Data sheet

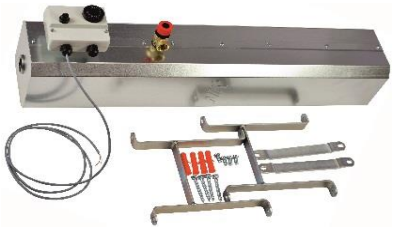
EcoAir 622M Air-to-water Heat Pump

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 °C); this energy is then “pumped“ to a higher temp. and transferred into heating water; the flow temp. may reach up to 65 °C
Working fluid	R407C (refrigerant), water (heating circuit)
Installation*	the heat pump shall be installed with EcoZenith multi-energy thermal store (code 13241 or 17192), or with a Pump Station Kit w. Smart Controller (code 17357 or 17358); see Accessories
Certification	HP Keymark - European Committee for Standardization quality label
Code	**17157**

** 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 PWM pump station (for codes see Accessories)*

Optional accessories

Heating Cable for EcoAir



In Line Heater

Braided hose

Technical data	
Nominal output	4,75 / 13,99 kW
Nominal power input	0,94 / 6,03 kW
COP	5,07 / 2,32
Nominal current [1]	16,9 A
Steady current	9,5 A
Starting current	4,9 A
Power supply	3/N/PE ~ 400/230V 50Hz
Recommended circuit breaker	B20A 3phase
Ingress protection (IP)	IPX4
Max. heat pump flow temp.	65 °C
Max. heating water temp. in system	100 °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 m²
Air operating temp.	-22/35 °C
Air volume	5457 m³/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 [3]	4,790 t
Refrigerant max. working pressure	31 bar
Connections	2 x Cu 28x1,5 mm
Weight	192 kg

1) for temperatures A+7/W35 at min. RPS and A-7/W35 at max. RPS according to EN 14511; 2) at max. RPS including charge pump 3) is not covered by the annual check for leaking refrigerant (EU 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 (according to EN 12 102)	
Sound power level for A7/W55 temp. at compressor speed of 21 Hz	55 dB(A)
Sound power level for A7/W55 temp. at compressor speed of 80 Hz	64 dB(A)
Sound pressure level at	36 dB(A) … 5 m 30 dB(A) … 10 m

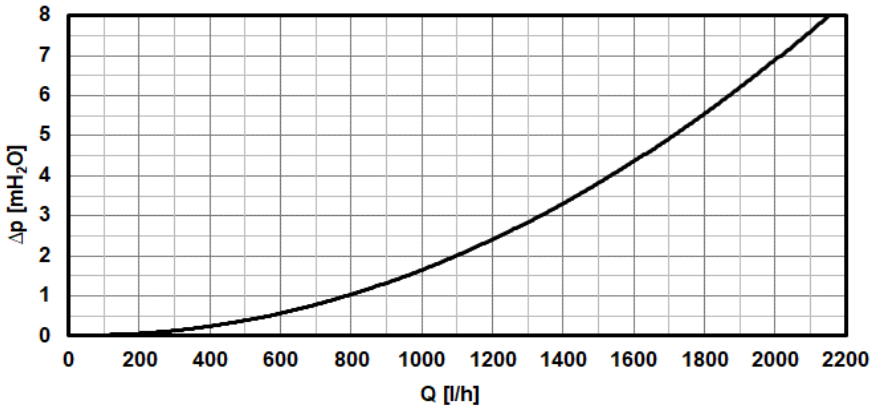
Accessories	
Compensator for heat pump	part of delivery (code 16757)
EcoZenith i350 L Multi-Energy Thermal Store	code 17192
CSE TC W Pump Station & IR 12 CTC Controller	code 17357
CSE TC W Pump Station & IR 12 FV3F Controller	code 17358
CSE TC W PWM Pump Station *	code 15874
Heating Cable for EcoAir	code 16168
In Line Heater	code 16166
Braided hose	for available variants with codes see the Catalogue
Coupler	for available variants with codes see the Catalogue
Elbow	for available variants with codes see the Catalogue

** applies only to installation in series, for heat pumps on the second and all following positions in the cascade (see Installation on Page 1)*

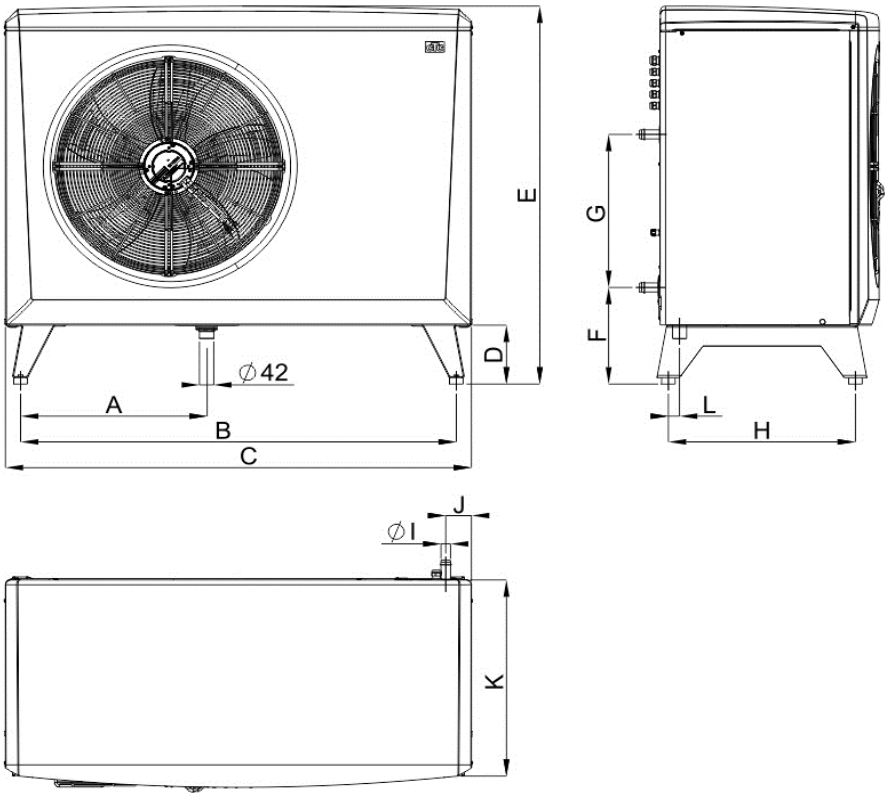
Output parameters *					
	Air temperature	Flow temperature	Output [kW]	Power input [kW]	COP [-]
RPS 120 Hz	12 °C	35 °C	24,47	6,98	3,51
		45 °C	23,79	8,23	2,89
		55 °C	23,11	9,47	2,44
	7 °C	35 °C	18,51	6,35	2,92
		45 °C	19,43	7,81	2,49
		55 °C	20,35	9,26	2,20
	2 °C	35 °C	15,39	5,91	2,60
		45 °C	15,66	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

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

Condenser pressure drop graph



Dimensions



	[mm]		[mm]
A	550	G	476
B	1285	H	551
C	1375	I	Ø28
D	188	J	83
E	1180	K	645
F	308	L	33

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Product Fiche

EcoAir 622M Air-to-water Heat Pump

Supplier's name *R E G U L U S 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 suplementary 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 suplementary 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 suplementary 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 thar 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
Rated heat output (*)	P_{rated}	**9**	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj.			
Tj = - 7 °C	P_{dh}	**7,50**	kW
Tj = + 2 °C	P_{dh}	**4,60**	kW
Tj = + 7 °C	P_{dh}	**4,70**	kW
Tj = + 12 °C	P_{dh}	**5,60**	kW
Tj = bivalent temperature	P_{dh}	**8,70**	kW
Tj = operation limit temperature	P_{dh}	**8,70**	kW
For air-to-water heat pumps: Tj = - 15 °C (if TOL < - 20 °C)	P_{dh}	**-**	kW
Bivalent temperature	T_{biv}	**-10**	°C
Cycling interval capacity for heating	P_{cvc}	**-**	kW
Degradation co-efficient (**)	C_{dh}	**0,98**	-
Power consumption in modes other than active mode			
Off mode	P_{OFF}	**0,012**	kW
Thermostat-off mode	P_{TO}	**0,012**	kW
Standby mode	P_{SB}	**0,012**	kW
Crankcase heater mode	P_{CK}	**0,000**	kW
Other items			
capacity control		**variable**	
Sound power level, indoors / outdoors	L_{WA}	**- / 55**	db
Annual energy consumption	Q_{HE}	**4656**	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficie	η_s	**148**	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj.			
Tj = - 7 °C	COP_d	**2,41**	-
Tj = + 2 °C	COP_d	**3,81**	-
Tj = + 7 °C	COP_d	**4,76**	-
Tj = + 12 °C	COP_d	**6,15**	-
Tj = bivalent temperature	COP_d	**1,99**	-
Tj = operation limit temperature	COP_d	**1,99**	-
For air-to-water heat pumps: Tj = - 15 °C (if TOL < - 20 °C)	COP_d	**-**	-
For air-to-water heat pumps: operation limit temperature	T_{OL}	**-10**	°C
Cycling interval efficiency	COP_{cvc}	**-**	-
Heating water operating limt temp.	W_{TOL}	**55**	°C
Supplementary heater			
Rated heat output (*)	P_{sup}	**0,00**	kW
Type of energy input		**electric**	
For air-to-water heat pumps: rated air flow rate, outdoors		**4200**	m^3/h
For water/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger		**-**	m^3/h

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

(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the capacity for heating sup(Tj).

(**) If Cdh is not determined by measurement then the default degradation is Cdh = 0,9.