

Model AHP
air / water
30 - 140 kW



Model WWHP
water / water
100 - 500 kW



Model EPDH
air / water
31 - 124 kW



ECOTHERM is the leading brand for turnkey hot water, steam and solar systems for hotels, hospitals and industry in the Middle East.

ECOTHERM amazes its customers with “Individual Heat Transfer Solutions” for hot water, steam and solar generation. The following advantages mark these solutions:

Individuality

ECOTHERM realizes extensive turnkey systems as well as the production of separate components. Each single plant is specifically aligned to the customer’s individual requirements. The basis is an own production in Austria and a wide product portfolio.

Premium quality

All products made of high-class duplex stainless steel guarantee a long-life cycle and perfect hygiene. ECOTHERM is certified to ISO 9001 : 2008 with all required European standards.

Innovation

We are always open to the new, we constantly investigate new technologies and we develop path-breaking and future-oriented products.

Premium service

Clients benefit from extensive service at consulting, planning, engineering, supervision and training. ECOTHERM regularly improves the know-how of its partners and clients via selective trainings.

Efficiency

The ECOTHERM Group managed by the owner has slim decision-making structures. ECOTHERM turnkey solutions from one single source and the economical handling of energy resources offer an optimal cost-benefit ratio.

Experience

With over thousand installations in the last decade in Europe, the Middle East, Asia, North Africa and Central America, ECOTHERM has become one of the technology and innovation leaders for individual hot water, steam and solar solutions on the market.

Reliability

ECOTHERM systems are monitored around the clock and can be serviced at low cost, quickly and efficiently via an advance control panel. Our designed plants have low maintenance requirements and are totally dependable.

Sustainability

ECOTHERM products help our customers to save energy and money. We save valuable resources through the use of renewable energies. ECOTHERM high-performance plants have minimal space requirements and provide maximum energy savings. When planning new products ECOTHERM engineers take all the qualitative and economic principles into account in accordance with ecological principles.

Partnership

We live in a partnership with all our customers, suppliers and employees. This relationship is characterized by honesty, commitment, openness, trust and reliability. The object is a joint long-term success.

Internationality

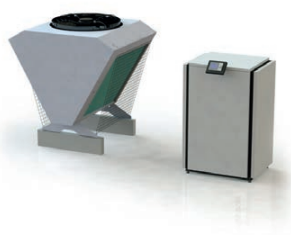
The international alignment of ECOTHERM with branches in Dubai, Kuwait, Mexico, Hungary, India and partners in more than 20 countries is the basis for our flexible and efficient project implementation that is always on schedule.

ECOTHERM Heatpumps

Find your optimal solution

Pages 4 - 5

Products:



- **Model AHP: Air to Water Heat Pumps**
30 kW – 140 kW
with high flow temperature in Split system

Pages 8 - 9



- **Model WWHP: Water to Water Heat Pumps**
100 kW – 500 kW
Industrial heat pump module with two compressors in single refrigeration cycle brine - water / water - water

Pages 10 - 11



- **Model HWHP or SCHP: Hot Water Heat Pump or Shower Chiller Heat Pump**
1,2 kW
The Hot Water Heat Pump can reach up to 62°C for the hot water in the included tank with a very good COP.

Page 12 -13



- **Model EPHH or EPDH: Pool Heating and Colling with Heat Pump**
31 – 124 kW
Our heat/cool pumps are specifically designed for swimming pool heating and cooling – they are not converted air-conditioning units.

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Technical Specifications

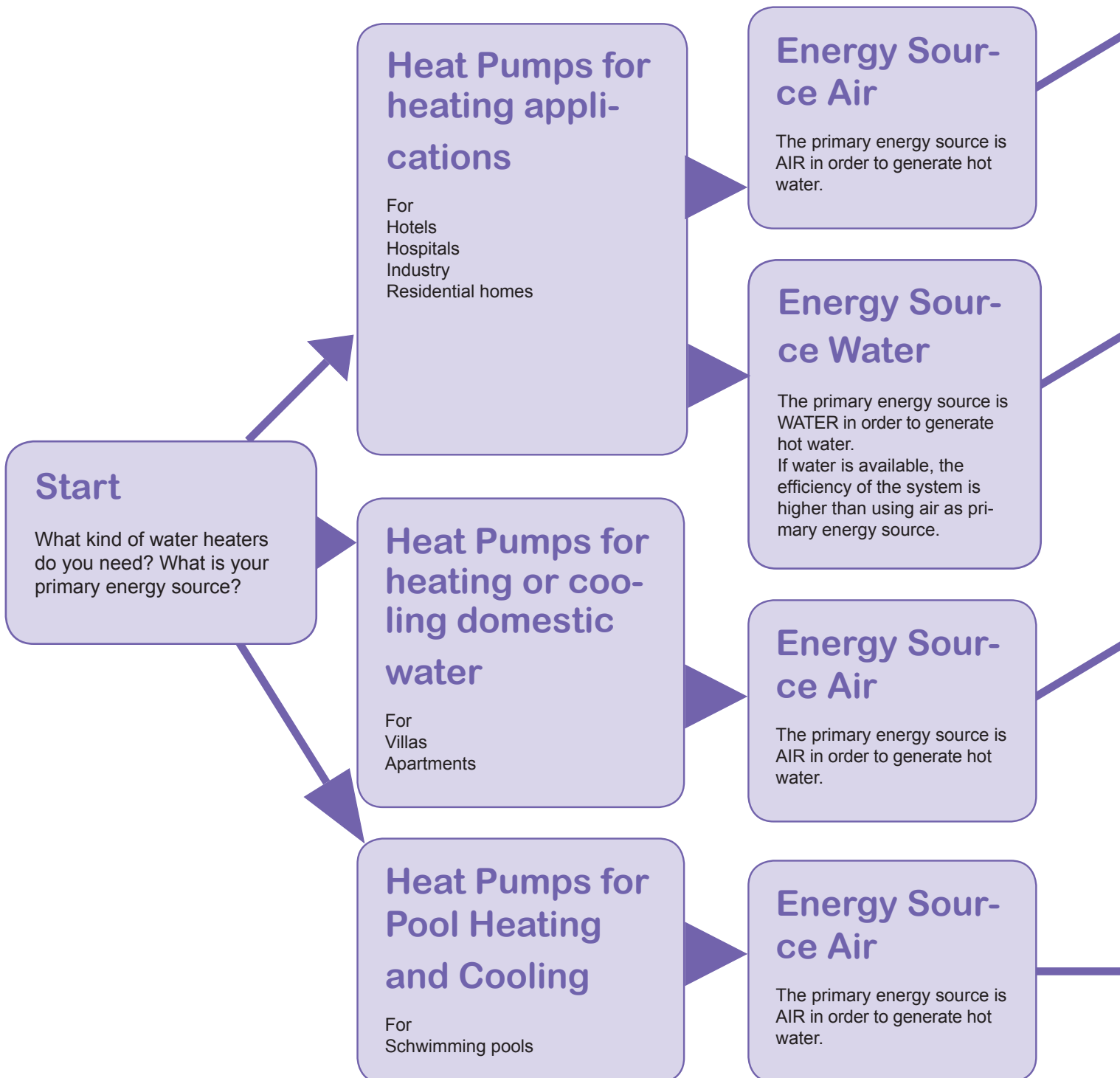
Pages 16 - 17

Find your optimal ECOTHERM solution

ECOTHERM heat pumps are premium quality products. All components are tested of high quality at the production facility at the ECOTHERM headquarters in Austria. With EVI (Enhanced Vapor Injection) several positive parameters can be achieved which are especially useful for heat

pumps. By injecting the refrigerant directly into the SCROLL compressor head, the conditions in the refrigerant circuit of the system change. As a result, the heat pump outlet temperature reaches a flow temperature of up to 65 ° C even at low outside temperatures. Another advantage is the lower

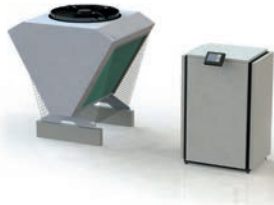
heat loss and the efficiency with decreasing source temperature. At higher source temperatures, the EVI circuit can be disconnected and thus the heat and heat Cooling capacity of the heat pump reduced by approx. 10% to 25%.



Model AWHP

Air - Water heat pump with high flow temperature in Split system

Model AWHP



Model AWHP

Air - Water Heat Pump
20 - 140 kW
More details on pages 8 - 9.

Model WWHP

Industrial heat pump module with two compressors in single refrigeration cycle. Brine - water or water - water.

Model WWHP



Model WWHP

Water - Water Heat Pump
100 - 500 kW
More details on pages 10-11.

Model HWHP Model SCHP

Hot water heat pump or Shower water cooler.

Model HWHP



Model SCHP



Model HWHP

1,4kW, 266 litres
More details on pages 12-13.

Model SCHP

1,2kW, 266 litres
More details on pages 12-13.

Model EPHH Model EPDH

Heat pump specifically designed for swimming pools.

Model EPHH Model EPDH



Model EPHH

Pool heating
31 - 123,8 kW
More details on pages 14-15.

Model EPDH

Pool heating and cooling
36 - 136,6 kW
More details on pages 14-15.

Top 12 Advantages



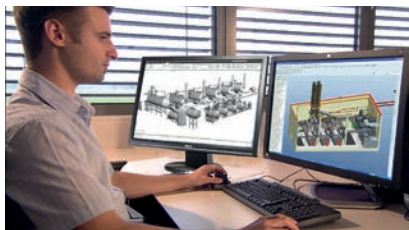
Stainless Steel
Best hygiene, quality and lifetime.



ECOTHERM spiral flat heating coils
The patented spiral flat heating coil is mounted horizontally at the bottom of the storage tank.



Premium quality
Components are made of high quality stainless steel (1.4571/Duplex)



Individuality
Each system is individually designed and optimized.



Minimum space requirement
by individual design and high performance components (spiral flat heating coils)



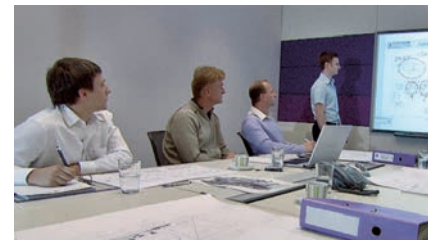
Easy to operate
Electronic control with touch-screen and option for remote maintenance via PC (optional)



High quality fiber-fleece insulation
Up to 30 percent less heat losses, patented aluminum closure strips and patented covering rosettes



Easy installation on site
Preinstalled, wired, space-saving packaging



ECOTHERM Academy
Training and Support



Fresh hot water system with maximum hygiene
Optimal hot water hygiene, reduced risk of Legionella and scaling. Hot water is generated on demand, low storage volumes



Highest savings
Energy efficient, minimal maintenance costs

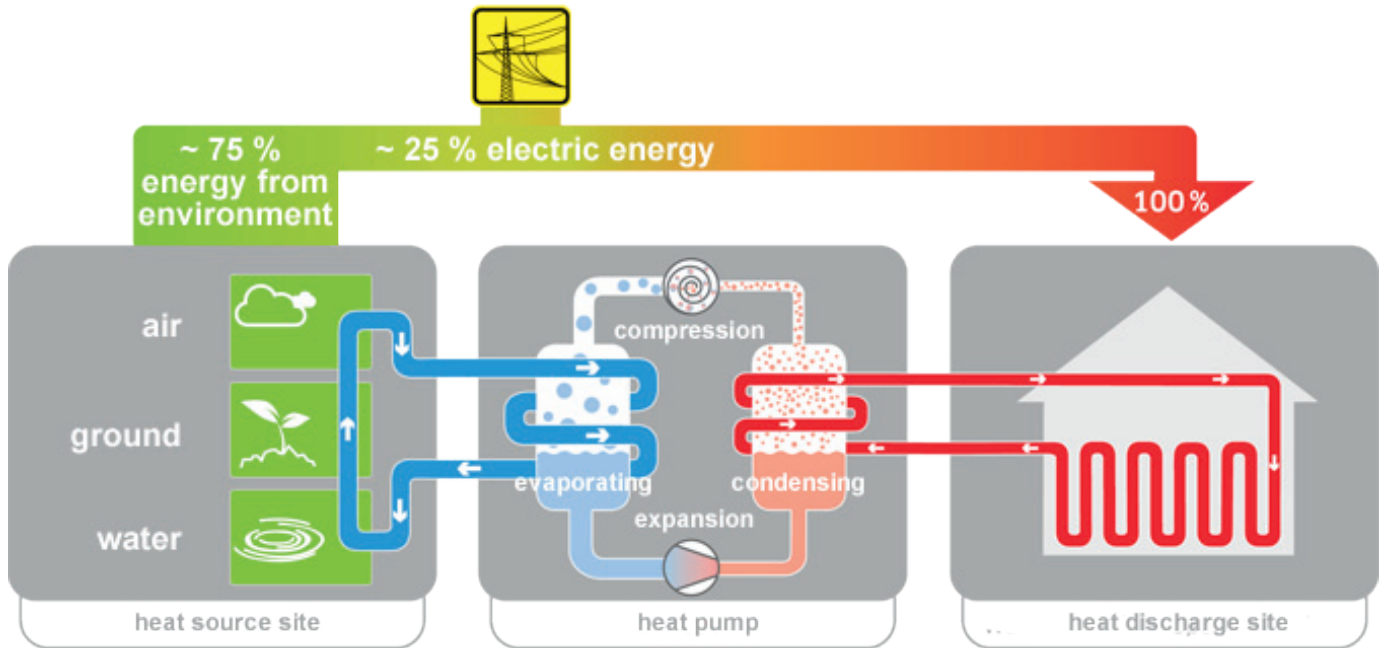


Experience
Worldwide more than 1,000 installed systems

Technology in ECOTHERM heat pumps

Innovations are standard in ECOTHERM heat pumps

Heat pump technology has been known for a long time. However, the new challenges represent today's requirements and the associated complexity in the development of heat pumps and the design of the application system with heat pumps. ECOTHERM is actively involved in various innovative projects and the findings are transferred to the heat pump manufacturing process. This allows the agile use of new technologies based on knowledge, experience and close links with our partners.



Principle - basically very simple

The heat pump is sufficient with heat, which is below the human temperature and is therefore perceived as cold. Even at low temperatures, there is still enough heat to heat with a heat pump.

... how is it possible?

In the heat pump is a closed circuit, which is filled with the working fluid, refrigerant. This medium circulates continuously while the heat pump is running and changes its physical state. It evaporates, compresses, condenses and expands. The temperature of the working medium entering the evaporator is lower than the temperature of the source flowing through the evaporator, causing evaporation of the working medium. This vapor is compressed to a higher pressure and a higher temperature. This saturated vapor enters the condenser where it gives off useful heat. The liquid working medium already expands through the injection valve to steam temperature and pressure. The working fluid returns to the evaporator and the cycle is repeated.

EVI technology and its advantages in ECOTHERM heat pumps

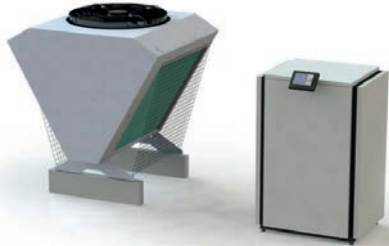
With EVI (Enhanced Vapor Injection) several positive parameters can be achieved which are especially useful for heat pumps. By injecting the refrigerant directly into the SCROLL compressor head, the conditions in the refrigerant circuit of the system change. As a result, the heat pump outlet temperature reaches a flow temperature of up to 65 ° C even at low outside temperatures. Another advantage is the lower heat loss and the efficiency with decreasing source temperature. At higher source temperatures, the EVI circuit can be disconnected and thus the heat and heat Cooling capacity of the heat pump reduced by approx. 10% to 25%.

These features make ECOTHERM heat pumps with EVI technology an ideal choice for modernization or hot water heating systems where high flow temperatures are required by the heat pump in the long term.

Model AWHP: Heat pump air - water with high flow temperature in Split system

20 - 140 kW

Description



- Air - water split high temperature heat pump with scroll compressor in internal unit and external unit, with stable frame construction and flexible outputs. Double high-absorption suspension with sylomer pads and adjustable base plates ensure low noise and vibration levels of the Scroll compressor.
- Stainless steel plate heat exchanger (1,4401) for heating circuit. Free-hanging Al-Cu V-shaped heat exchanger with water resistant coating in the outdoor unit. Electrical switchboard with integrated safety elements and equithermal controller of the heat pump is located below the upper lid in the indoor unit. Quiet, low-speed EC Ziehl - Abegg with bionic fins located in the outdoor unit. Outdoor unit with type VOV600 and VOV900 made of 100% stainless steel. Reversible defrosting optimized via APS system with subcooling of liquid refrigerant. With electronic starter via built-in soft starter and electronic expansion control with autoadaptivity.
- Frame construction with a massive base plate on adjustable legs. Covering the epoxy-coated unit. The multi-layer sound insulation and vibration-eliminating profiles are glued from the inside of the cover. Equithermal, digital control of the heat pump with integrated cooling control function. For controlling one heating or cooling circuit with mixing unit, for one heating or cooling circuit without a mixing unit. Temperature regulation for DHW storage tank and control of electrical backup heating element inside the heat pump. Simple extension of control up to 3 heating / cooling circuits via expansion modules or up to 16 circuits via system controllers. The standard version also includes solar control as well as the possibility of cascading up to 16 devices.
- Full-text control menu with features dependent on user instructions, information texts and status output signal. Diagnostic system with record history of operation. External temperature sensor, hotgas sensor, liquid refrigerant temperature sensor, heat pump flow and return temperature sensor as well as source output sensor, source return sensor, and hot water sensor.

Technical information

Heat pump type	AWHP 30 EVI	AWHP 40 EVI	AWHP 47 EVI	AWHP 65 EVI HD	AWHP 95 EVI HD	AWHP 140 EVI HD
Article nr.	HPWA001045	HPWA001046	HPWA001047	HPWAHD1143	HPWAHD1144	HPWAHD1145
Refrigerant	R407c	R407c	R407c	R407c	R407c	R407c
Heating capacity [kW]						
A2/W35	30,5	40,4	47,1	63,8	93,46	140,0
A7/W35	35,58	47,13	54,95	74,43	109,04	163,33
A-2/W35	28,23	37,39	43,59	59,04	86,49	129,56
A2/W55	31,08	41,17	48	65,01	95,24	142,66
Input [kW]						
A2/W35	8,24	10,63	12,39	17,24	24,59	36,84
Performance COP						
A2/W35	3,7	3,8	3,8	3,7	3,8	3,8
Parameter of heat rejection						
Maximal flow temperature [°C]	+65	+65	+65	+65	+65	+65
Minimal flow temperature [°C]	+12	+12	+12	+12	+12	+12
Flow nominal [m ³ /h]	3,77	5,00	5,82	7,89	11,55	17,3
Pressure drop (max.) [kPa]	20	20	20	20	20	20
ΔT recommended [K]	7	7	7	7	7	7
Connection port size ["]	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Parameter of low potential heat source (source)						
Minimum source temperature [°C]	-22	-22	-22	-22	-22	-22
Maximum source temperature [°C]	+40	+40	+40	+40	+40	+40
Flow source nominal [m ³ /h]	8900	11910	13880	18620	27540	41250
Pressure drop source (max.) [kPa]	0,075	0,043	0,061	2x0,043	2x0,061	3x0,061
ΔT recommended source [K]	7	7	7	7	7	7
Connection port size source ["]	16mm / 28mm	18mm / 35mm	22mm / 35mm	2x(22mm / 35mm)	2x(22mm / 35mm)	3x(22mm / 35mm)
Parameter of electrical connection and planing						
Mains dimension [mm ²]	5x6	5x10	5x10	5x25	5x25	5x25
Voltage [V]	3x400	3x400	3x400	3x400	3x400	3x400
Safety protection [A]	32	32	40	63	80	100
Current - nominal [A]	14,6	16,8	20,8	2x16,8	2x20,8	3x20,8
Current - maximal [A]	29,4	30,6	35,9	2x28,9	2,35,9	3x35,9
Current - Start [A]	38,54	44,35	54,91	2x44,35	2x54,91	3x54,91
Softstart	MCI25	MCD201	MCD201	2xMCD201	2xMCD201	3xMCD201
Energy Efficiency Parameters and Performance ErP						
Energy class	A++	A++	A++	A++	A++	A++
SCOP	3,73	3,84	3,84	3,75	3,85	3,86
Seasonal energy efficiency η [%]	149	154	154	150	154	154
Rated nominal heating capacity P rated [kW]	36	47	55	74	109	163
Bivalent point [°C]	-7	-7	-6	-6	-6	-6
Sound emissions - indoor Lw [dB(A)]	55	54	54	52	52	54
Sound emissions - outdoor Lw [dB(A)]	70	72	76	74	74	76

Model WWHP: Industrial heat pump module with two compressors in single refrigeration cycle brine - water / water - water 100 - 500 kW



Description

- Heat pump module with a pair of compressors connected in single refrigeration cycle on a stable platform that can be placed in the HeavyDuty Modular Heat Pump. Double high-absorption suspension with silicone washers ensures low noise and vibration levels of the hermetic Scroll compressor.
- Stainless steel plate heat exchanger (1.4401) for heating circuit. Switchingboard with integrated safety elements and equithermal control of the heat pump is located in a separate cabinet. With electronic starter via built-in soft starter and electronic coolant injection with autoadaptivity.
- Frame construction with a massive base plate on adjustable legs. Equithermal, digital control of the heat pump module allowing multi-stage operation with high redundancy and protection against system failure. For controlling the heating circuit with the mixer and for one heating circuit without a mixer. Temperature regulation for one DHW storage and control of electrical auxiliary heating. Simple extension of control up to 3 heating / cooling circuits via expansion modules or up to 16 circuits via system controllers for RVS heating. The standard version also includes solar control, as well as the possibility of cascading up to 16 devices.
- Full-text control menu with features dependent on user instructions, information texts and status output signal. Diagnostic system with record history of operation. External temperature sensor, hotplate sensor, coolant temperature sensor, heat pump heat pump temperature sensor and return temperature sensor as well as source temperature sensor at probe and evaporator inlet, hot water sensor.
- Optionally available with ModBus module as well WebControl control and monitoring via the Internet.

Technical information

Heat pump type	TWW 105 EVI		TBW 98HD EVI	TWB 176 HD	TBW225 HD
Article nr.	HPWA001366		HPWAMTB98I	HPWAMTB176	HPWAMTP224
Refrigerant	R410a		R410a	R410a	R410a
Heating capacity [kW]	water/water		brine/water	brine/water	brine/water
W10/W35	104,8	B0/W35	98,2	175,2	224,5
W15/W35	120,31	B5/W35	110,73	197,55	253,13
W7/W35	97,25	B-5/W35	91,41	163,08	208,97
W10/W55	107,73	B5/W55	91,94	164,03	210,19
Input [kW]					
W10/W35	18,38	B0/W35	20,89	37,27	48,8
Performance COP					
W10/W35	5,7	B0/W35	4,7	4,7	4,6
Parameter of heat rejection					
Maximal flow temperature [°C]	+65 ($\Delta T_{10K}=70^{\circ}\text{C}$)		+65 ($\Delta T_{10K}=70^{\circ}\text{C}$)	+60	+60
Minimal flow temperature [°C]	+20		+20	+20	+20
Flow nominal [m ³ /h]	6,48 - 12,95		6,07 - 12,14	10,83 - 21,65	13,87 - 27,74
Pressure drop (max.) [kPa]	20		20	20	20
ΔT recommended [K]	7		7	7	7
Connection port size ["]	2		2	3	3
Parameter of low potential heat source (source)					
Minimum source temperature [°C]	-5		-5	-5	-5
Maximum source temperature [°C]	+25		+25	+25	+25
Flow source nominal [m ³ /h]	9,35 - 18,69		8,82 - 17,63	15,73 - 31,45	20,03 - 40,06
Pressure drop source (max.) [kPa]	20		20	20	20
ΔT recommended source [K]	4		3	3	3
Connection port size source ["]	2		2	3	3
Parameter of electrical connection and planing					
Mains dimension [mm ²]	5x10		5x10	5x16	5x16
Voltage [V]	3x400		3x400	3x400	3x400
Safety protection [A]	80		80	160	160
Current - nominal [A]	43,75		46,7	69,76	86,22
Current - maximal [A]	66,0		74,8	130,8	165,2
Current - Start [A]	2x58,42		2x63,04	2x63,05	2x85,02
Softstart	2xMCD201		2xMCD201	2xMCD201	2xMCD201
Energy Efficiency Parameters and Performance ErP					
Energy class	A++		A++	A++	A++
SCOP	5,68		4,68	4,69	4,59
Seasonal energy efficiency η [%]	227		187	188	184
Rated nominal heating capacity P rated [kW]	91		98	175	225
Bivalent point [°C]	-10		-10	-10	-10
Sound emissions - indoor L _w [dB(A)]	56		56	61	63
Sound emissions - outdoor L _w [dB(A)]	-		-	-	-

Model HWHP and SCHP: ECOTHERM Hot Water Heat Pump and Shower Water Cooler 266 Liter

**Save Energy. Save Money.
Protect Environment.**



Model HWHP

For villas and apartments very often electricity is the main source of energy to generate hot water. If solar thermal collectors are used - as e. g. with a thermosyphon system - then also an electric heating element is used as backup.

Very often up to 8 kW are needed to heat up several electric water heaters in a villa. the ECOTHERM Hot Water Heat Pump needs only 500 W (= 0.5 kW) to supply the same amount of hot water - either as domestic hot water or for space heating. This saves money and valuable resources in order to protect environmental resources.

Additionally in big resorts and housing projects with a couple of hundreds or even thousands of villas, the rated power supply of all buildings is extremely high.

100% renewable energy

Since the demand of the ECOTHERM Hot Water Heat Pump is so small, it can easily be operated most of the year by a small photovoltaic system and therefore operate 100% based on renewable energies.

ECOTHERM Hot Water Heat Pumps are therefore your best choice. Manufactured in the European Union the chillers meet the highest quality standards, ensure reliable and easy operation and supply a large amount of hot water using minimum energy.

Improve the Quality of your Live



Model SCHP

In regions where the ambient temperature often exceeds 45°C (= 115°F), the cold water used for showering can reach more than 40°C. Therefore it significantly improves the quality of life to have a large reservoir of cold water for this purpose.

EXOKON Shower Water Chillers are the best choice for this demand. Manufactured in the European Union the chillers meet the highest quality standards, ensure reliable and easy operation and supply a large amount of cold water using minimum energy.

100% renewable energy

The energy demand for EXOKON Shower Water Chillers is below 500W. Therefore the main source of energy can be a small photovoltaic systems existing of only two panels. Thus your comfortable cool shower experience can be supplied by 100 percent renewable energy – to improve the quality of your life – and to save valuable energy resources.

Technical information

Type:	HWHP 395	SCHP 395
Dimensions:	H: 1768mm, Ø 707mm	H: 1768mm, Ø 707mm
Weight without packaging:	145 kg	145 kg
Voltage / Frequency:	3 x 220 V / 60 Hz Phase-Neutral-Earth	230 V / 50 Hz Phase-Neutral-Earth
Heat pump input:	395 Watt	395 Watt
Heat pump output:	1421 Watt	1200 Watt
High supplementary heating:	2000 Watt / 230 V	2000 Watt / 230 V
Safety with high supplementary heating:	Minimum 13 A	Minimum 13 A
Thermostat for supplementary heating:	Set at 65°C, controlled via the display	
Refrigerant:	R134a	R134a
Quantity of air:	Min. / Max. 200 / 300 m3/h	Min. / Max. 200 / 300 m3/h
Air temperature:	Min. - 10°C to Max. +50°C	Min. - 10°C to Max. +45°C
Hot water storage tank:	Enamelled, 266 litres	Enamelled, 266 litres
Working pressure:	Max. 1 MPa / 10 bar	Max. 1 MPa / 10 bar
Anode:	Magnesium - 5/4" RG	Magnesium - 5/4" RG
Water temperature:	Adjustable - Max. 62°C	Adjustable - Min. 13°C
Hot water output:	850 litres at 60°C / 24h	cold water 504 litres at 15°C / 24h
Water connections		
• Cold water:	1" RT	1" RT
• Hot water:	1" RT	1" RT
• Condensation water:	1/2" RT	1/2" RT
• Heat exchanger:	1" RT	1" RT
• Circulation connection:	3/4" RT	3/4" RT
Electronic:	Yes	Yes
Air inlet / outlet:	Top / Top	Top / Top
Duct connection:	Ø 160 mm	Ø 160 mm
Legionella function:	Yes	No

Model EPHH or EPDH

Pool Heating and Cooling with Heat Pump

31 - 124 kW



Description

Our heat cool pumps are specifically designed for swimming pool heating and cooling – they are not converted air-conditioning units. This means that all components used in their construction are designed to give maximum efficiency and reliability at swimming pool conditions, even in the toughest climates.

Heat pumps are widely accepted as the most economic and effective method of heating and cooling your swimming pool.

Unlike electric flow heaters and boilers that can only provide pool heating. ECOTHERM heat cool pumps will automatically either heat or cool your pool without the need for additional equipment.

As an added bonus, a ECOTHERM heat cool pump will produce up to five times the energy it consumes, dramatically reducing the energy consumption of your swimming pool.

On the basis of pool size, water temperature, air temperature, humidity and bathing activity, ECOTHERM units can be designed to accommodate any requirement.

Features

- Capacities from 31kW to 124kW
- Purpose designed components for pool heating and cooling
- Zero ozone depleting R134a refrigerant - ensure reliable, efficient operation regardless of air temperature
- Can be installed outside or in a plant room
- Titanium or CuNi heat exchanger
- Full automatic operation
- Leading brand scroll compressors
- Quiet, efficient outlet axial fans
- Plastisol coated cabinet
- Water flow switch
- Comprehensive circuit protection
- Weather-proof construction
- Digital thermostat

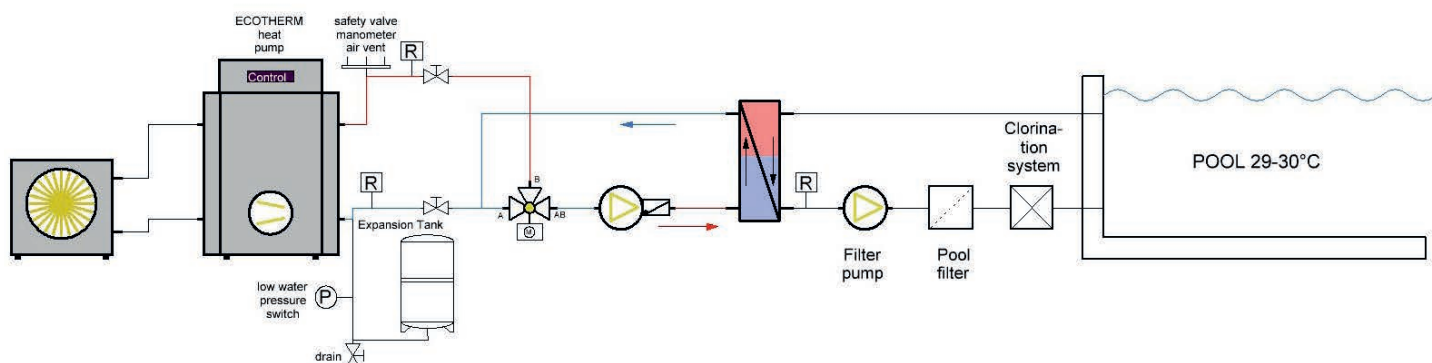
Applications

- Indoor or outdoor pools
- Hotel and Spa pools
- Health clubs and wellness centres

Options

- Chiller or heater only
- Soft start
- High pressure fan
- 3ph, 60Hz versions
- Condensate insulation kit

Hydraulic scheme



Specifications

Model	Units	EPDH 30 BHC	EPDH 45 BHC	EPDH 70 BHC	EPDH 90 BHC	EPDH 140 BHC
Air temperature range	°C	10-55	10-55	10-55	10-55	10-55
Water temperature range	°C	10-40	10-40	10-40	10-40	10-40
Heating output @ +20°C/85% RH ambient	kW	31,0	36,4	61,9	72,7	123,8
Heating input @ +20°C/85% RH ambient	kW	5,5	6,7	10,5	13,3	21,0
Cooling output @ +45°C/50% RH ambient	kW	25,5	30,0	51,0	59,9	102,1
Cooling input @ +45°C/50% RH ambient	kW	8,3	10,0	16,2	20,0	32,4
Power supply	V/Hz	400/3ph/50	400/3ph/50	400/3ph/50	400/3ph/50	400/3ph/50
Min. supply capacity	A	21	25	42	50	84
Recommended supply fuse	A	30	40	60	70	125
Max. starting current standard (LRA)	A	96	102	96	102	96
Max. starting current soft start (LRA)	A	33	34	33	34	33
Nominal air flow	m ³ /h	5500	11000	14000	22000	28000
Fan external resistance (standard)	Pa	0	0	0	0	0
Water flow +/- 10% (CuNi/Titanium exchanger)	l/min	n.a./250	66/300	133/500	166/600	266/1000
Pressure drop (water)	m hd	n.a./0,7	4,5/0,4	3,4/1,5	4,5/1,7	5,3/2,1
Water connections	inch	n.a./2 union	1 1/2" BSPM/2 union	1 1/2" /3 BSPM	1 1/2" /3 BSPM	2" /4 BSPM
Condensate water connections	inch	1 1/2" BSPM	1 1/2" BSPM	1 1/2" BSPM	1 1/2" BSPM	1 1/2" BSPM
Compressor	Type	1x Scroll	1x Scroll	2x Scroll	2x Scroll	4x Scroll
Fan	Type	1xAxial	1xAxial	1xAxial	2xAxial	2xAxial
Sound level @ 3m	dB(A)	64	65	70	65	70
Product size (w x d x h)	mm	1525x790x1080	1665x1060x1310	1810x1190x1310	2065x1190x1330	2210x1650x1340
Weight	kg	219	329	549	599	1065
Model	Units	EPDH 30 BM	EPDH 45 BM	EPDH 70 BM	EPDH 90 BM	EPDH 140 BM
Air temperature range	°C	10-40	10-40	10-40	10-40	10-40
Water temperature range	°C	10-38	10-38	10-38	10-38	10-38
output @ +25°C/55% RH ambient	kW	36,3	45,2	68,3	96,3	136,6
input @ +25°C/55% RH ambient	kW	6,7	8,6	12,3	18,1	24,7
output @ +15°C/70% RH ambient	kW	29,6	36,9	55,7	78,5	111,3
input @ +15°C/70% RH ambient	kW	6,2	8,0	11,4	16,8	22,8
output @ -3°C/100% RH ambient	kW	17,4	21,7	32,7	46,1	65,4
input @ -3°C/100% RH ambient	kW	5,4	6,9	9,8	14,5	19,6
Power supply	V/Hz	400/3ph/50	400/3ph/50	400/3ph/50	400/3ph/50	400/3ph/50
Min. supply capacity	A	20	22	35	43	67
Recommended supply fuse	A	30	30	50	60	100
Nominal air flow	m ³ /h	5500	12000	14000	24000	28000
water flow	l/min	250	300	500	600	1000
Pressure drop (water)	m hd	0,7	0,4	1,5	1,4	2,1
Water connections	inch	2 union	2 union	3 BSPM	3 BSPM	4 BSPM
Compressor	Type	1x Scroll	1x Scroll	1x Scroll	2x Scroll	2x Scroll
Condenser	Type	Titanium	Titanium	Titanium	Titanium	Titanium
Sound level @ 10m	dB(A)	54	55	59	55	59
Sound level @ 3m	dB(A)	64	65	70	65	70
Product size (w x d x h)	mm	1585x790x1080	1695x1060x1330	1840x1190x1310	2095x1190x1350	2250x1650x1340
Weight	kg	219	330	417	633	816

output and input calculated at water temperature 26°C for heating, and 32°C for cooling

EPHH ... ECOTHERM Pool Heatpump (only for heating)

EPDH ... ECOTHERM Pool Heatpump DUAL (heating and cooling)

Guide to hot water demand according to european standard and DIN 4708

Use these guidelines as a rough check for your hot water requirement. The actual requirement can vary depending on usage patterns. Refer to your planning consultant for further information.

Maximum demand rates (litres of hot water per hour at 60°C)

Building	Demand Factor	Bath	Shower	Bidet	Private Hand Basin	Public Hand Basin	Kitchen Sink	Bar Sink	Slop Sink
Hotel & Hostel	0,5	50	50	10	10	15	80	100	50
Hospital	0,7	60	70	10	10	15	80	-	50
Restaurant	1,0	-	-	-	5	25	140	100	100
Sport Centre	1,0	-	220	-	5	15	80	100	40
Day School	0,8	-	180	-	5	20	80	-	40
University	0,8	-	220	-	5	25	80	-	40
Offices	1,0	-	-	-	5	10	40	-	40
Factory	1,0	-	120	-	5	20	80	-	50

Calculation example

Hotel with 300 rooms litres / hour at 60°C

300 bath / showers	=	15,000
300 private handbasins	=	3,000
300 bidets	=	3,000
60 public handbasins	=	900
25 kitchen sinks	=	2,000
15 bar sinks	=	1,500
15 slop sinks	=	750

Total = 26,150 x demand factor 0,5 (hotel)
Demand = 13,075 litres / hour continuous at 60°C

Demand capacity for apartments

(with shared water heating)

ECOTHERM Stainless Steel Storage Water Heaters are commonly used in apartment houses and other buildings with shared water heating. The maximum number of standard apartments (according to DIN 4708) that each ECOTHERM Water Heater will serve are indicated in the performance tables pages 28, 29, 30 and 32.

Hot water demand

for standard apartments (DIN4708*)

Number of Apartments	Cont. requirement Litres per hour	
	60°C	45°C
50	3000	4300
100	5200	7500
150	7200	10400
200	9100	13200
250	10700	15500
300	12000	17400

Standard Apartment (DIN4708*)

A standard apartment is defined as having 4 rooms, 3-4 persons, 150 litres bath (filling time 10 min.), 1 hand basin and 1 kitchen sink.

*) DIN4708

specifies that the performance of the heat exchanger and the hot water storage capacity are both significant factors in determining the number of apartments a water heater can serve.

Nominal Power Rating NL1

The nominal dwelling unit is a 4 room apartment with 3.5 (3 to 4) persons and sanitary equipment with a bath tub, a washstand and a kitchen rinse. The hot water requirement for each dwelling with $W_b=5820$ Wh includes that of a bath tub (small bath tub with typical capacity of 140 litres) and a minimum temperature increase

of 35K from cold water. Occupation or equipment deviations from nominal parameters are to be compensated by adjusting the number of nominal dwellings according to DIN 4708 part 2. The nominal power rating according to DIN 4708 part 3 must correspond to the nominal demand using DIN 4708 part 2.

ECOSIZE

Use our own developed software "ECOSIZE" in order to design your optimal ECOTHERM solution. Register for your personal login to the online software ECOSIZE.

ecosize.ecotherm.com

Guide to hot water demand according to Ashrae

Use these guidelines as a rough check for your hot water requirement. The actual requirement can vary depending on usage patterns. Refer to your planning consultant for further information.

Maximum demand rates (litres of hot water per hour at 60°C)

Building	Demand Factor	Bathtubs	Shower	Bidet	Private Hand Basin	Kitchen Sink	Pantry Sink	Service Sink
Hotel	0.25	75.7	283.9	7.6	30.3	113.6	37.9	113.6
Hospital	0.25	75.7	283.9	7.6	22.7	75.7	37.9	75.7
Restaurant	-	-	-	-	-	-	-	-
Sport Centre	-	-	-	-	-	-	-	-
School	0.4	-	851.6	7.6	20	75.7	37.9	74.7
Gymnasium	0.4	113.6	851.6	7.6	30.3	-	-	-
Offices	0.3	-	113.6	7.6	22.7	75.7	37.9	75.7
Factory	0.4	-	851.6	7.6	45.4	75.7	-	75.7

Calculation example

Hotel with 30 rooms	litres / hour at 60°C	
60 lavatories x 7.6	=	456
30 bathtubs x 75.7	=	2,271
30 showers x 283.9	=	8,517
60 kitchen sinks x 113.6	=	6,816
15 laundry tubs x 75.7	=	1,135

Total = 9,525.6 x demand factor 0.25 (hotel)
Demand = 2,381.4 litres / hour continuous at 60°C

Find our references at
www.ecotherm.com



Philosophy

Our Mission

ECOTHERM amazes its customers with individual solutions for hot water, steam and solar systems.

Our Vision

ECOTHERM is the leading brand for individual hot water, steam and solar solutions for hotels, hospitals and industry in Europe, Middle East, Asia, North Africa and Central America.

Our Values

Quality
Individuality
Innovation
Partnership
Sustainability
Experience

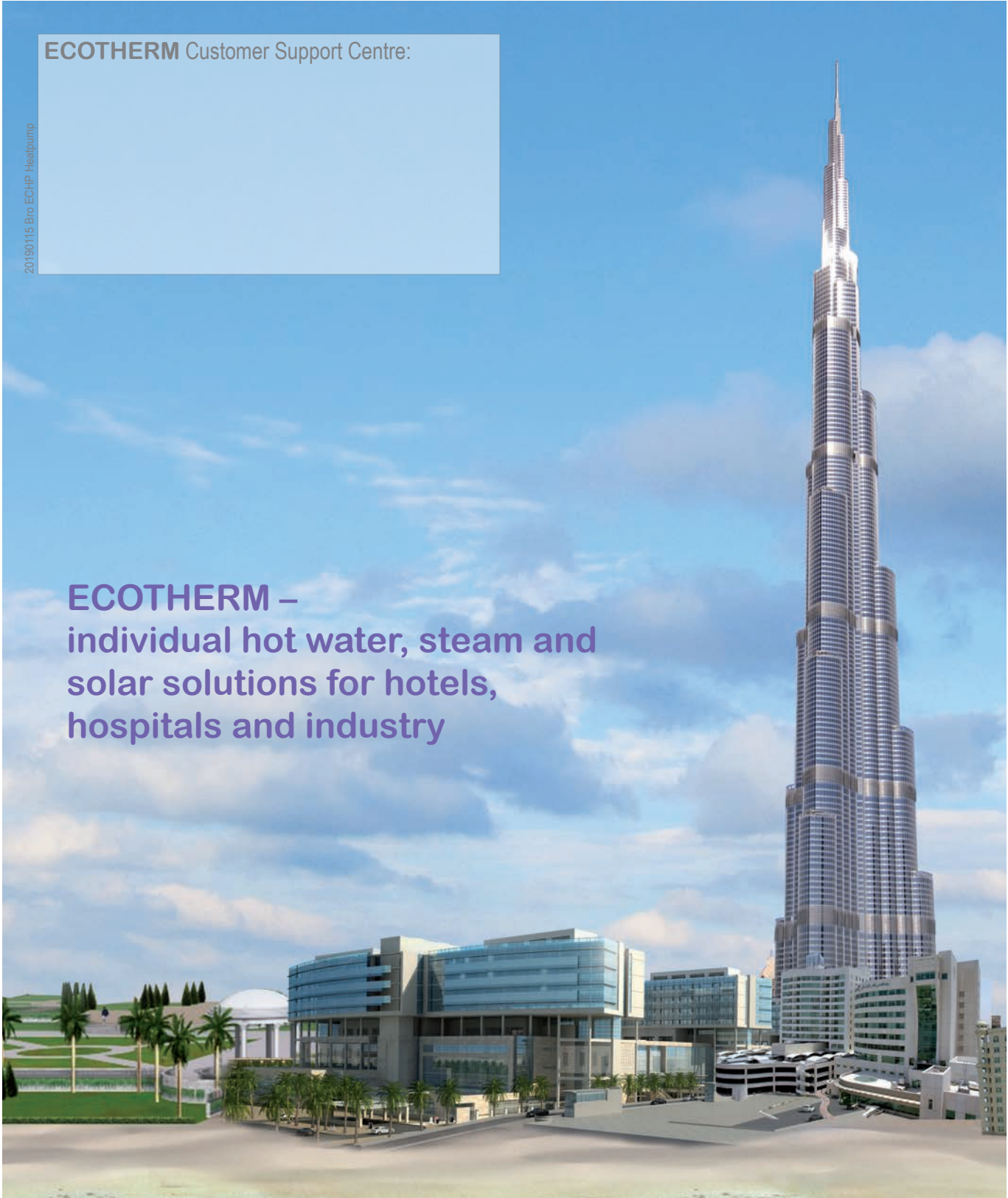
ECOTHERM

Individual Heat Transfer Solutions

ECOTHERM Customer Support Centre:

20190115 Bro ECHP Heatpump

**ECOTHERM –
individual hot water, steam and
solar solutions for hotels,
hospitals and industry**



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