

ANK

Reversible heat pump Air/Water
Optimized for heating, outdoor installation
Axial fans, scroll compressor
Cooling capacity 6,8÷29,7 kW
Heating capacity 7,9÷33,3 kW

HFC
Refrigerant
R410A



Aermec participates in the EUROVENT programme: LCP
The products involved can be found at the website
www.eurovent-certification.com

Variable Multi Flow

VMF



- **VERSION WITH BUILT-IN HYDRONIC KIT**
- **PRODUCTION OF HOT WATER UP TO 60°C**
- **HEATING OPERATION WITH EXTERNAL TEMPERATURES DOWN TO -20°C**
- **PRODUCTION OF HOT DOMESTIC WATER WITH EXTERNAL TEMPERATURES FROM -20°C UP TO 42°C**

Characteristics

Reversible Heat pumps units

Versions

ANK H: Heat pumps high efficiency, without hydronic kit

Versions with hydronic kit

ANK_HP: with standard pump

ANK_HA: with buffer tank and standard pump

Operational limits (1)

- max. external air temperature 46°C cooling mode

- max. Leaving water temperature 60°C heating mode
- High efficiency scroll compressors with low power input
- Electronic soft start to reduce starting current (standard for single phase versions)
- High efficiency heat exchangers with trace heating as standard
- flow switch as standard supply
- Water filter
- Axial flow fan units for extremely quiet operation

Inverter axial flow fan units for heat pumps (ANK020H÷ANK085H)

- The hydronic kit includes:
 - Expansion tank
 - Safety valve
 - Pressure gauge
- Electronic controller (Modu_control)
- Metallic protective cabinet with anti-corrosion polyester paint

(1) For more details on operating limits, refer to the technical documentation available on the website www.aermec.com

Accessories

- **MODU-485BL:** RS-485 interface for supervision systems with MODBUS protocol.

AERSET

The AERSET accessory allows the automatic compensation of the operating setpoint of the unit to which it is connected, based on a 0-10V MODBUS input signal. **Mandatory accessory: AER485 or MODU-485A**

- **MULTICONTROL:** Allows the simultaneous control of several chillers or heat pumps (up to 4) fitted with our MODUCONTROL controller and installed in the same hydraulic system.

For complete control the following accessories are available:

- **SPLW: System water temperature sensor.** In most cases the loose supplied sensors for each

chiller/heat pump are sufficient. In cases of a common flow/return header this sensor can be used to control the common system supply water temperature for the chillers connected to the header, or it can be used for temperature monitoring.

- **SDHW: Domestic hot water temperature sensor.** Used with the storage tank to control the temperature of water produced.

VMF-CRP to predict accessory for the management of the probes SPLW / SDHW if provided with the MULTICONTROL

- **PR3:** Simplified remote panel. Permits control of the basic unit functions (on/off and change of operating mode, diagnostics and alarm reset). Maximum distance permitted is 150 m with

screened cable.

- **DCPX:** Fan speed controller allowing operation in cooling mode within an external temperature range from +20 °C to -10 °C; in heating mode in summer to produce DHW with external temperatures up to +42 °C.
- **BDX:** Condensate drip tray with integrated electric heater controlled by the external air temperature sensor.
- **BSKW:** Electric heater kit with IP44 panel for remote mounting in a sheltered area. Available in single and three phase power supply:
 - BS4KW230M (4 kW, 230V/1/50Hz)
 - BS6KW230M (6 kW, 230V/1/50Hz)
 - BS6KW400T (6 kW, 400V/3/50Hz)
 - BS9KW400T (9 kW, 400V/3/50Hz)

- **VT:** Anti-vibration mounts.
- **SAF:** Thermal accumulator for the instantaneous production of domestic hot water.
Refer to the dedicated "SAF" card for more information necessary for the correct operation of the system, as well as details on the required or recommended accessories. Please consult the VMF system for the production of DHW with Thermal Accumulator not supplied by Aermec.

Accessories factory fitted only

- **DRE:** Electronic soft starter device reducing starting current by about 30%.
- **KRB:** Electric anti-freeze heater for the base. Prevents the formation of ice on the base.
- **BDX:** Condensate drip tray with electric heater

Compatibility with the VMF system

For further system information please refer to the specific documentation.

Accessory compatibility

ANK	vers	020	030	040	045	050	085	100	150
MODU-485BL		•	•	•	•	•	•	•	•
AERSET		•	•	•	•	•	•	•	•
MULTICONTROL		•	•	•	•	•	•	•	•
SPLW		•	•	•	•	•	•	•	•
SDHW		•	•	•	•	•	•	•	•
VMF-CRP		•	•	•	•	•	•	•	•
PR3		•	•	•	•	•	•	•	•
DCPX	(1)	-	-	-	-	-	-	53	53
BS4KW230M		•	•	•	•	-	-	-	-
BS6KW230M		•	•	•	•	-	-	-	-
BS6KW400T		-	-	-	-	•	•	•	•
BS9KW400T		-	-	-	-	•	•	•	•
VT	H/HP	9	9	9	9	9	9	15	15
	HA	15A	15A	15A	15A	15A	15A	15	15
SAF		•	•	•	•	•	•	•	•
Accessories factory fitted only									
DRE	(2)	•	•	•	•	•	•	•(x2)	•(x2)
KRB1	(3)	•	-	-	-	-	-	-	-
KRB2	(3)		•	•	•	•	•	-	-
KRB3	(3)	-	-	-	-	-	-	•	•
BDX	(3)	8	9	9	9	9	9	-	-

(1) The size up 020 to 085 Inverter fans are fitted as standard

(2) Only available for 400V/3N/50Hz power supply

(x2) n° the quantity to order

(3) KRB is not compatible with BDX

Unit Configurator

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

Fields	Code
1,2,3	ANK
4,5,6	Size
	020-030-040-045-050-085-100-150
7	Model
	H Heat pump
8	Version
	° Standard
	P With pump
	A With buffer tank and pump
9	Execution
	° Standard
10	Coil fins
	° Aluminium
	R Copper
	S Tinned copper
	V Coated aluminium (epoxy paint)
11	Field of use
	° Standard (leaving water temperature down to 4°C)
	Z Low temperature (Low leaving liquid from 4°C down to up to 0°C)
	Y Low temperature (Low leaving liquid from 0°C down to -8°C)
12	Evaporator
	° Standatd
13	Power supply
	M 230V/1/50Hz (from 020 to 045)
	° 400V/3N/50Hz

Technical data

ANK - H			020	030	040	045	020	030	040	045	050	085	100	150
		V/ph/Hz	230V	230V	230V	230V	400V	400V	400V	400V	400V	400V	400V	400V
12°C / 7°C	Cooling capacity	(1) kW	6,8	8,2	9,6	11,7	6,8	8,2	10,5	11,6	13,1	15,5	25,3	29,3
	Total input power	(1) kW	2,3	2,8	3,2	3,7	2,3	2,8	3,5	4,0	4,3	5,2	8,1	10,0
	EER	(1)	2,92	2,91	2,97	3,16	2,93	2,91	2,98	2,93	3,03	3,00	3,12	2,92
	Water flow rate	(1) l/h	1179	1405	1649	2018	1168	1405	1810	1997	2253	2676	4361	5055
	Pressure drop	(1) kPa	16	9	14	14	16	9	16	14	18	24	32	36
40°C / 45°C	Heating capacity	(2) kW	8,0	10,0	10,9	13,5	8,0	10,0	12,2	14,0	15,3	17,4	27,1	33,3
	Total input power	(2) kW	2,5	3,1	3,4	3,8	2,5	3,1	3,8	4,2	4,4	5,0	8,3	10,5
	COP	(2)	3,16	3,24	3,15	3,50	3,21	3,24	3,25	3,38	3,48	3,46	3,24	3,19
	Water flow rate	(2) l/h	1376	1737	1880	2332	1376	1737	2116	2429	2655	3020	4689	5773
	Pressure drop	(2) kPa	22	14	18	19	22	14	22	21	25	31	37	47
23°C / 18°C	Cooling capacity	(3) kW	9,5	11,4	13,3	16,3	9,5	11,4	14,7	16,2	18,2	21,7	34,0	39,4
	Total input power	(3) kW	2,5	2,9	3,4	3,9	2,4	2,9	3,7	4,2	4,5	5,5	8,8	10,9
	EER	(3)	3,86	3,86	3,94	4,19	3,88	3,86	3,95	3,89	4,02	3,96	3,86	3,61
	Water flow rate	(3) l/h	1651	1968	2309	2826	1636	1968	2535	2797	3155	3748	5889	6826
	Pressure drop	(3) kPa	31	18	27	27	31	18	31	27	35	47	58	66
30°C / 35°C	Heating capacity	(4) kW	8,5	10,6	11,6	14,0	8,5	10,6	13,1	14,6	16,2	18,2	29,2	35,6
	Total input power	(4) kW	2,2	2,6	2,8	3,3	2,1	2,6	3,1	3,5	3,8	4,3	6,9	8,8
	COP	(4)	3,96	4,04	4,08	4,30	4,03	4,04	4,20	4,15	4,31	4,18	4,21	4,07
	Water flow rate	(4) l/h	1472	1830	2001	2424	1472	1830	2252	2525	2799	3137	5041	6147
	Pressure drop	(4) kPa	25	15	21	20	25	15	25	22	28	33	43	53
Performance under average climatic conditions (Average) UE n°811/2013 Pdesignh ≤ 70kW														
Pdesignh		(5)	7	9	10	12	7	9	11	13	14	16	26	32
SCOP		(5)	3,33	3,40	3,43	3,55	3,38	3,40	3,50	3,48	3,60	4,65	3,90	3,90
ηs		(5)	130	133	134	139	132	133	137	136	141	183	153	153
Efficiency Energy Class			A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A++	A++
Cooling mode for low temperature														
ηsc		%	119,6	124,1	127,8	139,0	119,8	124,1	129,8	129,8	135,0	135,0	149,4	142,3
SEER			3,07	3,18	3,27	3,55	3,07	3,18	3,32	3,32	3,45	3,45	3,81	3,63

ANK - HP/HA			020	030	040	045	020	030	040	045	050	085	100	150
		V/ph/Hz	230V	230V	230V	230V	400V	400V	400V	400V	400V	400V	400V	400V
12°C / 7°C	Cooling capacity	(1) kW	6,9	8,2	9,7	11,8	6,9	8,2	10,6	11,7	13,2	15,7	25,6	29,7
	Total input power	(1) kW	2,3	2,8	3,2	3,7	2,3	2,8	3,5	4,0	4,3	5,2	8,2	10,4
	EER	(1)	2,99	2,96	3,02	3,17	3,00	2,97	3,05	2,95	3,06	3,03	3,12	2,87
	Water flow rate	(1) l/h	1179	1405	1649	2018	1168	1405	1810	1997	2253	2676	4361	5055
	High static pressure	(1) kPa	78	71	62	70	78	82	70	81	74	63	115	144
40°C / 45°C	Heating capacity	(2) kW	7,9	9,9	10,8	13,4	7,9	9,9	12,1	13,9	15,2	17,3	26,8	33,0
	Total input power	(2) kW	2,5	3,1	3,4	3,9	2,4	3,0	3,7	4,2	4,4	5,0	8,4	10,8
	COP	(2)	3,17	3,25	3,16	3,45	3,22	3,26	3,27	3,35	3,46	3,44	3,18	3,05
	Water flow rate	(2) l/h	1376	1737	1880	2332	1376	1737	2116	2429	2655	3020	4689	5773
	High static pressure	(2) kPa	72	58	52	57	72	76	61	68	60	50	105	109
23°C / 18°C	Cooling capacity	(3) kW	9,6	11,5	13,4	16,4	9,5	11,5	14,8	16,3	18,4	21,8	34,3	39,8
	Total input power	(3) kW	2,4	2,9	3,4	3,9	2,4	2,9	3,6	4,2	4,5	5,5	8,9	11,4
	EER	(3)	3,99	3,93	4,01	4,18	4,00	3,98	4,06	3,92	4,05	3,99	3,85	3,48
	Water flow rate	(3) l/h	1651	1968	2309	2826	1636	1968	2535	2797	3155	3748	5889	6826
	High static pressure	(3) kPa	62	47	29	32	62	70	45	55	38	17	66	51
30°C / 35°C	Heating capacity	(4) kW	8,4	10,5	11,5	13,9	8,4	10,5	12,9	14,5	16,1	18,0	28,9	35,3
	Total input power	(4) kW	2,1	2,6	2,8	3,3	2,1	2,6	3,0	3,5	3,8	4,3	7,0	9,2
	COP	(4)	4,00	4,05	4,10	4,24	4,07	4,08	4,26	4,12	4,28	4,16	4,11	3,85
	Water flow rate	(4) l/h	1472	1830	2001	2424	1472	1830	2252	2525	2799	3137	5041	6147
	High static pressure	(4) kPa	69	54	46	53	69	73	56	65	54	45	95	90
Performance under average climatic conditions (Average) UE n°811/2013 Pdesignh ≤ 70kW														
Pdesignh		(5)	7	9	10	12	7	9	11	13	14	15	25	30
SCOP		(5)	3,40	3,50	3,50	3,60	3,45	3,50	3,58	3,53	3,65	3,45	3,83	3,70
ηs		(5)	133	137	137	141	135	137	140	138	143	135	150	145
Efficiency Energy Class			A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A++	A++
Cooling mode for low temperature														
ηsc			121,1	125,0	130,7	138,4	120,7	125,0	132,5	130,1	135,4	137,1	146,6	137,0
SEER			3,10	3,20	3,34	3,54	3,09	3,20	3,39	3,33	3,46	3,50	3,74	3,50

Date (14511:2018)

- (1) Water system side 12°C/7°C, External air 35°C
- (2) Water system side 40°C/45°C, External air 7°C b.s./6°C b.u.
- (3) Water system side 23°C/18°C, External air 35°C
- (4) Water system side 30°C/35°C, External air 7°C b.s./6°C b.u.
- (5) Efficiencies for low temperature Applications (35°C)

Technical Data

			020	030	040	045	050	085	100	150
Electrical data										
230V	Total input current (cooling)	(6) A	11	13	16	19	-	-	-	-
	Total input current (heating)	(6) A	12	15	17	19	-	-	-	-
	Maximum current (FLA)	(6) A	13,90	19,40	22,20	25,00	-	-	-	-
	Starting current (LRA)	(6)(7) A	45,00	45,00	45,00	45,00	-	-	-	-
400V	Total input current (cooling)	(6) A	4,3	5,6	7,1	7,7	8,7	11	17	20
	Total input current (heating)	(6) A	4,7	6,2	7,6	8,0	9,0	10	18	21
	Maximum current (FLA)	(6) A	6,1	7,7	9,1	10,6	11,8	12,30	21,70	25,80
	Starting current (LRA)	(6) A	39,7	40,3	54,3	61,3	71,3	91,3	72,6	104,7
Scroll Compressor										
Compressors	Type/n°	scroll/1	scroll/1	scroll/1	scroll/1	scroll/1	scroll/1	scroll/1	scroll/2	scroll/2
Circuit	n°	1	1	1	1	1	1	1	1	1
Refrigerant	Type	R410A								
Heat exchanger system side										
Exchanger	Type/n°	Plate/1								
Hydraulic connections (In/Out)	Ø	1"1/4								
Axial fans										
Fan	Type/n°	inverter/1	inverter/1	inverter/2	inverter/2	inverter/2	inverter/2	std/2	std/2	
Air flow rate (cooling)		3500	8000	8000	7500	7500	7500	14500	14500	
Sound data (cooling mode)										
Sound power level	dB(A)	68	70.5	70.5	70.5	70.5	70.5	77	78	
Sound pressure level	dB(A)	37	39.5	39.5	39.5	39.5	39.5	45.5	46.5	

Sound power Aermec determines sound power values on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification.

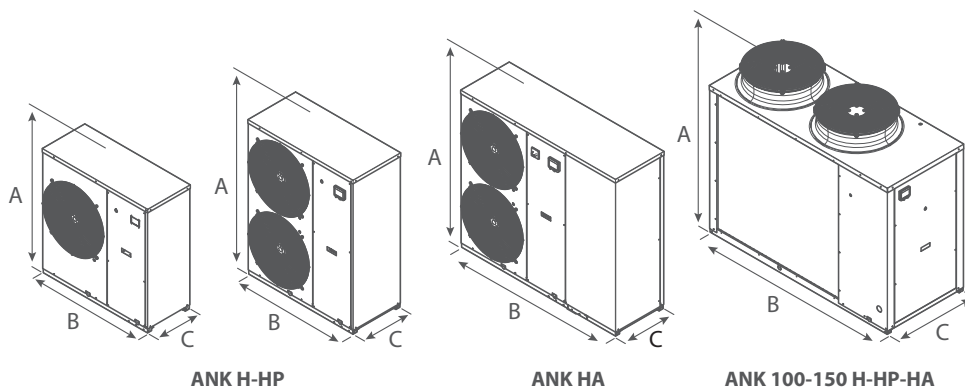
Sound pressure Sound pressure in free field, at 10 m distance from the external surface of the unit (in accordance with UNI EN ISO 3744).

(6) Unit standar configuration without hydronic kit

(7) Unit with soft-start

Note: For more information, refer to the selection program or the technical documentation available on the website www.aermec.com

Dimensions (mm)



ANK			020	030	040	045	050	085	100	150
A	All	mm	1028	1281	1281	1281	1281	1281	1450	1450
B	H/HP	mm	1000	1000	1000	1000	1000	1000	1750	1750
	HA	mm	1358	1450	1450	1450	1450	1450	1750	1750
C	All	mm	400	400	450	450	450	450	750	750
Weight	H	kg	118	149	152	165	172	174	296	341
	HP	kg	123	154	157	175	182	184	314	362
	HA	kg	160	211	214	232	238	241	364	412