

DATA SHEET

EcoAir 622 Air-to-water Heat Pump



Main features

Application	Space heating and hot water heating.
Description	Heat pumps extract energy from the ambient air (at outdoor temperature of down to $-22\text{ }^{\circ}\text{C}$); this energy is then "pumped" to a higher temp. and transferred into heating water; the flow temp. may reach up to $65\text{ }^{\circ}\text{C}$.
Working fluid	Water (heating circuit).
Installation ¹⁾	Shall be installed with EcoZenith multi-energy thermal store, RegulusBOX indoor unit (code18054) or with CSE IR pump station w. controller (for variants and their codes see Catalogue).
Certification	HP Keymark – European Committee for Standardization quality label.
Code	17157

1) In case of installation in series, the first heat pump in series shall be installed with Pump Station Kit w. Smart Controller, all the heat pumps following in series shall be installed with CSE TC W iPWM pump station (for codes see Catalogue).

Technical data

Nominal output ²⁾	4.75 kW / 13.99 kW
Nominal power input ²⁾	0.94 kW / 6.03 kW
COP ²⁾	5.07 / 2.32
Nominal current ³⁾	16.9 A
Power supply	3/N/PE ~ 400/230V 50Hz
Recommended circuit breaker ⁴⁾	B20A 3phase
Ingress protection (IP)	IPX4
Max. heat pump flow temp.	$65\text{ }^{\circ}\text{C}$
Max. heating water temperature at HP inlet	$100\text{ }^{\circ}\text{C}$
Max. working pressure of heat. water	3 bar
Heating water volume in heat pump	2.8 l
Min. volume of heating system that cannot be shut off	120 l
Min. flow rate through heat pump*	1400 l/h
Min. surface area of heat exchanger in tank	1.5 m^2
Air operating temp.	$-22/35\text{ }^{\circ}\text{C}$
Air volume	$5457\text{ m}^3/\text{h}$
Fan speed	modulating
Fan input power	148 W
Compressor / oil type	Scroll / PVE FV50S
Refrigerant	R 407C (GWP 1774)
Refrigerant quantity	2.7 kg
CO ₂ equivalent ⁵⁾	4.790 t
Refrigerant max. working pressure	31 bar
Connections	2x Cu 28 x 1.5 mm
Weight	192 kg

2) For temperatures A+7/W35 at min. speed and A-7/W35 at max. speed following EN 14511. 3) At max. speed incl. circulation pump. 4) For heat pumps installed with the selected accessories (cf. the Installation row) the circuit breaker value may be reduced to B16A 3ph as the max. current limitation is secured through software in the controller included. 5) Not subject to mandatory leak checks under EU Regulation No. 517/2014.

Energy efficiency data

(for low-temperature applications under average climatic conditions, others see the Product Fiche)

Seasonal Energy Efficiency	194%
Energy Efficiency Class	A+++
SCOP	4.93

Sound data (by ErP)

Sound power level	55 dB(A)
Sound pressure level at	36 dB(A) at 5 m from the heat pump 30 dB(A) at 10 m from the heat pump

EcoAir 622M Air-to-water Heat Pump
Parameters for distribution tariff change

Parameters for distribution tariff change	9.47 kW
Heat output ⁶⁾	15.39 kW
Steady current ⁶⁾	9.5 A
Starting current	4.9 A
Nominal voltage / number of phases	400 V 3f

6) For temperatures A2/W35 and max. compressor rpm.

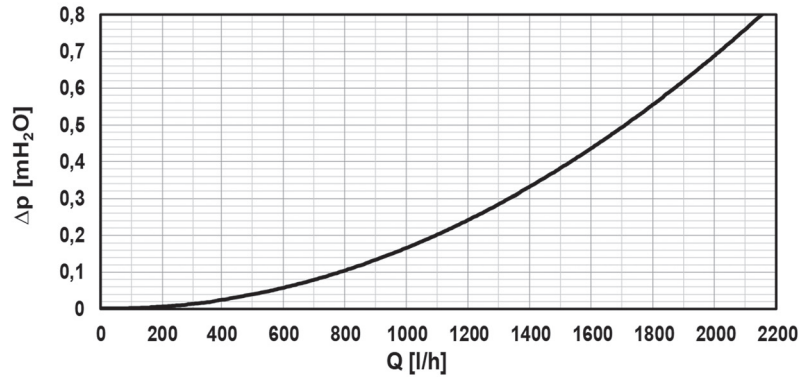
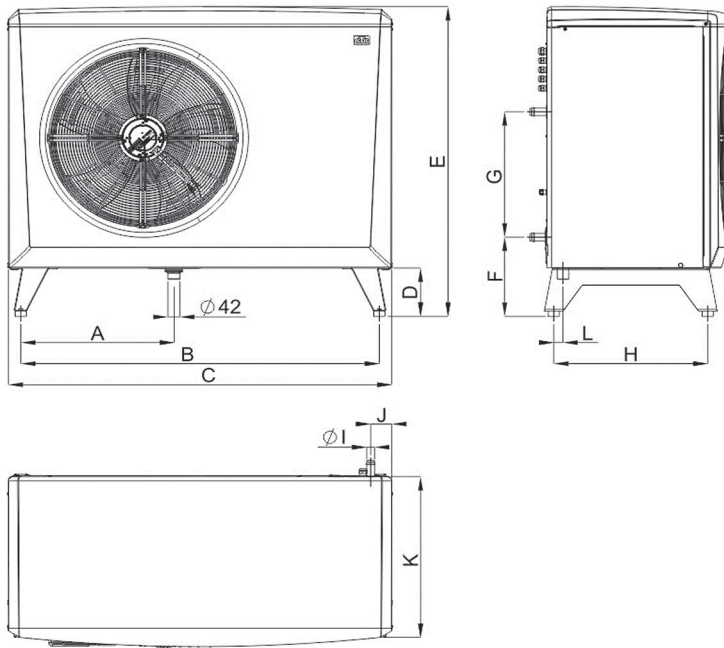
Output parameters⁷⁾

	Air temperature	Flow temperature	Output [kW]	Power input [kW]	COP [-]
RPS 120 Hz	12 °C	35 °C	24.47	6.98	3.51
		45 °C	23.79	8.23	2.89
		55 °C	23.11	9.47	2.44
	7 °C	35 °C	18.51	6.35	2.92
		45 °C	19.43	7.81	2.49
		55 °C	20.35	9.26	2.20
	2 °C	35 °C	15.39	5.91	2.60
		45 °C	15.66	7.05	2.22
		55 °C	15.92	8.18	1.95
	-7 °C	35 °C	13.99	6.03	2.32
		45 °C	14.23	7.25	1.96
		55 °C	14.47	8.46	1.71
-15 °C	35 °C	12.05	5.99	2.01	
	45 °C	11.91	7.10	1.68	
	55 °C	11.76	8.20	1.43	
RPS 50 Hz	12 °C	35 °C	13.50	2.49	5.41
		45 °C	12.96	3.01	4.31
		55 °C	12.41	3.52	3.53
	7 °C	35 °C	10.30	2.27	4.53
		45 °C	10.33	2.80	3.69
		55 °C	10.35	3.32	3.12
	2 °C	35 °C	8.27	2.19	3.78
		45 °C	8.70	2.77	3.14
		55 °C	9.12	3.35	2.72
	-7 °C	35 °C	7.29	2.18	3.34
		45 °C	7.11	2.64	2.69
		55 °C	6.93	3.10	2.24
-15 °C	35 °C	5.77	2.07	2.79	
	45 °C	5.64	2.60	2.17	
	55 °C	5.51	3.12	1.77	
RPS 20 Hz	12 °C	35 °C	5.48	0.97	5.65
		45 °C	5.76	1.34	4.29
		55 °C	6.03	1.71	3.52
	7 °C	35 °C	4.75	0.94	5.07
		45 °C	5.06	1.32	3.84
		55 °C	5.36	1.69	3.17
	2 °C	35 °C	3.72	1.01	3.67
		45 °C	4.20	1.34	3.23
		55 °C	4.67	1.67	2.79

7) The values of working parameters are measured according to EN 14 511 including defrost cycle at the manufacturer's test lab.

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EcoAir 622M Air-to-water Heat Pump

Sound data	Heat pump in night mode	Max. compressor rpm
Sound power level	59 dB(A)	64 dB(A)
Sound pressure level	40 dB(A) et 5 m from the heat pump 34 dB(A) et 10 m from the heat pump	45 dB(A) at 5 m from the heat pump 39 dB(A) at 10 m from the heat pump

Condenser pressure drop graph

Dimensions


	[mm]		[mm]
A	550	G	476
B	1285	H	550
C	1375	I	$\phi 28$
D	188	J	83
E	1180	K	645
F	308	L	33

PRODUCT FICHE

EcoAir 622M Air-to-water Heat Pump

Supplier's name *REGULUS spol. s r. o.*
Supplier's model identifier *CTC EcoAir 622M*

Parameter	low temperature	medium temperature
The seasonal space heating energy efficiency class	A+++	A++
Average climate		
The rated heat output including any supplementary heaters	9 kW	9 kW
The seasonal space heating energy efficiency	194 %	148 %
The annual energy consumption	3 567 kWh	4 656 kWh
Cold climate		
The rated heat output including any supplementary heaters	13 kW	12 kW
The seasonal space heating energy efficiency	168 %	136 %
The annual energy consumption	7 225 kWh	8 159 kWh
Warm climate		
The rated heat output including any supplementary heaters	13 kW	13 kW
The seasonal space heating energy efficiency	245 %	183 %
The annual energy consumption	2 804 kWh	3 746 kWh
The sound power level LWA, outdoors	55 db	

Any specific precautions that shall be taken when the space heater is assembled, installed or maintained are stated in the manual that is a part of the supply.

Model:	CTC EcoAir 622M
Air-to-water heat pump:	yes
Water-to-water heat pump:	no
Brine-to-water heat pump:	no
Low-temperature heat pump:	no
Equipped with supplementary heater:	no
Heat pump combination heater:	no

Parameters declared for medium-temperature application and average climate.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	P_{rated}	8	kW	Seasonal space heating energy efficiency	η_s	148	%
<i>Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j.</i>				<i>Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j.</i>			
$T_j = -7\text{ °C}$	P_{dh}	7,50	kW	$T_j = -7\text{ °C}$	COP_d	2,41	–
$T_j = +2\text{ °C}$	P_{dh}	4,60	kW	$T_j = +2\text{ °C}$	COP_d	3,81	–
$T_j = +7\text{ °C}$	P_{dh}	4,70	kW	$T_j = +7\text{ °C}$	COP_d	4,76	–
$T_j = +12\text{ °C}$	P_{dh}	5,60	kW	$T_j = +12\text{ °C}$	COP_d	6,15	–
$T_j = \text{bivalent temperature}$	P_{dh}	8,70	kW	$T_j = \text{bivalent temperature}$	COP_d	1,99	–
$T_j = \text{operation limit temperature}$	P_{dh}	8,70	kW	$T_j = \text{operation limit temperature}$	COP_d	1,99	–
For air-to-water heat pumps:	P_{dh}	–	kW	For air-to-water heat pumps:	COP_d	–	–
$T_j = -15\text{ °C}$ (if TOL < -20 °C)	P_{dh}	–	kW	$T_j = -15\text{ °C}$ (if TOL < -20 °C)	COP_d	–	–
Bivalent temperature	T_{biv}	-10	°C	For air-to-water heat pumps:	T_{OL}	-10	°C
Cycling interval capacity for heating	P_{cyc}	–	kW	operation limit temperature	COP_{cyc}	–	–
Degradation co-efficient (**)	C_{dh}	0,98	–	Cycling interval efficiency	W_{TOL}	55	°C
<i>Power consumption in modes other than active mode</i>				<i>Supplementary heater</i>			
Off mode	P_{OFF}	0,012	kW	Rated heat output (*)	P_{sup}	0,00	kW
Thermostat-off mode	P_{TO}	0,012	kW	Type of energy input	electric		
Standby mode	P_{SB}	0,012	kW	For air-to-water heat pumps:	4 200 m ³ /h		
Crankcase heater mode	P_{CK}	0,000	kW	rated air flow rate, outdoors			
<i>Other items</i>				For water/brine-to-water heat pumps:	– m ³ /h		
Capacity control	variable			Rated brine or water flow rate, outdoor heat exchanger			
Sound power level, indoors / outdoors	L_{WA}	- / 55	dB				
Annual energy consumption	Q_{HE}	4 656	kWh				

Contact details **Enertech AB, Box 309, SE-341 26 Ljungby, Švédsko** www.ctc.se

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the capacity for heating $sup(T_j)$.

(**) If C_{dh} is not determined by measurement then the default degradation is $C_{dh} = 0,9$.