

ANL 290/650 heat pump

HFC
Refrigerant
R410A



Aermec

participate in the EUROVENT program: LCP
the products are present on the site
www.eurovent-certification.com

Reversible Heat Pumps
Air/Water for outdoor installation
Axial fan and scroll compressor:
Cooling capacity 53÷128kW
Heating capacity 61÷142kW

Variable Multi Flow

VMF



- **STANDARD VERSION**
- **LOW NOISE VERSION**
- **VERSION WITH BUILT-IN HYDRONIC KIT**

Features

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 pump

ANL_HL: Heat pump low noise

Range of operations

Work up to 44°C of outdoor air temperature at full load, depending on size.

For further details refer to the selection software/ technical documentation.

- High efficiency scroll compressors
- Flow switch as standard supply.
- Low and high pressure transducers as standard supply.
- High efficiency exchangers.
- Electronic controller (Modu_control).
- Possibility of integrated hydronic kit that encloses the main hydraulic components; it is

available in different configurations with one or two pumps, with different static pressures available

- Microprocessor control system
 - Control from the entering water temperature, with the possibility of selecting control of the leaving water temperature
 - Summer condensation control with 0-10V modulating signal depending on pressure, compensated according to the outside air temperature (with DCPX accessory)
 - Intelligent defrosting to decay of pressure.
 - Automatic rotation of compressors.
 - Load limiting safety control.
 - Automatic reset of alarms before total block.
 - Alarm history.

Accessories

- **MODU-485BL:** RS-485 interface for supervision systems with MODBUS protocol.
- **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-485BL**
- **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 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.
- **MULTICONTROL:** Allows the simultaneous control of several chillers or heat pumps (up to 4) fitted with our MODUCONTROL con-

troller 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.
- **DCPX:** Low temperature device for correct cooling mode operation with ambient temperatures from less than 10 °C down to - 10 °C.
- **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.

- **GP:** Protects the external coil from blows.
- **VT:** Anti-vibration mounts.

Accessories can only be applied in the factory

- **RIF:** Current rephaser. Connected in parallel to the motor, it allows a reduction of the absorbed current about 10%.

COMPATIBILITY WITH THE VMF SYSTEM.

For further system information please refer to the specific documentation.

Accessory compatibility

ANL_H		290	300	340	400	580	620	650
MODU-485BL	all	•	•	•	•	•	•	•
AERNET	all	•	•	•	•	•	•	•
MULTICONTROL	all	•	•	•	•	•	•	•
SPLW	all	•	•	•	•	•	•	•
AERSET	all	•	•	•	•	•	•	•
PR3	all	•	•	•	•	•	•	•
DCPX (version with standard fan "om")	H	-	-	-	83	83	83	83
	HL	inverter fans			standard	standard	standard	standard
DCPX (version increased fan "M")	H	-	-	-	-	-	-	-
	HL	62	62	63	-	-	-	-
GP	all	GP3	GP3	GP3	GP2 (x2)	GP2 (x2)	GP2 (x2)	GP2 (x2)
VT (00)	all	17	17	17	11	11	11	11
VT (P1-P2-P3-P4)	all	13	13	13	11	11	11	11
VT (01-02-03-04)	all	13	13	13	11	11	11	11
Accessories can only be applied in the factory								
RIF	all	32	32	42	42	50	72	51

(1) Standard with desuperheater

(1) Standard for the size up 400HL to 650HL

(x2) indicates the quantity to order

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.

- Campo** **Description**
- 1,2,3** **ANL**
- 4,5,6** **Size**
290-300-340-400-580-620-650 (2)
- 7** **Field of use**
° Standard with produced water down to +4 °C
X Electronic thermostatic valve temperature of water produced up to +4°C (for different temperatures please contact us)
- 8** **Model**
H Heat pump
- 9** **Heat recovery**
° Without heat recovery
D desuperheater (3)
- 10** **Versions**
° Standard
L Low noise
- 11** **Coil**
° Aluminium
R Copper
S Tinned copper
V Coated
- 12** **Fans (4)**
° Standard
M Increased
J Inverter
- 13** **Power supply**
° 400V/3N/50 Hz
- 14** **Soft-start**
° Without Soft Start
S With Soft Start
- 15-16** **Integrated hydronic kit**
00 Without pump or storage tank
01 Low head pump and buffer tank
02 Single and standby low head pump and buffer tank
03 Single high head pump and buffer tank
04 Single and standby high head pump and buffer tank
P1 Low head pump
P2 Single and standby low head pump
P3 Single high head pump
P4 Single and standby high head pump

(2) Sizes up 290 to 340 are available only in the Low noise mode "L".

(3) The desuperheater can be used exclusively in the cold operation

(4) **On / off fan Standard**, standard sizes up 400 to 650

Fans on/off Increased, options only for size up ANL290HL to 340HL

Fans Inverter, standard sizes from 290 to 340, with no static pressure

Fans Inverter, option for sizes from 400 to 650 with static pressure

Technical data

ANL - H		290	300	340	400	580	620	650
		V/ph/Hz	400V	400V	400V	400V	400V	400V
12°C / 7°C	Cooling capacity	(1) kW	/	/	/	82,5	105,8	128,8
	Total input power	(1) kW	/	/	/	28,98	41,54	48,42
	EER	(1)	/	/	/	2,85	2,55	2,66
	ESEER	(1)	/	/	/	4,06	3,74	3,93
	Water flow rate	(1) l/h	/	/	/	14226	21125	22257
	Pressure drop	(1) kPa	/	/	/	29	55	61
40°C / 45°C	Heating capacity	(2) kW	/	/	/	90,02	122,24	141,49
	Total input power	(2) kW	/	/	/	28,45	38,74	46,01
	COP	(2)	/	/	/	3,16	3,16	3,17
	Water flow rate	(2) l/h	/	/	/	15577	21125	23077
	Pressure drop	(2) kPa	/	/	/	33	55	61
	Pressure drop	(2) kPa	/	/	/	33	55	61
23°C / 18°C	Cooling capacity	(3) kW	/	/	/	111,72	143,26	174,25
	Total input power	(3) kW	/	/	/	32,14	46,11	53,98
	EER	(3)	/	/	/	3,48	3,11	3,42
	Water flow rate	(3) l/h	/	/	/	16121	24879	28682
	Pressure drop	(3) kPa	/	/	/	36	80	96
	Pressure drop	(3) kPa	/	/	/	36	80	96
30°C / 35°C	Heating capacity	(4) kW	/	/	/	93,52	127	147
	Total input power	(4) kW	/	/	/	23,67	32,28	35,06
	COP	(4)	/	/	/	3,95	3,93	3,96
	Water flow rate	(4) l/h	/	/	/	16121	21862	23883
	Pressure drop	(4) kPa	/	/	/	36	60	66
	Pressure drop	(4) kPa	/	/	/	36	60	66
Performance under average climatic conditions (Average) UE n°813/2013 Pdesignh ≤ 400kW								
Pdesignh		(5)	/	/	/	76	103	113
SCOP		(5)	/	/	/	3,53	3,53	3,55
ηs		(5)	/	/	/	138	138	139
Cooling mode for low temperature								
ηsc						157,9	145,5	160,1
SEER						4,02	3,71	4,08

ANL - HL		290	300	340	400	580	620	650
		V/ph/Hz	400V	400V	400V	400V	400V	400V
12°C / 7°C	Cooling capacity	(1) kW	52,97	57,25	65,66	77,98	100,73	122,25
	Total input power	(1) kW	20,91	23,86	24,52	30,58	44,6	51,87
	EER	(1)	2,53	2,40	2,68	2,55	2,26	2,36
	ESEER	(1)	3,50	3,54	3,55	3,48	3,37	3,8
	Water flow rate	(1) l/h	9138	9873	11331	13446	17385	21118
	Pressure drop	(1) kPa	26	24	31	26	40	55
40°C / 45°C	Heating capacity	(2) kW	60,81	66,42	72,64	90,02	122,24	141,49
	Total input power	(2) kW	18,82	20,61	22,37	28,45	38,74	46,01
	COP	(2)	3,23	3,22	3,25	3,16	3,16	3,17
	Water flow rate	(2) l/h	10518	11493	12564	15577	21125	2443
	Pressure drop	(2) kPa	32	29	35	33	55	61
	Pressure drop	(2) kPa	32	29	35	33	55	61
23°C / 18°C	Cooling capacity	(3) kW	71,74	77,56	88,93	109,05	140,83	170,74
	Total input power	(3) kW	23,18	26,43	27,21	32,61	47,59	55,58
	EER	(3)	3,09	2,93	3,27	3,34	2,96	3,26
	Water flow rate	(3) l/h	12448	13450	15435	18911	24452	29701
	Pressure drop	(3) kPa	47	42	56	51	77	93
	Pressure drop	(3) kPa	47	42	56	51	77	93
30°C / 35°C	Heating capacity	(4) kW	63,18	69,01	75,47	93,52	127	147
	Total input power	(4) kW	15,67	17,15	18,62	23,67	32,28	35,06
	COP	(4)	4,03	4,02	0,64	3,95	3,93	3,96
	Water flow rate	(4) l/h	10885	11895	13002	16121	21862	23883
	Pressure drop	(4) kPa	35	32	38	36	60	66
	Pressure drop	(4) kPa	35	32	38	36	60	66
Performance under average climatic conditions (Average) UE n°811/2013 Pdesignh ≤ 70kW								
Pdesignh		(5)	51	56	61	76	103	113
SCOP		(5)	3,58	3,60	3,60	3,53	3,53	3,55
ηs		(5)	140	141	141	138	138	139
Efficiency Energy Class			A+	A+	A+	/	/	/
Cooling mode for low temperature								
ηsc			142,8	137,0	152,3	149,6	142,6	157,3
SEER			3,65	3,50	3,88	3,82	3,64	4,01

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)

ANL - H				290	300	340	400	580	620	650
Electrical data										
Total input currente (cooling)	H	(6)	A	/	/	/	52	68	70	77
Total input currente (heating)	H	(6)	A	/	/	/	51	63	68	74
Maximum current (FLA)	H	(6)	A	/	/	/	65	98	107	116
Starting current (LRA)	H	(6)	A	/	/	/	181	264	264	273
Total input currente (cooling)	HL	(6)	A	37	41	45	54	72	75	83
Total input currente (heating)	HL	(6)	A	34	36	42	51	63	68	74
Maximum current (FLA)	HL	(6)	A	44	47	54	65	98	107	116
Starting current (LRA)	HL	(6)	A	126	128	160	181	264	264	273
Scroll Compressor										
Compressors / Circuit	n°			2/1	2/1	2/1	2/1	2/1	2/1	2/1
Refrigerant	Type			R410A						
Heat exchanger system side										
Exchanger	Type/n°			Plate/1						
hydraulic connections (In/Out)	Ø			2"½						
Axial fans										
Fan	Type/n°			Inverter/4	Inverter/4	Inverter/6	std/2	std/2	std/2	std/2
Air flow rate (cooling)	H	m³/h		/	/	/	45800	45800	44600	44600
	HL	m³/h		17600	17600	17200	32060	32060	31220	31220
Sound data (cooling mode)										
Sound power level	H	dB(A)		/	/	/	89.4	89.4	89.4	89.4
Sound pressure level	H	dB(A)		/	/	/	57.6	67.6	57.6	57.6
Sound power level	HL	dB(A)		73.4	74.1	74.3	83.4	84.0	84.6	85.2
Sound pressure level	HL	dB(A)		41.7	42.4	42.6	51.5	52.1	52.7	53.4

(6) Unit standar configuration without hydronic kit

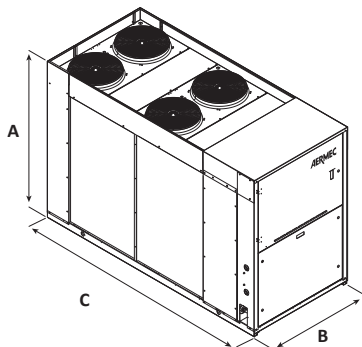
Sound power Aermec determines sound power values on the basis of measurements made in accordance with UNI EN ISO 9614-2, as required for Eurovent certification.

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).

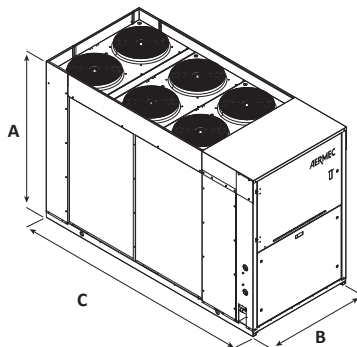
Note: For more information, refer to the selection program or the technical documentation available on the website www.aermec.com

Dimensions (mm)

ANL-H 290-300



ANL-H 340



Mod. ANL_H		290	300	340	400	580	620	650
A	mm	1605	1605	1605	1875	1875	1875	1875
B	mm	1100	1100	1100	1100	1100	1100	1100
C	mm	2450	2450	2450	2950	3200	3200	3200
Weight "00"	Kg	655	660	684	808	902	1008	1053
Weight operation "00"	Kg	673	679	703	832	926	1033	1078

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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