TBA 1300-3350 F

Air-water chiller with free-cooling

Cooling capacity 317,2 ÷ 1223,6 kW

- **High efficiency also at partial loads**
- **Microchannel coil**
- **Low peak current (only 6 Amps!)**
- **Evaporator with low refrigerant charge**
- **Available also with R513A (XP10) refrigerant**

AERMEC AI

DESCRIPTION

Air-cooled chiller designed to meet air conditioning needs in residential / commercial complexes or industrial applications.
These are outdoor units with oil free centrifugal compressor, axial fans, micro-channel coils, and shell and tube heat exchangers.
The base, the structure and the panels are made of steel treated with polyester paint RAL 9003.

VERSIONS

A High efficiency
E Silenced high efficiency

FEATURES

Operating field

Operation at full load up to 44 °C external air temperature depending on size and version. For further details refer to the selection software/technical documentation.

Units mono or dual-circuit

The units according to the size are mono or dual-circuit, to ensure maximum efficiency both at full load and at partial load.

Oil free centrifugal compressor

Two-stage oil-free centrifugal compressor with magnetic levitation and inverter.
Compressor features:
— Operates without oil as bearings are magnetic levitation type
— Continuous load modulation by varying rpm (from 30% to 100%)
— Low peak currents (only 6 Amps!)

Aluminium microchannel coils

The whole range uses microchannel condenser coils allowing reduction of refrigerant charge but keeping the same high efficiency.

Free-cooling water coils

These units also have a water coil dedicated to free-cooling mode.
Free-cooling offers significant energy saving in applications that require cooling all year round.
As soon as the outside air temperature allows, a valve makes the water flow towards the free-cooling battery which is cooled directly by the air. The compressors are completely shut down, if possible, leading to considerable electrical savings.

A "P" free-cooling plus model with the oversized water battery can be chosen for applications in which a higher free-cooling performance is required.

Integrated hydronic kit

Integrated hydronic kit containing the main hydraulic components; available with various configurations, to obtain a solution that allows you to save money and to facilitate installation.

CONTROL PCO[5]

Units include 1 control board for each circuit.
Microprocessor adjustment, with 7", touch screen keyboard, which allows to navigate intuitively among the various screens, allowing to modify the operating parameters and graphically view the progress of some variables in real time and the ad adjustment includes complete management of the alarms and their log.
Further features:
— Possibility to control two units in a Master-Slave configuration
— The presence of a programmable timer allows functioning time periods and a possible second set-point to be set.
— The temperature control takes place with the integral proportional logic, based on the water output temperature.

CONFIGURATOR

Field		Description
1,2,3		**TBA**
4,5,6,7		**Size** 1300, 1350, 2300, 2325, 2350, 3300, 3320, 3340, 3350
8		**Model**
	F	Free-cooling
	P	Free-cooling plus (1)
9		**Heat recovery**
	°	Without heat recovery
10		**Version**
	A	High efficiency
	E	Silenced high efficiency
11		**Coils / free-cooling coils**
	0	Painted alluminium microchannel / Copper painted aluminium
	R	Copper-copper/Copper-copper
	V	Copper-painted alumimium / Copper-painted alumimium
	°	Alluminium microchannel / Copper - aluminium
12		**Fans**
	K	Inverter plus
13		**Power supply**
	°	400V ~ 3 50Hz with magnet circuit breakers
14,15		**Integrated hydronic kit**
	00	Without hydronic kit
		Kit with n° 1 pump
	PA	Pump A
	PB	Pump B
	PC	Pump C
	PD	Pump D
	PE	Pump E
	PF	Pump F
	PG	Pump G
	PH	Pump H
	PI	Pump I
	PJ	Pump J (2)
		Pump n° 1 pump + stand-by pump
	DA	Pump A + stand-by pump
	DB	Pump B + stand-by pump
	DC	Pump C + stand-by pump
	DD	Pump D + stand-by pump
	DE	Pump E + stand-by pump
	DF	Pump F + stand-by pump
	DG	Pump G + stand-by pump
	DH	Pump H + stand-by pump
	DI	Pump I + stand-by pump
	DJ	Pump J + stand-by pump (2)
		Kit with inverter pump to fixed speed
	IA	Pump A equipped with inverter device to work at fixed speed
	IB	Pump B equipped with inverter device to work at fixed speed
	IC	Pump C equipped with inverter device to work at fixed speedr
	ID	Pump D equipped with inverter device to work at fixed speed
	IE	Pump E equipped with inverter device to work at fixed speed
	IF	Pump F equipped with inverter device to work at fixed speed
	IG	Pump G equipped with inverter device to work at fixed speed
	IH	Pump H equipped with inverter device to work at fixed speed
	II	Pump I equipped with inverter device to work at fixed speed
	IJ	Pump J equipped with inverter device to work at fixed speed (2)
		Kit with n°1 pump + stand-by pump both equipped wih inverter device to work at fixed speed
	JA	Pump A+stand-by pump, both equipped with inverter to work at fixed speed
	JB	Pump B+stand-by pump, both equipped with inverter to work at fixed speed
	JC	Pump C+stand-by pump, both equipped with inverter to work at fixed speed
	JD	Pump D+stand-by pump, both equipped with inverter to work at fixed speed
	JE	Pump E+stand-by pump, both equipped with inverter to work at fixed speed
	JF	Pump F+stand-by pump, both equipped with inverter to work at fixed speed
	JG	Pump G+stand-by pump, both equipped with inverter to work at fixed speed
	JH	Pump H+stand-by pump, both equipped with inverter to work at fixed speed
	JI	Pump I+stand-by pump, both equipped with inverter to work at fixed speed
	JJ	Pump J+stand-by pump, both equipped with inverter to work at fixed speed (2)
		Kit with double pump both equipped with inverter device to work at fixed speed
	KF	Doble pump F with inverter device to work at fixed speed
	KG	Doble pump G with inverter device to work at fixed speed
	KH	Doble pump H with inverter device to work at fixed speed
	KI	Doble pump I with inverter device to work at fixed speed
	KJ	Doble pump J with inverter device to work at fixed speed (2)
		Kit with double pumps
	TF	Double pump F
	TG	Double pump G
	TH	Double pump H
	TI	Double pump I
	TJ	Double pump J (2)
16		**Refrigerant gas**
	G	R513A (XP10)
	°	R134a

(1) The Free-Cooling Plus "P" models are only compatible with"°" ed "0"
(2) For all configurations including pump J please contact the factory.

ACCESSORIES

AER485P1: RS-485 interface for supervising systems with MODBUS protocol. 1 accessory is provided for each unit control board.
AERBAC-ONE: Ethernet communication interface for Bacnet/IP and Modbus TCP/IP protocols, HTTPS protocol for web interface, encrypted communication protocols and access credential management in accordance with the latest standards. One accessory is provided for each unit control board.
AERBACP: Ethernet communication interface for Bacnet/IP and Modbus TCP/IP protocols. 1 accessory is provided for each unit control board.
AERNET: The device remotely controls, manages and remotely monitors a chiller/heat pump using a PC, smartphone or table via a Cloud connection. AERNET acts as Master while each connected unit is configured as Slave up to a maximum of 6 control cards. The connection is made via cable and/or USB key. Wi-Fi connectivity is not available. It is also possible to save a log file with all the data from the connected units to your terminal with a simple click for possible post-analysis. With the purchase of the Router, the Customer benefits from a 24-month free period during which he can use the Aernet Service at no additional cost. At the end of this initial period, the Service may be renewed by subscribing to a 1, 2 or 3 year subscription. For further details on costs and renewal methods, please contact our office or consult the technical documentation available on our website. www.aermec.com.
MULTICHILLER-EVO: Control, switch-on and switch-off system of the single chillers where multiple units are installed in parallel (max. no. 9), always ensuring constant flow rate to the evaporators.
AVX: Spring anti-vibration supports.

FACTORY FITTED ACCESSORIES

GP_T: Anti-intrusion grid kit

ACCESSORIES COMPATIBILITY

Model	Ver	1300	1350	2300	2325	2350	3300	3320	3340	3350
AER485P1	A,E	•	•	•		•	•		•	•
AER485P1 x no. 2	A,E				•			•		
AERBAC-ONE	A,E	•	•	•		•	•		•	•
AERBAC-ONE x no. 2	A,E				•			•		
AERBACP	A,E	•	•	•		•	•		•	•
AERBACP x no. 2	A,E				•			•		
AERNET	A,E	•	•	•	•	•	•	•	•	•
MULTICHILLER-EVO	A,E	•	•	•	•	•	•	•	•	•

Antivibration

Ver	1300	1350	2300	2325	2350	3300	3320	3340	3350
A, E	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)

(1) Contact us.

Anti-intrusion grid

Ver	1300	1350	2300	2325	2350	3300	3320	3340	3350
A, E	GP3T	GP4T	GP6T	GP7T	GP8T	GP9T	GP10T	GP11T	GP11T

A grey background indicates the accessory must be assembled in the factory

PERFORMANCE SPECIFICATIONS

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Model: F											
Cooling performance chiller operation (1)											
Cooling capacity	A,E	kW	317,2	419,2	634,5	736,4	838,4	934,7	1065,0	1149,0	1223,6
Input power	A,E	kW	91,6	121,8	182,8	214,3	244,4	267,3	311,2	337,8	365,9
Cooling total input current	A,E	A	147,50	198,30	295,00	345,80	396,70	427,50	498,30	559,20	604,20
EER	A,E	W/W	3,46	3,44	3,47	3,44	3,43	3,50	3,42	3,40	3,34
Water flow rate system side	A,E	l/h	54.505	72.025	109.011	126.530	144.050	160.596	182.983	197.414	210.235
Pressure drop system side	A,E	kPa	65	32	70	54	45	69	72	66	52
Cooling performances with free-cooling (2)											
Cooling capacity	A,E	kW	241,0	320,6	482,0	561,7	641,1	719,6	807,2	878,6	895,3
Input power	A,E	kW	9,9	13,2	19,8	23,1	26,4	29,6	32,9	36,2	36,2
Free cooling total input current	A,E	A	15,9	21,5	31,9	37,2	42,8	47,4	52,8	60,0	59,8
EER	A,E	W/W	24,38	24,33	24,38	24,36	24,32	24,27	24,50	24,25	24,70
Water flow rate system side	A,E	l/h	54.505	72.025	109.011	126.530	144.050	160.596	182.983	197.414	210.235
Pressure drop system side	A,E	kPa	118	78	130	103	99	127	138	117	109

(1) System side water heat exchanger 12 °C/7 °C; External air 35 °C; Chiller operation 100%; Free-cooling 0%
(2) Acqua scambiatore lato utenza 12 °C / * °C ; Aria esterna 2 °C

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Model: P											
Cooling performance chiller operation (1)											
Cooling capacity	A,E	kW	317,2	419,2	634,5	736,4	838,4	934,7	1065,0	1149,0	1206,6
Input power	A,E	kW	93,1	123,9	185,8	217,9	248,6	271,6	316,4	343,6	366,0
Cooling total input current	A,E	A	147,90	198,80	295,70	346,70	397,60	428,60	499,60	560,50	605,50
EER	A,E	W/W	3,41	3,38	3,42	3,38	3,37	3,44	3,37	3,34	3,30
Water flow rate system side	A,E	l/h	54.505	72.025	109.011	126.530	144.050	160.596	182.983	197.414	207.315
Pressure drop system side	A,E	kPa	65	32	70	54	45	69	72	66	50
Cooling performances with free-cooling (2)											
Cooling capacity	A,E	kW	259,7	344,9	519,4	604,6	689,9	773,0	870,1	945,2	968,9
Input power	A,E	kW	10,1	13,4	20,2	23,5	26,9	30,3	33,6	37,0	37,0
Free cooling total input current	A,E	A	16,0	21,6	32,1	37,4	43,0	47,7	53,1	60,3	61,2
EER	A,E	W/W	25,75	25,65	25,75	25,69	25,65	25,55	25,88	25,56	26,20
Water flow rate system side	A,E	l/h	54.505	72.025	109.011	126.530	144.050	160.596	182.983	197.414	207.315
Pressure drop system side	A,E	kPa	114	74	126	99	95	123	134	113	102

(1) System side water heat exchanger 12 °C/7 °C; External air 35 °C; Chiller operation 100%; Free-cooling 0%
(2) Acqua scambiatore lato utenza 12 °C / * °C ; Aria esterna 2 °C

ENERGY INDICES (REG. 2016/2281 EU)

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Model: F											
SEER - 12/7 (EN14825: 2018)											
SEER	A,E	W/W	5,49	5,43	5,80	5,71	5,91	6,20	5,97	6,05	5,90
Seasonal efficiency	A,E	%	216,50	214,20	228,90	225,50	233,20	244,80	235,60	239,10	232,90
Water Regulation (1)	A,E	type	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO
SEER - 23/18 (EN14825: 2018)											
SEER	A,E	W/W	-	7,29	-	-	7,44	-	-	7,58	7,41
Seasonal efficiency	A,E	%	-	288,70	-	-	294,50	-	-	300,20	293,40
Water Regulation (1)	A,E	type	-	VW/FO	-	-	VW/FO	-	-	VW/FO	VW/FO
SEPR - (EN 14825: 2018)											
SEPR	A,E	W/W	9,51	9,10	9,69	8,99	9,22	9,92	10,08	9,82	9,29
Water Regulation (1)	A,E	type	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO

(1) VW/VO - variable water flow rate/variable outlet temperature; FW/VO - fixed water flow rate/variable outlet temperature; VW/FO - variable water flow rate/fixed outlet temperature; FW/FO - fixed water flow rate/fixed outlet temperature.

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Model: P											
SEER - 12/7 (EN14825: 2018)											
SEER	A,E	W/W	5,29	5,34	5,71	5,63	5,81	6,12	5,80	5,92	5,84
Seasonal efficiency	A,E	%	208,70	210,50	225,50	222,30	229,20	241,80	229,10	233,60	230,40
Water Regulation (1)	A,E	type	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO
SEER - 23/18 (EN14825: 2018)											
SEER	A,E	W/W	-	7,17	-	-	7,31	-	-	7,41	7,33
Seasonal efficiency	A,E	%	-	283,80	-	-	289,50	-	-	293,50	290,30
Water Regulation (1)	A,E	type	-	VW/FO	-	-	VW/FO	-	-	VW/FO	VW/FO
SEPR - (EN 14825: 2018)											
SEPR	A,E	W/W	9,80	9,03	9,75	9,26	9,36	10,11	9,85	9,97	9,59
Water Regulation (1)	A,E	type	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO

(1) VW/VO - variable water flow rate/variable outlet temperature; FW/VO - fixed water flow rate/variable outlet temperature; VW/FO - variable water flow rate/fixed outlet temperature; FW/FO - fixed water flow rate/fixed outlet temperature.

ELECTRIC DATA

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Electric data											
Maximum current (FLA)	A,E	A	177,0	252,0	353,0	428,0	504,0	529,0	604,0	745,0	745,0
Peak current (LRA)	A,E	A	38,0	48,0	214,0	289,0	300,0	390,0	465,0	541,0	541,0

GENERAL TECHNICAL DATA

Refrigerant circuit

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Compressor											
Type	A,E	type					Centrifugal				
Compressor regulation	A,E	type					Inverter				
Number	A,E	no.	1	1	2	2	2	3	3	3	3
Circuits	A,E	no.	1	1	1	2	1	1	2	1	1
Refrigerant	A,E	type					R134a				
Total refrigerant charge (1)	A,E	kg	81,50	165,70	163,00	253,80	295,80	275,20	317,20	327,90	397,90
Potential global heating (GWP)	A,E						1430				
Equivalent CO_2	A,E	tCO_2eq	116,55	236,95	233,09	362,93	422,99	393,54	453,60	468,90	569,00

(1) The load indicated in the table is an estimated and preliminary value. The final value of the refrigerant load is indicated on the unit's technical label. For further information contact the office.

System side heat exchanger

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
System side heat exchanger											
Type	A,E	type					Shell and tube				
Number	A,E	no.	1	1	1	1	1	1	1	1	1
Hydraulic connections											
Connections (in/out)	A,E	Type					Grooved joints				
Size (in)	A,E	Ø	3″	4″	4″	5″	5″	5″	5″	6″	6″
Size (out)	A,E	Ø	3″	4″	4″	5″	5″	5″	5″	6″	6″

Fans

General data - fans (F model)

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Fan											
Type	A,E	type					Axial				
Fan motor	A,E	type					Inverter				
Number	A,E	no.	6	8	12	14	16	18	20	22	22
Air flow rate	A,E	m^3/h	105810	141080	211610	246950	282140	317540	352700	387990	387940

General data - fans (P model)

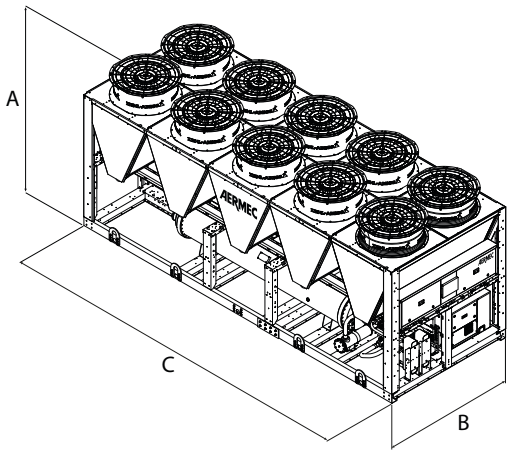
Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Fan											
Type	A,E	type					Axial				
Fan motor	A,E	type					Inverter				
Number	A,E	no.	6	8	12	14	16	18	20	22	22
Air flow rate	A,E	m^3/h	100240	133650	200480	233890	267300	300710	334100	367540	367540

Sound data

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Sound data calculated in cooling mode (1)											
Sound power level	A	dB(A)	88,3	90,0	91,3	92,8	93,1	93,1	94,1	95,5	95,5
	E	dB(A)	82,3	84,0	85,3	86,8	87,1	87,1	88,1	89,5	89,5
Sound pressure level (10 m)	A	dB(A)	56,1	57,6	58,7	60,0	60,2	60,1	61,0	62,3	62,3
	E	dB(A)	50,1	51,6	52,7	54,0	54,2	54,1	55,0	56,3	56,3

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification. Sound pressure (cold functioning) measured in free field, 10m away from the unit external surface (in compliance with UNI EN ISO 3744).

DIMENSIONS



Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Integrated hydronic kit: 00, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, KF, KG, KH, KI, KJ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, TF, TG, TH, TI, TJ											
Dimensions and weights											
A	A,E	mm	2520	2520	2520	2520	2520	2520	2520	2520	2520
B	A,E	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200
C	A,E	mm	3570	4760	7140	8330	9520	10710	11900	13090	13090

Model F

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Integrated hydronic kit: 00											
Weights											
Empty weight	A	kg	3.290	4.330	5.860	7.050	8.020	8.490	9.820	10.310	10.670
	E	kg	3.370	4.440	6.030	7.250	8.240	8.740	10.100	10.610	10.970
Weight functioning	A	kg	3.570	4.720	6.380	7.680	8.790	9.270	10.720	11.270	11.710
	E	kg	3.650	4.830	6.550	7.880	9.010	9.520	11.000	11.570	12.010

Model P

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
Integrated hydronic kit: 00											
Weights											
Empty weight	A	kg	3.380	4.460	6.050	7.270	8.270	8.780	10.140	10.650	11.020
	E	kg	3.470	4.570	6.220	7.470	8.490	9.020	10.410	10.960	11.320
Weight functioning	A	kg	3.700	4.910	6.650	8.000	9.150	9.680	11.180	11.760	12.220
	E	kg	3.790	5.020	6.820	8.200	9.370	9.920	11.450	12.070	12.520

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