

# 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



### 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 43°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<sup>5</sup>

##### 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	<b>Size</b> 1300, 1350, 2300, 2325, 2350, 3300, 3320, 3340, 3350
8	<b>Model</b>
F	Free-cooling
P	Free-cooling plus (1)
9	<b>Heat recovery</b>
°	Without heat recovery
10	<b>Version</b>
A	High efficiency
E	Silenced high efficiency
11	<b>Coils / free-cooling coils</b>
O	Painted aluminium microchannel / Copper painted aluminium
R	Copper-copper/Copper-copper
S	Copper-Tinned copper / Copper -Tinned copper
V	Copper-painted aluminium / Copper-painted aluminium
°	Alluminium microchannel / Copper - aluminium
12	<b>Fans</b>
J	Inverter
13	<b>Power supply</b>
°	400V ~ 3 50Hz with magnet circuit breakers
14,15	<b>Integrated hydronic kit</b>
00	Without hydronic kit
	<b>Kit with n° 1 pump</b>
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)
	<b>Pump n° 1 pump + stand-by pump</b>
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

## ACCESSORIES

**AER485P1:** RS-485 interface for supervising systems with MODBUS protocol. 1 accessory is provided for each unit control board.

**AERBACP:** Ethernet communication interface for Bacnet/IP, Modbus TCP/IP, SNMP protocols. 1 accessory is provided for each unit control board.

**AERNET:** The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 control boards). Also, with a simple click is possible to save

## ACCESSORIES COMPATIBILITY

Model	Ver	1300	1350	2300	2325	2350	3300	3320	3340	3350
AER485P1	A,E	•	•	•	•	•	•	•	•	•
AER485P1 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.

Field	Description
DH	Pump H + stand-by pump
DI	Pump I + stand-by pump
DJ	Pump J + stand-by pump (2)
	<b>Kit with inverter pump to fixed speed</b>
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 speed
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)
	<b>Kit with n°1 pump + stand-by pump both equipped with inverter device to work at fixed speed</b>
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)
	<b>Kit with double pump both equipped with inverter device to work at fixed speed</b>
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)
	<b>Kit with double pumps</b>
TF	Double pump F
TG	Double pump G
TH	Double pump H
TI	Double pump I
TJ	Double pump J (2)
16	<b>Refrigerant gas</b>
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.

a log file with all the connected unit datas in the personal terminal for post analysis.

**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

## 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
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### 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	147,5	198,3	295,0	345,8	396,7	427,5	498,3	559,2	604,2
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	54505	72025	109011	126530	144050	160596	182983	197414	210235
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	297,2	395,5	594,4	692,7	791,1	888,3	994,1	1085,0	1100,1
Input power	A,E	kW	11,3	15,0	22,5	26,3	30,0	33,8	37,5	41,3	41,3
Free cooling total input current	A,E	A	17,5	23,3	35,0	40,8	46,7	52,5	58,3	64,2	64,2
EER	A,E	W/W	26,41	26,36	26,41	26,38	26,36	26,31	26,50	26,30	26,66
Water flow rate system side	A,E	l/h	54505	72025	109011	126530	144050	160596	182983	197414	210235
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
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### 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	147,9	198,8	295,7	346,7	397,6	428,6	499,6	560,5	605,5
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	54505	72025	109011	126530	144050	160596	182983	197414	207315
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	319,4	425,1	638,8	744,5	850,2	954,8	1068,2	1166,2	1181,8
Input power	A,E	kW	11,5	15,3	23,0	26,8	30,7	34,5	38,4	42,2	42,2
Free cooling total input current	A,E	A	17,9	18,8	35,7	36,7	37,6	53,6	44,6	65,5	80,5
EER	A,E	W/W	27,76	27,71	27,76	27,73	27,71	27,66	27,85	27,64	28,01
Water flow rate system side	A,E	l/h	54505	72025	109011	126530	144050	160596	182983	197414	207315
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
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### Model: F

#### SEER - (EN14825:2018) 12/7 with inverter fans (1)

SEER	A,E	W/W	5,06	5,14	5,21	5,17	5,30	5,40	5,32	5,26	5,23
Seasonal efficiency	A,E	%	199,3%	202,7%	205,5%	203,6%	208,8%	212,8%	209,6%	207,2%	206,1%

#### SEPR - (EN14825:2018) High temperature with inverter fans (2)

SEPR	A,E	W/W	8,65	8,51	8,79	8,32	8,53	9,04	9,34	8,89	8,58
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(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Calculation performed with FIXED water flow rate.

Size	1300	1350	2300	2325	2350	3300	3320	3340	3350
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### Model: P

#### SEER - (EN14825:2018) 12/7 with inverter fans (1)

SEER	A,E	W/W	4,98	5,06	5,14	5,09	5,21	5,32	5,11	5,18	5,17
Seasonal efficiency	A,E	%	196,3%	199,4%	202,5%	200,4%	205,5%	209,7%	201,2%	204,0%	203,7%

#### SEPR - (EN14825:2018) High temperature with inverter fans (2)

SEPR	A,E	W/W	8,91	8,45	8,88	8,53	8,65	9,18	8,99	9,06	8,81
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(1) Calculation performed with FIXED water flow rate and VARIABLE outlet temperature.

(2) Calculation performed with FIXED water flow rate.

## ELECTRIC DATA

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
<b>Electric data</b>											
Maximum current (FLA)	A,E	A	165,0	249,0	329,0	413,0	498,0	493,0	577,0	737,0	737,0
Peak current (LRA)	A,E	A	36,0	45,0	210,0	305,0	315,0	384,0	479,0	575,0	575,0

## GENERAL TECHNICAL DATA

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
<b>Compressor</b>											
Type	A,E	type									
Compressor regulation	A,E	Type									
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									
Refrigerant charge (1)	A,E	kg	81,5	165,7	163,0	253,8	295,8	275,2	317,2	327,9	397,9
<b>System side heat exchanger</b>											
Type	A,E	type									
Number	A,E	no.	1	1	1	1	1	1	1	1	1
<b>Hydraulic connections</b>											
Connections (in/out)	A,E	Type									
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"
<b>Sound data calculated in cooling mode (2)</b>											
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) 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.

(2) 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).

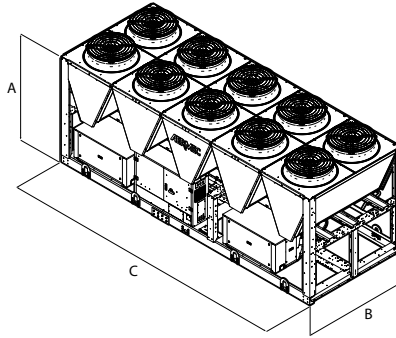
### General data - fans (F model)

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
<b>Fan</b>											
Type	A,E	type									
Fan motor	A,E	type									
Number	A,E	no.	6	8	12	14	16	18	20	22	22
Air flow rate	A,E	m <sup>3</sup> /h	93180	124240	186360	217420	248480	279540	310600	341660	341660

### General data - fans (P model)

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
<b>Fan</b>											
Type	A,E	type									
Fan motor	A,E	type									
Number	A,E	no.	6	8	12	14	16	18	20	22	22
Air flow rate	A,E	m <sup>3</sup> /h	88680	118240	177360	206920	236480	266040	295600	325160	325160

## DIMENSIONS



Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
<b>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</b>											
<b>Dimensions and weights</b>											
A	A,E	mm	2450	2450	2450	2450	2450	2450	2450	2450	2450
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
<b>Integrated hydronic kit: 00</b>											
<b>Weights</b>											
Empty weight	A	kg	3290	4330	5860	7050	8020	8490	9820	10310	10670
	E	kg	3370	4440	6030	7250	8240	8740	10100	10610	10970
Weight functioning	A	kg	3570	4720	6380	7680	8790	9270	10720	11270	11710
	E	kg	3650	4830	6550	7880	9010	9520	11000	11570	12010

### Model P

Size			1300	1350	2300	2325	2350	3300	3320	3340	3350
<b>Integrated hydronic kit: 00</b>											
<b>Weights</b>											
Empty weight	A	kg	3380	4460	6050	7270	8270	8780	10140	10650	11020
	E	kg	3470	4570	6220	7470	8490	9020	10410	10960	11320
Weight functioning	A	kg	3700	4910	6650	8000	9150	9680	11180	11760	12220
	E	kg	3790	5020	6820	8200	9370	9920	11450	12070	12520

Aermec reserves the right to make any modifications deemed necessary.  
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**Aermec S.p.A.**  
Via Roma, 996 - 37040 Bevilacqua (VR) - Italia  
Tel. 0442633111 - Telefax 044293577  
www.aermec.com