

ANL 020/202

**Reversible Heat Pumps
Air/Water for outdoor installation
Axial fan and scroll compressor:
Cooling capacity 5,65 - 41,47kW
Heating capacity 6,27 - 44,90kW**

R410A



Aermec participates in the EUROVENT Certification Programme: LCP
The products concerned appear in the EUROVENT site
www.eurovent-certification.com.

Variable Multi Flow[®]

VMF



- **STANDARD VERSION**
- **VERSION WITH BUILT-IN HYDRONIC KIT**
- **PRODUCTION OF HOT DOMESTIC WATER (D.H.W.)**

Characteristics

Reversible heat pumps for external installation for the production of chilled/ heated water with high performance and low electric absorption scroll compressors, axial fans, external copper coils with aluminium fins, system-side plate heat exchanger.

In the units with desuperheater, but in cooling-only operation, it is possible to produce free hot water.

The basement, the structure and the panelling are in steel treated with polyester anti-corrosion paint.

Versions

ANL_H: Heat pumps without hydronic kit

Versions with hydronic kit

ANL_HP: with standard pump

ANL_HN: with high pump

ANL_HA: with buffer tank and standard pump

ANL_HQ: with buffer tank and high pump

Range of operations

full load up to 46 °C ambient air temperature with the possibility to produce chilled water down to -10 °C in cooling mode (for more details refer to the technical documentation)

- High efficiency scroll compressors with low

power input

- flow switch/ pressure switch as standard supply
- Water filter
- High efficiency heat exchangers
- Axial flow fan units for extremely quiet operation
- Inverter axial flow fan units for heat pumps from size 030 to 090
- Possibility of integrated hydronic kit which includes the main hydraulic components; it is available in different configurations with or without buffer tank, one pumps high or low head.
- Electronic controller (Modu_control)

Accessories

- **MODU-485BL:** RS-485 interface for supervision systems with MODBUS protocol.
- **AERWEB300:** The AERWEB option allows remote control of a chiller through a standard PC and an ethernet connection with a standard browser; 4 versions available:
AERWEB300-6: Web server to monitor and remote control maximum 6 units on RS485 network;
AERWEB300-18: Web server to monitor and remote control maximum 18 units on RS485 network;
AERWEB300-6G: Web server to monitor and remote control maximum 6 units on RS485 network with integrated GPRS modem;
AERWEB300-18G: Web server to monitor and remote control maximum 18 units on RS485 network with integrated GPRS modem.
- **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:** an speed controller allowing operation in cooling mode within an external temperature range from +20 °C to -10 °C;

Standard for the version with desuperheater

- **BDX:** Condensate drip.
- **VT:** Anti-vibration mounts.

Accessories factory fitted only

- **DRE:** Electronic soft starter device reducing starting current by about 30%
- **KR:** Anti-freeze electric heater for the plate heat exchanger, not available for sizes 020A-HA to 040A-HA.
- **KRB:** Electric anti-freeze heater for the base. Prevents the formation of ice on the base.
- **RA:** Anti-freeze electric heater for the buffer tank.

Compatibility with the VMF system

For further system information please refer to the specific documentation.

ANL - H	vers	020	025	030	040	050	070	080	090	102	152	202
MODU-485BL	All	*	*	*	*	*	*	*	*	*	*	*
AERWEB300	All	*	*	*	*	*	*	*	*	*	*	*
MULTICONTROL	All	*	*	*	*	*	*	*	*	*	*	*
SPLW	All	*	*	*	*	*	*	*	*	*	*	*
SDHW	All	*	*	*	*	*	*	*	*	*	*	*
VMF-CRP	All	*	*	*	*	*	*	*	*	*	*	*
PR3	All	*	*	*	*	*	*	*	*	*	*	*
DCPX	(1) H	51	51	*	*	*	*	*	*	53	53	53
BDX	H / HP	5	5	5	5	5	5	5	5	-	-	-
	HA	5	5	5	5	6	6	6	6	-	-	-
VT	H/HP	9	9	9	9	9	9	9	9	15	15	15
	HA	9	9	9	9	15	15	15	15	15	15	15
Accessories factory fitted only												
DRE	(2)	-	-	-	-	5	5	5	5	5 x2	5 x2	5 x2
KR	H/HP	2	2	2	2	2	2	2	2	100	100	100
	HA	-	-	-	-	2	2	2	2	100	100	100
KRB3	All	-	-	-	-	-	-	-	-	*	*	*
RA		*	*	*	*	*	*	*	*	-	-	-
RA100	HA	-	-	-	-	-	-	-	-	*	*	*

(1) Standard for the unit with desuperheater

* Size with Inverter fans

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

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.

Field	Code
1,2,3	ANL
4,5,6	Size 020-025-030-040-050-070-080-090-102-152-202
7	Model H Heat pump
8	Version ° Standard P With pumps N With high pump (for size from 102 to 202) A With buffer tank and standard pump Q With buffer tank and high pump (for size from 050 to 202)
9	Heat recovery ° Without recovery D With desuperheater (4)
10	Coil fin (5) ° Aluminium R Copper S Tinned copper V Treated aluminium
11	Field of use ° Standard (leaving water temperature down to 4°C)
12	Evaporator ° Standard C Condensing unit
13	Power supply M 230V/1/50Hz (for size from 020 to 040) ° 400V/3N/50Hz

(4) The desuperheater is available for sizes from 050 to 090 only with buffer tank, whilst sizes from 102 to 202 are available in all versions. Desuperheater is incompatible with the dimensional reasons even with the option Q.

(5) Coil fin options

° Aluminium

R e S Models in heat pump: only for sizes 030H-202H

V Cataphoresis treatment for sizes 020H ÷ 025H

Epoxy paint for models with heat pump 020H ÷ 202H

Technical Data

ANL - H			020	025	030	040	050	070	080	090	102	152	202
		V/ph/Hz	230V-400V	230V-400V	230V-400V	230V-400V	400V	400V	400V	400V	400V	400V	400V
12°C / 7°C	Cooling capacity	(1) kW	5,64	6,14	7,43	9,52	13,29	16,37	20,32	22,06	25,75	31,71	40,58
	Total input power	(1) kW	1,89	2,06	2,53	3,33	4,14	5,01	6,51	6,87	8,82	10,48	14,28
	EER	(1)	2,98	2,98	2,94	2,86	3,21	3,27	3,12	3,21	2,92	3,03	2,84
	ESEER	(1)	3,43	3,43	3,40	3,33	3,74	3,82	3,12	3,71	3,85	3,99	3,94
	Cooling Energy Class Eurovent	(1)	B	B	B	C	A	A	A	A	B	B	C
	Water flow rate	(1) l/h	979	1065	1288	1649	2301	2839	3521	3830	4465	5496	7031
	Pressure drop	(1) kPa	30	31	32	30	34	35	44	60	55	57	62
40°C / 45°C	Heating capacity	(2) kW	6,26	7,07	8,49	10,70	14,12	17,44	22,4	24,46	29,31	35,35	45,78
	Total input power	(2) kW	1,97	2,19	2,71	3,28	4,42	5,04	6,5	7,12	8,88	10,45	13,76
	COP	(2)	3,18	3,23	3,13	3,26	3,19	3,46	3,45	3,44	3,30	3,38	3,33
	Heating Energy Class Eurovent	(2)	B	A	B	A	B	A	A	A	A	A	A
	Water flow rate	(2) l/h	1078	1217	1460	1843	2434	3007	3859	4207	5041	6084	7878
		Pressure drop	(2) kPa	33	37	37	34	34	36	48	65	69	68
23°C / 18°C	Cooling capacity	(3) kW	6,81	7,39	8,94	11,46	16,05	19,71	24,5	26,46	31,48	38,64	49,08
	Total input power	(3) kW	1,99	2,16	2,65	3,48	4,34	5,24	6,82	7,2	9,24	10,98	14,94
	EER	(3)	3,42	3,42	3,37	3,29	3,70	3,76	3,59	3,68	3,41	3,52	3,29
	Cooling Energy Class Eurovent	(3)	D	D	D	E	B	C	B	D	C	E	
	Water flow rate	(3) l/h	1188	1289	1560	1996	2796	3431	4270	4622	5492	6737	8556
		Pressure drop	(3) kPa	43	44	46	43	49	50	63	85	81	83
30°C / 35°C	Heating capacity	(4) kW	6,54	7,39	8,86	11,17	14,74	18,21	23,89	25,54	30,6	36,91	47,8
	Total input power	(4) kW	1,71	1,90	2,34	2,92	3,81	4,5	5,82	6,37	8,04	9,52	12,58
	COP	(4)	3,82	3,89	3,79	3,83	3,87	4,05	4,10	4,01	3,81	3,88	3,80
	Heating Energy Class Eurovent	(4)	C	C	C	C	C	B	A	B	C	C	C
	Water flow rate	(4) l/h	1121	1265	1518	1916	2530	3127	4012	4374	5241	6326	8191
		Pressure drop	(4) kPa	36	41	41	37	37	40	53	72	76	75
Performance under average climatic conditions (Average)													
	Pdesignh	(5)	6	7	8	10	13	16	21	23	28	33	43
	SCOP	(5)	3,33	3,38	3,30	3,33	3,43	3,55	3,55	3,53	3,65	3,88	3,83
	ηs	(5)	130	132	129	130	134	139	139	138	143	152	150
	Efficiency Energy Class	(6)	A+	A+	A+	A+	A+	A+	A+	A+	A+	A++	A++

ANL - HP/HA			020	025	030	040	050	070	080	090	102	152	202
		V/ph/Hz	230V-400V	230V-400V	230V-400V	230V-400V	400V	400V	400V	400V	400V	400V	400V
12°C / 7°C	Cooling capacity	(1) kW	5,77	6,28	7,59	9,70	13,51	16,63	20,62	22,42	26,34	32,49	41,47
	Total input power	(1) kW	1,81	1,96	2,41	3,20	4,01	4,84	6,3	6,6	8,83	10,7	14,52
	EER	(1)	3,19	3,20	3,15	3,03	3,37	3,44	3,27	3,40	2,98	3,04	2,86
	ESEER	(1)	3,50	3,54	3,55	3,48	3,37	3,97	3,8	3,95	3,96	3,94	3,82
	Cooling Energy Class Eurovent	(1)	A	A	A	B	A	A	A	A	B	B	C
	Water flow rate	(1) l/h	979	1065	1288	1649	2301	2884	3521	3830	4465	5496	7031
	High static pressure	(1) kPa	73	73	71	65	76	72	57	52	88	124	106
40°C / 45°C	Heating capacity	(2) kW	6,13	6,92	8,31	10,50	13,89	17,18	22,1	24,1	28,7	34,56	44,9
	Total input power	(2) kW	1,88	2,08	2,58	3,13	4,28	4,87	6,29	6,85	8,9	10,71	14,07
	COP	(2)	3,26	3,33	3,22	3,35	3,25	3,53	3,51	3,52	3,22	3,23	3,19
	Heating Energy Class Eurovent	(2)	A	A	A	A	A	A	A	A	A	A	B
	Water flow rate	(2) l/h	1078	1217	1460	1843	2434	3007	3859	4207	5041	6084	7878
		High static pressure	(2) kPa	69	67	65	58	72	67	46	40	64	94
23°C / 18°C	Cooling capacity	(3) kW	6,96	7,55	9,13	11,67	16,32	20,01	24,84	26,86	32,11	39,43	49,93
	Total input power	(3) kW	1,87	2,03	2,50	3,32	4,16	5,03	6,58	6,9	9,27	11,3	15,34
	EER	(3)	3,72	3,72	3,65	3,52	3,92	3,98	3,78	3,89	3,46	3,49	3,25
	Cooling Energy Class Eurovent	(3)	B	B	B	C	A	A	B	A	D	D	E
	Water flow rate	(3) l/h	1188	1289	1560	1996	2796	3431	4270	4622	5492	6737	8556
		High static pressure	(3) kPa	64	64	61	52	60	55	33	27	47	63
30°C / 35°C	Heating capacity	(4) kW	6,40	7,23	8,68	10,97	14,5	17,93	23,08	25,18	29,99	36,13	46,95
	Total input power	(4) kW	1,60	1,78	2,20	2,77	3,66	4,31	5,6	6,1	8,07	9,81	12,94
	COP	(4)	4,00	4,06	3,95	3,96	3,96	4,16	4,12	4,13	3,72	3,68	3,63
	Heating Energy Class Eurovent	(4)	B	A	B	B	B	A	A	A	D	D	D
	Water flow rate	(4) l/h	1121	1265	1518	1916	2530	3127	4012	4374	5241	6326	8191
		High static pressure	(4) kPa	66	64	62	54	68	63	40	33	53	78
Performance under average climatic conditions (Average)													
	Pdesignh	(5)	6	6	8	10	13	16	21	23	27	32	42
	SCOP	(5)	3,40	3,48	3,40	3,40	3,48	3,63	3,63	3,60	3,58	3,58	3,60
	ηs	(5)	133	136	133	133	136	142	142	141	140	140	141
	Efficiency Energy Class	(6)	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+

Date (14511:2013)

- (1) Water evaporator 12°C/7°C, External air 35°C
- (2) Water condenser 40°C/45°C, External air 7°C b.s./6°C b.u.
- (3) Water evaporator 23°C/18°C, External air 35°C
- (4) Water condenser 30°C/35°C, External air 7°C b.s./6°C b.u.
- (5) Efficiencies for low temperature Applications (35°C)
- (6) Efficiency Energy Class in according to regulation n°811/2013 Pdesignh ≤ 70kW

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

Technical Data

			020	025	030	040	050	070	080	090	102	152	202
Electrical data													
230V	Total input current (cooling)	(7) A	6,4	7,3	8,1	10,7	-	-	-	-	-	-	-
	Total input current (heating)	(7) A	6,6	7,6	9,3	11,8	-	-	-	-	-	-	-
	Maximum current (FLA)	(7) A	17,5	17,5	20,7	24,7	-	-	-	-	-	-	-
	Starting current (LRA)	(7) A	59,5	62,5	83,7	98,7	-	-	-	-	-	-	-
400V	Total input current (cooling)	(7) A	3,7	4,2	4,7	6,2	8,7	9,7	12,2	12,8	15,6	18,8	24,7
	Total input current (heating)	(7) A	3,8	4,4	5,4	6,8	9,5	10,3	12,9	13,8	17,0	19,0	25,0
	Maximum current (FLA)	(7) A	7,0	7,0	7,7	9,7	11,3	13,5	16,3	17,3	22,0	26,0	32,0
	Starting current (LRA)	(7) A	27,5	33,5	36,7	49,7	65,3	75,3	102,3	96,3	76,0	87,0	117,0
Scroll Compressor													
Compressors	n°		1	1	1	1	1	1	1	1	2	2	2
Circuit	n°		1	1	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°	std/1	std/1	inverter/1	inverter/1	inverter/2	inverter/2	inverter/2	inverter/2	std/2	std/2	std/2	
Air flow rate (cooling)		2500	2500	3500	3500	7200	7200	7300	7200	14000	13500	13500	
Sound data (cooling)													
Sound power level	dB(A)	61	61	68	68	69	69	69	68	76	77	78	
Sound pressure level	dB(A)	30	30	37	37	38	38	38	37	44	45	46	

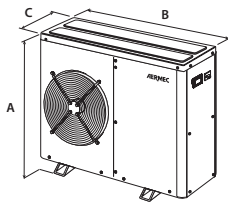
(7) Unit standar configuration without hydronic kit

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.

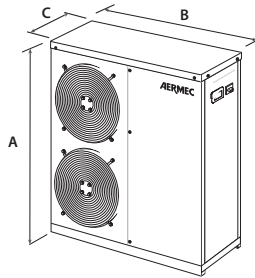
Sound pressure Sound pressure in free field, at 10 m distance from the external surface of the unit (in accordance with UNI EN ISO 3744).

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

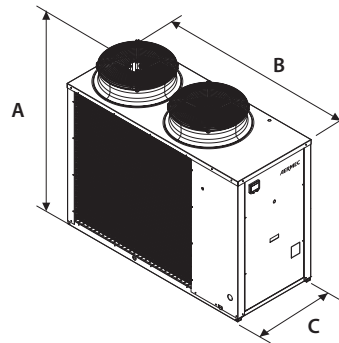
Dimensions (mm)



020 - 040



050 - 090



102 - 152 - 202

			020	025	030	040	050	070	080	090	102	152	202
ANL H - HP													
Height	A	mm	868		1000			1252				1450	
Width	B	mm	900		900			1124				1750	
Length (*with feet)	C	mm	310/354*		310/354*			384/428*				750	
ANL - HA													
Height	A	mm	868		1015			1281				1450	
Width	B	mm	1124		1124			1165				1750	
Length (*with feet)	C	mm	384/428*		384/428*			550				750	
ANL - HQ													
Height	A	mm	/		/			1281				1450	
Width	B	mm	/		/			1165				1750	
Length (*with feet)	C	mm	/		/			550				750	
Weight													
ANL H	kg		75		86		120	120	156	156	295	322	358
ANL - HP	kg		77		91		127	150	163	163	313	343	379
ANL - HA	kg		99		103		147	150	183	183	363	393	429
ANL - HQ e HN	kg		/		/		151	151	187	187	380	410	450

Aermec reserves the right to make all modification deemed necessary for improving the product at any time with any modification of technical data.

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