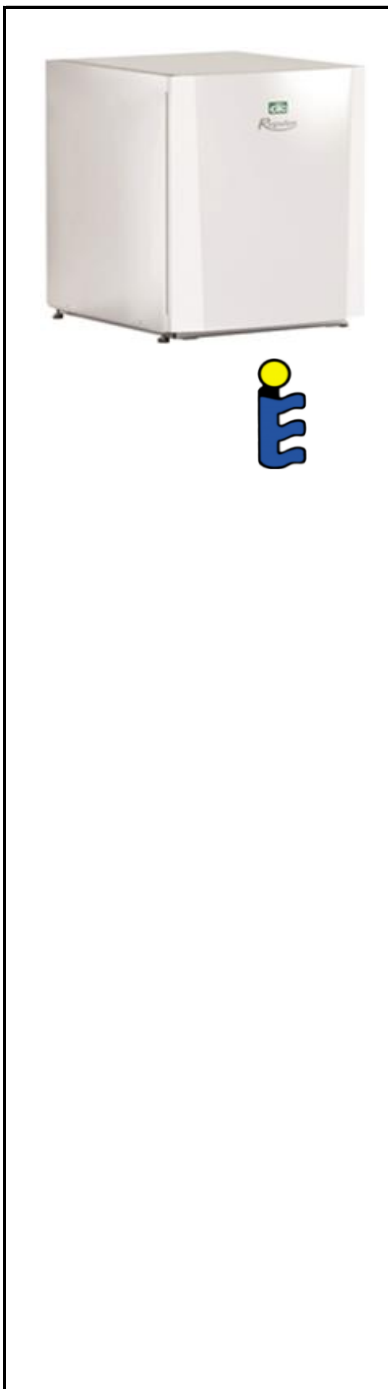


Main features	
Application	space and DHW heating
Description	the heat pump exploits the energy potential of the ground, pumps the energy obtained through deep boreholes or ground collectors to a higher temperature and transfers it to the heating water; the flow temperature can reach as much as 65°C
Installation *	the heat pump shall be installed with a Smart Controller (code 13196, see Accessories); circulation pumps for brine and heating circuits are integrated in the heat pump
Working fluid	R407C (refrigerant c.), antifreeze fluid (brine c.), water (heating circ.)
Certification	HP Keymark - quality label by the European Committee for Standardization (CEN)
<b>Code</b>	<b>12652</b>

\* in case of installation in series, it is necessary to order Smart Controller code 13196 that shall be installed with the first heat pump in series – circulation pumps for both brine and heating circuits are already included in the heat pumps



Technical data	
Nominal output	16,76 kW
Nominal power input	3,71 kW
Nominal current	13,9 A
Steady current	6 A
Starting current	32 A
Power supply	3/N/PE ~ 400/230V 50Hz
Recommended circuit breaker	B16A 3f
IP rating	IPX1
Compressor	Scroll
Refrigerant	R 407C (GWP 1774)
Refrigerant quantity	2,7 kg
CO2 equivalent *	4,790 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	4,1 l
Brine system min. flow (Δt = 5 K)	2270 l/h
Brine system nom. flow (Δt = 3 K)	3780 l/h
Brine pump	UPMXL GEO 25-125 180 PWM
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	3,4 l
Min. surface area of heat exchanger in tank	5 m <sup>2</sup>
Min. flow rate through HP (Δt = 10 K at 0/35 °C)	1440 l/h
Nom. flow rate through HP (Δt = 5 K at 0/35 °C)	2920 l/h
Heating circuit pump	UPM GEO 25-85 130
Heating circuit connection	2 x Cu 28x1,5
Weight	168 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	181%
Energy Efficiency Class	A++
SCOP	4,7

Sound data	
Sound power level by EN 12 102	55,5 dB(A)

### Accessories

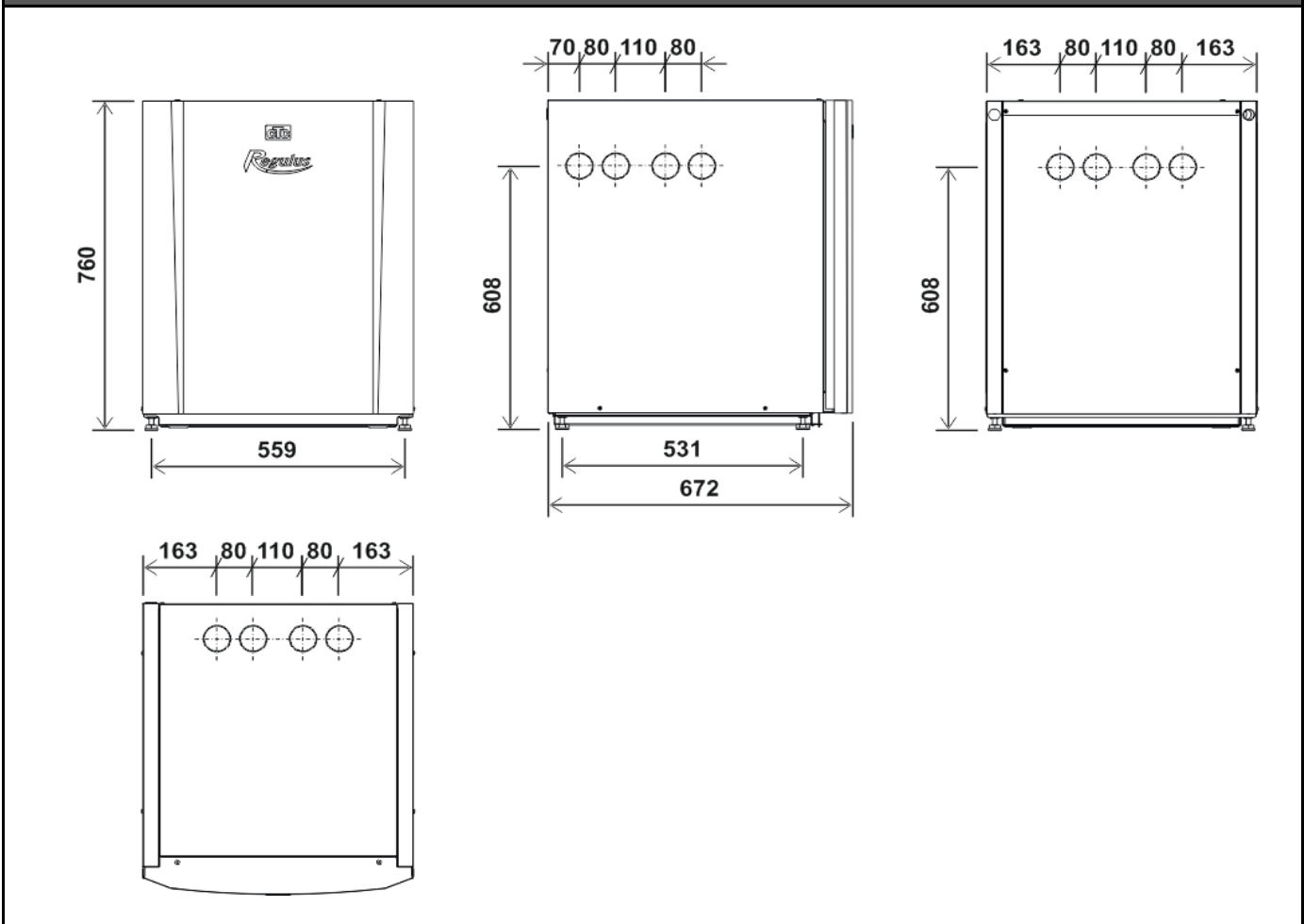
IR 12 Smart Controller	code 13196
In Line Heater	code 16166

### Output parameters \*\*

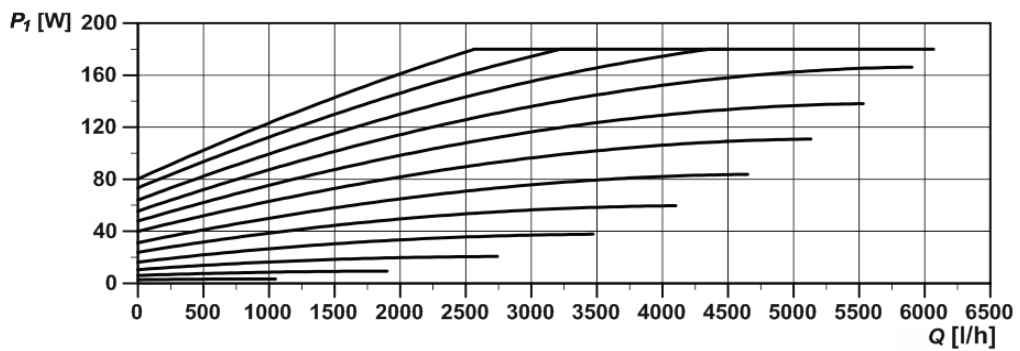
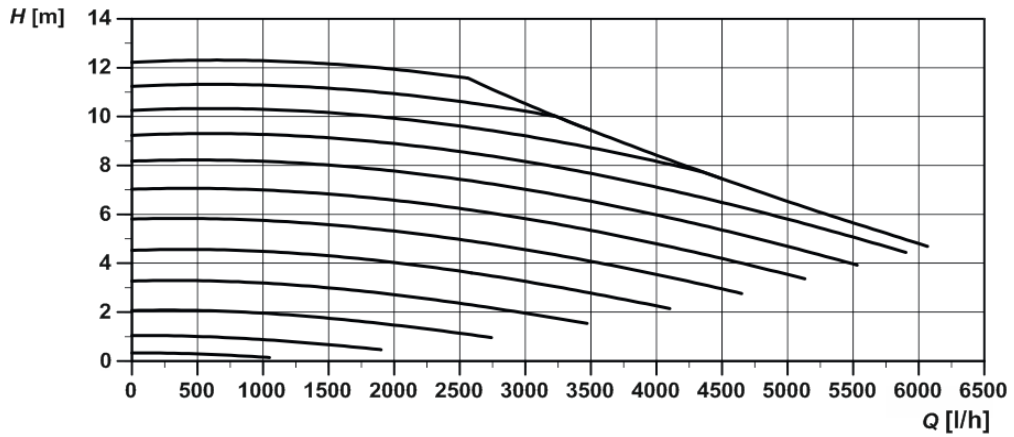
Brine system temperature	Flow temperature	Output [kW]	Power input [kW]	COP [-]
5 °C	35 °C	19,25	3,83	5,02
	45 °C	18,42	4,55	4,05
	55 °C	18,16	5,37	3,38
0 °C	25 °C	-	-	-
	35 °C	16,76	3,71	4,52
	45 °C	16,14	4,47	3,61
	55 °C	15,87	5,17	3,07
-5 °C	45 °C	14,05	4,40	3,19

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

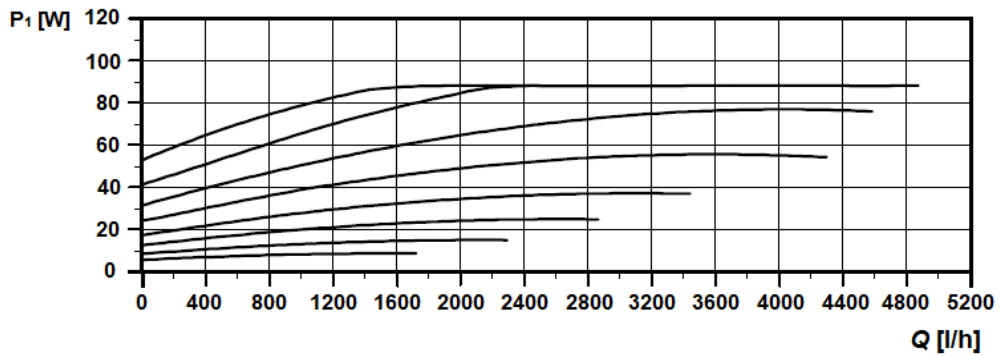
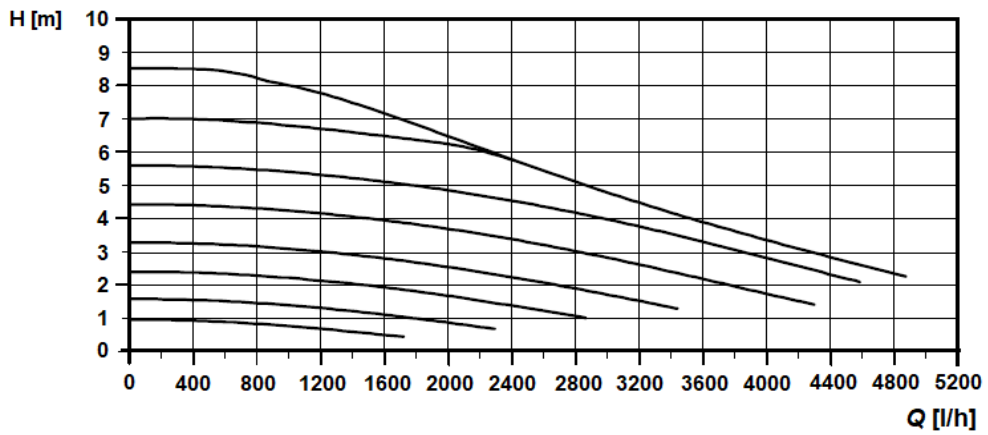
### Dimensions



Brine pump performance curves

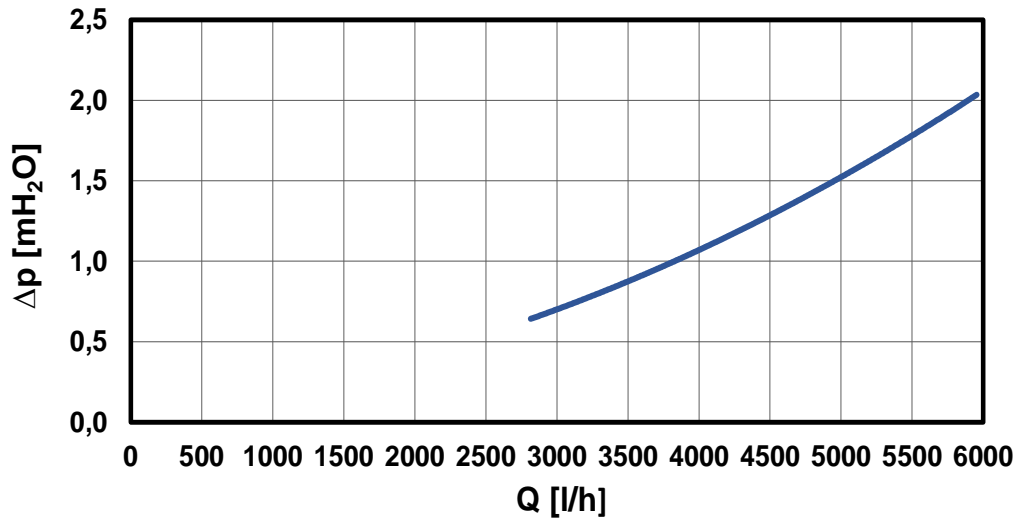


Performance curves of heating circuit pump

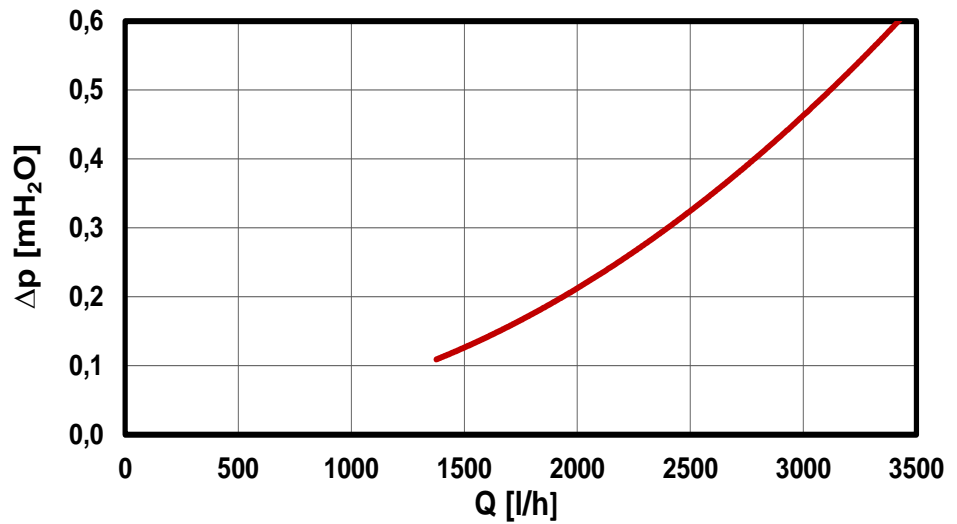


Evaporator + condenser pressure drop

Evaporator pressure drop



Condenser pressure drop



**Dodavatel** REGULUS spol. s.r.o.  
**Model** CTC EcoPart 417

Parameter	low temperature	medium temperature
The seasonal space heating energy efficiency class	<b>A++</b>	<b>A++</b>
<b>Average climate</b>		
The rated heat output including any supplementary heaters	<b>19 kW</b>	<b>18 kW</b>
The seasonal space heating energy efficiency	<b>181 %</b>	<b>137%</b>
The annual energy consumption	<b>8 362 kWh</b>	<b>10 284 kWh</b>
<b>Cold climate</b>		
The rated heat output including any supplementary heaters	<b>18 kW</b>	<b>17 kW</b>
The seasonal space heating energy efficiency	<b>184 %</b>	<b>140 %</b>
The annual energy consumption	<b>9 166 kWh</b>	<b>11 554 kWh</b>
<b>Warm climate</b>		
The rated heat output including any supplementary heaters	<b>18 kW</b>	<b>17 kW</b>
The seasonal space heating energy efficiency	<b>180 %</b>	<b>137 %</b>
The annual energy consumption	<b>5 180 kWh</b>	<b>6 315 kWh</b>
<b>The sound power level LWA, outdoors</b>	<b>56 dB</b>	

*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.*

<b>Model:</b>	<b>CTC EcoPart 417</b>
<b>Air-to-water heat pump:</b>	<b>no</b>
<b>Water-to-water heat pump:</b>	<b>no</b>
<b>Brine-to-water heat pump:</b>	<b>yes</b>
<b>Low-temperature heat pump:</b>	<b>no</b>
<b>Equipped with supplementary heater:</b>	<b>no</b>
<b>Heat pump combination heater.</b>	<b>no</b>

**Parameters declared for medium-temperature application and average climate.**

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	$P_{rated}$	<b>18</b>	kW	Seasonal space heat. ener. efficiency	$\eta_s$	<b>137</b>	%
<i>Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature <math>T_j</math>.</i>				<i>Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature <math>T_j</math>.</i>			
$T_j = -7\text{ °C}$	$P_{dh}$	<b>16,00</b>	kW	$T_j = -7\text{ °C}$	$COP_d$	<b>3,23</b>	-
$T_j = +2\text{ °C}$	$P_{dh}$	<b>16,10</b>	kW	$T_j = +2\text{ °C}$	$COP_d$	<b>3,6</b>	-
$T_j = +7\text{ °C}$	$P_{dh}$	<b>16,40</b>	kW	$T_j = +7\text{ °C}$	$COP_d$	<b>3,97</b>	-
$T_j = +12\text{ °C}$	$P_{dh}$	<b>16,70</b>	kW	$T_j = +12\text{ °C}$	$COP_d$	<b>4,36</b>	-
$T_j = \text{bivalent temperature}$	$P_{dh}$	<b>16,00</b>	kW	$T_j = \text{bivalent temperature}$	$COP_d$	<b>3,23</b>	-
$T_j = \text{operation limit temperature}$	$P_{dh}$	-	kW	$T_j = \text{operation limit temperature}$	$COP_d$	-	-
For air-to-water heat pumps:	$P_{dh}$	-	kW	For air-to-water heat pumps:	$COP_d$	-	-
$T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$ )	$P_{dh}$	-	kW	$T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$ )	$COP_d$	-	-
Bivalent temperature	$T_{biv}$	<b>-7</b>	°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 (**)	$C_{dh}$	<b>0,99</b>	-	Cycling interval efficiency	$COP_{cyc}$	-	-
<i>Power consumption in modes other than active mode</i>				Heating water operating limit temp.	$W_{TOL}$	<b>65,00</b>	°C
Off mode	$P_{OFF}$	<b>0,018</b>	kW	<i>Supplementary heater</i>			
Thermostat-off mode	$P_{TO}$	<b>0,008</b>	kW	Rated heat output (*)	$P_{sup}$	<b>2,20</b>	kW
Standby mode	$P_{SB}$	<b>0,018</b>	kW	Type of energy input	<b>electric</b>		
Crankcase heater mode	$P_{CK}$	<b>0,000</b>	kW	For air-to-water heat pumps:			
<i>Other items</i>				rated air flow rate, outdoors	-	-	m <sup>3</sup> /h
capacity control		<b>fixed</b>		For water/brine-to-water heat pumps:			
Sound power level, indoors / outdoors	$L_{WA}$	<b>56 / -</b>	db	Rated brine or water flow rate,	<b>3,10</b>	-	m <sup>3</sup> /h
				outdoor heat exchanger			

Contact details **Enertech AB, Box 309, SE-341 26 Ljungby, Sweden** [www.ctc.se](http://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  $C_{dh} = 0,9$ .