AERMEC

NEW

NS FREECOOLING

AIR/WATER chillers
featuring axial fans and a cooling capacity from 272 to 1554 kW
Free-cooling capacity from 280 to 1510 kW
screw compressors

R134a

Max. working temperature 46 °C
Available with pumping unit

Features

- R134a refrigerant
- High efficiency even at part loads
- Screw compressors with 40-100% stepless capacity control (25-100% with an electronic valve), with soundproofing enclosure as standard
- Tubular band exchanger optimised for R134a gas
- Electronic expansion valve as standard in models 5002 to 5702
- Three-way valve positioned on the water side of the free-cooling circuit to pass the water over the free-cooling batteries
- Modular microprocessor control with multilanguage user interface
- Extremely robust structure coated with rustproof polyester paint
- Available in 32 different sizes
- Available versions: High Efficiency [A], Low-noise High Efficiency [E]
- Optional partial heat recovery
- Optional pumping unit (single pump or single and reserve pump with two 25-litre expansion tanks)
- Option of larger or inverter fans with available static pressure
- Batteries have aluminium, pre-coated aluminium, copper or tinned copper fins
- Wide operating range

- Max. summer outdoor air temperature:
  42°C for models 1601 and 3002 to 3402
  44°C for models 5002 to 5702
  46°C for all other models
- These limits can however be overcome with a power reduction, thanks to an intelligent algorithm that will prevent the unit from cutting out under extreme conditions.

- Low-noise operation
- Low-noise axial fans with aerodynamic blades
- Soundproofing compressor enclosure as standard
- For the low-noise versions:

- Silencer on compressor discharge line
- Optional AK acoustic kit, including enhanced soundproofing enclosures and additional insulation

- DCPX as standard: fan speed regulation device with continuous phase-cut control

Accessories

- **AER 485P1:** RS-485 interface for supervision systems with MODBUS protocol.
- **AVX:** Sprung shock absorber supports. For AVX compatibility check the technical manual.
- **KRSDES: (available wtith Desuperheater "D")**Electric heating elements for the evaporator and desuperheater **to be installed at the factory**
- **GP:** The safety grille protects the external battery from accidental impact and hailstone damage. **To be installed at the factory.**
- **PRV3:** This allows the chiller command operations to be given from a distance.
- **RIF**: Current rephaser. The parallel connection with the motor makes a reduction of the current consumption possible (about 10%). **This can only be installed when the machine is being made and must therefore be specified when the order is placed.** For RIF compatibility check the technical manual.
- **AERWEB300:** the AERWEB device allows the remote control of a chiller from a normal PC by means of a serial connection. By using additional modules the device allows the chiller to be controlled via a telephone network, using the**AERMODEM**; or a GSM network, using the **AERMODEMGSM**. AERWEB can pilot up to 9 chillers, each of which **must** be equipped with the AER485P1 accessory.
- **AK: ACOUSTIC KIT. (only for the E versions)**
  This accessory reduces the operating noise level even further. This can only be installed when the machine is being manufactured and must therefore be specified when the order is placed.
- **MULTI-CHILLER**: A control system for control, switch-on and switch-off of the single chillers in a plant in which multiple units are installed in parallel, ensuring constant flow to the evaporators.

Mod. NS	**1251**	**1401**	**1601**	**1801**	**2101**	**2401**	**1402**	**1602**	**1802**	**2002**	**2202**	**2352**	**2502**	**2652**	**2802**	**3002**
AER485P1	✔(x1)	✔(x1)	✔(x1)	✔(x1)	✔(x1)	✔(x1)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)
MULTI-CHILLER	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
(1)(3)AK-ACOUSTIC KIT	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
PRV3	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
AERWEB30	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Mod. NS	**3202**	**3402**	**3602**	**3902**	**4202**	**4502**	**4802**	**5002**	**5202**	**5402**	**5702**	**6003**	**6303**	**6603**	**6903**	**7203**
AER485P1	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x3)	✔(x3)	✔(x3)	✔(x3)	✔(x3)
MULTI-CHILLER	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
(1)(3)AK-ACOUSTIC KIT	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
PRV3	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
AERWEB30	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Mod. NS A/E	**1251**	**1401**	**1601**	**1801**	**2101**	**2401**	**1402**	**1602**	**1802**	**2002**	**2202**	**2352**	**2502**	**2652**	**2802**	**3002**
(1)GP 300M	✔(x1)	✔(x1)	✔(x1)													
(1)GP 400M				✔(x1)												
(1)GP 500M					✔(x1)	✔(x1)										
(1)GP 300B							✔(x1)	✔(x1)								
(1)GP 400B									✔(x1)							
(1)GP 500B										✔(x1)	✔(x1)	✔(x1)	✔(x1)	✔(x1)	✔(x1)	
(1)GP 300M+300M																4(x2)
(1)(4)KRSDES	KRS10DES	KRS10DES	KRS11DES	KRS11DES	KRS11DES	KRS19DES	KRS19DES	KRS19DES	KRS18DES	KRS18DES	KRS19DES	KRS19DES	KRS19DES	KRS19DES	KRS19DES	KRS13DES
Mod. NS A/E	**3202**	**3402**	**3602**	**3902**	**4202**	**4502**	**4802**	**5002**	**5202**	**5402**	**5702**	**6003**	**6303**	**6603**	**6903**	**7203**
(1)GP 300M+300M	✔(x2)															
(1)GP 300M+400M		✔(x2)														
(1)GP 400M+400M			✔(x2)													
(1)GP 400M+500M				✔(x2)	✔(x2)											
(1)GP 500M+500M						✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)	✔(x2)					
(1)GP 400M+400M+500M												✔(x3)				
(1)GP 400M+500M+500M													✔(x3)	✔(x3)		
(1)GP 500M+500M+500M															✔(x3)	✔(x3)
(1)(4)KRSDES	KRS14DES	KRS13DES	KRS12DES	KRS13DES	KRS13DES	KRS14DES	KRS14DES	KRS14DES	KRS14DES	KRS14DES	KRS14DES	KRS15DES	KRS16DES	KRS16DES	KRS17DES	KRS17DES
Mod. NS A/E	**1251**	**1401**	**1601**	**1801**	**2101**	**2401**	**1402**	**1602**	**1802**	**2002**	**2202**	**2352**	**2502**	**2652**	**2802**	**3002**
AVX	501	501	501	506	512	512	501	501	505	511	511	511	511	511	511	509
(1)(2)RIFNS*	1251F	1401F	1601F	1801	2101	2401	1402	1602	1802	2002	2202	2352	2502	2602	2802	3002F
Mod. NS A/E	**3202**	**3402**	**3602**	**3902**	**4202**	**4502**	**4802**	**5002**	**5202**	**5402**	**5702**	**6003**	**6303**	**6603**	**6903**	**7203**
AVX	507	513	516	518	518	521	521	560	560	560	560	525	527	527	530	530
(1)(2)RIFNS*	3202F	3402F	3602	3902	4202	4502	4802	5002	5202	5402	5702	6003	6303	6603	6903	7203

*example: RIFNS**1251F**

Notes:
(1) This accessory can only be added at the manufacturing stage. The number in brackets, i.e. (x1) indicates the quantity.
(2) This accessory is only available at the following voltage: 400V-3-50Hz
(3) This accessory is only available for the low-noise versions
(4) The KRSDES accessory includes electrical heating elements for the evaporator and the desuperheater

Choosing a unit

By suitably combining the numerous options available, it is possible to configure each model in such a way as to meet even the most specific system requirements.

Field key: 1 2 | 3 4 5 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 15

1 2 — Code
3 4 5 6 — Size
7 — Operating range
8 — Model
9 — Heat recovery units
10 — Version
11 — Batteries
12 — Fans
13 — Power supply
14 15 — Hydronic kit

Code:
NS

Size:
1251, 1401, 1601, 1801, 2101, 2401, 1402, 1602, 1802, 2002, 2202
2352, 2502, 2652, 2802,3002, 3202,3402, 3602, 3902,4202,4502,
4802, 5002, 5202, 5402, 5703, 6003, 6303, 6603, 6903, 7203

Operating range
° - Mechanical thermostatic valve, min. temp. of water produced: +4°C
Y - Mechanical thermostatic valve, temp. of water produced from +4°C to -6°C
X - Electronic thermostatic valve, max. temp. of water produced: +4°C
(for lower temperatures please contact us)

Model:
F - Free-cooling

Heat recovery units:
° °- No recovery units
D - Desuperheater

Version:
A - High efficiency
E - Low-noise high efficiency version

Batteries:
° - Aluminium
R - Copper
S - Tinned copper
V - Painted aluminium copper

Fans:
° - Standard
M - Larger versions (not compatible with Power Supply fields "2", "4", "5" and "9")
J - Inverters (not compatible with Power Supply fields "5" and "9")

Power Supply:
° ° - 400V 3~ 50Hz with fuses
2 ° - 230V 3~ 50Hz with fuses *
4 - 230V 3~ 50Hz with thermomagnetic switches *
5 ° - 500V 3~ 50Hz with fuses **
8 - 400V 3~ 50Hz with thermomagnetic switches
9 - 500V 3~ 50Hz with thermomagnetic switches **

Hydronic kit:
00 - no pumping unit
PA - Pumping unit (Pump A)
PB - Pumping unit (Pump A and reserve pump)
PC - Pumping unit (Pump C)
PD - Pumping unit (Pump C and reserve pump)
PE - Pumping unit (Pump E)
PF - Pumping unit (Pump C and reserve pump)
PG - Pumping unit (Pump G)
PH - Pumping unit (Pump G and reserve pump)
PJ - Pumping unit (Pump J)
PK - Pumping unit (Pump J and reserve pump)
PN - Pumping unit (Pump N) ***
PO - Pumping unit (Pump N and reserve pump)***
PP - Pumping unit (Pump P) ***
PQ - Pumping unit (Pump P and reserve pump)***

Option "D" limitations with Desuperheater
not available in models 2002-2802
available in models 1251 to 1601, 1402, 1602, 1801, 1802,
from 3002 to 4202, and from 6003 to 6603 with no pumping unit on the evaporator side

* not available in models 1251 to 2401 and 2352 to 7203
** not available in models 1801 to 2401 and 3402 to 7203
***not available in models 1251 to 1801, 1402 to 2002,
3002 to 4202 and 6003 to 6603

Technical data

Mod. NS	U.M.	Vers.	1251	1401	1601	1801	2101	2401	1402	1602	1802
Cooling capacity	kW	FA	272	304	338	408	465	518	285	324	377
		FE	243	282	322	372	415	471	257	295	340
Total power consumption	kW	FA	91	104	115	144	157	177	103	119	133
		FE	93	105	117	148	161	183	105	121	136
E.E.R.		FA	2.99	2.92	2.94	2.83	2.96	2.93	2.77	2.72	2.83
		FE	2.61	2.69	2.75	2.51	2.58	2.57	2.45	2.44	2.50
Total power consumption	A	FA	160	180	196	238	267	299	179	205	225
		FE	164	182	199	245	274	309	182	208	230
Free-cooling											
Cooling capacity	kW	FA	280	291	301	403	486	503	285	297	393
		FE	268	283	297	391	466	490	249	288	379
Total power consumption	kW	FA / FE	12	12	12	16	20	20	12	12	16
EER		FA	23.3	24.3	25.1	25.2	24.3	25.2	23.8	24.8	24.6
		FE	22.3	23.6	24.8	24.4	23.3	24.5	20.8	24.0	23.7
Total current consumption	A	FA / FE	24	24	24	32	40	40	24	24	32
Water flow rate	l/h	FA	46780	52290	58140	70180	79980	89100	49020	55730	64840
		FE	41800	48500	55380	63980	71380	81010	44200	50740	58480
Compressors	no.	All	1	1	1	1	1	1	2	2	2
*Partload		%	40-100	40-100	40-100	40-100	40-100	40-100	40-100	40-100	40-100
♪ Sound pressure (Chiller)	dBA	FA	62	63	65	65	66	66	64	65	65
		FE	54	55	57	57	58	58	56	57	57
♪Sound pressure (Freecooling)	dBA	All	62	63	65	65	66	66	64	65	65
Air flow rate (Chiller)	m³/h	FA	102000	102000	102000	136000	170000	170000	102000	102000	136000
		FE	70000	78000	87000	100000	112000	127000	74000	80000	96000
Air flow rate (Freecooling)	m³/h	FA	102000	102000	102000	136000	170000	170000	102000	102000	136000
Fans	no.	FA/FE	6	6	6	8	10	10	6	6	8
(1)Evaporators	no.	FA/FE	1	1	1	1	1	1	1	1	1

Mod. NS	U.M.	Vers.	2002	2202	2352	2502	2652	2802	3002	3202	3402
Cooling capacity	kW	FA	429	480	501	522	553	584	642	675	746
		FE	389	439	457	475	514	554	604	645	694
Total power consumption	kW	FA	153	168	177	186	200	215	219	230	259
		FE	156	167	179	191	203	214	222	233	265
E.E.R.		FA	2.80	2.86	2.83	2.81	2.77	2.72	2.93	2.93	2.88
		FE	2.49	2.63	2.55	2.49	2.53	2.59	2.72	2.77	2.62
Total power consumption	A	FA	261	288	305	322	344	366	376	391	434
		FE	266	286	308	331	349	364	381	396	444
Free-cooling											
Cooling capacity	kW	FA	452	491	498	505	514	522	592	602	705
		FE	420	476	483	489	502	514	580	594	688
Total power consumption	kW	FA / FE	20	20	20	20	20	20	24	24	28
EER		FA	22.6	24.6	24.9	25.3	25.7	26.1	24.7	25.1	25.2
		FE	21.0	23.8	24.2	24.5	25.1	25.7	24.2	24.8	24.6
Total current consumption	A	FA / FE	40	40	40	40	40	40	48	48	56
Water flow rate	l/h	FA	73790	82560	86170	89780	95120	100450	110430	116100	128310
		FE	66910	75510	78600	81700	88410	95290	103890	110940	119370
Compressors	no.	All	2	2	2	2	2	2	2	2	2
*Partload		%	40-100	40-100	40-100	40-100	40-100	40-100	40-100	40-100	40-100
♪ Sound pressure (Chiller)	dBA	FA	66	66	66	66	67	67	67	68	68
		FE	58	58	58	58	59	59	59	60	60
♪Sound pressure (Freecooling)	dBA	FA	66	66	66	66	67	67	67	68	68
Air flow rate	m³/h	FA	170000	170000	170000	170000	170000	170000	204000	204000	238000
		FE	124500	120000	123000	130000	130000	140000	165000	174000	187000
Air flow rate	m³/h	FA	170000	170000	170000	170000	170000	170000	204000	204000	238000
Fans	no.	FA/FE	10	10	10	10	10	10	12	12	14
(1)Evaporators	no.	FA/FE	1	1	1	1	1	1	2	2	2

Mod. NS	U.M.	Vers.	3602	3902	4202	4502	4802	5002	5202	5402	5702
Cooling capacity	kW	FA	817	873	926	983	1036	1084	1154	1225	1282
		FE	744	787	843	887	943	1017	1066	1116	1159
Total power consumption	kW	FA	288	300	321	334	354	374	403	432	444
		FE	298	311	333	346	369	381	413	445	457
E.E.R.		FA	2.84	2.91	2.88	2.94	2.93	2.90	2.86	2.84	2.89
		FE	2.50	2.53	2.53	2.56	2.56	2.67	2.58	2.51	2.54
Total power consumption	A	FA	476	505	537	566	598	629	672	714	743
		FE	493	524	557	586	623	641	689	735	765
Free-cooling											
Cooling capacity	kW	FA	807	889	907	989	1007	993	1009	1025	1035
		FE	782	585	881	956	979	976	988	1001	1010
Total power consumption	kW	FA / FE	32	36	36	40	40	40	40	40	40
EER		FA	25.2	24.7	25.2	24.7	25.2	24.8	25.2	25.6	25.9
		FE	24.4	16.3	24.5	23.9	24.5	24.4	24.7	25.0	25.3
Total current consumption	A	FA / FE	64	72	72	80	80	80	80	80	80

*40-100 - Partload continuous
25-100 - Electronic expansion valve

Technical data

Mod. NS	U.M.	Vers.	3602	3902	4202	4502	4802	5002	5202	5402	5702
Water flow rate	l/h	FA	140530	150160	159270	169080	178190	186450	198490	210700	220510
		FE	127970	135370	145000	152570	162200	174930	183350	191950	199350
Compressors	no.	All	2	2	2	2	2	2	2	2	2
*Partload		%	40-100	40-100	40-100	40-100	40-100	25-100	25-100	25-100	25-100
♪ Sound pressure (Chiller)	dBA	FA	68	69	69	69	69	70	71	71	71
		FE	60	61	61	61	61	62	63	63	63
♪Sound pressure (Freecooling)		FA	68	69	69	69	69	70	71	71	71
Air flow rate (Chiller)	m³/h	FA	272000	306000	306000	340000	340000	340000	340000	340000	340000
		FE	200000	212000	227000	239000	254000	254000	254000	254000	254000
Air flow rate (Freecooling)	m³/h	FA	272000	306000	306000	340000	340000	340000	340000	340000	340000
Fans	no.	FA/FE	16	18	18	20	20	20	20	20	20
(1)Evaporators	no.	FA/FE	2	2	2	2	2	2	2	2	2

Mod. NS	U.M.	Vers.	6003	6303	6603	6903	7203
Cooling capacity	kW	FA	1335	1391	1444	1501	1554
		FE	1216	1259	1315	1358	1414
Total power consumption	kW	FA	465	478	498	511	532
		FE	479	492	514	527	549
E.E.R.		FA	2.87	2.91	2.90	2.94	2.92
		FE	2.54	2.56	2.56	2.58	2.58
Total power consumption	A	FA	775	804	836	865	897
		FE	798	828	863	892	926
Free-cooling							
Cooling capacity	kW	FA	1310	1393	1410	1493	1510
		FE	1272	1347	1371	1446	1469
Total power consumption	kW	FA / FE	52	56	56	60	60
EER		FA	25.2	24.9	25.2	24.9	25.2
		FE	24.5	24.1	24.5	24.1	24.5
Total current consumption	A	FA / FE	104	112	112	120	120
Water flow rate	l/h	FA	229620	239250	248370	258170	267290
		FE	209150	216550	226180	233580	243210
Compressors	no.	All	3	3	3	3	3
Capacity control		%	40-100	40-100	40-100	40-100	40-100
♪ Sound pressure	dBA	FA	70	70	71	71	71
		FE	62	62	63	63	63
♪Sound pressure		FA	70	70	71	71	71
Air flow rate	m³/h	FA	442000	476000	476000	510000	510000
		FE	327000	339000	354000	366000	381000
Air flow rate	m³/h	FA	442000	476000	476000	510000	510000
Fans	no.	FA/FE	26	28	28	30	30
(1)Evaporators	no.	FA/FE	3	3	3	3	3

(1) = Tubular band

Power supply voltage= 400V 3~ 50 Hz. Performance values refer to the following conditions:

Cooling:
- water inlet temperature 12 °C;
- water outlet temperature 7 °C;
- outside air temp. 35 °C;
- Δt = 5 °C.

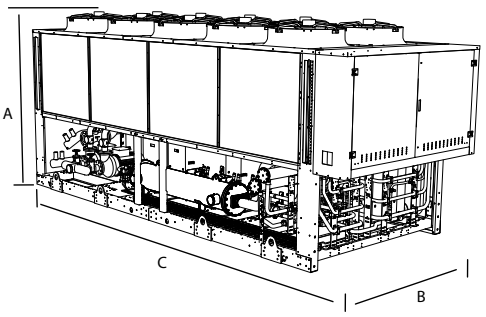
Free-cooling
- water inlet temperature 15°C
- outside air temp. 2°C
- Glycol 0%

♪Sound pressure measured in free field 10 metres away and direction factor = 2. In accordance with ISO 3744

*40-100 - Partload continuous
25-100 - Electronic expansion valve

Dimensions (mm)

Mod. NS(F)			1251	1401	1601	1801	2101	2401	1402
Height	(A)		2450	2450	2450	2450	2450	2450	2450
Width	(B)		2200	2200	2200	2200	2200	2200	2200
Depth	(C)	A/E	3780	3780	3780	4770	5750	5750	3780
Weight	kg	A/E	3760	3770	3840	5000	5950	5980	4010
Mod. NS(F)			**1602**	**1802**	**2002**	**2202**	**2352**	**2502**	**2652**
Height	(A)		2450	2450	2450	2450	2450	2450	2450
Width	(B)		2200	2200	2200	2200	2200	2200	2200
Depth	(C)	A/E	3780	4770	5750	5750	5750	5750	5750
Weight	kg	A/E	4030	4730	5470	5790	6340	6330	6340
Mod. NS(F)			**2802**	**3002**	**3202**	**3402**	**3602**	**3902**	**4202**
Height	(A)		2450	2450	2450	2450	2450	2450	2450
Width	(B)		2200	2200	2200	2200	2200	2200	2200
Depth	(C)	A/E	5750	7160	7160	8150	9140	10120	10120
Weight	kg	A/E	6350	7210	7310	8410	9180	10580	10860



Mod. NS(F)			4502	4802	5002	5202	5402	5702	6003	6303	6603	6903	7203
Height	(A)		2450	2450	2450	2450	2450	2450	2450	2450	2450	2450	2450
Width	(B)		2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
Depth	(C)	A/E	11100	11100	11100	11100	11100	11100	14490	15470	15470	16450	16450
Weight	kg	A/E	11104	11320	12300	12600	12700	12800	15160	16560	16840	17084	17300

For transportation reasons, NS FREE-COOLING models from 6003 to 7203 are shipped in two units: one unit consists of two compressors and their standard electrical box (placed in front of the machine) and the other unit consists of a compressor and the electrical box at the side of the compressors under the slatted exchange battery. On the site, the two units just have to be connected electrically. For more detailed information refer to the technical and/or installation manual.

Cod.: SNSFCUY.00 / 1211

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