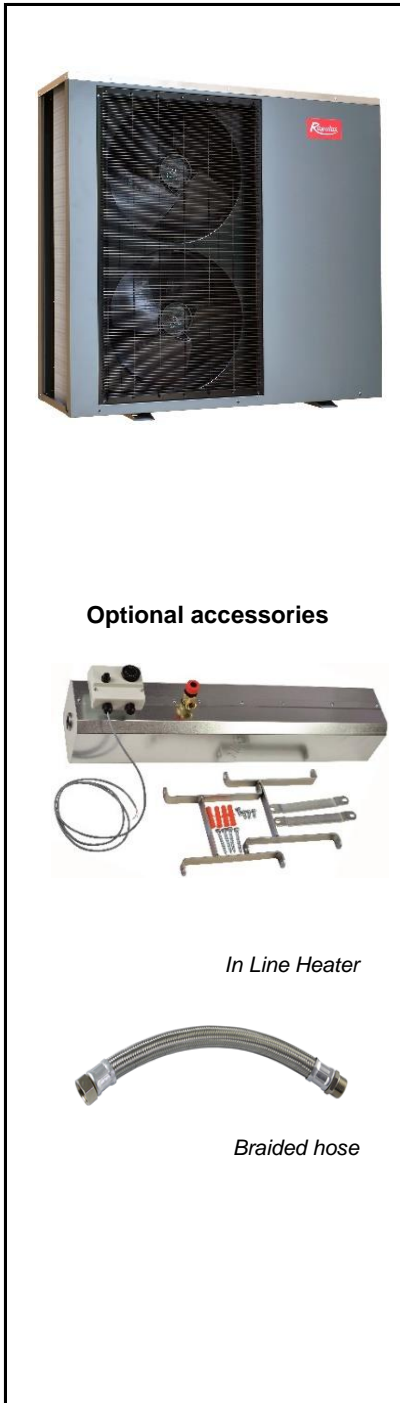


## RTC 12i Air-to-water Heat Pump

v1.5\_01/2020

Main Features	
Application	heating and cooling
Description	the heat pump gains energy from the ambient air (at outdoor temperatures as low as - 25°C), the energy is then “pumped” to a higher temp. and transferred into heating water, the flue temperature can reach up to 55°C; equipped with modulating compressor control
Working fluid	R410A (cooling circuit), water (heating circuit)
Installation	the heat pump must be installed together with a pump station and controller (code 18145), see Accessories table
<b>Code</b>	<b>17448</b>



Technical data	
Nominal output <sup>1</sup>	12,6 kW
Nominal power input <sup>1</sup>	3,07 kW
COP <sup>1</sup>	4,10
Steady current	14,1 A
Starting current	3,8 A
Nominal current	24 A
Power supply	1/N/PE ~ 230V 50Hz
Recommended circuit breaker	B25A 1f
Ingress protection (IP)	IPX4
Max. flow temperature	55 °C
Max. temperature in heating system	100 °C
Max. heating water working pressure	3 bar
Heating water volume in heat pump	4,5 l
Min. volume of non-closable heating system	80 l
Min. flow rate through HP	1335 l/h
Min. surface area of heat exchanger in storage	1,5 m <sup>2</sup>
Working air temperature for heating mode	- 25 to 45°C
Working air temperature for cooling mode	0 to 55 °C
Max. flow rate	4200 m <sup>3</sup> /h
Number of fans	2
Fan speed	variable
Fan input power	150 W
Compressor / oil type	twin rotary / FV50S
Refrigerant	R410A (GWP 2088)
Refrigerant quantity	3 kg
CO <sub>2</sub> equivalent <sup>2</sup>	6,26 t
Refrigerant max. working pressure	42 bar
Connections	G 1"
Weight	140 kg

1) for temp. A+7/W35 at max. speed

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

Sound data (according to EN 12 102)	
Sound power level	65 dB(A)

Energy efficiency data	
<i>(for low-temperature applications under average climatic conditions, others see the Product Fiche)</i>	
Seasonal Energy Efficiency	153%
Energy Efficiency Class	A++
SCOP	3,90

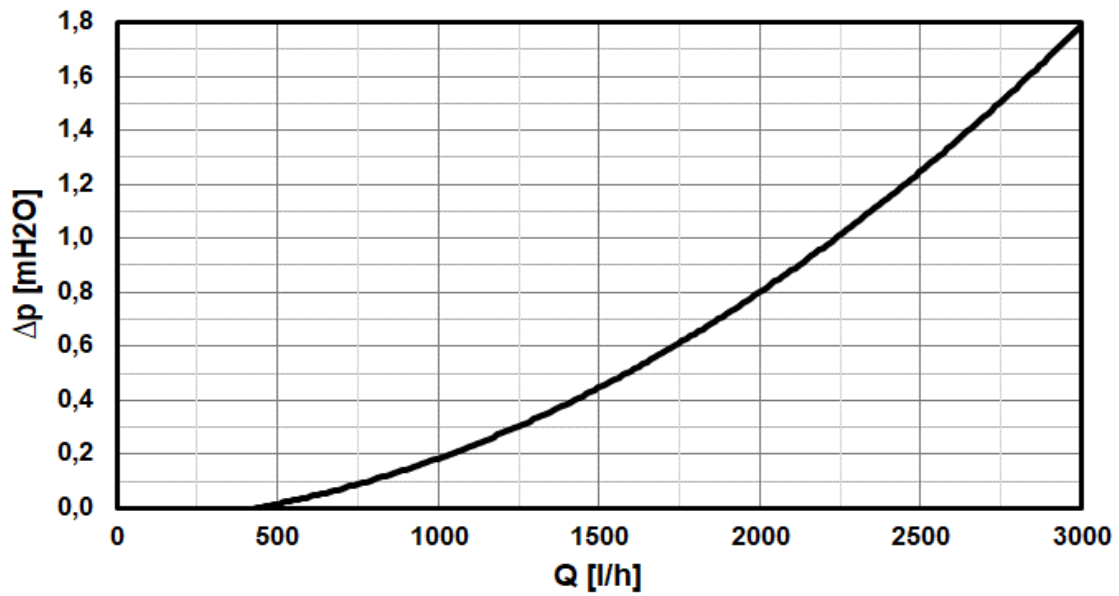
## RTC 12i Air-to-water Heat Pump

Accessories	
Compensator for heat pump	part of delivery (code 16757)
CSE TC W Pump Station & IR14 RTC Controller	code 18145
In Line Heater	code 16166
Braided hose	for available variants with codes see the Catalogue

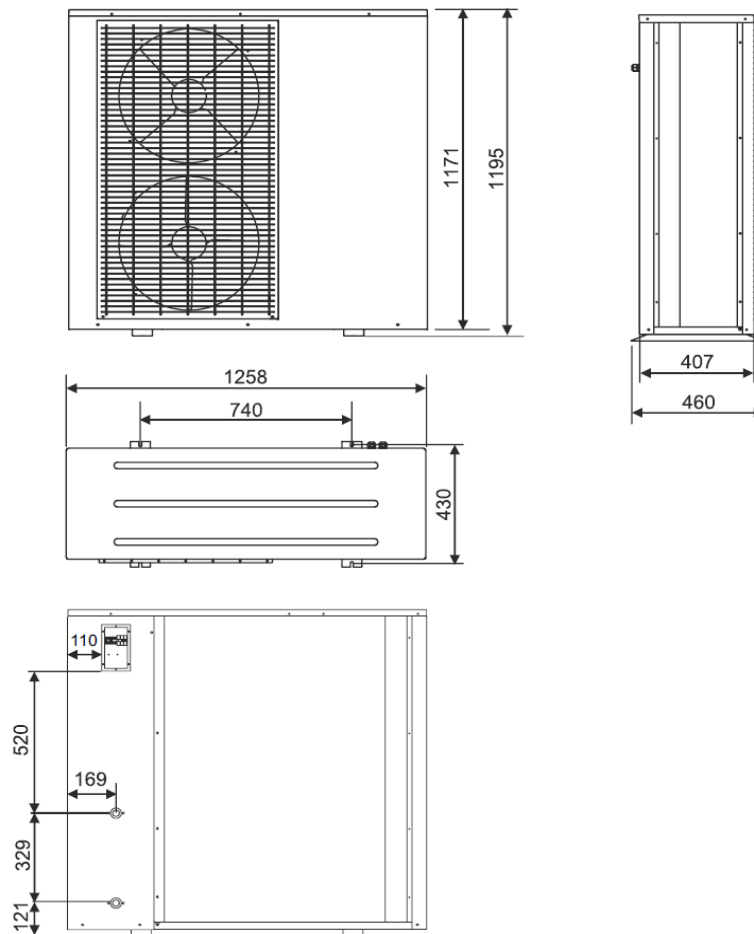
Output parameters <sup>3</sup>					
HEATING					
RPS	Air temperature	Flow temperature	Output [kW]	Power input [kW]	COP [-]
85 Hz	7 °C	25 °C	12,24	2,60	4,72
		35 °C	12,60	3,16	4,00
		45 °C	11,48	3,64	3,15
	2 °C	25 °C	11,42	2,55	4,48
		35 °C	10,58	3,01	3,51
		45 °C	10,23	3,56	2,88
	-7 °C	25 °C	8,54	2,40	3,55
		35 °C	8,07	2,78	2,90
		45 °C	7,55	3,26	2,31
	-15 °C	25 °C	6,67	2,21	3,02
		35 °C	6,52	2,66	2,45
		45 °C	5,91	3,02	1,96
55 Hz	12 °C	25 °C	9,50	1,35	7,06
		35 °C	8,77	1,65	5,31
		45 °C	8,62	2,04	4,24
	7 °C	25 °C	7,92	1,39	5,68
		35 °C	7,71	1,65	4,67
		45 °C	7,19	2,12	3,39
	2 °C	25 °C	6,90	1,40	4,92
		35 °C	6,76	1,66	4,08
		45 °C	6,32	2,07	3,05
	-7 °C	25 °C	5,21	1,41	3,71
		35 °C	5,25	1,67	3,14
		45 °C	4,45	1,98	2,24
-15 °C	25 °C	4,64	1,33	3,49	
	35 °C	3,91	1,63	2,40	
	45 °C	2,97	1,82	1,63	
36 Hz	12 °C	25 °C	6,12	0,86	7,11
		35 °C	6,11	1,03	5,92
		45 °C	5,22	1,41	3,69
	7 °C	25 °C	1,49	0,92	5,86
		35 °C	5,34	1,04	5,14
		45 °C	4,86	1,43	3,40
	2 °C	25 °C	1,24	0,95	4,70
		35 °C	1,18	1,01	4,21
		45 °C	4,04	1,42	2,85
COOLING					
	Air temperature	Flow temperature	Output [kW]	Power input [kW]	EER [-]
	35 °C	23 °C	10,37	3,16	3,28
		12 °C	7,91	3,01	2,63

<sup>3</sup> The values of output parameters are measured at the manufacturer's test lab.

Condenser pressure drop graph



Dimensions



Supplier's name *REGULUS spol. s.r.o.*  
 Supplier's model identifier *RTC 12i*

Model:	RTC 12i
Air-to-water heat pump:	yes
Water-to-water heat pump:	no
Brine-to-water heat pump:	no
Low-temperature heat pump:	yes
Equipped with supplementary heater:	no
Heat pump combination heater:	no

### Parameters declared for low-temperature application and average climate.

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (*)	$P_{rated}$	<b>10</b>	kW	Seasonal space heating energy efficiency	$\eta_s$	<b>153</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>8,50</b>	kW	$T_j = -7\text{ °C}$	$COP_d$	<b>2,74</b>	-
$T_j = +2\text{ °C}$	$P_{dh}$	<b>5,20</b>	kW	$T_j = +2\text{ °C}$	$COP_d$	<b>3,72</b>	-
$T_j = +7\text{ °C}$	$P_{dh}$	<b>3,30</b>	kW	$T_j = +7\text{ °C}$	$COP_d$	<b>4,93</b>	-
$T_j = +12\text{ °C}$	$P_{dh}$	<b>1,50</b>	kW	$T_j = +12\text{ °C}$	$COP_d$	<b>6,44</b>	-
$T_j =$ bivalent temperature	$P_{dh}$	<b>8,10</b>	kW	$T_j =$ bivalent temperature	$COP_d$	<b>2,85</b>	-
$T_j =$ operation limit temperature	$P_{dh}$	<b>9,60</b>	kW	$T_j =$ operation limit temperature	$COP_d$	<b>2,50</b>	-
For air-to-water heat pumps:	$P_{dh}$	-	kW	For air-to-water heat pumps:	$COP_d$	-	-
$T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$ )				$T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$ )			
Bivalent temperature	$T_{biv}$	<b>-6</b>	°C	For air-to-water heat pumps:	$T_{OL}$	<b>-10</b>	°C
Cycling interval capacity for heating	$P_{cvc}$	-	kW	operation limit temperature			
Degradation co-efficient (**)	$C_{dh}$	<b>0,99</b>	-	Cycling interval efficiency	$COP_{cvc}$	-	-
<i>Power consumption in modes other than active mode</i>				Heating water operating limit temp.	$W_{TOL}$	<b>55</b>	°C
Off mode	$P_{OFF}$	<b>0,017</b>	kW	<i>Supplementary heater</i>			
Thermostat-off mode	$P_{TO}$	<b>0,000</b>	kW	Rated heat output (*)	$P_{sup}$	<b>0,00</b>	kW
Standby mode	$P_{SB}$	<b>0,017</b>	kW	Type of energy input	<b>electric</b>		
Crankcase heater mode	$P_{CK}$	<b>0,033</b>	kW	For air-to-water heat pumps:			
<i>Other items</i>				rated air flow rate, outdoors			
capacity control		<b>variable</b>		For water/brine-to-water heat pumps:			
Sound power level, indoors / outdoors	$L_{WA}$	<b>65</b>	dB	Rated brine or water flow rate, outdoor heat exchanger			

Contact details **REGULUS spol. s r.o. Do Koutů 1897/3, 143 00 Praha 4** [www.regulus.eu](http://www.regulus.eu)

(\*) 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  $C_{dh} = 0,9$ .