Heat **Pumps**

ground source
and air source models

Energy-saving solutions

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CTC Regulus Heat Pumps obtained European EHPA quality label

The **EHPA quality label for heat pumps** originates in activities of the heat pump associations of Austria, Germany and Switzerland to create a common set of requirements to ensure product and service quality for heat pumps and protect the market against sales and installations of **poor quality heat pumps.**

In order to **qualify for the EHPA quality label**, the heat pump in question **must comply with EHPA heat pump test criteria** and the distributor must provide a defined level of service.

The key requirements are (list not exhaustive):

- Conformity of all main components and compliance with the national rules and regulation (CE marking);
- **Minimum efficiency** values defined as **follows (COP):**

- brine to water	B0/W35 - 4.3
- water to water	W10/W35 - 5.1
- air to water	A2/W35 - 3.1
- direct exchange ground coupled to water	E4/W35 - 4.3

- The product shall be tested for its **energy parameters** in a lab registered with EHPA.
- Declaration of **sound power level**.
- Existence of **sales & distribution**, planning, service and operating documents in the local language of the country where the **heat pump is distributed**.
- Existence of a functioning customer service network in the sales area that **allows for a 24h reaction time** to consumer complaints.
- A two year full warranty which shall include a declaration stating that the **heat pump spare parts inventory** will be available for at least ten years.

More info on the quality label at **www.regulus.eu**

Warranty

We offer a longer warranty for heat pumps than EHPA requires as one of conditions for obtaining Q-LABEL. Thanks to the high quality of all components and reliability of Regulus CTC Heat Pumps, the warranty is extended to 5 years and the warranty for compressor can be even as long as 10 years.

REGULUS - ENERGY SAVING SOLUTIONS FOR YOUR HEATING

Why to consider energy efficient heating?

Energy prices keep climbing up year by year and their further growth can be expected. Investing into a cost effective heating system will bring significant savings today and even higher in the future.

Why a Heat Pump?

If you choose any traditional heat source, it will always consume fuel, transforming it into heat with a certain efficiency, be it higher or lower. However, you will always pay for the complete energy consumption for your home.

If you choose a Heat Pump, it will be able to gain the majority of energy from the ambient environment (usually 2/3 of the energy supplied for a house), consuming only a smaller part of the energy (usually 1/3 of the energy supplied for a house). It means that the majority of energy needed will always be for free, disregarded of its price.

Is it the right time to buy a Heat Pump now?

The technical development in heat pumps has made a big progress in recent years. Heat pumps from serious European manufacturers are economic, feature a long service life and utilize intelligent control systems. Their price has dropped significantly due to the mass production. Moreover, you can get a state subsidy in some countries! So say goodbye to high energy bills, the right time is just now!

Why a CTC Regulus Heat Pump?

Regulus offers excellent CTC heat pumps that are manufactured by a renowned Swedish company with 80 years of tradition. CTC applies the latest technologies in its development of new models in order to reach top parameters, however the mass production enables favorable pricing.

Regulus is active in the heating branch since 1992, concentrating on renewable energy sources since 1999. Our team of engineers is ready to suggest you an optimum cost saving solution for your heating. It is not our goal to sell you a heat pump without any considerations, our aim is to calculate and design the best technical solution for you that will be suitable for your home and your needs and will bring you the highest savings, maintaining the heating comfort.

What is the range of CTC Regulus Heat Pumps and accessories?

Our offer consists not only of heat pumps alone but involves an entire system that enables the heat pump to be utilized optimally for space heating and DHW as well. Other renewable energy sources can be used together, like solar energy or biomass.

You can choose your air-source heat pump from a wide choice of performance variants and assemble an optimum heat source for your house.

Ground-coupled heat pumps can gain heat either from a deep bore or from underground loops, it is up to you which variant suits your needs better. All models feature a closed coolant circuit, filled and tested in production. The installation is then fast and easy. Each heat pump is equipped with its dedicated control electronics that controls its operation. It communicates with an intelligent controller, IR12CTC or IR10CTC, that can also control a whole heating system and a series of heat pumps at the same time.

A complex solution is represented by EcoZenith compact unit that contains all components of a current home boiler room. It heats DHW, contains a thermal store, an electronic controller and heating elements switched on/off in steps. The EcoHeat model contains also an integrated ground-source heat pump. If you choose an IR12CTC or IR10CTC Intelligent Controller, you can monitor and control your heating system over the internet.

HOW IT WORKS...

» Heat pump draws low-temperature energy from the ambient environment and "pumps" it to a higher temperature «

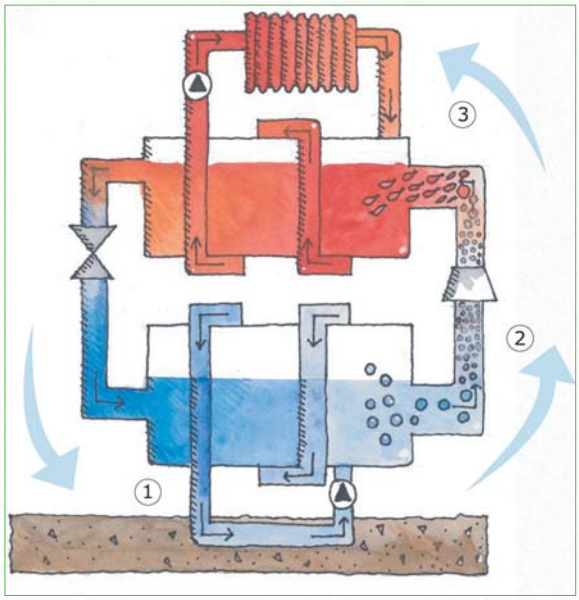
» Air or ground is usually the heat source «

How does a heat pump work?

The working principle is the same as in a current refrigerator, freezer or A/C unit. A heat pump is based on a closed circuit filled with special coolant that evaporates under low temperature and absorbs energy. Coolant vapors are compressed in a compressor, getting heated up. Under higher temperature, the gaseous coolant gives off its heat into heating water which brings it back to liquid form, and the entire cycle repeats itself.

Like a fridge can draw heat from food as cold as -20°C, a heat pump can work and draw heat from air, water or ground even under extremely low temperatures.

A COP (Coefficient of Performance) shows its efficiency, namely how many times more energy it supplies than consumes. With falling temperature of the heat source also the COP sinks.



Heat pumps use energy coming from solar radiation that remains in the air, ground and water. In an air-coupled heat pump, air passes through the heat pump, heating directly the coolant in the heat exchanger (evaporator). In a ground-coupled heat pump, biodegradable antifreeze fluid (brine) is used for heat transfer from the ground into the heat pump. This fluid circulates between the ground collector and the heat pump. When entering the heat pump, the temperature of the fluid is about 4°C. Its heat energy is transferred to the coolant circulating inside the heat pump in a closed circuit.

The heat from the ground collector causes evaporation of the coolant that has a low boiling point. Coolant vapor gets compressed by the compressor and heats up. The hot vapor then passes through a heat exchanger (condenser), condenses and gives off its heat to heating water. Then it cools down swiftly when passing through the expansion valve and the cycle repeats itself.

Air-coupled heat pumps work in the same manner, just the coolant in the evaporator is heated by passing air, not by a fluid.

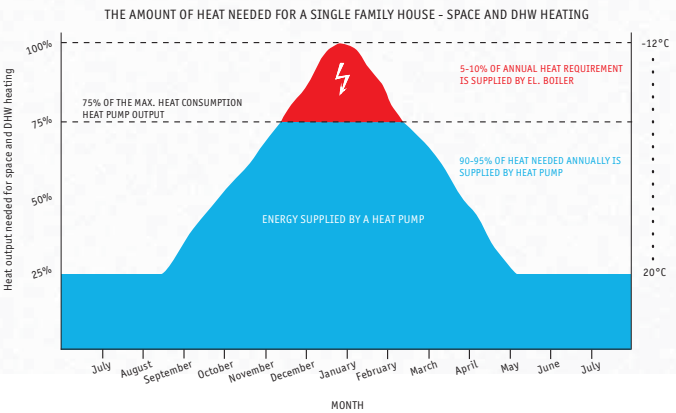
Solar collectors gain heat directly from the sun as the solar radiation heats up the fluid inside a solar collector. A solar thermal system needs almost no energy for its operation. If you combine a heat pump with a solar thermal system, you will be using solar energy directly through solar collectors for DHW and space support heating. In cool days the heat pump will utilize the solar energy indirectly. In systems with deep bores the heat from solar collectors can be stored into the bore in the summer. Then in the winter the heat pump exploits the stored heat and works with a higher COP.

In the summer, the cold from the bore can be used for direct cooling (without a heat pump), with higher cooling demands the cooling output can be increased using a heat pump.

What heat output is right?

A traditional heat source (boiler) shall be sized as equivalent to the heat loss value of the house or higher. Since the investment into a more powerful heat pump is rather high, its preferred output is usually lower. In periods of extreme frost usually traditional heat sources like electricity, gas, solid fuels etc. support the heat pump in supplying the heat demanded.

Due to a sparse occurrence of very cold days the operation of a traditional source brings very little cost increase while the investment spared is high. The recommended heat pump sizing is about 75 % of the building's heat loss that will cover as much as 95 % of the annual heat consumption.



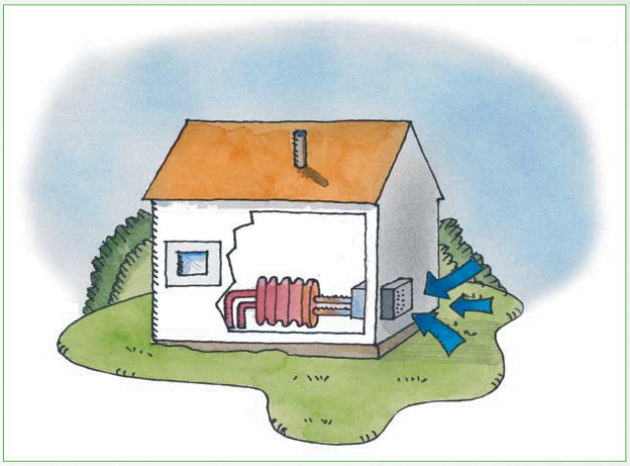
WHERE DOES A HEAT PUMP TAKE THE ENERGY FROM?

In mild climate air is the most current heat source for heat pumps. Air-source heat pumps benefit from easy installation requiring no deep bores, no groundwork.

In order to gain heat from the ground, either deep bores need to be drilled, or loops buried about 1.2m underground. In these systems the output is stable even under severe frost as the soil keeps a stable temperature.

Air-to-water heat pumps

Air-to-water heat pumps draw energy from the ambient air even when the outdoor temperature drops to -22°C. The energy gained at a low temperature is then "pumped" to a higher temperature and transferred into heating water. Electric energy is consumed just to run a compressor and fan of the heat pump. This makes about one third of the energy supplied by the heat pump, the rest is drawn from the ambient air. That's why about two thirds of the energy needed for heating can be saved. Reliability and excellent parameters of CTC heat pumps are proved by many thousands annual installations in the harsh Scandinavian climate.



Advantages of air-to-water heat pumps

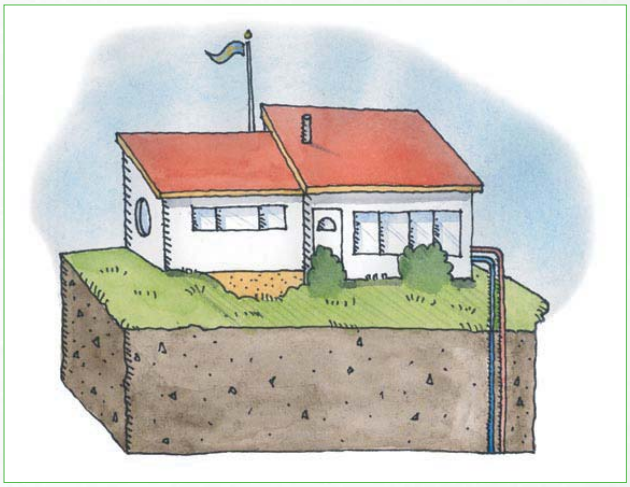
+ Low purchase costs
+ Easy installation
+ No groundwork

Drawbacks of air-to-water heat pumps

- Inconsiderate placement might cause noise disturbance
- Power output sinks at extremely low temperatures

Heat pumps with deep bore holes

In order to gain heat from deep bores, one or more boreholes need to be drilled (70-150 m deep). Their number and depth depend on the heating output of the installed heat pump and on the building to be heated. As there is a risk of influencing groundwater, it is necessary to have a geological survey performed and obtain a permission for the boreholes. The heat pump itself is located inside the building and connects to the borehole with 2 pipes. Its connection to a thermal store and a heating system is the same as that of an air-source heat pump.



Advantages of heat pumps with a deep bore

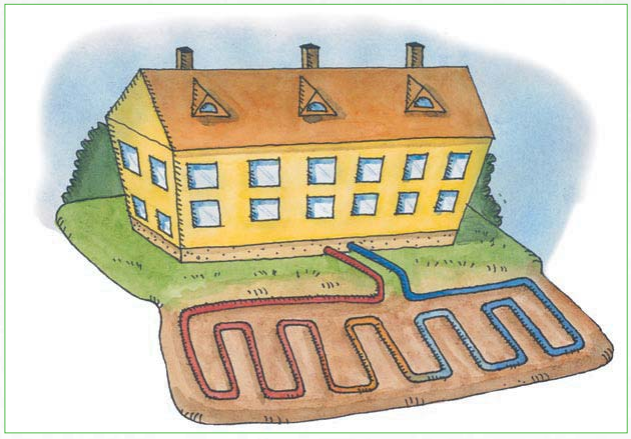
+ Stable heat source under low outdoor temperature
+ Deep bores do not require a big lot
+ Summer cooling possible

Drawbacks of heat pumps with a deep bore

- Higher installation costs
- Deep bores need a permit
- Water resources shall be taken into consideration

Heat pumps with ground collector

The sub-surface ground collector consists of loops of pipes buried 1.2m below the surface. The soil needs to be removed first and when the loop is laid, the soil is returned to its place. The other method is digging trenches where individual loops are laid in a similar method to burying e.g. electric cables. The heat pump itself is located inside the building and connects to the ground collector with 2 pipes. Its connection to a thermal store and a heating system is the same as that of an air-source heat pump.



Advantages of heat pumps with ground collector

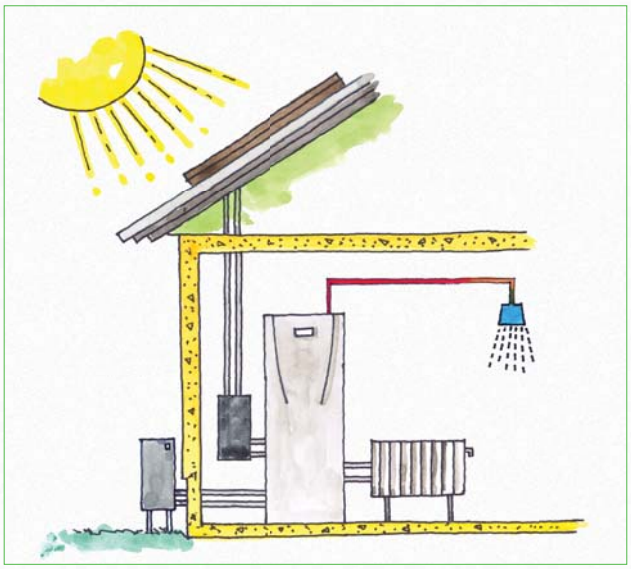
+ Lower installation costs against deep bores
+ Relatively stable heat source under low outdoor temperature
+ No special permit needed

Drawbacks of heat pumps with ground collector

- Large lot needed
- Groundwork on a large area

Combining solar energy with a Heat Pump

Solar energy can be utilized together with a heat pump, combining thus the most ecological energy sources. In the summertime solar energy can be used for DHW heating and in the heating season it helps in space heating. In a heat pump with a deep bore, solar energy can be stored in the bores.



EcoAir 406-420 Air-to-Water Heat Pump

Air-to-water heat pumps draw energy from the ambient air. The energy gained under a low outdoor temperature (as low as -22°C) is then "pumped" to a higher temperature and transferred into heating water. **Its flow temperature reaches as much as +65°C**. It is subsequently used to heat a house, prepare DHW or heat a pool.
This line of air-coupled heat pumps has been developed using the most advanced technologies in order to reach the best parameters. They are equipped with a new, extra large air heat exchanger (evaporator) for the best utilization of air energy. In order to reach a high COP and effective operation even under very low temperatures, they are fitted with the latest compressors and an electronic expansion valve.
Heat pumps of the 400 line can be sized to cover 100% of the heat needed for space and water heating, with heating needs covered by the heat pump alone without any electric backup.

EcoAir 406-420 Heat Pumps are able to communicate with IR12CTC or IR10CTC Intelligent Controllers that permit comfort heating system control incl. control of up to 10 heat pumps connected in series.

EcoAir 406-420 Heat Pump

Technical Data				EcoAir 406	EcoAir 408	EcoAir 410	EcoAir 415	EcoAir 420
Air/water temperature in °C	A7/W35*	Heat output	[kW]	6.22	7.83	11.45	16.19	17,52
		Power input	[kW]	1.30	1.62	2.36	3.53	4.23
		COP	[-]	4.78	4.83	4.86	4.58	4.15
	A2/W35*	Heat output	[kW]	4.69	6.02	8.80	11.42	14.55
		Power input	[kW]	1.28	1.60	2.30	3.24	4.13
		COP	[-]	3.66	3.76	3.83	3.52	3.52
	A-7/W35*	Heat output	[kW]	3.87	4.73	7.32	9.96	11.51
		Power input	[kW]	1.25	1.57	2.29	3.27	3.94
		COP	[-]	3.10	3.02	3.19	3.04	2.92
Dimensions and weight		Width	[mm]	1245	1245	1375	1375	1375
		Height	[mm]	1075	1075	1175	1175	1175
		Depth	[mm]	545	545	610	610	610
		Weight	[kg]	120	126	180	187	190
Sound power level			[dB(A)]	56.2	58.3	57.3	64.2	65.7
Noise level: (medium/reduced speed)		1 m distance	[dB(A)]	48.2	50.3	50	56	56
		5 m distance	[dB(A)]	34.2	36.3	36	42	44
		10 m distance	[dB(A)]	28.2	30.3	30	36	39
Code				13 243	13 244	12 994	12 995	12 848

*Values measured according to EN 14511 incl. defrost cycle in a Test Lab of the manufacturer.

Each CTC Heat Pump is equipped with a max. current limiter for compressor startup.
CTC 400 Heat Pumps are supplied with high-efficiency circulation pumps.

As a novelty, 400 series heat pumps are fitted with a condensate tray for efficient disposal of condensed humidity. The tray is fitted with an electric heating cable that heats the condensate during and shortly after defrost, protecting it from freezing. Heat pump parameters already involve the energy needed to heat up the condensate tray.

EcoAir Heat Pump with EcoZenith

EcoAir 400 Heat Pumps are available also with a fully equipped indoor unit, **EcoZenith** Multi-Energy Thermal Store. This is a novelty in the range of products, a successor of EcoEl Multi-Energy Thermal Stores.

EcoZenith Multi-Energy Thermal Store is a fully equipped compact indoor unit that will meet all requirements for space and DHW heating if used with a heat pump. It can be combined with either air-source EcoAir 400 Heat pumps, or with ground-source EcoPart 400 ones, up to 11 kW output. It is intended for indoor operation, produces no noise, features elegant design and requires very little space.

A copper heating coil inside the thermal store permits instantaneous water heating which guarantees continuous fresh water without any risk of Legionella bacteria formation.

A 4" touchscreen enables to set parameters and display operation data in user friendly environment.

A solar thermal system, a fireplace insert with a hydronic heat exchanger, or a plate heat exchanger for pool heating can be all connected to the unit.

Air-to-water Heat Pumps with multi-energy thermal store	Code
EcoAir 406 Heat Pump with multi-energy thermal store	13 372
EcoAir 408 Heat Pump with multi-energy thermal store	13 487
EcoAir 410 Heat Pump with multi-energy thermal store	13 492

More info on Heat Pumps can be found on the preceding page, information on the Multi-Energy Thermal Store is available **in the Accessories chapter** on page 16.

EcoAir 406-410 Single-Phase Air Source Heat Pump

EcoAir 400 Heat Pumps are offered also as single-phase models. Their parameters are comparable with the 3-phase models in the same series. These variants are designed to be power supplied preferably from PV sources.

Technical Data				EcoAir 406 1f	EcoAir 408 1f	EcoAir 410 1f
Air/water temperature in °C	A7/W35*	Heat output	[kW]	6.20	7.70	11.60
		Power input	[kW]	1.30	1.70	2.5
		COP	[-]	4.59	4.64	4.86
	A2/W35*	Heat output	[kW]	4.70	6.00	8.9
		Power input	[kW]	1.30	1.60	2.40
		COP	[-]	3.53	3.62	3.65
	A-7/W35*	Heat output	[kW]	3.70	4.80	7.1
		Power input	[kW]	1.30	1.60	2.30
		COP	[-]	2.87	2.97	3.03
Code				14 893	14 894	14 895

Values measured according to EN 14511 incl. defrost cycle in a Test Lab of the manufacturer.

EcoAir 520M Inverter Air Source Heat Pump

EcoAir 520M Heat Pump draws energy from the ambient air and transfers it to domestic hot water and heating water. It works down to -22°C outdoor temperature and offers heating water up to 65°C. This is a 3-phase inverter heat pump, equipped with the latest technology, its design being based on the time-proven EcoAir 400 series. EcoAir 520M features a brand new scroll compressor with speed control and a long service life that will adapt to any requirements of your home.

- new scroll compressor with speed control and a long service life
- 3-20 kW output
- SCOP 4.5
- Energy Efficiency Class A+++
- to be used with 3-phase PV source

** Energy Efficiency Class for systems with controller*

EcoAir 520M Heat Pump installs easily, offering a high COP and low noise level. Its output range is between 3 and 20 kW. It features automatic on-demand defrosting that reduces the defrosting needs to minimum. That brings more heat, higher output and a longer service life.

Technical Data				EcoAir 520M
Output			[kW]	3-20
SCOP			[-]	4,5
Air/water temperature in °C	A7/W35* 20 rps	Heat output	[kW]	4.90
		Power input	[kW]	0.90
		COP	[-]	5.24
	A2/W35* 38 rps	Heat output	[kW]	6.73
		Power input	[kW]	1.70
		COP	[-]	3.97
	A-7/W35* 90 rps	Heat output	[kW]	10.40
		Power input	[kW]	3.80
		COP	[-]	2.71
Dimensions and weight		Width	[mm]	1375
		Height	[mm]	1180
		Depth	[mm]	610
		Weight	[kg]	186
Sound power level			[dB(A)]	55,4
Sound pressure level at distance of		5 m	[dB(A)]	35
		10 m	[dB(A)]	29
Code				15 117

EcoHeat 400 ground-to-water heat pump

EcoHeat 300 is based on a proved compact design, bringing plenty of innovation and new technologies which ranks this model among the world's best in its class.

The heat output line involves 6, 8, 10 and 12kW models. **A high COP excels among other technical parameters, reaching as much as 5.5 in low-temperature systems! These values are reached due to the use of the most advanced technologies, namely of a new electronic expansion valve. Flow temperature can be as high as 65°C!** Domestic hot water is heated instantaneously in a copper heat exchanger inside the thermal store which guarantees always fresh water without any risk of Legionella bacteria formation that is detrimental to human health.

EcoHeat is a compact unit containing a ground source heat pump and a multi-energy thermal store incl. a smart controller with a colour touch screen and intuitive control.

EcoHeat heat pumps draw heat either from deep bores or from sub-surface ground collectors. The unit is placed inside a house and connected with the ground loops with 2 pipes. Its main advantage is a stable output and COP even under fierce frost. The multi-energy thermal store represents an entire boiler room. After easy connection to el. power supply, heating system and water mains it covers complete thermal needs of a house - heating, heat storing, DHW heating by a heat pump and integrated 9kW el. heating element. It is self-understood that also solar thermal collectors, hydronic fireplace insert or other heat sources can be connected. Its compact build excels in a low heat loss and a very small footprint.

The unit contains an electronic controller that manages to control 2 independent weather compensated heating circuits, DHW heating, heat pump operation and to switch its electric heating element. The heating system is controlled with respect to both outdoor temperature (OTC) and indoor room sensor. Temperature sensors for heating circuits and an outdoor temperature sensor are all contained in the package. Heating water is being mixed according to momentary needs in a special inbuilt 4-way valve. A possible second heating circuit shall be equipped with a 3-way mixing valve and if needed also with a second room temperature sensor (Regulus accessories).

EcoHeat is divided into two sections for the most efficient operation of the heat pump - the lower cooler zone for pre-heating of sanitary and heating water, and upper warmer zone for DHW backup heating. The heat pump supplies the lower section for most of time, working more efficiently, just in periods of DHW demand the 3-way valve switches and the heat pump starts supplying the upper zone where pre-heated DHW is heated to the desired temperature. The el. heating element in the upper section of the thermal store gets switched only in case of a high energy demand, e.g. when plenty of DHW is needed. In order to keep the backup heating efficient and precise, the controller switches the el. heating element in small steps (300 W).

The controller in EcoHeat continuously measures current in all phases of the main circuit breaker in order to prevent tripping. Whenever the total power drawn approaches the nominal circuit breaker value, the controller will reduce the power input to the heat pump (first decreasing the power input for the el. heating element in 300W steps if on, and then turning off the heat pump itself). As soon as the power drawn sinks (the other loads turned off), the controller will restore operation of the heat pump. The current sensors (included in the package) shall be installed on the main power supply (e.g. to the mains circuit breaker) and wired to the controller. This enables using EcoHeat for heating houses with a low-sized main fuse that otherwise could not be heated with an electric boiler and a heat pump, saving also high monthly charges for an unnecessarily high value of the main circuit breaker.

Technical Data			EcoHeat 406	EcoHeat 408	EcoHeat 410	EcoHeat 412
Primary circuit/HP flow temp. at B0/W25	Heat output	[kW]	6.1	8.5	10.4	12.3
	Power input	[kW]	1.20	1.72	1.87	2.23
	COP	[-]	5.10	4.93	5.55	5.51
Primary circuit/HP flow temp. at B0/W35	Heat output	[kW]	5.9	8.2	10	11.8
	Power input	[kW]	1.29	1.79	2.17	2.57
	COP	[-]	4.57	4.58	4.60	4.60
Primary circuit/HP flow temp. at B0/W55	Heat output	[kW]	5.2	7.6	9.3	11.0
	Power input	[kW]	1.88	2.54	3.12	3.72
	COP	[-]	2.76	2.99	2.98	2.96
Dimensions and weight	Width	[mm]	595	595	595	595
	Height	[mm]	1904	1904	1904	1904
	Depth	[mm]	672	672	672	672
	Weight	[kg]	267	270	272	279
Electric backup heating in 300W steps		[kW]	0 - 9	0 - 9	0 - 9	0 - 9
Thermal store	Volume	[l]	223	223	223	223
Volume of 40°C warm DHW available at the temperatures in the thermal store of 60/40°C (upper/lower)	if 8 l/min. DHW is drawn	[l]	174	233	283	348
	if 12 l/min. DHW is drawn	[l]	107	134	157	187
Code		[-]	13 441	13 442	13 443	13 444

COP given according to EN 14511 incl. power input for both the circulation pumps.

Max. flow temperature of the heat pump is 65°C.

Each CTC Heat Pump is fitted with a max. current limiter for compressor startup.

A solar module can be connected to EcoHeat to utilize solar energy from solar thermal collectors. Solar energy can be used together with a heat pump which means combining the most ecologic energy sources (more on Page 7). Solar energy is used to heat DHW in the summer and to support space heating in the winter. At the same time, this prolongs the service life of the heat pump. For a heat pump with a deep bore, summer solar energy surplus can be stored in the bore which helps increase the operation efficiency of the heat pump.

EcoPart 400 ground-to-water heat pump

EcoPart 400 is based on the proved design of the preceding generation of EcoPart V3 heat pumps, bringing some principal innovation and new technologies which ranks this model among the world's best heat pumps.

The heat output line involves 6, 8, 10, 12, 14 and 17 kW models. **A high COP excels among other technical parameters, reaching as much as 5.5 in low-temperature systems! Thanks to the use of the most advanced technologies, namely of a new electronic expansion valve, flow temperature can be as high as 65°C!** This temperature guarantees the utmost comfort in DHW heating.

It can work with a traditional PS thermal store and RBC HP hot water storage tanks. EcoPart 406-410 can also work with R2DC hot water storage tanks.

Heating control and communication with the heat pump is performed by external controllers, either IR12CTC or IR10CTC.

EcoPart heat pumps draw heat either from deep bores or from sub-surface ground collectors. The unit is placed inside a house and connected with the ground loops with 2 pipes. Its main advantage is a stable output and COP even under fierce frost. This heat pump provides very quiet operation.

EcoPart 400 ground source heat pump

Technical Data			EcoPart 406	EcoPart 408	EcoPart 410	EcoPart 412	EcoPart 414	EcoPart 417
Primary circuit/HP flow temp. at B0/W25	Heat output	[kW]	6.1	8.5	10.4	12.3	14.63	--
	Power input	[kW]	1.20	1.72	1.87	2.23	2.79	--
	COP	[-]	5.10	4.93	5.55	5.51	5.25	--
Primary circuit/HP flow temp. at B0/W35	Heat output	[kW]	5.9	8.2	10	11.8	14.5	16.76
	Power input	[kW]	1.29	1.79	2.17	2.57	3.19	3.71
	COP	[-]	4.57	4.58	4.60	4.60	4.54	4.52
Primary circuit/HP flow temp. at B0/W55	Heat output	[kW]	5.2	7.6	9.3	11.0	13.4	15.9
	Power input	[kW]	1.88	2.54	3.12	3.72	4.54	5.17
	COP	[-]	2.76	2.99	2,98	2.96	2,95	3.07
Dimensions and weight	Width	[mm]	600	600	600	600	600	600
	Height	[mm]	760	760	760	760	760	760
	Depth	[mm]	672	672	672	672	672	672
	Weight	[kg]	138	143	148	164	168	172
Code		[-]	12 647	12 648	12 649	12 650	12 651	12 652

COP given according to EN 14511 incl. power input for both the circulation pumps.

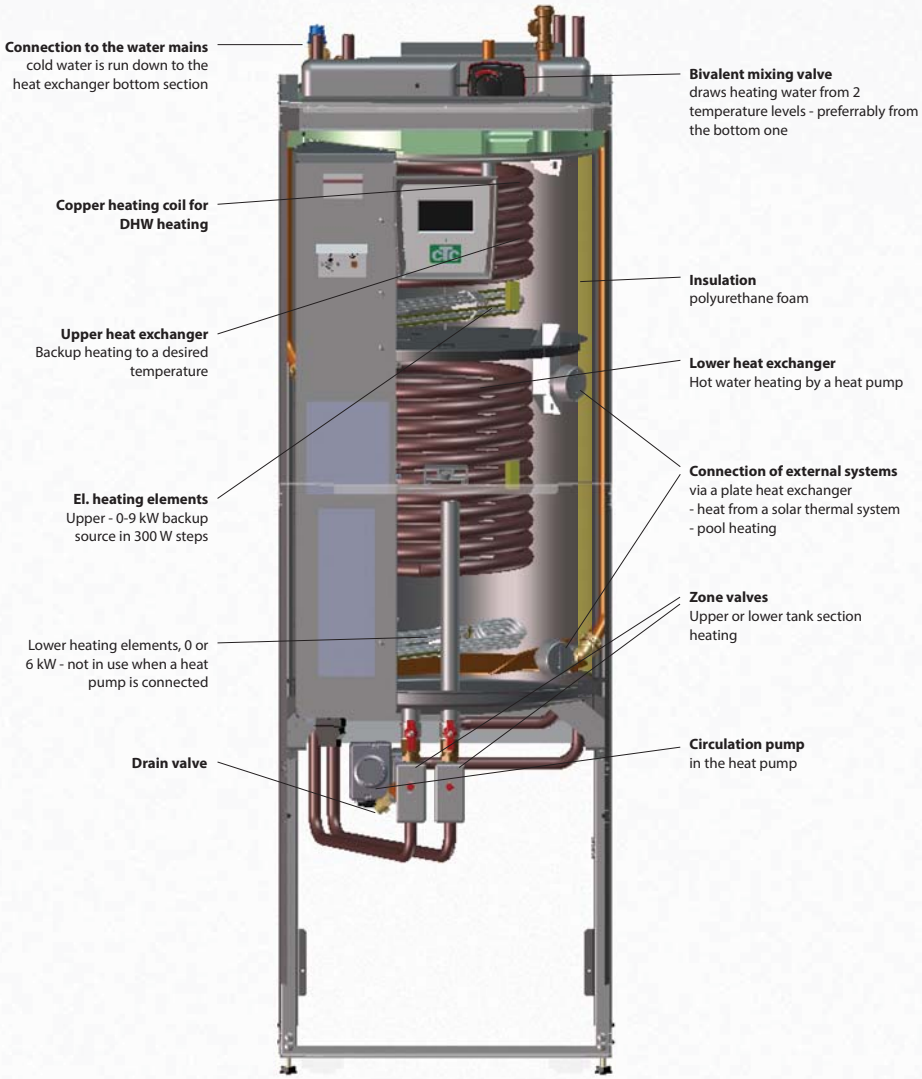
Max. flow temperature of the heat pump is 65 °C.

Each CTC Heat Pump is fitted with a max. current limiter for compressor startup.

Each CTC Heat Pump comes with a high-efficiency circulation pump for secondary circuit (the heating water circuit between a heat pump and a thermal store) and with an integrated primary circuit pump (bore/collector).

EcoZenith Multi-Energy Thermal Store

EcoZenith Multi-Energy Thermal Store is a fully equipped compact indoor unit that will meet all requirements for space and DHW heating if used with a heat pump. It is a thermal store with integrated DHW heating in a copper heating coil. The Multi-Energy Thermal Store further includes an el. heating element used as a backup heat source for the heat pump, a bivalent 4-way mixing valve with actuator, and an intelligent controller with a color touchscreen. The Multi-Energy Thermal Store can be connected to a solar thermal system, hydronic fireplace insert or to another heat source.

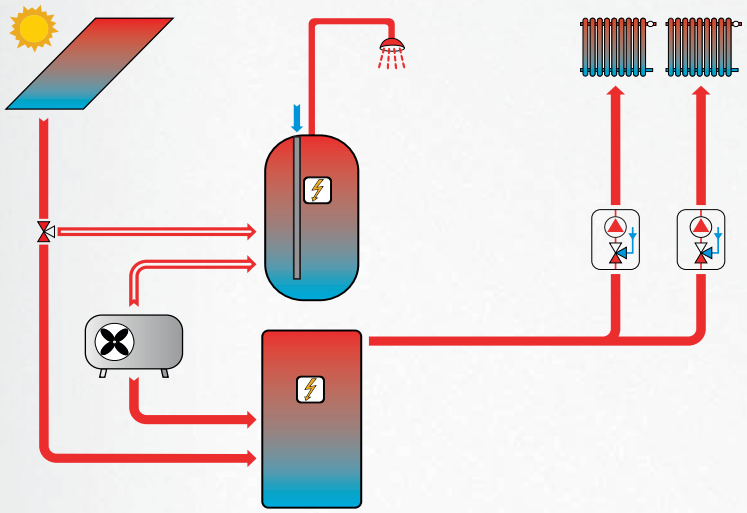


Technical Data			EcoZenith
Dimensions	Width	[mm]	595
	Height	[mm]	1904
	Depth	[mm]	672
	Weight	[kg]	182
Heating water volume		[l]	223
DHW volume		[l]	5.7
40°C hot water supply from Thermal Store with temperatures of 60/40 °C (upper/lower)	with 8 l/min. DHW draw-off rate	[l]	283*
	with 12 l/min. DHW draw-off rate	[l]	157*
Max. temperature		[°C]	110
Output		[kW]	15

* The values have been measured with EcoPart 410 heat pump.

IR12CTC Smart Controller

This Digital Controller is designed for efficient control of Regulus CTC heat pumps, enabling connection in series of up to 10 EcoAir 406-420 or EcoPart 406-417 heat pumps. Further it is able to control 2 independent mixed circuits by separate time schedules with 2 temperature levels (setback/comfort), DHW heating by both a heat pump and el. heating element following a preset time schedules and temperatures, and a backup heat source. If needed, even a solar thermal system with up to 2 solar sinks can be controlled (e.g. hot water storage tank and a thermal store). The controller can be upgraded to control a fireplace or a solid fuel boiler, to control recirculation, or even up to 3 solar sinks, by adding extension modules.



Connection diagram with a heat pump and solar collectors

The Controller features a Czech/English menu and comes with a 4GB SD card for important data storage, RJ45 Ethernet port to connect to a LAN, and **an integrated web server that supports visualization of the heating system and makes adjustments easy**. The controller can be then accessed over LAN or Internet like any other webpage.

IR10CTC Smart Controller

This Digital Controller is designed for efficient control of Regulus CTC heat pumps, enabling connection in series of up to 10 EcoAir 406-420 or EcoPart 406-417 heat pumps. Further it is able to control one independent mixed circuit by swapping 2 temperature levels (setback/comfort), DHW heating by both a heat pump and a backup heat source. The controller can be upgraded to control a fireplace or a solid fuel boiler, or to control recirculation, by adding extension modules. The Controller features a Czech/English menu and comes with a 4GB SD card for important data storage, RJ45 Ethernet port to connect to a LAN, and features **an integrated web server that supports visualization of the heating system and makes adjustments easy.**

Easy connection in series

CTC Heat Pumps can be simply coupled into series which will increase their total output easily. No more expensive accessories are needed, all is managed by IR12CTC or IR10CTC over a communication line, maintaining all the other control functions for an entire heating system.

Master Control Module

It is designed permit switching EcoAir and EcoPart Heat Pumps by a master heating controller. The module ensures all protective functions. It permits connecting a heat pump to the Internet, meeting this way conditions for extended compressor warranty.

ACCESSORIES

Accessories to EcoAir air-source Heat Pumps

Backup power supply for Heat Pumps

Backup power supply for EcoAir heat pumps, incl. maintenance-free sealed 44Ah accumulator of at least 12 years of service life. In case of a power failure it monitors the temperature in a heat pump's circuit and starts its circulation pump when needed; this way the battery is not being discharged unnecessarily. The heat pump's heat exchanger is then prevented from freezing for as long time as possible.

Code: 9 142

Hoses for Heat Pumps

Braided stainless-steel flexible hoses that prevent subtle vibrations from being transmitted to a heating system.

Braided hose 2x G 1" F 500 mm – *code 15 493*, 700 mm – code *15 494*, 1000 mm – code *15 495*

Braided hose G 1" F x G 1" M 500 mm – *code 15 496*, 700 mm – code *15 497*, 1000 mm – code *15 498*

Accessories to EcoHeat/EcoPart ground-source Heat Pumps

Filling manifold for primary circuit

Filling kit for primary circuits is designed to be used for easy filling and air bleeding a ground circuit with bores or ground loops. It contains a dirt filter, a two-way shut-off valve, a diverter ball valve and two filling valves to connect to a filling pump.

Code: 12 454 - M1", *12 455* - M5/4"

1"M Filling kit is suitable for EcoHeat 406-410 and EcoPart 406-410 Heat Pumps.

Fluid for primary circuits of Heat Pumps

Antifreeze heat carrier with anti-corrosion protection, for heating and cooling systems incl. primary circuits of ground-to-water heat pumps.

CONVECTheatR - concentrate

5 l Plastic container - code *11 430, 25 l Plastic container* - code *10 769, 200 l Barrel* - code *11 493*

Accessories to EcoHeat/EcoZenith Multi-Energy Thermal Stores

Solar module for EcoHeat/EcoZenith

It is intended for connection to a solar pump station, enabling utilization of solar energy in a thermal store for DHW heating or space heating support.

Code: 12 622

Internet module for EcoHeat/EcoZenith

Module permitting connection of multi-energy thermal store to Internet

Code: 15 085

Wireless room unit, with aerial, connection module and cable for EcoHeat/EcoZenith

Code: 13 944

Wireless room unit, additional, for EcoHeat/EcoZenith

Code: 13 945

Room sensor for EcoHeat/EcoZenith

Code: 9 752

Temperature sensor with 2.5m cable for EcoHeat/EcoZenith

Code: 9 583

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Energy-saving solutions