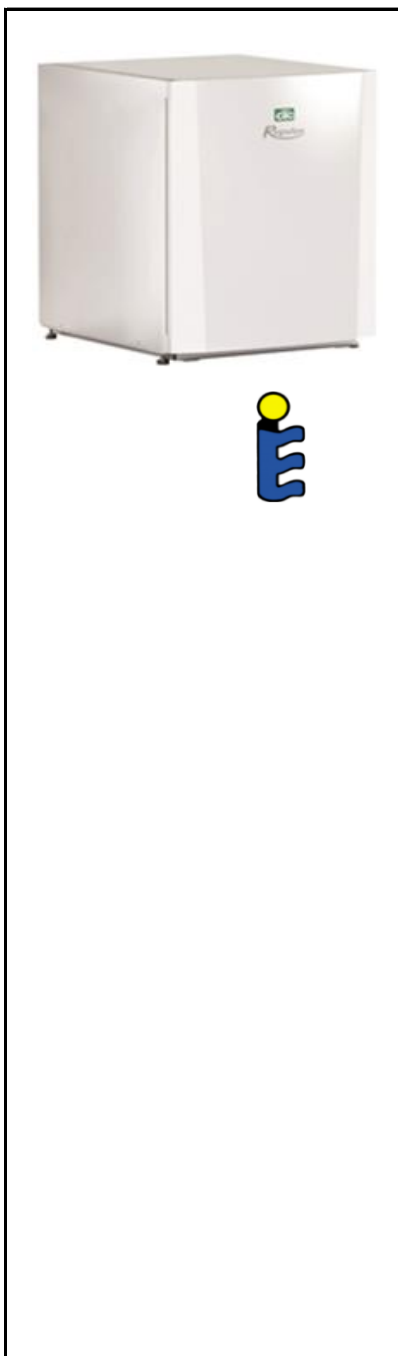


Main features	
Application	space heating and hot water heating
Description	heat pumps extract energy from ground; this energy gained from deep bores or ground collectors is then "pumped" to a higher temperature and transferred into heating water; the flow temp. may reach up to 65 °C
Installation	installation shall be done with Pump Station Kit w. Smart Controller (codes 17357 or 17358), see Accessories
Working fluid	R407C (refrigerant), antifreeze fluid (brine circuit), water (heating circuit)
Certification	HP Keymark - European Committee for Standardization quality label
Code	12648

* 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)



Technical data	
Nominal output	8,19 kW
Nominal power input	1,79 kW
Nominal current	6,5 A
Steady current	2,9 A
Starting current	17,7 A
Power supply	3/N/PE ~ 400/230V 50Hz
Recommended circuit breaker	B10A 3f
IP rating	IPX1
Compressor	Scroll
Refrigerant	R 407C (GWP 1774)
Refrigerant quantity	1,9 kg
CO2 equivalent *	3,370 t
Compressor oil	Polyoester (POE)
Refrigerant max. working pressure	31 bar
Brine system min./max. temp.	-5 °C / 20 °C
Brine system min./max. pressure	0,2 bar / 3,0 bar
Antifreeze fluid volume in HP	2,9 l
Brine system min. flow (Δt = 5 K)	1120 l/h
Brine system nom. flow (Δt = 3 K)	1840 l/h
Brine pump	UPM2K 25-70 180
Brine circuit connection	2 x Cu 28x1,5
Max. heat pump flow temp.	65 °C
Max. heating water temp. in system	110 °C
Max. working pressure of heat. water	3 bar
Heating water volume in heat pump	2,9 l
Min. surface area of heat exchanger in tank	2,3 m ²
Min. flow rate through HP (Δt = 10 K at 0/35 °C)	720 l/h
Nom. flow rate through HP (Δt = 5 K at 0/35 °C)	1400 l/h
Heating circuit connection	2 x Cu 22x1
Weight	143 kg

* is not covered by the annual check for leaking refrigerant (EU No 517/2014)

Energy efficiency data	
<i>(for low-temperature applications under average climatic conditions, others see the Product Fiche)</i>	
Seasonal Energy Efficiency	180%
Energy Efficiency Class	A+++
SCOP	4,7

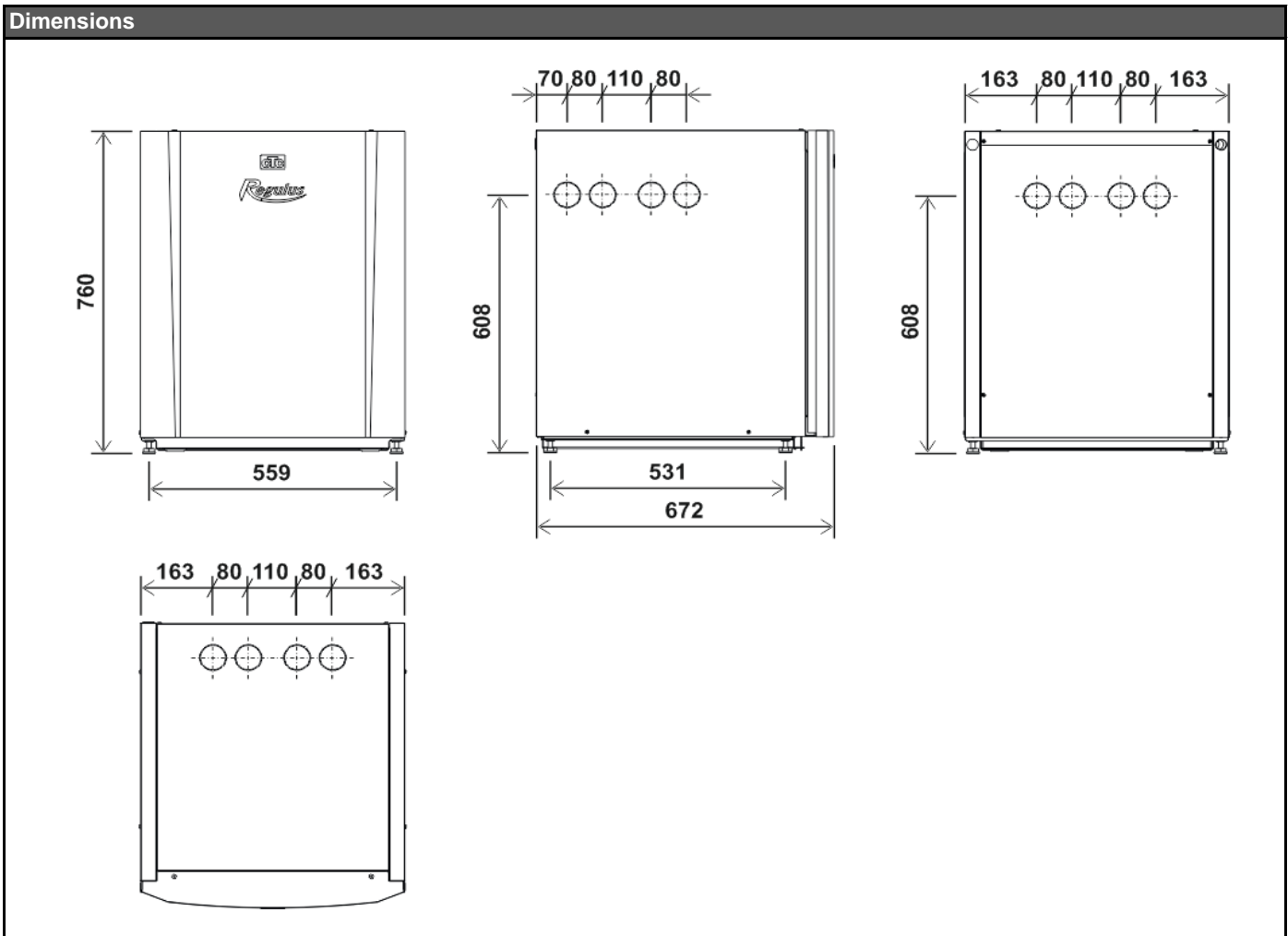
Sound data	
Sound power level by EN 12 102	46 dB(A)

Accessories	
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
In Line Heater	code 16167

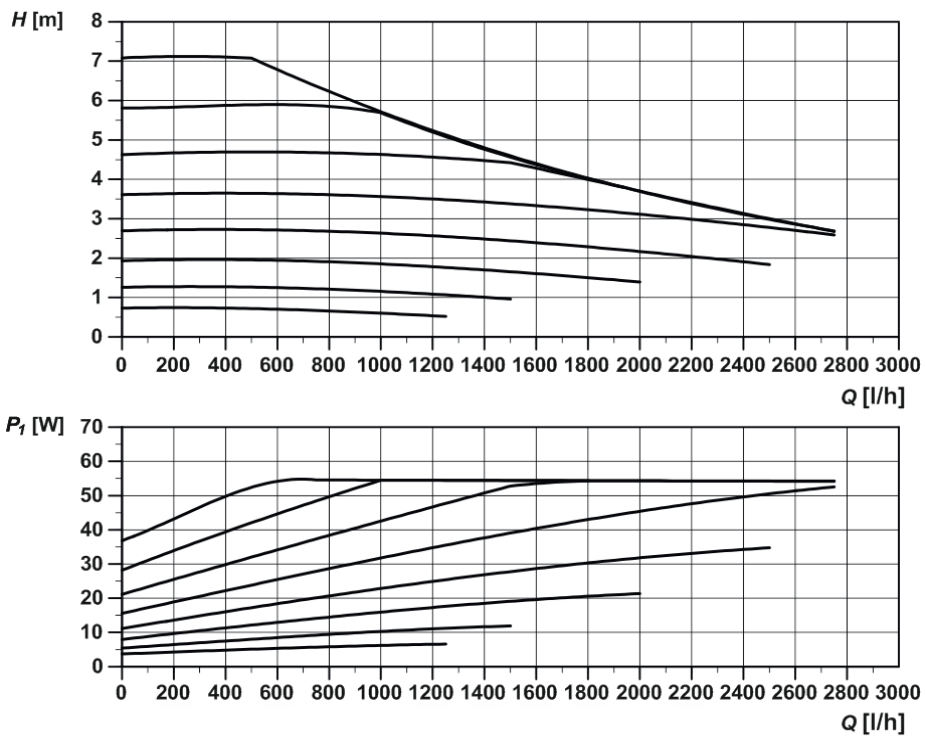
*applies only to installation in series, for heat pumps on the second and all following positions in the cascade (see Installation on Page 1)

Output parameters **				
Brine system temperature	Flow temperature	Output [kW]	Power input [kW]	COP [-]
5 °C	35 °C	9,44	1,88	5,02
	45 °C	9,05	2,24	4,04
	55 °C	8,65	2,62	3,30
0 °C	25 °C	8,50	1,72	4,93
	35 °C	8,19	1,79	4,58
	45 °C	7,87	2,16	3,64
-5 °C	45 °C	6,84	2,05	3,34

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

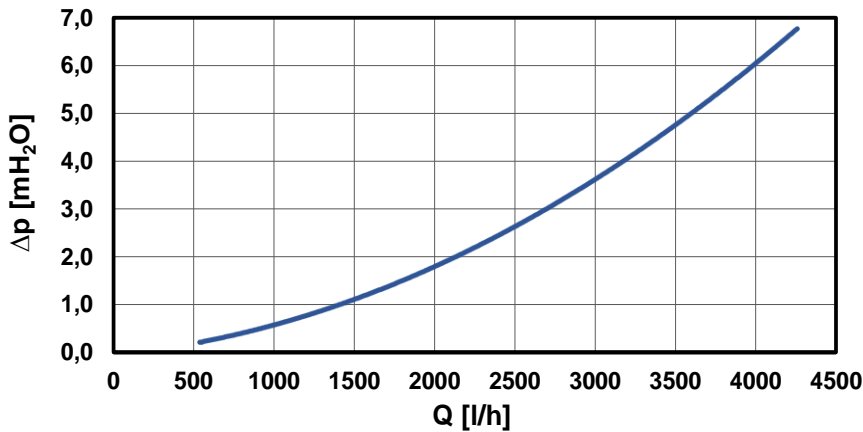


Brine pump performance curves

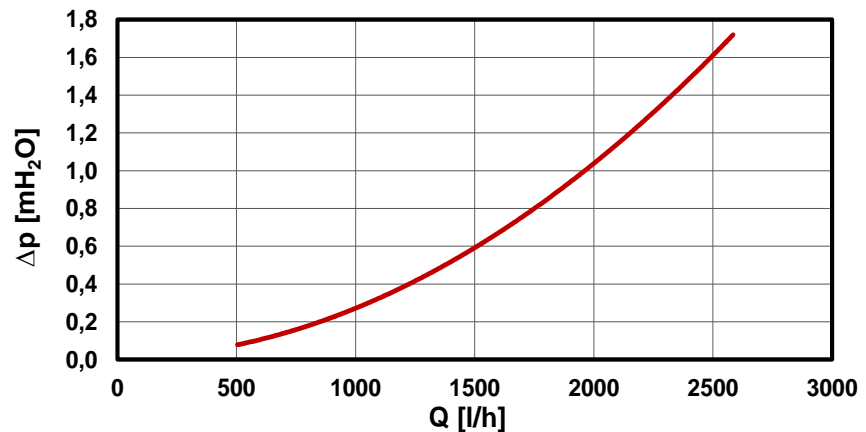


Evaporator + condenser pressure drop

Evaporator pressure drop



Condenser pressure drop



Dodavatel REGULUS spol. s.r.o.
Model CTC EcoPart 408

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	180 %	118 %
The annual energy consumption	4 092 kWh	4 995 kWh
Cold climate		
The rated heat output including any supplementary heaters	9 kW	9 kW
The seasonal space heating energy efficiency	183 %	139 %
The annual energy consumption	4 612 kWh	5 773 kWh
Warm climate		
The rated heat output including any supplementary heaters	9 kW	8 kW
The seasonal space heating energy efficiency	177 %	135 %
The annual energy consumption	2 558 kWh	3 083 kWh
The sound power level LWA, outdoors	46 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 EcoPart 408
Air-to-water heat pump:	no
Water-to-water heat pump:	no
Brine-to-water heat pump:	yes
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}	9	kW	Seasonal space heat. ener. efficiency	η_s	136	%
<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>			
$T_j = -7$ °C	P_{dh}	7,70	kW	$T_j = -7$ °C	COP_d	3,28	-
$T_j = +2$ °C	P_{dh}	7,90	kW	$T_j = +2$ °C	COP_d	3,62	-
$T_j = +7$ °C	P_{dh}	8,00	kW	$T_j = +7$ °C	COP_d	4	-
$T_j = +12$ °C	P_{dh}	8,10	kW	$T_j = +12$ °C	COP_d	4,38	-
$T_j =$ bivalent temperature	P_{dh}	7,70	kW	$T_j =$ bivalent temperature	COP_d	3,13	-
$T_j =$ operation limit temperature	P_{dh}	-	kW	$T_j =$ operation limit temperature	COP_d	-	-
For air-to-water heat pumps:	P_{dh}	-	kW	For air-to-water heat pumps:	COP_d	-	-
$T_j = -15$ °C (if TOL < -20 °C)	P_{dh}	-	kW	$T_j = -15$ °C (if TOL < -20 °C)	COP_d	-	-
Bivalent temperature	T_{biv}	-6	°C	For air-to-water heat pumps:	T_{OL}	-	°C
Cycling interval capacity for heating	P_{cyc}	-	kW	operation limit temperature	COP_{cyc}	-	-
Degradation co-efficient (**)	C_{dh}	0,99	-	Cycling interval efficiency	COP_{cyc}	-	-
<i>Power consumption in modes other than active mode</i>				Heating water operating limit temp.	W_{TOL}	65	°C
Off mode	P_{OFF}	0,018	kW	<i>Supplementary heater</i>			
Thermostat-off mode	P_{TO}	0,004	kW	Rated heat output (*)	P_{sup}	1,10	kW
Standby mode	P_{SB}	0,018	kW	Type of energy input	electric		
Crankcase heater mode	P_{CK}	0,000	kW	For air-to-water heat pumps:			
<i>Other items</i>				rated air flow rate, outdoors	-	-	m ³ /h
capacity control		fixed		For water/brine-to-water heat pumps:			
Sound power level, indoors / outdoors	L_{WA}	46 / -	db	Rated brine or water flow rate,	1,60	-	m ³ /h
				outdoor heat exchanger			

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 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 $C_{dh} = 0,9$.