

# NSMJ 1251-6102

## Air-water chiller

Cooling capacity 293,1 ÷ 1416,1 kW



- **Microchannel coil**
- **Operation up to 50 °C outdoor air**
- **High efficiency also at partial loads**
- **Night mode**



### DESCRIPTION

Air-cooled outdoor chiller designed to meet air conditioning needs in residential/commercial complexes or industrial applications. These are outdoor units with inverter screw compressors, axial fans, micro-channel coils, and shell and tube heat exchangers. In the unit with desuperheater, it is also possible to produce free-hot water. The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

### VERSIONS

- A High efficiency
- E Silenced high efficiency

### FEATURES

#### Operating field

Operation at full load up to 50 °C external air temperature depending on size and version. For further details refer to the selection software/technical documentation.

#### Unit with 1 / 2 cooling circuits

Unit with 1–2 refrigerant circuits. The units, depending on the size, are single-circuit or double-circuit and are equipped with inverter compressors to ensure maximum efficiency both at full load and partial loads.

#### Aluminium microchannel coils

The microchannel condensing aluminum coils ensure high levels of efficiency, reduced quantities of refrigerant and lower unit weight. The treatment "O" available as configurator it ensures high resistance to corrosion even in the most aggressive environments.

#### Condensation control temperature

Fitted as standard with a device for electronic condensation control so that the unit can work even with low temperatures, adapting the air flow rate to the actual system request in order to reduce consumption.

#### R513A (XP10) refrigerant gas

Thanks to the R513A (XP10) refrigerant, the environmental impact of the units is significantly reduced. Combining a reduced refrigerant load with a low global warming potential (GWP), these units boast low equivalent CO<sub>2</sub> values.

### Electronic expansion valve

The possibility to use electronic expansion valve, offers significant benefits, especially when the chiller is working with partial loads, increasing the energy efficiency of the unit.

### Integrated hydronic kit

Integrated hydronic kit containing the main hydraulic components; available with various configurations with one or two pumps, high or low head, to obtain a solution that allows you to save money and to facilitate installation.

### Low noise version

**Silenced versions feature a special compressor jacket which ensures a further noise reduction of approximately 4 dB.**

### CONTROL PCO<sup>5</sup>

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.

- 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.
- **Night mode:** only in the **non-silenced** versions is it possible to set a silenced operating mode, which is useful for example at night for greater acoustic comfort but always guarantees performance even at peak load times.

### 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](http://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 .:** Anti-intrusion grid kit

**KRS:** Electric heater for the heat exchanger

**XLA:** This kit allows to extend the working range of the unit from -10 °C to -20 °C ambient temperature, thanks to an additional electric heater and a special insulating material for the heat exchanger.

### ACCESSORIES COMPATIBILITY

Model	Ver	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
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	*	*	*	*	*	*	*	*	*	*	*	*	*

x \_ indicates the quantity to buy

#### Antivibration

Ver	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
<b>Integrated hydronic kit: 00, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, TF, TG, TH, TI, TJ</b>													
A, E	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)	AVX. (1)

(1) Contact us.

#### Anti-intrusion grid kit

Ver	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
A, E	GP4V	GP4V	GP5V	GP5V	GP6V	GP7V	GP8V	GP9V	GP10V	GP11V	GP11V	GP11V	GP11V

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

#### Heater exchangers

Ver	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
A, E	KRS22	KRS23	KRS23	KRS23	KRS23	KRS24	KRS24	KRS24	KRS24	KRS24	KRS24	KRS24	KRS24

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

#### Kit for low temperature

Ver	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
<b>Fans: K</b>													
A, E	XLA	XLA	XLA	XLA	XLA	XLA	XLA	XLA	XLA	XLA	XLA	XLA	XLA

### CONFIGURATOR

Field	Description
<b>1,2,3,4</b>	<b>NSMJ</b>
<b>5,6,7,8</b>	<b>Size</b> 1251, 1601, 1801, 2352, 2802, 3202, 3802, 4102, 4402, 4802, 5202, 5702, 6102
<b>9</b>	<b>Model</b>
°	Cooling only
<b>10</b>	<b>Heat recovery</b>
D	With desuperheater (1)
°	Without heat recovery
<b>11</b>	<b>Version</b>
A	High efficiency
E	Silenced high efficiency
<b>12</b>	<b>Coils</b>
I	Copper-aluminium
O	Coated aluminium microchannel
R	Copper pipes-copper fins
V	Copper pipes-Coated aluminium fins
°	Aluminium microchannel
<b>13</b>	<b>Fans</b>
K	Inverter plus
°	Standard with DCPX
<b>14</b>	<b>Power supply</b>
°	400V ~ 3 50Hz with fuses
<b>15,16</b>	<b>Integrated hydronic kit</b>
00	Without hydronic kit
PA	Pump A
PB	Pump B

Field	Description
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)
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)
TF	Double pump F
TG	Double pump G
TH	Double pump H
TI	Double pump I
TJ	Double pump J

(1) Minimum water temperature of 35 °C must always be ensured at heat exchanger inlet if working with low temperatures of water produced in the primary circuit.

(2) For all configurations including pump J please contact the factory.

## PERFORMANCE SPECIFICATIONS

### NSMJ - A/E

Size	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102		
<b>Fans: K</b>															
<b>Cooling performance 12 °C / 7 °C (1)</b>															
Cooling capacity	A,E	kW	299,8	394,9	474,0	609,2	708,1	794,6	876,2	949,7	1036,0	1159,9	1253,3	1334,0	1416,2
Input power	A,E	kW	90,1	118,2	146,2	187,8	219,2	242,8	272,3	300,5	314,1	358,6	410,3	436,6	497,7
Cooling total input current	A,E	A	143,90	189,40	231,00	312,60	358,20	394,20	438,90	480,80	509,90	582,80	655,20	707,40	793,90
EER	A,E	W/W	3,33	3,34	3,24	3,24	3,23	3,27	3,22	3,16	3,30	3,23	3,05	3,06	2,85
Water flow rate system side	A,E	l/h	51.598	67.906	81.513	104.750	121.732	136.609	150.646	163.292	178.121	199.409	215.428	229.337	243.450
Pressure drop system side	A,E	kPa	68	28	41	31	27	29	35	49	57	42	27	56	35

(1) Data EN 14511:2022; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C

Size	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102		
<b>Fans: °</b>															
<b>Cooling performance 12 °C / 7 °C (1)</b>															
Cooling capacity	A,E	kW	293,1	384,8	461,6	583,3	678,3	761,3	840,0	911,4	1000,3	1117,2	1204,6	1277,5	1351,4
Input power	A,E	kW	93,3	122,2	151,4	195,1	226,6	249,8	280,6	309,0	325,2	371,3	425,8	453,4	516,2
Cooling total input current	A,E	A	157,20	204,00	249,50	328,50	374,90	411,30	459,00	502,30	536,60	612,90	689,10	744,50	832,90
EER	A,E	W/W	3,14	3,15	3,05	2,99	2,99	3,05	2,99	2,95	3,08	3,01	2,83	2,82	2,62
Water flow rate system side	A,E	l/h	50.437	66.180	79.378	100.283	116.610	130.873	144.418	156.708	171.985	192.062	207.062	219.629	232.300
Pressure drop system side	A,E	kPa	65	27	38	28	25	27	32	45	53	39	25	51	32

(1) Data EN 14511:2022; Heat exchanger water (services side) 12°C / 7°C; outside air 35°C

## ENERGY INDICES (REG. 2016/2281 EU)

### Energy index data

Size	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102		
<b>Fans: K</b>															
<b>SEER - 12/7 (EN14825: 2018)</b>															
SEER	A,E	W/W	5,35	5,10	5,07	5,36	5,23	5,29	5,25	5,21	5,33	5,31	5,20	5,31	5,18
Seasonal efficiency	A,E	%	210,85	201,15	199,84	211,28	206,28	208,74	206,96	205,51	210,29	209,31	205,10	209,29	204,20
Water Regulation (1)	A,E	type	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO
<b>SEER - 23/18 (EN14825: 2018)</b>															
SEER	A,E	W/W	6,78	6,42	6,22	6,63	6,52	6,59	6,44	6,37	6,54	6,47	6,31	6,35	6,15
Seasonal efficiency	A,E	%	268,37	253,86	245,74	262,01	257,82	260,77	254,54	251,71	258,43	255,83	249,60	250,95	243,12
Water Regulation (1)	A,E	type	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO
<b>SEPR - (EN 14825: 2018)</b>															
SEPR	A,E	W/W	7,40	6,94	6,82	7,55	7,31	7,35	7,31	7,17	7,43	7,28	7,01	7,14	6,89
Water Regulation (1)	A,E	type	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/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			1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
<b>Fans: °</b>															
<b>SEER - 12/7 (EN14825: 2018)</b>															
SEER	A,E	W/W	5,07	5,03	4,98	4,93	4,98	5,04	5,00	4,96	5,05	5,01	5,03	5,03	4,97
Seasonal efficiency	A,E	%	199,65	198,30	196,05	194,10	196,34	198,62	196,81	195,31	198,96	197,55	198,24	198,11	195,73
Water Regulation (1)	A,E	type	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO	VW/VO
<b>SEER - 23/18 (EN14825: 2018)</b>															
SEER	A,E	W/W	6,43	6,32	6,11	6,02	6,13	6,24	6,07	6,00	6,12	6,05	6,02	5,93	5,83
Seasonal efficiency	A,E	%	254,17	249,67	241,22	237,70	242,28	246,41	239,60	237,18	242,00	239,08	237,98	234,10	230,31
Water Regulation (1)	A,E	type	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO	VW/FO
<b>SEPR - (EN 14825: 2018)</b>															
SEPR	A,E	W/W	7,00	6,84	6,74	6,71	6,77	6,80	6,77	6,66	6,84	6,74	6,70	6,60	6,46
Water Regulation (1)	A,E	type	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/FO	FW/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			1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
<b>Fans: K</b>															
<b>Electric data</b>															
Maximum current (FLA)	A,E	A	261,6	301,6	392,0	492,0	582,4	592,8	763,2	773,6	944,0	954,4	954,4	1.094,4	1.094,4
Peak current (LRA)	A,E	A	61,6	61,6	72,0	292,0	342,4	352,8	443,2	453,6	544,0	554,4	554,4	624,4	624,4
<b>Fans: °</b>															
<b>Electric data</b>															
Maximum current (FLA)	A,E	A	251,2	291,2	379,0	479,0	566,8	574,6	742,4	750,2	918,0	925,8	925,8	1.065,8	1.065,8
Peak current (LRA)	A,E	A	51,2	51,2	59,0	279,0	326,8	334,6	422,4	430,2	518,0	525,8	525,8	595,8	595,8

## GENERAL TECHNICAL DATA

### Refrigerant circuit

Size			1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
<b>Fans: K, °</b>															
<b>Compressor</b>															
Type	A,E	type	Screw												
Compressor regulation	A,E	Type	Inverter												
Number	A,E	no.	1	1	1	2	2	2	2	2	2	2	2	2	2
Circuits	A,E	no.	1	1	1	2	2	2	2	2	2	2	2	2	2
Refrigerant	A,E	type	R513A												
Total refrigerant charge (1)	A,E	kg	28,00	28,00	30,00	78,00	106,00	104,00	122,00	136,00	136,00	178,00	178,00	188,00	188,00
Potential global heating (GWP)	A,E		631												
Equivalent CO <sub>2</sub>	A,E	tCO <sub>2</sub> eq	17,70	17,70	18,90	49,20	66,90	65,60	77,00	85,80	85,80	112,30	112,30	118,60	118,60

(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			1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
<b>Fans: K, °</b>															
<b>System side heat exchanger</b>															
Type	A,E	type	Shell and tube												
Number	A,E	no.	1	1	1	1	1	1	1	1	1	1	1	1	1
Connections (in/out)	A,E	Type	Grooved joints												
Sizes (in/out)	A,E	Ø	5"	6"	6"	6"	6"	8"	8"	8"	8"	10"	10"	10"	10"

### Fans data

Size			1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
<b>Fans: K</b>															
<b>Fan</b>															
Type	A,E	type	Axial												
Fan motor	A,E	type	Inverter												
Number	A,E	no.	8	8	10	10	12	14	16	18	20	22	22	22	22
Air flow rate	A,E	m <sup>3</sup> /h	138.854	138.854	173.568	204.264	245.117	285.970	326.823	367.676	408.529	449.382	449.382	449.382	449.382
<b>Fans: °</b>															
<b>Fan</b>															
Type	A,E	type	Axial												
Fan motor	A,E	type	On-Off with DCPX												
Number	A,E	no.	8	8	10	10	12	14	16	18	20	22	22	22	22
Air flow rate	A,E	m <sup>3</sup> /h	122.738	122.738	153.422	153.580	184.296	215.012	245.729	276.445	307.161	337.877	337.877	337.877	337.877

## Sound data

Size	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
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### Fans: K

#### Sound data calculated in cooling mode (1)

Sound power level	A	dB(A)	96,7	97,9	98,1	99,4	100,0	100,9	100,9	101,0	102,1	103,0	103,8	103,8
	E	dB(A)	92,3	96,0	96,1	94,7	97,2	98,1	98,2	98,6	99,7	100,0	101,0	101,0
Sound pressure level (10 m)	A	dB(A)	64,3	65,5	65,6	66,8	67,4	68,1	68,0	68,0	69,0	69,7	70,5	70,5
	E	dB(A)	59,9	63,6	63,6	62,1	64,6	65,3	65,3	65,6	66,6	66,7	67,7	67,7

(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).

Size	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
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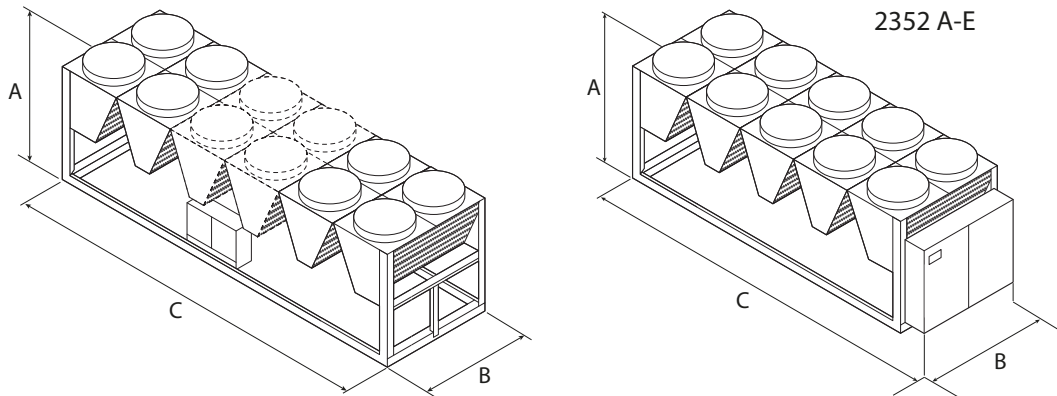
### Fans: °

#### Sound data calculated in cooling mode (1)

Sound power level	A	dB(A)	97,1	98,2	98,5	99,7	100,2	101,2	101,2	101,3	102,3	103,2	104,0	104,0
	E	dB(A)	92,4	95,7	95,9	94,6	96,8	97,8	97,9	98,4	99,3	99,6	100,6	100,6
Sound pressure level (10 m)	A	dB(A)	64,8	65,9	66,0	67,1	67,6	68,4	68,3	68,3	69,2	70,0	70,8	70,8
	E	dB(A)	60,0	63,4	63,4	62,0	64,2	65,0	65,0	65,3	66,2	66,4	67,4	67,4

(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	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
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### Fans: K

#### Dimensions and weights

A	A,E	mm	2.520	2.520	2.520	2.520	2.520	2.520	2.520	2.520	2.520	2.520	2.520
B	A,E	mm	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200
C	A,E	mm	4.760	4.760	5.950	6.500	7.140	8.330	9.520	10.710	11.900	13.090	13.090

Size	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
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### Fans: °

#### Dimensions and weights

A	A,E	mm	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450
B	A,E	mm	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200
C	A,E	mm	4.760	4.760	5.950	6.500	7.140	8.330	9.520	10.710	11.900	13.090	13.090

Size	1251	1601	1801	2352	2802	3202	3802	4102	4402	4802	5202	5702	6102
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### Integrated hydronic kit: 00

#### Weights

Empty weight	A	kg	3.831	4.240	4.656	6.203	7.108	7.431	8.733	9.564	9.659	11.135	11.331	11.329
	E	kg	4.133	4.542	4.958	6.806	7.711	8.034	9.337	10.168	10.262	11.974	12.170	12.168
Weight functioning	A	kg	3.911	4.494	4.910	6.524	7.418	7.718	9.263	10.082	10.176	12.067	12.263	12.246
	E	kg	4.213	4.796	5.212	7.128	8.021	8.322	9.866	10.685	10.779	12.906	13.102	13.085

Aermec reserves the right to make any modifications deemed necessary. All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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