ambient conditions the evaporative media is automatically moved away from the face of the condenser to allow a free passage of air on to the condenser reducing fan power in the 'off cycle' Power savings up to 25% can be achieved using this system which is particularly effective in countries which have high ambient temperatures.

TMA ES 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.

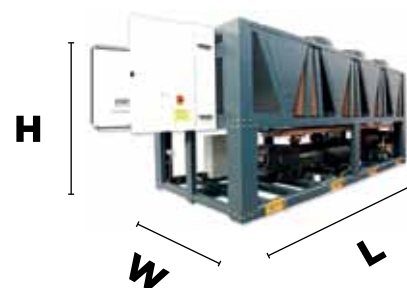
Typical units dimensions

Length (L): from 3.210 to 24.020 mm

Width (W): 2.250 mm

Height (H): 2.540 mm

Operating Weight: from 1.825 kg to 15.173 kg



3.210



24.020



Length from 3.210 mm to 24.020 mm. The bigger sizes are delivered in two sections.

TMA ES with EC fans 910 mm

R134a

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA ES with EC fans 910 mm		TMA 1A 200B ES EC	TMA 1A 240B ES EC	TMA 1A 275B ES EC	TMA 1A 325B ES EC	TMA 1B 375B ES EC	TMA 1B 450B ES EC
CHILLER PERFORMANCE							
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a
Total cooling capacity	kW	200	240	275	325	375	450
Nominal power input	kW	51,2	62,5	71,1	84,3	99,6	119,7
E.E.R.	Coef.	3,91	3,84	3,87	3,86	3,77	3,76
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	5,9	5,83	6,11	6,28	6,07	6,2
Noise Pressure Level	dB(A)	60,00	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	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
Condenser coil type (*2)	Type	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
Evaporator type (*3)	Type	FL	FL	FL	FL	FL	FL
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	51,2	62,5	71,1	84,3	99,6	119,7
Total running current	A	82,8	100,0	112,9	133,1	163,4	194,8
Total max current	A	153,2	157,6	157,6	162,0	236,4	240,8
Total starting current	A	18,2	22,6	22,6	27,0	31,4	35,8
DIMENSIONS							
Length with cabinet	mm	3210	3210	3210	4510	4510	5810
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2540	2540	2540	2540	2540	2540
Shipping weight	kg	1800	2040	2040	2550	2640	3300
Operating weight	kg	1826	2079	2079	2597	2687	3356
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) AL / AL: Aluminium							
(*3) FL: Flooded							
(*4) Delivered in 2 sections							

TMA ES with EC fans 910 mm

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA 2A 500B ES EC	TMA 2A 550B ES EC	TMA 2A 650B ES EC	TMA 2B 700B ES EC	TMA 2B 750B ES EC	TMA 2B 825B ES EC	TMA 2B 900B ES EC	TMA 3A 975B ES EC	TMA 3B 1050B ES EC	TMA 3B 1150B ES EC	TMA 3B 1250B ES EC
R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
500	550	650	700	750	825	900	975	1050	1150	1250
129,6	142,2	165,8	172,8	196,4	220,6	236,6	250,1	272,4	299,5	342,2
3,86	3,87	3,92	4,05	3,82	3,74	3,80	3,90	3,85	3,84	3,65
A	A	A	A	A	A	A	A	A	A	A
6,33	6,29	6,23	6,31	6,43	6,25	6,29	6,47	6,34	6,25	6,3
64,00	64,00	64,00	66,00	66,00	67,00	67,00	66,00	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	10,00
Oil Free	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	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	12,0
6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL
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	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	230-1-50
129,6	142,2	165,8	172,8	196,4	220,6	236,6	250,1	272,4	299,5	342,2
207,0	225,8	261,8	286	322,4	360,2	385,2	394,9	449,1	491,6	558,1
315,2	315,2	319,6	468,4	468,4	472,8	477,2	481,6	696,0	700,4	704,8
126,1	135,5	155,7	172,2	190,4	211,5	226,2	288,8	326,4	356,2	402,0
5810	5810	7110	8410	8410	8410	9710	9710	11010	11010	12310
2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
3520	3830	4380	4990	4990	5270	5820	6340	6900	7010	7510
3584	3908	4474	5084	5084	5380	5942	6477	7037	7163	7671

TMA ES with EC fans 910 mm

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA ES with EC fans 910 mm		TMA 4B 1400B ES EC	TMA 4B 1550B ES EC	TMA 4B 1650B ES EC	TMA 4B 1800B ES EC	TMA 6B 1950B ES EC	TMA 6B 2100B ES EC
CHILLER PERFORMANCE							
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a
Total cooling capacity	kW	1400	1550	1650	1800	1950	2100
Nominal power input	kW	363,2	406,0	441,2	473,2	506,2	544,8
E.E.R.	Coef.	3,85	3,82	3,74	3,80	3,85	3,85
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	6,23	6,39	6,28	6,31	6,35	6,39
Noise Pressure Level	dB(A)	69,00	69,00	70,00	70,00	71,00	71,00
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°	4	4	4	4	6	6
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
Condenser coil type (*2)	Type	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
Evaporator type (*3)	Type	FL	FL	FL	FL	FL	FL
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	363,2	406,0	441,2	473,2	506,2	544,8
Total running current	A	598,8	665,6	720,4	770,4	839,0	898,2
Total max current	A	928,0	936,8	945,6	954,4	1383,2	1392,0
Total starting current	A	476,1	528,4	571,7	611,4	724,7	775,5
DIMENSIONS							
Length with cabinet	mm	13620 (*4)	16220 (*4)	16220 (*4)	18820 (*4)	18820 (*4)	21420 (*4)
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2540	2540	2540	2540	2540	2540
Shipping weight	kg	8650	9680	10240	11340	12480	13510
Operating weight	kg	8839	9869	10461	11585	12755	13785
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) AL / AL: Aluminium							
(*3) FL: Flooded							
(*4) Delivered in 2 sections							

TMA ES with EC fans 910 mm

R134a

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA 6B 2300B ES EC	TMA 6B 2500B ES EC									
R134a	R134a									
2300	2500									
599,0	678,8									
3,84	3,68									
A	A									
6,42	6,22									
71,00	71,00									
10,00	10,00									
Oil Free	Oil Free									
6	6									
12,0	12,0									
6,0	6,0									
AL / AL	AL / AL									
FL	FL									
400-3-50	400-3-50									
230-1-50	230-1-50									
599,0	678,8									
983,2	1107,4									
1400,8	1400,8									
847,8	951,3									
21420 (*4)	21420 (*4)									
2250	2250									
2540	2540									
13710	13700									
14017	14023									

TMA ES with EC fans 910 mm

HFO
1234ze

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA ES with EC fans 910 mm		TMA 1Z 200B ES EC	TMA 1Z 240B ES EC	TMA 1Z 275B ES EC	TMA 1Z 325B ES EC	TMA 1Z 375B ES EC	TMA 2Z 450B ES EC
CHILLER PERFORMANCE							
Refrigerant		HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze
Total cooling capacity	kW	200	240	275	325	375	450
Nominal power input	kW	48,8	58,0	64,8	81,0	98,4	108,0
E.E.R.	Coef.	4,10	4,14	4,24	4,01	3,81	4,17
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	5,85	5,87	6,11	6,39	6,40	6,34
Noise Pressure Level	dB(A)	61,00	62,00	62,00	63,00	63,00	65,00
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
Condenser coil type (*2)	Type	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
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	48,8	58,0	64,8	81,0	98,4	108,0
Total running current	A	82,9	97,0	107,5	132,7	159,8	181,8
Total max current	A	223,2	227,6	227,6	232,0	236,4	450,8
Total starting current	A	18,2	22,6	22,6	27,0	31,4	111,3
DIMENSIONS							
Length with cabinet	mm	3210	3210	3210	4510	4510	5810
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2540	2540	2540	2540	2540	2540
Shipping weight	kg	1820	1900	1990	2500	2580	3430
Operating weight	kg	1929	2001	2148	2652	2720	3691
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) AL / AL: Aluminium							
(*3) S&T or BPHE: Shell&Tube or Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA ES with EC fans 910 mm

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA 2Z 500B ES EC	TMA 2Z 550B ES EC	TMA 2Z 650B ES EC	TMA 2Z 700B ES EC	TMA 2Z 750B ES EC	TMA 3Z 825B ES EC	TMA 3Z 900B ES EC	TMA 3Z 975B ES EC	TMA 3Z 1125B ES EC	TMA 4Z 1250B ES EC	TMA 4Z 1400B ES EC
HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze
500	550	650	700	750	825	900	975	1125	1250	1400
119,6	129,6	164,2	190,8	196,8	197,2	217,7	243,0	289,6	308,8	376,0
4,18	4,24	3,96	3,67	3,81	4,18	4,13	4,01	3,88	4,05	3,72
A	A	A	A	A	A	A	A	A	A	A
6,42	6,50	6,34	6,40	6,40	6,50	6,53	6,59	6,48	6,48	6,46
65,00	65,00	65,00	66,00	66,00	67,00	67,00	67,00	68,00	68,00	69,00
10,00	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	Oil Free
2	2	2	2	2	3	3	3	3	4	4
12,0	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	6,0
AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
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	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	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	230-1-50
119,6	129,6	164,2	190,8	196,8	197,2	217,7	243,0	289,6	308,8	376,0
199,6	215,0	268,8	310,2	319,6	326,9	358,9	398,1	470,6	507,2	611,6
455,2	455,2	459,6	468,4	472,8	687,2	691,6	696,0	700,4	914,8	928,0
122,4	130,1	159,2	184,3	191,2	242,0	264,8	292,4	342,2	404,1	485,7
5810	5810	7110	8410	8410	9710	9710	11010	11010	12310	13620 (*4)
2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
3510	3540	4060	4640	4930	5600	5680	6200	6280	7310	7970
3765	3787	4300	4874	5342	6012	6085	6597	6666	7791	8439

TMA ES with EC fans 910 mm

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA ES with EC fans 910 mm		TMA 4Z 1500B ES EC	TMA 6Z 1650B ES EC	TMA 6Z 1800B ES EC	TMA 6Z 1900B ES EC	TMA 6Z 1950B ES EC	TMA 6Z 2100B ES EC
CHILLER PERFORMANCE							
Refrigerant		HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze
Total cooling capacity	kW	1500	1650	1800	1900	1950	2100
Nominal power input	kW	388,0	399,6	443,0	478,6	501,0	569,6
E.E.R.	Coef.	3,87	4,13	4,06	3,97	3,89	3,69
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	6,42	6,48	6,46	6,45	6,50	6,50
Noise Pressure Level	dB(A)	69,00	70,00	70,00	70,00	70,00	71,00
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°	4	6	6	6	6	6
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
Condenser coil type (*2)	Type	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
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	388,0	399,6	443,0	478,6	501,0	569,6
Total running current	A	630,4	661,8	728,8	784,4	819,6	926,2
Total max current	A	936,8	1365,6	1374,4	1383,2	1392,0	1400,8
Total starting current	A	502,0	574,1	631,4	679,2	710,0	800,3
DIMENSIONS							
Length with cabinet	mm	16220 (*4)	16220 (*4)	18820 (*4)	18820 (*4)	21420 (*4)	21420 (*4)
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2540	2540	2540	2540	2540	2540
Shipping weight	kg	9440	9890	10940	11050	12120	12230
Operating weight	kg	10265	10715	11751	11861	12915	13025
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) AL / AL: Aluminium							
(*3) S&T or BPHE: Shell&Tube or Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA ES with EC fans 910 mm



Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA 6Z 2250B ES EC										
HFO-1234ze										
2250										
579,2										
3,88										
A										
6,34										
71,00										
10,00										
Oil Free										
6										
12,0										
6,0										
AL / AL										
S&T or BPHE										
400-3-50										
230-1-50										
579,2										
941,2										
1400,8										
812,8										
21420 (*4)										
2250										
2540										
12260										
13033										

TMA ES with EC fans 800 mm

R134a

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA ES with EC fans 800 mm		TMA 1A 200A ES EC	TMA 1A 240A ES EC	TMA 1A 275A ES EC	TMA 1A 325A ES EC	TMA 1B 375A ES EC	TMA 1B 450A ES EC
CHILLER PERFORMANCE							
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a
Total cooling capacity	kW	200	240	275	325	375	450
Nominal power input	kW	49,8	58,3	68,7	80,8	95,1	114,1
E.E.R.	Coef.	4,02	4,12	4,01	4,02	3,95	3,94
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	6,25	6,63	6,43	6,47	6,28	6,44
Noise Pressure Level	dB(A)	58,00	58,00	59,00	59,00	6100	6200
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
Condenser coil type (*2)	Type	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
Evaporator type (*3)	Type	FL	FL	FL	FL	FL	FL
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	49,8	58,3	68,7	80,8	95,1	114,1
Total running current	A	80,8	93,6	109,3	127,9	156,6	186,4
Total max current	A	151,2	151,2	154,0	156,8	229,6	232,4
Total starting current	A	16,2	16,2	19,0	21,8	24,6	27,4
DIMENSIONS							
Length with cabinet	mm	3210	3210	4510	4510	5810	5810
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2540	2540	2540	2540	2540	2540
Shipping weight	kg	1870	2020	2550	2620	3140	3360
Operating weight	kg	1896	2052	2589	2667	3187	3416
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) AL / AL: Aluminium							
(*3) FL: Flooded							
(*4) Delivered in 2 sections							

TMA ES with EC fans 800 mm

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA 2A 500A ES EC	TMA 2A 550A ES EC	TMA 2A 650A ES EC	TMA 2B 700A ES EC	TMA 2B 750A ES EC	TMA 2B 825A ES EC	TMA 2B 900A ES EC	TMA 3A 975A ES EC	TMA 3B 1050A ES EC	TMA 3B 1150A ES EC	TMA 3B 1250A ES EC
R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
500	550	650	700	750	825	900	975	1050	1150	1250
121,2	137,3	161,6	174,6	188,4	213,3	228,2	240,7	260,2	286,2	326,1
4,13	4,01	4,02	4,01	3,98	3,87	3,94	4,05	4,04	4,02	3,83
A	A	A	A	A	A	A	A	A	A	A
6,71	6,43	6,47	6,59	6,61	6,39	6,44	6,64	6,55	6,66	6,65
61,00	62,00	62,00	64,00	64,00	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	10,00
Oil Free	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	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	12,0
6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
FL	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL
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	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	230-1-50
121,2	137,3	161,6	174,6	188,4	213,3	228,2	240,7	260,2	286,2	326,1
194,2	218,6	255,8	289,0	310,4	349,4	372,8	380,9	430,7	471,6	533,7
302,4	308,0	313,6	453,6	456,4	462,0	464,8	467,6	677,6	680,4	680,4
113,3	128,3	149,7	166,3	178,4	200,7	213,8	274,8	308,0	336,2	377,6
5810	7110	8410	8410	9710	11010	11010	12310	12310	12310	12310
2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
3520	4400	5010	5050	5560	6350	6450	7420	7470	7580	7580
3584	4478	5104	5144	5654	6460	6572	7557	7607	7733	7741

TMA ES with EC fans 800 mm

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA ES with EC fans 800 mm		TMA 4B 1400A ES EC	TMA 4B 1550A ES EC	TMA 4B 1650A ES EC	TMA 4B 1800A ES EC	TMA 6B 1950A ES EC	TMA 6B 2100A ES EC
CHILLER PERFORMANCE							
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a
Total cooling capacity	kW	1400	1550	1650	1800	1950	2100
Nominal power input	kW	349,2	389,9	423,0	452,9	483,8	523,8
E.E.R.	Coef.	4,01	3,98	3,90	3,97	4,03	4,01
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	6,59	6,65	6,56	6,61	6,65	6,65
Noise Pressure Level	dB(A)	67,00	67,00	67,00	68,00	69,00	69,00
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°	4	4	4	4	6	6
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
Condenser coil type (*2)	Type	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
Evaporator type (*3)	Type	FL	FL	FL	FL	FL	FL
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	349,2	389,9	423,0	452,9	483,8	523,8
Total running current	A	578,0	641,6	693,2	740,0	805,4	867,0
Total max current	A	907,2	912,8	918,4	924,0	1349,6	1360,8
Total starting current	A	455,3	504,4	544,5	581,0	691,1	744,3
DIMENSIONS							
Length with cabinet	mm	16220 (*4)	18820 (*4)	18820 (*4)	21420 (*4)	21420 (*4)	24020 (*4)
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2540	2540	2540	2540	2540	2540
Shipping weight	kg	9790	10830	11380	12490	13620	14760
Operating weight	kg	9979	11019	11601	12735	13895	15035
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) AL / AL: Aluminium							
(*3) FL: Flooded							
(*4) Delivered in 2 sections							

TMA ES with EC fans 800 mm

R134a

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA 6B 2300A ES EC	TMA 6B 2500A ES EC									
R134a	R134a									
2300	2500									
572,4	652,2									
4,02	3,83									
A	A									
6,73	6,65									
69,00	69,00									
10,00	10,00									
Oil Free	Oil Free									
6	6									
12,0	12,0									
6,0	6,0									
AL / AL	AL / AL									
FL	FL									
400-3-50	400-3-50									
230-1-50	230-1-50									
572,4	652,2									
943,2	1067,4									
1360,8	1360,8									
807,8	911,3									
24020 (*4)	24020 (*4)									
2250	2250									
2540	2540									
14850	14850									
15157	15173									

TMA ES with EC fans 800 mm

HFO
1234ze

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA ES with EC fans 800 mm		TMA 1Z 200A ES EC	TMA 1Z 240A ES EC	TMA 1Z 275A ES EC	TMA 1Z 325A ES EC	TMA 1Z 375A ES EC	TMA 2Z 450A ES EC
CHILLER PERFORMANCE							
Refrigerant		HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze
Total cooling capacity	kW	200	240	275	325	375	450
Nominal power input	kW	47,4	55,4	62,4	77,5	93,9	102,4
E.E.R.	Coef.	4,22	4,33	4,41	4,19	4,00	4,39
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	6,19	6,45	6,48	6,65	6,70	6,62
Noise Pressure Level	dB(A)	60,00	60,00	60,00	61,00	61,00	63,00
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
Condenser coil type (*2)	Type	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
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	47,4	55,4	62,4	77,5	93,9	102,4
Total running current	A	80,9	93,1	103,9	127,5	153,0	173,4
Total max current	A	221,2	221,2	224,0	226,8	229,6	442,4
Total starting current	A	16,2	16,2	19,0	21,8	24,6	102,9
DIMENSIONS							
Length with cabinet	mm	3210	3210	4510	4510	5810	5810
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2540	2540	2540	2540	2540	2540
Shipping weight	kg	1890	1900	2490	2570	3090	3500
Operating weight	kg	1999	2001	2648	2722	3230	3761
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) AL / AL: Aluminium							
(*3) S&T or BPHE: Shell&Tube or Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA ES with EC fans 800 mm

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA 2Z 500A ES EC	TMA 2Z 550A ES EC	TMA 2Z 650A ES EC	TMA 2Z 700A ES EC	TMA 2Z 750A ES EC	TMA 3Z 825A ES EC	TMA 3Z 900A ES EC	TMA 3Z 975A ES EC	TMA 3Z 1125A ES EC	TMA 4Z 1250A ES EC	TMA 4Z 1400A ES EC
HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze
500	550	650	700	750	825	900	975	1125	1250	1400
114,6	124,7	155,0	181,0	187,7	187,1	206,5	230,8	276,3	294,0	362,0
4,36	4,41	4,19	3,87	4,00	4,41	4,36	4,23	4,07	4,25	3,87
A	A	A	A	A	A	A	A	A	A	A
6,69	6,81	6,65	6,76	6,70	6,80	6,84	6,91	6,94	6,66	6,91
63,00	63,00	64,00	64,00	64,00	65,00	65,00	65,00	65,00	67,00	67,00
10,00	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	Oil Free
2	2	2	2	2	3	3	3	3	4	4
12,0	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	6,0
AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
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	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	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	230-1-50
114,6	124,7	155,0	181,0	187,7	187,1	206,5	230,8	276,3	294,0	362,0
192,0	207,8	255,0	295,4	306,0	311,7	342,1	379,7	450,6	485,2	590,8
442,4	448,0	453,6	453,6	459,2	672,0	674,8	677,6	680,4	907,2	907,2
112,2	122,9	149,3	169,5	177,6	226,8	248,0	274,0	322,2	385,7	464,9
5810	7110	8410	8410	9710	11010	11010	12310	12310	16220 (*4)	16220 (*4)
2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
2540	2540	2540	2540	2540	2540	2540	2540	2540	2540	2540
3510	4110	4690	4710	5500	6180	6250	6780	6850	9080	9110
3765	4357	4930	4944	5912	6592	6655	7177	7236	9561	9579

TMA ES with EC fans 800 mm

Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA ES with EC fans 800 mm		TMA 4Z 1500A ES EC	TMA 6Z 1650A ES EC	TMA 6Z 1800A ES EC	TMA 6Z 1900A ES EC	TMA 6Z 1950A ES EC	TMA 6Z 2100A ES EC
CHILLER PERFORMANCE							
Refrigerant		HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze	HFO-1234ze
Total cooling capacity	kW	1500	1650	1800	1900	1950	2100
Nominal power input	kW	371,9	381,4	422,7	456,2	473,0	543,0
E.E.R.	Coef.	4,03	4,33	4,26	4,16	4,12	3,87
Energy class		A	A	A	A	A	A
E.S.E.E.R.	Coef.	6,90	6,96	6,96	6,95	6,93	6,93
Noise Pressure Level	dB(A)	67,00	68,00	68,00	68,00	68,00	68,00
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°	4	6	6	6	6	6
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
Condenser coil type (*2)	Type	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL	AL / AL
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	371,9	381,4	422,7	456,2	473,0	543,0
Total running current	A	606,4	634,6	698,4	750,8	777,2	886,2
Total max current	A	912,8	1338,4	1344,0	1349,6	1349,6	1360,8
Total starting current	A	478,0	546,9	601,0	645,6	667,6	760,3
DIMENSIONS							
Length with cabinet	mm	18820 (*4)	18820 (*4)	21420 (*4)	21420 (*4)	21420 (*4)	24020 (*4)
Width	mm	2250	2250	2250	2250	2250	2250
Height	mm	2540	2540	2540	2540	2540	2540
Shipping weight	kg	10590	11030	12090	12190	12230	13370
Operating weight	kg	11415	11855	12901	13001	13025	14165
(*1) Oil Free: Centrifugal Oil Free Compressor							
(*2) AL / AL: Aluminium							
(*3) S&T or BPHE: Shell&Tube or Brazed Plate Heat Exchanger							
(*4) Delivered in 2 sections							

TMA ES with EC fans 800 mm



Air cooled chiller with centrifugal compressors, axial fans and Evaporative System for outdoor installation

TMA 6Z 2250A ES EC										
HFO-1234ze										
2250										
552,6										
4,07										
A										
6,83										
68,00										
10,00										
Oil Free										
6										
12,0										
6,0										
AL / AL										
S&T or BPHE										
400-3-50										
230-1-50										
552,6										
901,2										
1360,8										
772,8										
24020 (*4)										
2250										
2540										
13400										
14173										