



HEAT PUMPS



2025/2026

For residential and apartment buildings For commercial and industrial properties



AIR-TO-WATER | GROUND-TO-WATER | WATER-TO-WATER POWER FROM 1 TO 64 kW | CASCADES OVER 1000 kW























Dear customers and business partners,

Let me introduce you to the new catalogue of Master Therm heat pumps with traditional refrigerants R407c and R410a for the years 2025 and 2026 2025 and 2026.

In recent years, we have responded to the growing interest in ecological and energy-efficient heating using heat pumps. In 2022, we opened a new production facility in Jablonec nad Jizerou, which allowed us to significantly modernize our manufacturing processes. In 2023, we further expanded the production plant with a multifunctional warehouse, designed for future automation.

Thanks to these steps, we are now able to respond even more flexibly to individual customer requirements and deliver effective, tailor-made solutions - whether for residential, commercial, or industrial applications. In addition to our newly developed generation of pumps with natural refrigerant R290, we continue to offer a proven range of air-to-water and ground-to-water heat pumps using R407c and R410a. These devices remain available for sale within the European Union and – most importantly for our customers – continue to be fully supported by our service network, both now and in the future.

You will find the current range of these pumps in this catalogue. We believe that, together with the growing range of pumps with refrigerant R290, both lines complement each other perfectly and allow every customer to find the ideal solution.

The Master Therm company has been operating on the market for over 30 years, with all development and production carried out exclusively in the Czech Republic. We would like to thank all our current and future customers for their trust in the cutting-edge technologies and the quality of our products. Thank you for choosing a Master Therm heat pump or for considering one as a heat source for your home or business. We trust that this catalogue will be a helpful tool in your decision-making, and we hope to exceed your expectations.

On behalf of Master Therm heat pumps, Ltd.

Ing. Karel Guzek Head of export

MASTER THERM: A CZECH DEVELOPMENT AND MANUFACTURING TRADITION SINCE 1994

Master Therm heat pumps, Ltd., is a Czech manufacturer of air-to-water, ground-to-water and water-to-water heat pumps for family and apartment houses as well as industrial buildings. All technical development and production of Master Therm heat pumps takes place in the Czech Republic, EU. Master Therm exports more than two thirds of its production abroad, especially to Western Europe.

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Heat pump: questions and answers

What is the purpose of a heat pump?

A heat pump provides heat for the building, both for heating and hot water. It fully replaces an electric or gas boiler. It provides energy without any negative impact on the environment: **the heat pump is a renewable energy source**.

Where does its high efficiency come from?

Compared to an electric or gas boiler, a heat pump is significantly more efficient because it also provides heat for your home from the surrounding environment: air, ground or water. The electric power of the heat pump only accounts for about 20-30% of the heat energy collected.

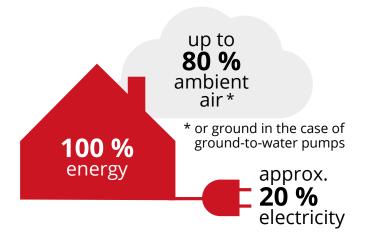
This is what yields key energy savings compared to those of a conventional electric or gas boiler. The efficient use of freely available energy from the environment multiplies the heating efficiency by up to 5.5 times (SCOP = 5.5) compared to an electric boiler. And your heating bills can be up to 80% lower.

What is the seasonal SCOP heating factor?

The heating capacity of a heat pump is much higher than the electric power input of a compressor, i.e. the efficiency of the pump is many times higher than 100%. The ratio of the heating power and the compressor input is called the COP.

The seasonal SCOP is the ratio of the total amount of heat produced to the total electricity consumption of the heat pump for the entire heating season.

Depending on the kind and type of pump, it can reach values of 3.5 to 5.5.



Prompt returns thanks to subsidies:



In most countries heat pumps are registered in the lists for the subsidy titles. Ask your local distributor about terms and conditions for subsidies. Master Therm heat pumps have a valid registration for subsidies.

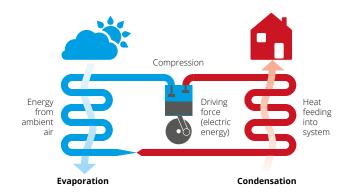
The heat pump can also cool thanks to the reverse mode. During the summer months, it can provide long-term cooling of the building and thus significantly increases comfort during summer.





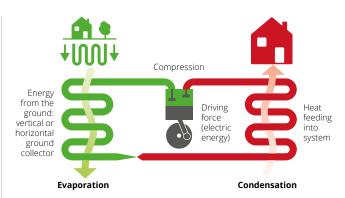


SYSTEMS OF HEAT PUMPS



Air-to-water

Air-to-water heat pumps are based on the principle of extracting heat from the ambient air, whose temperature can be many degrees Celsius below zero. The heat extracted from the environment is transferred by the heat pump to the heating water that heats the building, or is used for the preparation of hot water. The system achieves a seasonal efficiency of up to 4.5 times higher than that of a conventional electric boiler and thus delivers significant energy savings.



Ground-to-water

Ground-to-water heat pumps extract energy directly from the ground using a vertical or flat plate collector. An antifreeze mixture circulates through the collector and heats the ground. Thanks to the constant temperature of the ground, the heat pump has a stable source of energy throughout the year. The heat extracted from the ground is then transferred to the building. The system achieves a seasonal efficiency up to 5.5 times higher than that of a con-ventional electric boiler.

Water-to-water

Water-to-water heat pumps are also available on request for the use of thermal energy from ground or surface water. They are based on the ground-to-water AquaMaster series. They are distinctive for their more sediment-resistant evaporator (coax) and modified electrical equipment.



Model series



BoxAir Inverter

Air-to-water

BoxAir Inverter is the best-selling range of air-to-water heat pump with exceptional operating efficiency. It provides heat and hot water for small newly-built housing as well as multi-generational family residences with a heat loss of up to 16 kW. Also suitable for large buildings and industrial applications.

KEY FEATURES

- Available in compact and split versions and with built-in hot water tank
- · Power from 2 to 22 kW
- Energy efficiency A+++
- · Extremely quiet operation
- Top-of-the-range frequency-controlled compressor
- Integrated control system for up to 6 heating circuits
- Online control and monitoring
- Reverse-cooling mode



AquaMaster

Ground-to-water

The bestselling MasterTherm heat pump range in Western Europe. By harnessing energy directly from the ground, the AquaMaster range offers the best year-round efficiency and exceptional reliability and longevity. It is suitable for heating and cooling all types of buildings: from passive houses with minimal energy loss to conventional family houses to large buildings including industrial applications.

KEY FEATURE

- Available in ON/OFF and frequency-controlled compressor versions
- · Power from 1 to 48 kW
- Energy efficiency A+++
- Adaptation to water-to-water at no extra cost
- Independent of outside temperature or weather
- Integrated control system for up to 6 heating circuits
- · Online control and monitoring
- Reversing cooling or passive cooling





BoxAir and AquaMaster for largescale and industrial facilities

Air-to-water / Ground-to-water

Special heat pumps for high performance needs and specific industrial installations. Air-to-water and ground-to-water systems, compact and split solutions, cascade connection. Extensions of the BoxAir, AquaMaster and EasyMaster model series.

KEY FEATURES

- Air-to-water power up to 35 kW (per compressor circuit in compact and split designs)
- · Ground-to-water power up to 64 kW
- Total capacity of the cascade up to 1000 kW
- MasterLan power cascade control
- ModBUS RTU communication protocol
- · Online control and monitoring
- Option for reversible or passive cooling
- Also suitable for industrial cooling and waste heat recovery systems



AQ ZHX

Industrial cooling and waste heat recovery

Cooling technology and waste heat recovery with applications in engineering, In paper, food, metal processing, plastics, energy, heat and power generation or cogeneration industries. Cooling of large data centres and server rooms.

KEY FEATURES

- Unique high temperature compressor
- Typical return on investment in units of years
- Precise control of heat/cooling production
- Extremely high cooling efficiency
- Minimisation of refrigerant quantity
- High operational reliability
- Low service costs
- Remote monitoring of operation
- High heating water outlet temperature (up to 82 °C)

Industrial projects Implemented

- · Cooling of the CEZ Group Energo cogeneration units
- · Cooling and heat recovery of the particle accelerator at the Institute of Nuclear Physics of the Czech Academy of Sciences
- · Cooling and heat recovery of the national supercomputer at the IT4Innovations centre
- · Cooling of diagnostic and surgical technologies at the Homolka Hospital in Prague
- · Cooling and heat recovery of the production technology of The Candy Plus Sweet Factory
- ... and many more

7 reasons to choose Master Therm

A tradition since 1994



Master Therm was established in the Czech Republic in the 1990s, originally as an importer of heat pumps from the USA. Over years of gradual work on our own, we have become a manufacturer with a complete in-house development. All heat pumps from Master Therm are invented, designed and manufactured in the Czech Republic.

We offer a comprehensive and smart solution



With us you get a heating system, not just a separate heat source. We supply complete heat pump systems of all types, including our own control software that can work photovoltaics or automatically react to future spot electricity prices.

3 Quality and innovation



Master Therm heat pumps are characterised by their efficient design, which ensures extremely quiet operation and trouble-free service access. We are among the pioneers in the development of electronic refrigerant injection (EEV), infinitely variable compressor power control (inverter) and software for controlling heating circuits.

4 Service and warranty



With a network of in-house technicians and immediate availability of spare parts, we guarantee nationwide service coverage. When you buy a heat pump, our journey together is just beginning. We offer online service monitoring of pumps and an extended warranty for 7 years with unlimited coverage.

5 Reputation abroad



Master Therm exports more than 70% of its production abroad, especially to Western Europe. The most important foreign markets include the UK, Ireland, the Netherlands, Belgium, Italy, Switzerland, Estonia and Slovakia.

6 Awards and certificates



Our pumps are among the most appreciated, both at home and abroad. In addition to more than 20 international awards, we hold a ISO quality management certificate, Heat Pump Keymark certificate, certificates from the authorized testing laboratory ETI (SZÚ) in Brno, Czech Republic, EU, a certificate from the BBA of the United Kingdom and others.

Subsidies



In most countries heat pumps are registered in lists for subsidy titles. Ask your local distributor about terms and conditions of subsidies.



MASTER THERM HOLDS THE FOLLOWING CERTIFICATES:

European certification mark



Heat Pump KEYMARK

Quality Certificate for the Single European Market

The Heat Pump KEYMARK certificate is the European independent quality certificate for heat pumps entering the Single Market and covered by EU Regulations 813/2013 and 814/2013 – efficiency requirements (ecodesign).



ISO 9001:2015 Certificate

International Quality Certificate

Quality Management System Certificate in accordance with ISO 9001:2015. Scope of certification: manufacture, sale, installation and service of heat pumps. Certification body: BUREAUVERITAS GROUP.



Certificate of the testing institute

Certificate of compliance with Czech and EU standards

Performance parameters and compliance of product characteristics with the requirements of the EN 14 511 standard. The Master Therm heat pumps are tested and certified by the accredited Engineering Testing Institute (SZÚ) in Brno, Czech Republic, EU.



Type conformity assessment protocol

Certificate confirming the characteristics of the products with the stated parameters

Certificate confirming that the type test has been successfully carried out on Master Therm products. It proves that the stated technical specifications of the products comply with the Czech and European Union standards.



BBA MCS Certificate

British quality certificate, allows to draw on British government incentives

Master Therm heat pumps are certified by the British Board of Agrément (BBA) according to the MCS (Microgeneration Certification Scheme) stand-ard, designed for systems for the production of heat and electricity from re-newable sources.



We deliver and service all over Europe



Establishment & showroom

Okrajová 187, Chýně–Prague West, Czech Republic

Production plant

Dolní Tříč 636, Jablonec nad Jizerou, Czech Republic

Advanced technologies

Master Therm Online





Connecting the Master Therm heat pump to the internet allows it to be controlled from anywhere via the web browser on Mastertherm.online or via an app on a mobile phone or tablet. You are thus in full control of your home's heat, which is within easy reach. Continuous service supervision and remote diagnostics included.

iOS app



Android app



Touchscreen display



The pGDx terminal with a 4.3-inch touchscreen and its own processor is the main control panel of the heat pump. With its help, the desired indoor temperature and all other pump functions can be easily set. It integrates the function of a room instrument to control the temperature of the heated / cooled space. It is possible to connect control panels or temperature sensors of adjacent heating circuits to the terminal and control everything from one place.

It supports communication within Smart Grids for efficient management of electricity production and consumption. Connection via Ethernet (cable) or Wi-Fi, automatic online updates.

Unique control software



Master Therm heat pumps are controlled by an internally developed app for controlling the cooling circuit including its peripherals. It uses an equithermal system based on following the outside temperature and complemented by advanced backward temperature control in the building based on internal room temperature sensors. As a result, the heat pump automatically maintains the building at a constant temperature with extreme precision and never operates at a higher heating water temperature than is strictly necessary. It works also in cooperation with photovoltaics.

Desuperheater



Desuperheater is an integrated device designed for efficient heating of water to high temperature with high efficiency. It is a heat exchanger that extracts high temperature energy at the outlet of the hot steam from the compressor. This energy is transferred through a separate hydraulic circuit to the hot-water storage tank. The water is heated while the compressor is running as a "by-product" of the building's heating. The heating efficiency when using a desuperheater is identical to the heating factor for heating.





Electronically controlled expansion valve (EEV)



Master Therm is one of the leaders in the use of electronic refrigerant injection technology. The EEV allows for precise control of the superheat temperature of the refrigerant vapour in the evaporator. This allows the evaporator area to be used with maximum effect for the evaporation of the refrigerant, resulting in higher plant efficiency. The EEV thus increases the heating factor, operational reliability and lifetime.

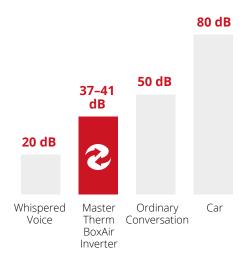
The EEV also protects the compressor against liquid injection at high loads. On the other hand, in the low-load mode (e.g., with a heating duct outlet temperature of less than 30°C), the electronic valve can be fully opened and a high-heating factor can be achieved, which is not possible with a thermostatic valve (TEV).

Heating in winter, cooling in summer



All Master Therm heat pumps can fully cool the building. By purchasing a pump, you are, therefore, also purchasing the perfect cooling solution for summer. Thanks to its design, it has approximately half the running costs of a conventional air conditioner. Additionally, even while in cooling mode, it can simultaneously heat hot water for domestic use.

For ground-to-water pumps, we offer a passive cooling module that transfers heat from the interior to the ground collector without the need for a compressor. This ensures extremely efficient summer cooling and contributes to the regeneration of the collector after the heating season.



Quiet compressors and fans



All Master Therm heat pumps use quiet-scroll or double-rotary compressors, located in the unit in a special anti-vibration frame. Of course, the pump casing itself is carefully soundproofed.

For air-to-water heat pumps, we use the most modern low-speed fans with very low sound pressure levels, which ensure minimum noise levels in outdoor units

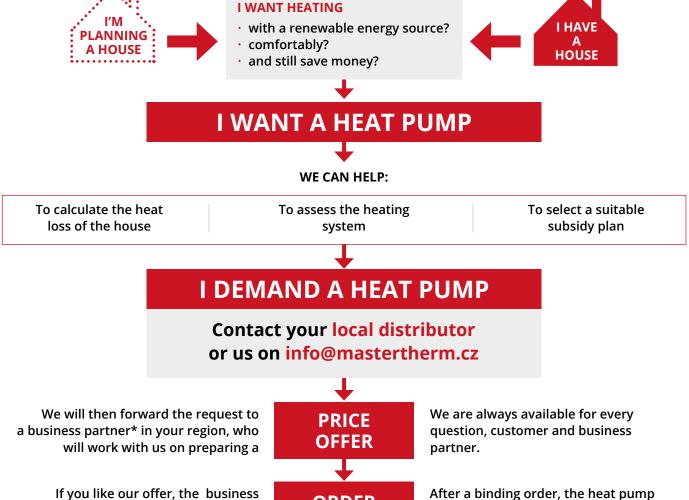
Frequency-controlled BLDC compressor



A compressor with a frequency converter (inverter) allows the heat pump continuously to regulate the heating / cooling capacity. The main advantages of inverter technology are electricity savings, more efficient use of heat exchangers, a reduction in the number of compressor starts, a reduction in the energy required to defrost the evaporator (air-to-water system), and as a result, an increase in the heating factor.

Thanks to the inverter, the pump does not require the installation of a storage tank, thus saving investment costs and space in the machine room.

HOW TO GET A MASTER THERM HEAT PUMP?



handed over to the business partner, who will take care of its transport to you and its

Once the pump is manufactured, it will be

Then all that is left is to set the heat pump into

partner will create an

ORDER **INSTALLATION OPERATION**

After a binding order, the heat pump

will be put into production.

Installation will be handled either by our partner or directly by Master Therm's service technician. All systems and the installation itself will be checked before the installation.

AFTER THE INSTALLATION, OUR JOURNEY TOGETHER BEGINS, MARKED FOR MANY YEARS TO COME BY YOUR HOME THERMAL COMFORT AND LOWER ENERGY BILLS.

AFTER THE FIRST AND EVERY SUBSEQUENT SEASON, WE'LL COME TO YOUR HOME FOR A PREVENTIVE SERVICE INSPECTION TO KEEP YOUR HEAT PUMP IN TOP SHAPE.**

^{*}Master Therm's partner network consists of only certified and vetted companies.

^{**}Regular service inspections are a mandatory part of the optional 7-year warranty.

















BoxAir Inverter

The BoxAir Inverter is the best-selling range of high-end air-to-water heat pumps with exceptional operating efficiency.

The BoxAir Inverter provides heat and hot water for small housing units as well as intergenerational family residences with a heat loss of up to 16 kW. And it can also serve as a cooling facility in the summer months.

The BoxAir Inverter is also suitable for apartment buildings or commercial installations. Several heat pumps can be cascaded in succession if higher heating output is required.



BoxAir Inverter

All in one, all outside.



BoxAir Inverter Split

Evaporator outside, compressor electronics inside.



BoxAir Inverter Split Combi

Split with an integrated hot water storage tank.



KEY FEATURES

- Power from 2 to 22 kW
- Energy efficiency A++(+)
- Extremely quiet operation according to current EU standards
- Top-quality frequency-controlled compressor
- Integrated control system for up to 6 heating circuits
- Online control and monitoring
- Warranty and after-warranty service with direct cooperation with the manufacturer
- Reverse cooling mode







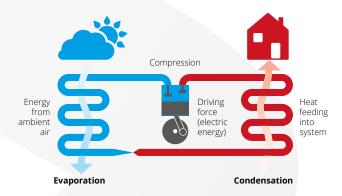








AIR-TO-WATER HEAT PUMPS





HOW THEY WORK

Air-to-water heat pumps are based on the principle of extracting heat from the ambient air, the temperature of which can be many degrees Celsius below zero. The heat extracted from the environment is transferred by the heat pump to the heating water that heats the building or is used in the preparation of hot water. The system achieves seasonal efficiencies of up to 4.5 times higher than those of a conventional electric boiler and thus delivers significant energy savings.



MAIN ADVANTAGES

The major advantages of air-to-water pumps include relatively low investment costs, quick and easy installation and the easy availability of a primary energy source: air is everywhere around us.



HEATS IN WINTER, COOLS IN SUMMER

Air-to-water heat pumps are suitable not only for heating and heating hot water or swimming pools all year round, but also for cooling the building in the summer months thanks to the possibility of reverse operation.



HEAT PUMPS AND SUBSIDIES

Heat pumps are recognised as a **renewable energy source**. Ask your local distributor if it is possible to obtain subsidies for them.

MASTER THERM: A CZECH MANUFACTURING TRADITION SINCE 1994

Master Therm is a manufacturer of air-to-water, ground-to-water and water-to-water heat pumps for family and apartment houses and industrial buildings. All technical development and production of Master Therm heat pumps is carried out in the Czech Republic, EU.



More than two-thirds of Master Therm's production are exported abroad, especially to Western Europe. Master Therm also carries out special projects such as heat recovery systems at the IT4Innovations supercomputer centre in Ostrava, Czech Republic, the cooling and recovery of waste heat from particle accelerators at the Institute of Nuclear Physics of the Czech Academy of Sciences or cooling and heat recovery of CEZ Group Energo cogeneration units.



BoxAir Inverter

All in one, all outside

Fans and evaporator

condensate drain.

Extremely quiet and efficient airto-water heat pump for family or apartment houses. Repeatedly awarded by experts worldwide.

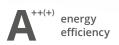


Frequency-controlled compressor and electronically-controlled expansion valve

Top-notch technology increases efficiency (heating factor), operational reliability and equipment lifetime. Also included is a built-in speedcontrolled circulator.

Durable all-aluminium cabinet

Constructed of aluminium profiles and panels, it resists weathering and corrosion over the long term. Default colour: grey RAL 9006.







Unique Master Therm software for pump control

- Custom application for controlling the cooling circuit and peripherals
- Equithermal MaR (measurement and regulation) system
- Advanced feedback control of building temperature based on internal room temperature sensors
- Control via touchscreen terminal or online application
- Includes **remote service monitoring** and diagnostics
- Control of up to 6 heating circuits, including the possibility of connecting a pool or solar panel



INSTALLATION EXAMPLES













V	1 odel	Perfor- mance at A7W35	Ther- mal loss of the object Q _z	Seasonal efficier heating a low temp opera	ncy of at 35 °C erature	Seasonal of efficiency the efficiency that efficienc	cy of t 55 °C mpera-	Acoustic pressure level L _p (5 m outside of unit)	Order number (according to heating circuit control	
		kW	kW	SCOP	Class	SCOP	Class	dB(A)	Regulation STANDARD (μPC)	Regulation PLUS (pCO5)
	BoxAir 22 I	2-7	up to 5,5	4.38	A++	3.33	A++	37	1BA22I-01	1BA22I-11
	BoxAir 26 I	3-9	up to 8,5	4.29	A++	3.24	A++	37	1BA26I-01	1BA26I-11
	BoxAir 30 I	5–12	up to 10	4.75	A+++	3.61	A++	37	1BA30I-01	1BA30I-11
	BoxAir 37 I	5–17	up to 13	4.49	A+++	3.51	A++	41	1BA37I-01	1BA37I-11
	BoxAir 45 I	7–22	up to 16	4.46	A+++	3.48	A++	41	1BA45I-01	1BA45I-11

Installation diagrams, dimensions and detailed technical data for all models can be found in the Technical Data section.



The BoxAir 22 I and BoxAir 26 I models offer even more compact dimensions.

Designed for	single-circuit heating systems	multiple-circuit heating systems		
Main heating circuit	yes	yes		
Auxiliary heating circuit	-	independently 2 incl. mixing		
Space temperature	in 1 zone	in 2 zones		
Hot water (DHW)	yes	yes		
Selectable	-	up to 6 heating circuits		

BASIC FEATURES

- Compact monobloc outdoor air-to-water heat pump
- Easy installation without the need for intervention of the cooling (compressor) circuit and the heating system in place
- Low requirements for the volume of heating water in the system
- Support for connection to the power cascade without the need for a third-party MaR (measurement and regulation) system
- Zero internal noise
- Minimised external noise due to ultra-quiet fans



- Use for heating and cooling of the building including hot water preparation
- Heating water temperature up to 60 °C
- Outdoor temperature range from -20 °C to +40 °C
- Integrated electric boiler (automatic connection of an electric supply if required without affecting the thermal comfort of the building)

Optional equipment

7-year warranty on the complete pump

Extended warranty valid from the time of the pump's installation

Master Therm Online App 10ICON

107Z

Connecting the pump to a central Master Therm server allows the pump to be controlled online from anywhere via the web or app. Includes remote service access.

Reverse cooling mode 10CH

Reverse pump operation allowing long-term cooling of the interior in summer.

Room unit for auxiliary heating circuit 10PAD

Terminal with temperature sensor for placing additional heating circuits in the reference rooms (only for PLUS control).

Room unit for auxiliary heating circuit with humidity sensor 10PADH

An extra humidity sensor for eliminating condensation during cooling (only for PLUS control regulation).

Expansion module for PLUS control 10EK

Increases the number of regulated auxiliary heating circuits up to 6 (from the basic 2).

Integrated electric meter 3x 65 A 10EM65AMID

Built-in 3-phase electric meter for local measurement of electricity consumption. MID certification.

RAL colour 10C0

Individual colour for pump panels.



BoxAir Inverter Split

Evaporator outside, compressor electronics inside Extremely quiet and economical air-to-water heat pump in split design. The most valuable parts are stored in the unit inside the object. Even lower outdoor noise level of the pump.

Unique indoor unit

Typically located in the mechanical room of the building and therefore protected against the weather. It contains the most valuable parts of the pump including a frequency-controlled compressor, an electronically-controlled expansion valve, control electronics, circulator and more.

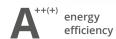


Outdoor unit

It is more dimensionally efficient than the BoxAir Inverter all-in-one pumps. It includes an evaporator and ultra-quiet fans with widely variable speed control. Thanks to the compressor located in the indoor unit, the outdoor unit is even quieter than the BoxAir Inverter all-in-one model. The durable all-aluminum construction of profiles and panels is long-lasting and resistant to weathering and corrosion.



The BoxAir 22 IS and BoxAir 26 IS models offer a more compact size of the outdoor unit due to the presence of only one fan and a smaller evaporator.







Unique Master Therm software for pump control

- Custom application for controlling the cooling circuit and peripherals
- Equithermal MaR (measurement and regulation) system
- Advanced feedback control of the building temperature based on inter-nal room temperature sensors
- Control via touchscreen terminal or **online application**
- Includes remote service monitoring and diagnostics
- Control of up to 6 heating circuits, including the possibility of connecting a pool or solar panel

23.6 °c 26.0 °c 1 land topped topped

INSTALLATION EXAMPLES













M	Model		Ther- mal loss of the object Q _z	gy effic heating low tem	al ener- iency of at 35°C perature ation	Seasonal efficiency o at 55°C r temper opera	of heating nedium rature	Acoustic pressure level L _p (5 m outside of unit)	Order number (according to heating circuit control)
		kW	kW	SCOP	Class	SCOP	Class	dB(A)	
	BoxAir 22 IS	2-7	up to 5,5	4.38	A++	3.33	A++	34	1BA22IS-11
	BoxAir 26 IS	3-9	up to 8,5	4.29	A++	3.24	A++	34	1BA26IS-11
	BoxAir 37 IS	5–17	up to 13	4.49	A+++	3.51	A++	41	1BA37IS-11
	BoxAir 45 IS	7–22	up to 16	4.46	A+++	3.48	A++	41	1BA45IS-11
								Heating circuit control	PLUS Regulation

Installation diagrams, dimensions and detailed technical data for all models can be found in the Technical Data section.

1.1	15,11313 11				
Heating circuit control	PLUS Regulation				
Main heating circuit	yes				
Auxiliary heating circuit	independently 2 incl. mixing				
Space temperature	in 2 zones				
Hot water (DHW)	yes				
Optional	up to 6 heating circuits				

BASIC FEATURES

- Air-to-water heat pump of split design
- The most valuable parts of the heat pump are stored in a unit inside the building
- The connecting pipes of the indoor and outdoor units form the low pressure (cold) part of the cooling circuit, so that heat loss through the pipework is completely eliminated
- Distance between indoor and outdoor units up to 15 metres



- Support for connection to the power cascade without the need for a third-party MaR (measurement and control) system
- Minimised noise in the outdoor unit due to ultraquiet fans and no compressor
- Indoor unit with compressor sound attenuated to the level of a conventional refrigerator



- Use for heating and cooling of the building including hot water supply
- Heating water temperature up to 60 °C
- Outdoor temperature range from -20 °C to +40 °C
- Integrated electric boiler (automatic connection of electric supply if required without affecting the thermal comfort of the building)



Optional equipment

7-year warranty on the complete pump

1077

Extended warranty valid from the time the pump is delivered. Only in combination with 10ICON.

Master Therm Online App

10ICON

Connecting the pump to a central MasterTherm server allows the pump to be controlled online from anywhere using the web or app. Includes remote service access

Reverse cooling mode

10CH

Reverse operation of the pump for long-term cooling of the interior in summer.

Desuperheater for high efficiency hot water heating

10DESUP

Integrated device that uses a separate hydraulic circuit to remove the heat of superheated steam at the compressor outlet and increase the efficiency of hot water preparation (heating). When the compressor is in operation (heating and cooling mode), part of its thermal energy is permanently transferred to the hot water tank.

Room unit for auxiliary heating circuit

10PAD

Terminal with temperature sensor for placing additional heating circuits in the reference rooms (only for PLUS control).

Room unit for auxiliary heating circuit with humidity sensor

10PADH

Includes humidity sensor for eliminating condensation of air humidity during cooling (only for PLUS control).

PLUS control expansion module

10EK

Increases the number of regulated auxiliary heating circuits up to 6 (from the basic 2).

Integrated electric meter 3x 65 A

10EM65AMID

Integrated 3-phase electric meter for local metering of electricity consumption. MID certification.

RAL colour

10CO

Individual colour for the pump panels.

Bracket for hanging the external unit on the wall

Suitable for tighter space conditions.

BoxAir Inverter Split Combi

Split with integrated hot water tank

Indoor unit including 170l hot water storage tank

The Combi version differs from the BoxAir Inverter Split by having an integrated hot water storage tank.



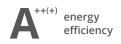
Constructed of aluminum profiles and panels, the outdoor unit resists weather and corrosion for a long time. Here the BoxAir 22 ISC and 26 ISC models are shown. For the 37 ISC model, the cabinet is twice as high.



BASIC FEATURES



- Air-to-water heat pump of split design
- Includes integrated 170-litre hot water tank to save space in the utility room. (BoxAir Inverter and BoxAir Inverter Split models work with an external tank.)





7-year warranty

107Z



Model	Perfor- mance at A7W35	Thermal loss of the object Q_z	Seasonal he efficiency low temperat	at 35°C efficiency at 55°C mediun		55°C medium	Sound pressure level L_{p} (5 m from the outdoor unit)	Ordering number
	kW	kW	SCOP	Class	SCOP	Class	dB(A)	PLUS Regulation
BoxAir 22 ISC	2-7	up to 5,5	4,38	A++	3,33	A++	34	1BA22ISC-11
BoxAir 26 ISC	3-9	up to 8,5	4,29	A++	3,24	A++	34	1BA26ISC-11
BoxAir 37 ISC	5–17	up to 13	4,49	A+++	3,51	A++	41	1BA37ISC-11

For installation diagrams, dimensions and detailed technical data for all models, please refer to the Technical Data section.

Optional equipment

7-year warranty on the complete pump

Extended warranty valid from commissioning of the pump. Only in combination with 10ICON.

Master Therm Online App 10ICON

Connecting the pump to the Master Therm central server allows the pump to be controlled online from anywhere using the app's website. Including remote service access.

Reverse cooling mode

Reverse operation of the pump allowing for long-term cooling of the interior in the summer.

Room unit for auxiliary heating circuit

Terminal with temperature sensor for placement in reference rooms of other heating circuits (only for PLUS control).

Room unit for auxiliary heating circuit with humidity sensor 10PADH

Includes humidity sensor for elimination of air humidity condensation during cooling (only for PLUS control).

10CH PLUS control expansion module 10EK

Increases the number of regulated auxiliary heating circuits up to 6 (from the basic 2).

Integrated electric meter 3x 65 A

10PAD

10EM65AMID

Integrated 3-phase electric meter for local measurement of electricity consumption. LCD panel, MID certification, data transfer to the heat pump controller.

Colour according to RAL

10CO

Individual colour for the pump panels.

Bracket for hanging the outdoor unit on the wall

Suitable for more confined space conditions.

















BoxAir Inverter



			BoxAir 22 I	BoxAir 26 I	BoxAir 30 I	BoxAir 37 I	BoxAir 45 I
Power range at A7W35		kW	2-7	3-9	5–12	5–17	7–22
Thermal loss of the object Q _z	'	kW	up to 5.5	up to 8.5	up to 10	up to 13	up to 16
Power A7W35 ¹	60 rps	kW	4.9	8.1	8.65	11.5	15.3
	СОР	-	4.7	4.8	5.2	4.7	4.7
Power A2W35	60 rps	kW	3.6	5.8	6.25	8.8	10.6
	COP	-	3.5	3.5	3.8	3.7	3.5
Power A–7W35	80 rps	kW	3.6	5.5	6.0	8.7	11.1
	СОР	-	2.8	2.8	2.9	2.8	2.75
Power A-15W35	90 rps	kW	3.2	5.1	5.3	8.2	9.8
	СОР	-	2.6	2.5	2.4	2.3	2.2
Seasonal heating energy efficiency at	Power ³	kW	5	7	8	11	13
35 °C low temperature operation	SCOP	-	4.38	4.29	4.75	4.49	4.46
	ης	%	172	168	187	177	176
	Class	-	A++	A++	A+++	A+++	A+++
Seasonal heating energy efficiency at	Power ³	kW	4	6	7	10	12
55 °C medium temperature operation	SCOP	-	3.33	3.24	3.61	3.51	3.48
	ης	%	130	126	141	137	136
	Class	-	A++	A++	A++	A++	A++
Refrigerant			R410a	R410a	R410a	R410a	R410a
Electric circuit breaker ²	3-phase		16 A"B"	20 A"B"	25 A"B"	25 A"B"	32 A"B"
	1-phase		20 A"B"	20 A"B"	25 A"B"	25 A"B"	32 A"B"
Compressor, supply voltage	3-phase		1x 230 V~	1x 230 V~	1x 230 V~	3x 400 V~	3x 400 V~
	1-phase		1x 230 V~				
Weight		kg	115	120	155	165	165
Mandatory leakage checks according to EP 517/2014			no	no	no	no	no
Maximum heating water temperature		°C	60	60	60	60	60
Heating capacity of integrated electric	bivalence mode	kW	4.5	4.5	6	7.5	7.5
boiler	backup mode(and at temperatures below -20 °C)	kW	4.5 + 4.5	4.5 + 4.5	6+6	7.5 + 7.5	7.5 + 7.5
Acoustic performance L _w		dB(A)	58	58	58	62	62
Sound pressure level L _p at a distance	1 m	dB(A)	49	49	49	53	53
from the outdoor unit	5 m	dB(A)	37	37	37	41	41
	10 m	dB(A)	31	31	31	35	35
Order number (according to heating	STANDARD Regulation	-	1BA22I-01	1BA26I-01	1BA30I-01	1BA37I-01	1BA45I-01
circuit control)	PLUS regulation	-	1BA22I-11	1BA26I-11	1BA30I-11	1BA37I-11	1BA45I-11

Heating circuit control	Designed for	Main heating circuit	Auxiliary heating circuit	Space temperature	Hot Water	Optional
STANDARD Regulation (μPC)	single circuit heating system	yes	-	in 1 zone	yes	-
PLUS Regulation (pCO5)	multi-circuit heating system	yes	independently 2 incl. mixing	in 2 zones	yes	up to 6 heating circuits

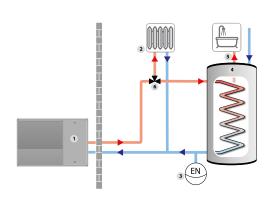
¹ Performance data according to EN 14 511, in accordance with EHPA requirements for the award of the Q quality mark. A7W35 60 Hz - air 7 °C, water 35 °C, compressor frequency 60 Hz.

² Recommended value of electrical protection 3x 400 V, incl. auxiliary integrated electric boiler. The 22 I, 26 I and 30 I units can also be connected to a mains supply of 1x 230 V with a fuse of 40 A "B" (22 I) or 50 A "B" (26 I, 30 I).

³ Design output at an outdoor temperature of -10 °C according to EN 14 825.



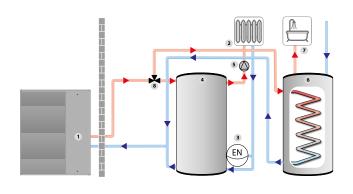




DIRECT CONNECTION OF HEAT PUMP TO HEATING SYSTEM AND HW (HEATING-WATER) TRANSFER MODE

- 1 heat pump
- 2 heating system
- **3** expansion tank
- 4 HW indirect heating storage tank
- 5 HW outlet
- 6 3-way valve

The heat pump (1) is directly connected to the heating system. The heating water temperature varies depending on the outside temperature. When HW heating is required, the heating is interrupted, and the 3-way valve (6) is switched on. By increasing the heating water outlet temperature from the heat pump, the HW storage tank (4) is heated. After the heating of water is finished, the system returns to area heating mode. The scheme is particularly suitable for underfloor heating, exceptional also for systems with a sufficiently sizeable volume of heating water. The possibility for local control of the heating system (control of the heating water flow through the heating system) is limited.

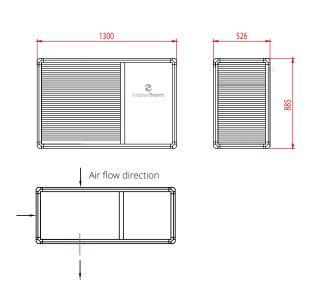


CONNECTION WITH HEATING WATER ACCUMULATION TANK AND HW HEATING TRANSFER MODE

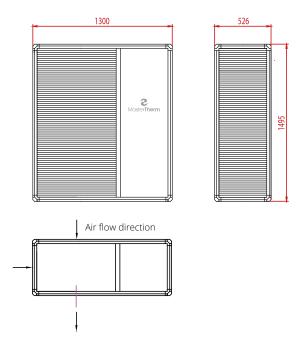
- 1 heat pump
- 2 heating system
- 3 expansion tank
- 4 storage tank
- 5 heating system PC
- 6 HW indirect heating storage tank
- **7** HW outlet
- 8 3-way valve

The heat pump (1) is connected to the heating system via the storage tank (4), which acts as both heat storage and thermohydraulic distributor. The temperature of the heating water varies depending on the outside temperature. The flow of heating water through the heating system is provided by a circulating pump (5). When HW heating is required, area heating is interrupted, and the 3-way valve (8) is switched on. By increasing the outlet temperature of the heating line from the heat pump, the HW storage tank is heated (6). After HW heating is finished, the system returns to area heating mode.

DIMENSIONS OF MODELS BA 22 I AND BA 26 I



DIMENSIONS OF MODELS BA 30 I TO BA 45 I



BoxAir Inverter Split



BoxAir 37 IS

BoxAir 45 IS

up to 6 heating

BoxAir 26 IS

Heating circuit control De	esigned for Main heatin circuit	g	Auxiliary heating circuit	Space temperature	Hot Water	Optional
circuit control)		-				
Order number (according to heating	PLUS regulation	•	1BA22IS-11	1BA26IS-11	1BA37IS-11	1BA45IS-11
	10 m	. dB(A)	28	28	35	35
from the outdoor unit	5 m	. dB(A)	34	34	41	41
Sound pressure level L _p at a distance	1 m	. dB(A)	46	46	53	53
Acoustic performance L	·	dB(A)	 55	55	62	62
boiler	backup mode(and at temperatures below -20 °C)	kW	4.5 + 4.5	4.5 + 4.5	7.5 + 7.5	7.5 + 7.5
Heating capacity of integrated electric	bivalence mode	kW	4.5	4.5	7.5	7.5
Maximum heating water temperature		°C	60	60	60	60
Mandatory leakage checks according to EP 517/2014			no	no	no	no
Weight		kg	160	165	165	170
	1-phase		1x 230 V~	1x 230 V~	n/a	n/a
Compressor, supply voltage	3-phase	•	1x 230 V~	1x 230 V~	3x 400 V~	3x 400 V~
	1-phase	•	20 A"B"	20 A"B"	n/a	n/a
Electric circuit breaker ²	3-phase	•	16 A"B"	20 A"B"	25 A"B"	32 A"B"
Refrigerant			R410a	R410a	R410a	R410a
	Class		A++	A++	A++	A++
	ης	%	130	126	137	136
55 °C medium temperature operation	SCOP	•	3.33	3.24	3.51	3.48
seasonal heating energy efficiency at	Power ³	kW	4	6	10	12
	Class		A++	A++	A+++	A+++
	ηs	%	172	168	177	176
35 °C low temperature operation	SCOP		4.38	4.29	4.49	4.46
Seasonal heating energy efficiency at	Power ³	kW	5	7	11	13
OHE! / 131133	СОР		2.6	2.4	2.3	2.2
 Power A-15W35	90 rps	kW	3.2	5.1	8.2	9.8
OVVCI AT/VVJJ	80 rps COP		2.8	2.8	2.8	2.75
Power A-7W35		kW	3.5	5.5	8.7	3.5 11.1
OWEL MANAGE	60 rps COP	. KVV	3.5	3.5	3.7	3.5
Power A2W35		kW	3.6	5.6		10.6
Power A7W35	60 rps COP	. kW	4.9	4.6	11.5 4.7	15.3 4.7
Fhermal loss of the object Q _z Power A7W35 ¹	COrns	. kW	up to 5.5	up to 8.5	up to 13	up to 16
Power range at A7W35		kW	2–7	3-9	5–17	7–22

BoxAir 22 IS

independently 2 incl.

in 2 zones

multi-circuit heating system

PLUS Regulation (pCO5)

mixing circuits

1 Performance data according to EN 14 511, in accordance with EHPA requirements for the award of the Q quality mark. A7W35 60 Hz - air 7 °C,

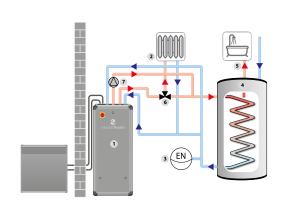
water 35 °C, compressor frequency 60 Hz.

Recommended value of electrical protection 3x 400 V, incl. auxiliary integrated electric boiler. The 22 I, 26 I and 30 I units can also be connected to a mains supply of 1x 230 V with a fuse of 40 A "B" (22 I) or 50 A "B" (26 I, 30 I).

³ Design output at an outdoor temperature of -10 °C according to EN 14 825.



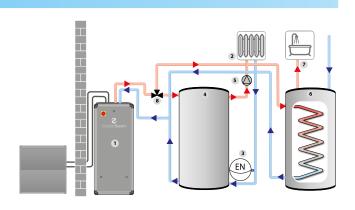




DIRECT CONNECTION OF HEAT PUMP TO HEATING SYSTEM AND DHW SWITCH-**HEATING MODE**

- 1 heat pump
- heating system
- expansion tank
- 4 indirect HW heating storage tank
- 5 HW outlet
- **6** 3-way valve
- 7 desuperheater

The heat pump (1) is directly connected to the heating system. The temperature of the heating water varies depending on the outside temperature. When HW heating is required, area heating is interrupted and the 3-way valve (6) is switched on. By increasing the outlet temperature of the heating water from the heat pump, the HW storage tank (4) is heated. When HW heating is finished, the system returns to area heating mode. The desuperheater (optional) is a special heat exchanger that extracts high temperature energy from the compressor and transfers it with high efficiency to the HW tank. With this wiring scheme, the possibility of additional heating system control by reducing the heating water flow (zone valves, thermostatic valves) is limited. A heat pump control can be used for precise control of the interior temperature.

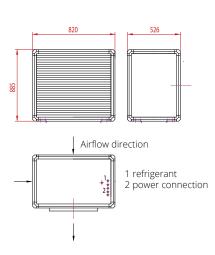


CONNECTION WITH HEATING WATER ACCUMULATION TANK AND HW HEATING TRANSFER MODE

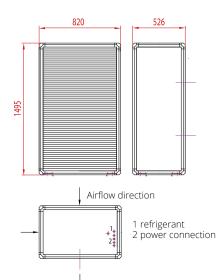
- heat pump
- 2 heating system
- 3 expansion tank
- 4 accumulation tank
- 5 heating system
- 6 indirect heating of HW accumulation tank
- 7 HW outlet
- 3-way valve

The heat pump (1) is connected to the heating system via the accumulation tank (4), which acts as both heat storage and thermohydraulic distributor. The temperature of the heating water varies depending on the outside temperature. The flow of heating water through the heating system is provided by a circulating pump (5). When HW heating is required, area heating is interrupted, and the 3-way valve (8) is switched on. By increasing the heating outlet temperature of the heat pump, the HW storage tank (6) is heated. After the heating has stopped, the returns to area heating mode. This system is suitable in buildings with a minimal capacity for a heating system and where local heating control is used to limit the flow of heating water. The system also allows the heat pump to be combined with other heat sources (e.g. a fireplace insert).

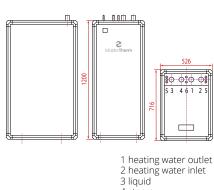
DIMENSIONS OF THE BA 22 IS AND BA 26 IS HEATING UNIT MODELS



DIMENSIONS OF THE BA 37 IS AND BA 45 IS HEATING UNIT MODELS



INHEATING UNIT

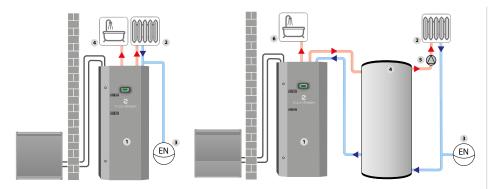


- 4 steam
- 5 electrical connection
- 6 desuperheater

BoxAir Inverter Split Combi

			_	BoxAir 22 ISC	BoxAir 26 ISC	BoxAir 37 ISC
Power range at A7W35				2-7	3-9	5–17
Thermal loss of the object C	Q_z		kW	up to 5.5	up to 8.5	up to 13
Power A7W35 ¹		60 rps	kW	4.9	8.1	11.5
		COP		4.7	4.6	4.7
Seasonal heating energy eff	iciency at 35 °C low	Power ³	kW	5	7	11
temperature operation		SCOP		4.38	4.29	4.49
	_	ηs	%	172	168	177
		Class		A++	A++	A+++
Seasonal heating energy eff	iciency at 55 °C medium	Power ³	kW	4	6	10
temperature operation		SCOP		3.33	3.24	3.51
		ηs		130	126	137
		Class		A++	A++	A+++
Refrigerant				R410a	R410a	R410a
Electric circuit breaker ²		3-phase		16 A"B"	20 A"B"	25 A"B"
		1-phase		20 A"B"	20 A"B"	n/a
Compressor, supply voltage	!	3-phase		1x 230 V~	1x 230 V~	3x 400 V~
		1-phase		1x 230 V~	1x 230 V~	n/a
Weight			kg kg	260	265	275
Maximum heating water ter	nperature		°C	60	60	60
Heating capacity of integrate	ed electric boiler	bivalence mode	kW	4.5	6	6
	t	backup mode(and at emperatures below -20 °0	kW	4.5	6	6
Acoustic performance L _w			dB(A)	55	55	62
Sound pressure level L _a at a	distance from the	1 m	dB(A)	46	46	53
outdoor unit		5 m	dB(A)	34	34	41
		10 m	dB(A)	28	28	35
Order number (according to	heating circuit control)	PLUS regulation		1BA22ISC-11	1BA26ISC-11	1BA37ISC-11
Heating circuit control	Designed for	Main heating circuit	Auxiliary ho		ace Hot erature Water	Optional
PLUS Regulation (pCO5)	multi-circuit heating system	ı yes i	ndependentl mixing	•	zones yes	up to 6 heating circuits

- 1 Performance data according to EN 14 511, in accordance with EHPA requirements for the award of the Q quality mark. A7W35 60 Hz air 7 °C, water 35 °C, compressor frequency 60 Hz.
- 2 Recommended value of electrical protection 3x 400 V, incl. auxiliary integrated electric boiler. The 22 I, 26 I and 30 I units can also be connected to a mains supply of 1x 230 V with a fuse of 40 A "B" (22 I) or 50 A "B" (26 I, 30 I).
- 3 Design output at an outdoor temperature of -10 °C according to EN 14 825.



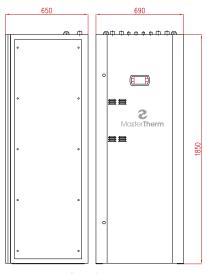
DIRECT HEATING PUMP CONNECTION INTO HEATING SYSTEM

- **1** heat pump
- **2** heating system
- **3** expansion tank
- 4 HW outlet

CONNECTION WITH HEATING WATER STORAGE TANK

- 1 heat pump
- **2** heating system
- **3** expansion tank
- 4 HW outlet
- 5 storage tank
- **6** heating system

DIMENSIONS OF THE INDOOR UNIT



Dimensions of outdoor unit same as BoxAir Inverter Split

















AquaMaster

The best-selling Master Therm heat pump range in Western Europe.*

By harnessing energy directly from the ground, the AquaMaster range offers the best year-round efficiency, exceptional reliability and and durability.

Suitable for heating and cooling all types of buildings: from passive houses with minimal energy loss to conventional family homes and large buildings, including industrial applications (with the possibility of connection to a cascade of pumps).

* 70% of Master Therm's production is exported abroad, especially to Great Britain, Ireland, the Netherlands, Belgium, Italy, Switzerland, Estonia and Slovakia.



AquaMaster

With ON/OFF compressor.



AquaMaster Inverter

With frequencycontrolled compressor.



AquaMaster Inverter Combi

Inverter with integrated SHW tank.



KEY FEATURES

- Power from 1 to 48 kW
- Energy efficiency A+++
- Adaptation to water-to-water at no extra cost
- Independent of outside temperature or weather
- Integrated control system for up to 6 heating circuits
- Online control and monitoring
- Warranty and after-warranty service directly from the manufacturer
- Reversible cooling mode and passive cooling







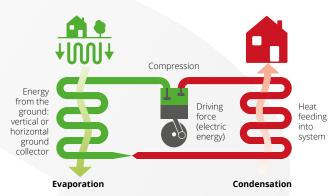








GROUND-TO-WATER HEAT PUMPS





HOW THEY WORK

Ground-to-water heat pumps extract energy from the ground by means of a vertical or horizontal collector**. Antifreeze circulates through the collector and removes ground heat. Thanks to the constant temperature of the ground, the heat pump has a stable source of energy throughout the year. The heat extracted from the ground is then transferred to the building. The system achieves a seasonal efficiency up to 5.5 times higher thanthat of a conventional electric boiler.



MAIN ADVANTAGES

The ground-to-water system offers **stable heating performance throughout the year** and generally higher efficiency than air-to-water systems. The ground collector with a predicted lifetime of up to 100 years is an enduring investment in your building(s) and/or land(s).



HEATS IN WINTER, COOLS IN SUMMER

They are suitable not only for heating and year-round heating of hot water or swimming pools but also for highly efficient cooling of the building in summer thanks to the option of reverse or passive cooling.



HEAT PUMPS AND SUBSIDIES

Heat pumps are recognised as **a renewable energy source**. Ask your local distributor if it is possible to obtain subsidies for them.

**The depth of the vertical collector must be approximately 15-20 meters per 1 kW of building's heat loss. Land area for the horizontal collector is approximately $35-40 \text{ m}^2$ per 1 kW of a building's heat loss.

MASTER THERM: A CZECH MANUFACTURING TRADITION SINCE 1994

Master Therm is a manufacturer of air-to-water, ground-to-water and water-to-water heat pumps for family and apartment houses and industrial buildings. All technical development and production of Master Therm heat pumps is carried out in the Czech Republic, EU.



More than two-thirds of Master Therm's production is exported abroad, especially to Western Europe. For example, Master Therm produced 170 AquaMaster Inverter heat pumps for a developer project in Cardiff, UK, where the pumps are connected to a system of 79 shared ground wells. Master Therm also carries out special projects such as heat recovery systems at the IT4Innovations supercomputer centre, the cooling and recovery of waste heat from particle accelerators at the Institute of Nuclear Physics of the Czech Academy of Sciences.



AquaMaster

With an ON/OFF compressor

Silent and efficient ground-to-water heat pump. Convenient purchase price thanks to its ON/OFF compressor, extreme reliability.

ON/OFF compressor

Due to the constant temperature of the source (ground or water), the AquaMaster heat pump achieves high efficiency values even with an ON/OFF compressor, i.e., without continuous power regulation.

Colour on request

Grey RAL 9006 is standard.



Electronically controlled expansion valve

Top-notch technology increases the pump's operating efficiency through precise control of the cooling circuit.

Built-in electronic circulators

The Primary i.e., source leading from ground or water) and the secondary (i.e., heating) circuit is driven by an electronic circulation pump.







Unique Master Therm software for pump control

- Custom application for controlling the cooling circuit and peripherals-Equithermal MaR (measurement and regulation)
- Advanced temperature feedback control in the building based on internal room temperature sensors
- Control via touchscreen terminal or **online application**
- Includes remote service monitoring and diagnostics
- Control of up to 6 heating circuits, including the possibility of connecting a swimming pool or solar panel





heating systems

ves

in 1 zone

ves

heating systems

ves

independently 2

incl. mixing

in 2 zones

ves

up to 6 heating

circuits

	Model		Performance at BOW35		of heat mediun	energy efficiency ing at a 55°C n temperature peration	Order number (according to heating circuit control)		
		kW	kW	SCOP	Class	SCOP	Class	Regulation STANDARD (µPC)	Regulation PLUS (pCO5)
	AquaMaster 22 Z	7,8	up to 8	4.50	A++	3.17	A+	1AQ22Z-0	1AQ22Z-1
_	AquaMaster 26 Z	10,1	up to 10	4.34	A++	3.11	A+	1AQ26Z-0	1AQ26Z-1
C Macter Therm	AquaMaster 30 Z	11,4	up to 11	4.29	A++	3.10	A+	1AQ30Z-0	1AQ30Z-1
ModerTheen	AquaMaster 37 Z	14,1	up to 14	4.46	A++	3.16	A+	1AQ37Z-0	1AQ37Z-1
	AquaMaster 45 Z	17,2	up to 17	4.61	A++	3.19	A+	1AQ45Z-0	1AQ45Z-1
	AquaMaster 60 Z	23,1	up to 23	4.27	A++	3.14	A+	-	1AQ60Z-1
	AquaMaster 75 Z	28,2	up to 28	4.25	A++	3.11	A+	-	1AQ75Z-1
	AquaMaster 90 Z	33,2	up to 33	4.42	A++	3.10	A+	-	1AQ90Z-1
	1. 1			. ,		Docian	- 4 6	single-circuit	multiple-circuit

Designed for

circuit

Optionally

Main heating circuit

Auxiliary heating

Space temperature

Hot water treatment

BASIC FEATURES

water on request)

a ground collector

temperature

system

For installation diagrams, dimensions and detailed technical data for all models, please see the Technical Data section.

Option	nal e	auir	ome	nt

7-year warranty on the complete pump

107Z

Only in combination with 10ICON.

Master Therm Online App

10ICON

Online control and remote service access.

Reversing cooling mode (22Z-90Z models)

1AOZR

Reversing operation allowing the cooling of the building.

Passive cooling module (22Z-37Z)

10PC

Exclusive for ground-to-water pumps. Direct heat extraction from the interior of the ground collector or borehole. Extremely economical summer cooling of the building without the need for compressor work. Contributes to collector regeneration after the heating season.

External passive cooling module (45Z-90Z)

Passive cooling for higher capacity models.

Desuperheater for high efficiency hot water heating **10DESUP**

An integrated device that extracts the heat of superheated vapours at the compressor outlet using a separate hydraulic circuit and increases the efficiency of hot water heating. It operates in both the heating and cooling modes of the building.

Room unit for auxiliary heating circuit

For reference rooms of other heating circuits (only for PLUS control).

Room unit for auxiliary heating circuit with humidity sensor

10PADH

With a humidity sensor to eliminate the condensation of air humidity during cooling (only for PLUS control).

Phase monitor

10SF

Protects 3-phase ON/OFF compressors against damage.

Soft start for soft start of compressor

Reduces the starting current during compressor start-up.

10EK

Expansion module for PLUS control Increases the number of auxiliary heating circuits up to 6.

Integrated electric meter 3x 65 A

10EM65AMID

For local measurement of energy consumption. MID certification.

Electric boiler 4.5 kW/6,0 kW/7.5 kW

10EKOT

Built-in bivalent, or emergency, heat source.

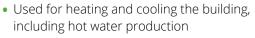
Water-to-water design

Different evaporator and electrical equipment.

10C0

Individual colour for the panels of the internal pump unit.

Zero external noise Indoor unit sound-attenuated to the level



• Ground-to-water heat pump (or water-to-

Independent of weather or outside

Located inside the building, connected to

• Supports connection to a power cascade

without the need for a higher-level MaR

 Possibility of active and passive cooling or a combination of both

of a conventional refrigerator

- Water heating temperatures up to 60 °C
- Integrated backup electric boiler on request





AquaMaster Inverter

With frequency-controlled compressor

A quiet and efficient groundto-water heat pump. The variable speed compressor (inverter) increases efficiency and savings in heating.

Frequency controlled compressor

The variable speed compressor adapts its output to the immediate heat demand of the building, thereby increasing the efficiency of the pump. The heating system does not require the installation of a storage tank.

Colour on request

Grey RAL 9006 as standard.



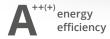
Electronically controlled expansion valve

Improves the operational efficiency of the pump by more precisely regulating the operation of the cooling circuit.

Built-in electronic circulator

The primary (i.e., source leading to the ground or water) and secondary (i.e., heating) circuit is driven by an electronic circulator.







7-year



online control

The unique compact model AQ17I (height 830 mm, width and depth 530 mm) fits into kitchen cupboards. It is soundproofed so that it does not disturb the living room.

Unique Master Therm software for pump control

- Custom application for controlling the cooling circuit and peripherals-Equithermal MaR (measurement and regulation)
- Advanced temperature feedback control in the building based on internal room temperature sensors
- Control via touchscreen terminal or **online application**
- Includes remote service monitoring and diagnostics
- Control of up to 6 heating circuits including the possibility of connecting a swimming pool or solar panel





Model		Perfor- mance at BOW35	Thermal loss of the object Q ₂	Seasonal energy efficiency of heating at a 35 °C low temperature operation		Seasonal energy efficiency of heating at a 55 °C medium temperature operation		Order number (according to heating circuit control)	
		kW	kW	SCOP	Class	SCOP	Class	Regulation STANDARD (μPC)	Regulation PLUS (pCO5)
	AquaMaster 17 l	1–5	up to 5	4.58	A+++	3.46	A++	1AQ17I-0	-
	AquaMaster 22 I	2-7	up to 7	4.72	A+++	3.58	A++	1AQ22I-0	1AQ22I-1
S	AquaMaster 26 I	3-9	up to 9	4.94	A+++	3.81	A++	1AQ26I-0	1AQ26I-1
	AquaMaster 30 I	4-12	up to 12	4.92	A+++	3.82	A++	1AQ30I-0	1AQ30I-1
	AquaMaster 37 I	5–15	up to 15	5.10	A+++	3.97	A+++	1AQ37I-0	1AQ37I-1
	AquaMaster 45 I	7–22	up to 22	5.10	A+++	3.96	A+++	1AQ45I-0	1AQ45I-1
, g	AquaMaster 60 I	7-35	up to 35	5.06	A+++	3.99	A+++	-	1AQ60I-1
	AquaMaster 90 I	10-48	up to 48	4.90	A+++	3.96	A+++	-	1AQ90I-1
								single-circuit	multiple-circuit

For installation diagrams, dimensions and detailed technical data for all models, please see the Technical Data section.

_					
\mathbf{c}	ntio	nal	equi	nma	nt
$\mathbf{\circ}$	pul	ııaı	Equi	PHILE	5116

7-year warranty on the complete pump 107Z

Only in combination with 10ICON.

Master Therm Online App 10ICON

Online control and remote service access.

Reversing cooling mode (22 Z – 90 Z models) 1AQZR

Reversing operation allowing the cooling of the building.

Passive cooling module (22 Z – 37 Z) 10PC

Exclusive for ground-to-water pumps. Direct heat extraction from the interior of the ground collector or borehole. Extremely economical summer cooling of the building without the need for compressor work. Contributes to collector regeneration after the heating season.

External passive cooling module (45 Z – 90 Z) 10PCEXT

Passive cooling for higher capacity models.

Desuperheater for high efficiency hot water heating 10DESUP

Integrated device that extracts the heat of superheated vapours at the compressor outlet using a separate hydraulic circuit and increases the efficiency of hot water heating. It operates in both heating and cooling modes for the building.

Room unit for auxiliary heating circuit 10PAD

For reference rooms of other heating circuits (only for PLUS control).

Room unit for auxiliary heating circuit with humidity sensor 10PADH

With humidity sensor to eliminate the condensation of air humidity during cooling (only for PLUS control).

Expansion module for PLUS control 10EK

Increases the number of auxiliary heating circuits up to 6.

Integrated electricity meter 1x 25 A 10EM25AMID

For local measurement of electricity consumption.

MID certification.

Integrated electric meter 3x 65 A 10EM65AMID

For local measurement of energy consumption. MID certification.

Electric boiler 4.5 kW/6,0 kW/7.5 kW 10EKOT

Built-in bivalent, or emergency, heat source.

Water-to-water design

Lower evaporator and different electrical equipment

Colour according to RAL Sampler 10C0

Individual colour for the panels of the internal pump unit.

single-circuit heating systems nultiple-circuit **Designed for** heating systems Main heating circuit ves ves **Auxiliary heating** independently 2 circuit incl. mixing Space temperature in 1 zone in 2 zones Hot water treatment ves ves up to 6 heating Optionally

BASIC FEATURES

- Ground-to-water (or water-to-water) heat pump with frequency-controlled compressor
- Independent of weather or air temperature
- Continuous flow control through primary or secondary circuits
- Located in the unit inside the building, connected to a ground borehole or collector
- Support for connection to a power cascade without the need for a third-party MaR system
- Zero external noise
- Indoor unit sound-attenuated to the level of a conventional refrigerator



- Use for heating and cooling of the building, including hot water production
- Possibility of active and passive cooling or a combination of both



- Water heating temperatures up to 64 °C
- Integrated backup electric boiler on request



AquaMaster Inverter Combi

Inverter with integrated SHW tank

BASIC FEATURES

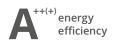


- Ground-to-water heat pump with split design
- Includes integrated hot water tank with a volume of 170 litres to save space in the utility room. (AquaMaster and AquaMaster Inverter models work with an external tank.)



Includes 170l hot water tank

The Combi version differs from the AquaMaster Inverter by means of its integrated hot water tank.







Model	Perfor- mance at BOW35	Thermal loss of the object Q _z	Seasonal energy efficiency of heating at a 35 °C low-temperature operation		Seasonal energy efficiency of heating at a 55°C medium temperature operation		Order number (according to heating circuit control)	
	kW	kW	SCOP	Class	SCOP	Class	STANDARD Regulation	PLUS Regulation
AquaMaster Inverter 17 IC	1–5	up to 5	4.58	A+++	3.46	A++	1AQ17IC-0	1AQ17IC-0
AquaMaster Inverter 22 IC	2-7	up to 7	4.72	A+++	3.58	A++	1AQ22IC-0	1AQ22IC-1
AquaMaster Inverter 26 IC	3-9	up to 9	4.94	A+++	3.81	A++	1AQ26IC-0	1AQ26IC-1
AquaMaster Inverter 30 IC	4–12	up to 12	4.92	A+++	3.82	A++	1AQ30IC-0	1AQ30IC-1
AquaMaster Inverter 37 IC	5–15	up to 15	5.10	A+++	3.97	A+++	1AQ37IC-0	1AQ37IC-1

For installation diagrams, dimensions and detailed technical data for all models, please see the Technical Data section.

Optional equipment

7 years warranty on complete pump

107Z

Extended warranty from the date of delivery. Only in combination with 1OICON.

Master Therm Online App 10ICON

Connect the pump to a central server. Master Therm allows you to control the pump online from anywhere using the web or app. Includes remote service access.

Passive cooling module

Exclusively for ground-to-water pumps. Direct

heat extraction from the interior of the ground collector or borehole. Extremely economical summer cooling without compressor work. Contributes to the regeneration of the collector after the heating season.

Room unit for the heating circuit 10PAD

Terminal with temperature sensor for placing additional heating circuits in the reference rooms (only for PLUS control).

Room unit for auxiliary heating circuit with humidity sensor

Includes humidity sensor for elimination of air humidity condensation during cooling (only for PLUS control).

Expansion module for PLUS control 10EK

Increases the number of regulated auxiliary heating circuits up to 6 (from the basic 2).

Integrated electricity meter 1 x 25A

10EM25AMID

10PADH

Integrated 1-phase electricity meter for local measurement of electricity consumption. MID certification.

Integrated electricity meter 3x 65 A

10EM65AMID

Integrated 3-phase electricity meter with identical functionality.

Electric boiler

4.5 kW/6,0 kW/7.5 kW

10EKOT

Integrated bivalent (supplementary) or emergency heat source.

Water-to-water design

Adaptation for use on bottom or surface water. Evaporator more resistant to sediment (coax) and different electrical equipment.

Colour according to RAL Sampler 100

Individual colour for the panels of the pump indoor unit. RAL 9006 grey at no extra charge.

















AquaMaster



Agua-



Agua-



Agua-



Agua-



Agua-



Agua-



Agua-



Agua-

			Aqua- Master 22 Z	Aqua- Master 26 Z	Aqua- Master 30 Z	Aqua- Master 37 Z	Aqua- Master 45 Z	Aqua- Master 60 Z	Aqua- Master 75 Z	Aqua- Master 90 Z
Power range at B0W35 ¹		kW	7.8	10.1	11.4	14.1	17.2	23.1	28.2	33.2
	COP	-	4.5	4.4	4.4	4.3	4.4	4.2	4.1	4.3
Thermal loss of the object Q _z		kW	up to 8	up to 10	up to 11	up to 14	up to 17	up to 23	up to 28	up to 33
Power W10W35		kW	10.4	13.3	14.9	18.4	22.5	31.2	37.7	45.0
	COP	-	539	5.7	5.5	5.4	5.5	5.4	5.2	5.4
Seasonal heating energy	Power ³	kW	8	10	11	14	17	23	28	33
efficiency at 35 °C low- temperature operation	SCOP	_	4.50	4.34	4.29	4.46	4.61	4.27	4.25	4.42
	ηs	- %	172	166	164	170	176	163	162	169
	Class	_	A++							
Seasonal heating energy efficiency at 55 °C mid-	Power ³	kW	7	9	11	13	16	22	26	30
temperature operation	SCOP	_	3.17	3.11	3.10	3.16	3.19	3.14	3.11	3.10
	ηѕ	%	117	116	116	118	120	118	116	116
	Class	_	A+							
Approximate required length of the ground well (or the sum of the lengths of several wells)		m	120	150	165	210	255	345	420	495
Refrigerant		-	R410a	R407c						
Electric circuit breaker ²	3-phase	-	3x 9 A"C"	3x 13 A"C"	3x 13 A"C"	3x 16 A"C"	3x 16 A"C"	3x 25 A"C"	3x 25 A"C"	3x 32 A"C"
	1-phase	_	20 A"C"	25 A"C"	32 A"C"	32 A"C"	n/a	n/a	n/a	n/a
Compressor, supply voltage	3-phase	-	3x 400 V~							
	1-phase	_	1x 230 V~	1x 230 V~	1x 230 V~	1x 230 V~	n/a	n/a	n/a	n/a
Weight		kg	140	160	165	180	190	245	255	275
Mandatory leakage checks according to EP 517/2014		_	no							
Maximum heating water temperature		°C	60	60	60	60	60	60	60	60
Heating capacity of integrated electric boiler (equipment upon request)		kW	4.5-7.5	4.5-7.5	4.5-7.5	4.5-7.5	4.5-7.5	4.5-7.5	4.5-7.5	4.5-7.5
Acoustic performance L _w		dB(A)	48	48	48	49	49	51	51	51
Order number (according to heating circuit control)	STANDARD Regulation	-	1AQ22Z-0	1AQ26Z-0	1AQ30Z-0	1AQ37Z-0	1AQ45Z-0	-	-	-
	PLUS regulation	-	1AQ22Z-1	1AQ26Z-1	1AQ30Z-1	1AQ37Z-1	1AQ45Z-1	1AQ60Z-1	1AQ75Z-1	1AQ90Z-1
		_								

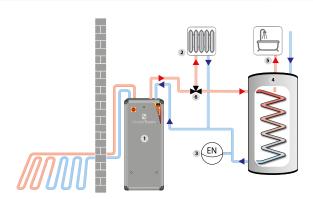
Heating circuit control	Designed for	Main heating circuit	Auxiliary heating circuit	Space temperature	Hot Water	Optional	
STANDARD Regulation (µPC)	single circuit heating system	yes	-	in 1 zone	yes	-	
PLUS Regulation (pCO5)	multi-circuit heating system	yes	independently 2 incl. mixing	in 2 zones	yes	up to 6 heating circuits	

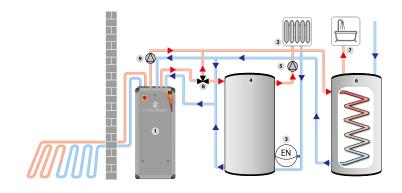
¹ Performance data according to EN 14 511, in accordance with EHPA requirements for the award of the Q quality mark. A7W35 60 Hz - air 7 °C, water 35 °C, compressor frequency 60 Hz.

² Recommended value of electrical protection 3x 400 V, incl. auxiliary integrated electric boiler. The 22 I, 26 I and 30 I units can also be connected to a mains supply of 1x 230 V with a fuse of 40 A "B" (22 I) or 50 A "B" (26 I, 30 I).

³ Design output at an outdoor temperature of -10 °C according to EN 14 825.







DIRECT CONNECTION OF HEAT PUMP TO HEATING SYSTEM AND HW HEATING TRANSFER MODE

- 1 heat pump
- 2 heating system
- **3** expansion tank
- 4 indirect heating HW storage tank
- 5 HW outlet
- 6 3-way valve

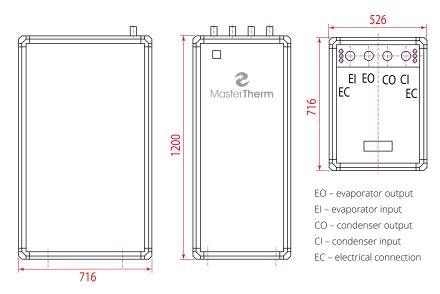
The heat pump (1) is directly connected to the heating system. The heating water temperature varies depending on the outside temperature. The heating is interrupted, and the 3-way valve (6) is switched on when HW heating is required. By increasing the heating water outlet temperature from the heat pump, the HW storage tank (4) is heated. After heating is finished, the system returns to area heating mode. The scheme is particularly suitable for underfloor heating, exceptional also for systems with a sufficiently sizeable volume of heating water. The possibility of local control of the heating system (control of the heating water flow through the heating system) is limited.

CONNECTION WITH HEATING WATER ACCUMULATION TANK AND HW HEATING TRANSFER MODE

- 1 heat pump
- 2 heating system
- 3 expansion tank
- 4 storage tank
- **5** heating system
- 6 indirect HW heating storage tank
- **7** HW outlet
- 8 3-way valve
- 9 desuperheater

The heat pump (1) is connected to the heating system via the storage tank (4), which acts as both heat storage and thermohydraulic distributor. The temperature of the heating water varies depending on the outside temperature. The flow of heating water through the heating system is provided by a circulating pump (5). When the heating of HWheating is required, the heating is interrupted and the 3-way valve (8) is switched. By increasing the outlet temperature of the heating water from the heat pump, the HW storage tank is heated (6). After the heating is finished, the system returns to area mode. The desuperheater (optional) is a special heat exchanger that extracts high-temperature energy at the output of the running compressor. Using a separate hydraulic circuit (9), this energy is used for highly efficient HW heating.

DIMENSIONS



AquaMaster Inverter



			Aqua- Master Inverter 17 I	Aqua- Master Inverter 22 I	Aqua- Master Inverter 26 I	Aqua- Master Inverter 30 I	Aqua- Master Inverter 37 I	Aqua- Master Inverter 45 I	Aqua- Master Inverter 60 I	Aqua- Master Inverter 90 I
Power range at B0W35			1-5	2-7	3-9	4-12	5-15	7-22	7-35	10-48
Power range at B0W35 ¹	60 rps	kW	2.95	4.4	7.6	7.9	10.5	14.0	20.2	31.3 ³
	СОР		4.3	4.5	4.5	4.6	4.7	4.6	4.7	4.6
Thermal loss of the object Q ₇		kW	up to 5	up to 7	up to 9	up to 12	up to 15	up to 22	up to 35	up to 48
Power W10W35	60 rps	kW	3.79	5.8	10.2	10.3	14.2	19.2	26.6	41.2 ³
	СОР		5.51	5.9	6.0	6.1	6.3	6.3	6.2	5.9
Seasonal heating energy	Power ⁴	kW	5	7	9	11	15	21	33	44
efficiency at 35 °C low-	SCOP		4.58	4.72	4.94	4.92	5.10	5.10	5.06	4.90
temperature operation	ηs	%	175	181	190	189	196	196	195	188
	Class		A+++							
Seasonal heating energy	Power ⁴	kW	4	6	8	11	14	19	33	42
efficiency at 55 °C mid-	SCOP		3.46	3.58	3.81	3.82	3.97	3.96	3.99	3.96
temperature operation	ηs	%	130	135	144	145	151	151	151	150
	Class	-	A++	A++	A++	A++	A+++	A+++	A+++	A+++
Approximate required length of the ground well (or the sum of the lengths of several wells)		m	75	105	135	180	225	330	525	720
Refrigerant		-	R410a							
Electric circuit breaker ²	3-phase	-	1x 20 A"B	1x 20 A"B	1x 20 A"B	1x 25 A"B"	3x 20 A"B"	3x 20 A"B"	3x 32 A"B"	3x 32 A"B"
	1-phase	-	20 A"B"	20 A"B"	20 A"B"	25 A"B"	32 A"B"	32 A"B"	n/a	n/a
Compressor, supply	3-phase	-	1x 230 V~	1x 230 V~	1x 230 V~	1x 230 V~	3x 400 V~	3x 400 V~	3x 400 V~	3x 400 V~
voltage	1-phase		1x 230 V~	n/a	n/a					
Weight		kg .	60	160	160	160	165	170	180	200
Mandatory leakage checks according to EP 517/2014			no							
Maximum heating water temperature		°C	60	60	60	60	60	60	60	60
Heating capacity of integrated electric	1-phase connection	kW	-	3-4	3-4	6	-	-	_	-
boiler (equipment upon request)	3-phase connection	kW	-	4.5-6	4.5-6	4.5-6	7.5	7.5	7.5	7.5
Acoustic performance L _w		dB(A)	49	48	48	48	48	48	55	60
Order number (according to heating circuit control)	STANDARD Regulation		1AQ17I-0	1AQ22I-0	1AQ26I-0	1AQ30I-0	1AQ37I-0	1AQ45I-0	-	-
	PLUS regulation		-	1AQ22I-1	1AQ26I-1	1AQ30I-1	1AQ37I-1	1AQ45I-1	1AQ60I-1	1AQ90I-1

Heating circuit control	Designed for	Main heating circuit	Auxiliary heating circuit	Space temperature	Hot Water	Optional
STANDARD Regulation (µPC)	single circuit heating system	yes	-	in 1 zone	yes	-
PLUS Regulation (pCO5)	multi-circuit heating system	yes	independently 2 incl. mixing	in 2 zones	yes	up to 6 heating circuits

¹ Performance data according to EN 14 511, in accordance with EHPA requirements for the award of the Q quality mark. A7W35 60 Hz - air 7 °C, water 35 °C, compressor frequency 60 Hz.

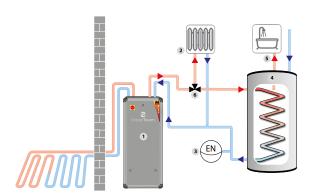
² Recommended value of electrical protection 3x 400 V, incl. auxiliary integrated electric boiler. The 22 I, 26 I and 30 I units can also be connected to a mains supply of 1x 230 V with a fuse of 40 A "B" (22 I) or 50 A "B" (26 I, 30 I).

³ Data for 90 I at 90 Hz.

⁴ Design output at an outdoor temperature of -10 °C according to EN 14 825.





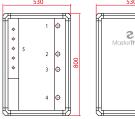


DIRECT CONNECTION OF HEAT PUMP TO HEATING SYSTEM AND HW HEATING **TRANSFER MODE**

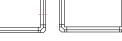
- 1 heat pump
- heating system
- expansion tank
- 4 indirect HW heating storage tank
- 5 HW outlet
- 6 3-way valve

The heat pump (1) is directly connected to the heating system. The heating water temperature varies depending on the outside temperature. The heating is interrupted, and the 3-way valve (6) is switched on when HW heating is required. By increasing the heating water outlet temperature from the heat pump, the HW storage tank (4) is heated. After HW heating is finished, the system returns to area heating mode. The scheme is particularly suitable for underfloor heating, exceptional also for systems with a sufficiently sizeable volume of heating water. The possibility for local control of the heating system (control of the heating water flow through the heating system) is limited.

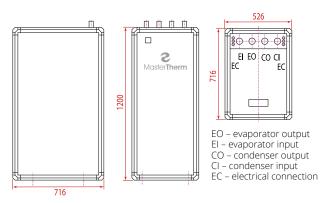
AQ 17 I **DIMENSIONS**

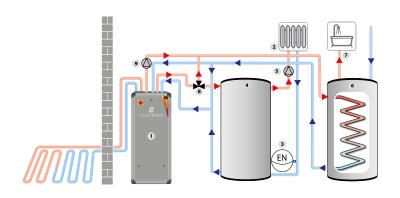


- 1 heating water outlet 5/4"
- 2 heating water inlet 5/4"
- 3 evaporator inlet 5/4" 4 – evaporator outlet - 5/4"
- electrical connection



AQ 22 I až AQ 60 I

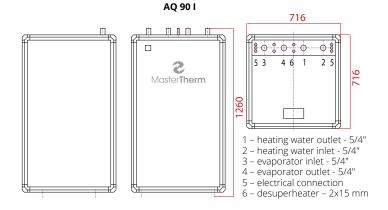




CONNECTION WITH HEATING WATER ACCUMULATION TANK AND HW HEATING TRANSFER MODE

- heat pump
- 2 heating system
- 3 expansion tank
- 4 storage tank
- heating system 5
- 6 indirect heating HW storage tank
- 7 HW outlet
- 8 3-way valve
- desuperheater

The heat pump (1) is connected to the heating system via the storage tank (4), which acts as both heat storage and thermohydraulic distributor. The temperature of the heating water varies depending on the outside temperature. The flow of heating water through the heating system is provided by a circulating pump (5). When HW heating HW is required, the heating is interrupted, and the 3-way valve (8) is switched on. By increasing the outlet temperature of the heating water from the heat pump, the HW storage tank is heated (6). After the heating is finished, the system returns to area heating mode. The desuperheater (optional) is a special heat exchanger that extracts hightemperature energy at the output of the running compressor. Using a separate hydraulic circuit (9), this energy is used for highly efficient HW heating.



AquaMaster **Inverter Combi**

Power range at B0W35		
Power range at B0W35 ¹	60 rps	
	COP	
Thermal loss of the object Q _z		
Power W10W35		
	COP	
Seasonal heating energy efficiency	Power ³	
at 35 °C low-temperature operation	SCOP	
	ης	
	Class	
Seasonal heating energy efficiency	Power ³	
at 55 °C mid-temperature operation	SCOP	
	ης	
	Class	
Refrigerant		
Electric circuit breaker ²	3-phase	
	1-phase	
Compressor, supply voltage	3-phase	
	1-phase	
Weight		
Maximum heating water temperature		
Heating capacity of integrated electric	1-phase	
boiler (equipment upon request)	connection	
	3-phase	
	connection	
Akustický výkon L _w		
Order number (according to heating	STANDARD	
circuit control)	Regulation	
	PLUS regulation	







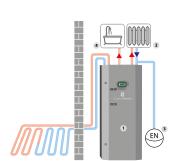




AquaMaster Inverter 17 IC	AquaMaster Inverter 22 IC	AquaMaster Inverter 26 IC	AquaMaster Inverter 30 IC	AquaMaster Inverter 37 IC
1–5	2-7	3-9	4-12	5–15
2.95	4.4	7.6	7.9	10.5
4.3	4.5	4.5	4.6	4.7
up to 5	up to 7	up to 9	up to 12	up to 15
3.79	5.8	10.2	10.3	14.2
5.51	5.9	6.0	6.1	6.3
5	7	9	11	15
4.58	4.72	4.94	4.92	5.10
175	181	190	189	196
A+++	A+++	A+++	A+++	A+++
4	6	8	11	14
3.46	3.58	3.81	3.82	3.97
130	135	144	145	151
A++	A++	A++	A++	A+++
R410a	R410a	R410a	R410a	R410a
1x 20 A"B"	1x 20 A"B"	1x 20 A"B"	1x 25 A"B"	3x 20 A"B"
20 A"B"	20 A"B"	20 A"B"	20 A"B"	25 A"B"
1x 230 V~				
1x 230 V~				
270	270	270	275	280
60	60	60	60	60
3-4	3-4	3-4	3-4	-
4.5-6	4.5-6	4.5-6	4.5-6	4.5-6
48	48	48	48	48
1AQ17IC-0	1AQ22IC-0	1AQ26IC-0	1AQ30IC-0	1AQ37IC-0
1AQ17IC-1	1AQ22IC-1	1AQ26IC-1	1AQ30IC-1	1AQ37IC-1

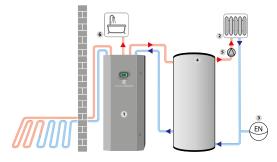
Heating circuit control	Designed for	Main heating circuit	Auxiliary heating circuit	Space temperature	Hot Water	Optional
STANDARD Regulation (µPC)	single circuit heating system	yes	-	in 1 zone	yes	-
PLUS Regulation (pCO5)	multi-circuit heating system	ves	independently 2 incl. mixing	in 2 zones	ves	up to 6 heating circuits

- 1 Performance data according to EN 14 511, in accordance with EHPA requirements for the award of the Q quality mark. A7W35 60 Hz air 7 °C, water 35 °C, compressor frequency 60 Hz.
- 2 Recommended value of electrical protection 3x 400 V, incl. auxiliary integrated electric boiler. The 22 I, 26 I and 30 I units can also be connected to a mains supply of 1x 230 V with a fuse of 40 A "B" (22 I) or 50 A "B" (26 I, 30 I). 3 Design output at an outdoor temperature of -10 $^{\circ}$ C according to EN 14 825.



DIRECT HEATING PUMP CONNECTION TO HEATING SYSTEM

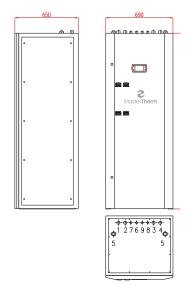
- heat pump
- heating system
- expansion tank
- HW outlet



HEATING WATER ACCUMULATION CONNECTION

- 1 heat pump
- 2 heating system
- expansion tank
- accumulation tank
- heating system outlet
- HW outlet

DIMENSIONS







For large-scale and industrial facilities

Air-to-water / ground-to-water / water-to-water













For largescale and industrial facilities

Extension of the BoxAir, EasyMaster and AquaMaster heat pump series.

Designed for heating and cooling (reversible and passive) of large-scale facilities such as office buildings, schools, sports facilities, manufacturing and warehouse industrial halls and others. Also suitable for industrial cooling and waste heat recovery systems from industrial processes.

Air-to-water, ground-to-water and water-towater systems, compact and split solutions. Easily connected in cascade, providing exceptional overall performance for large-scale buildings and industrial plants.

VZDUCH-VODA



BoxAir Inverter

Compact with frequency-controlled compressor



BoxAir Inverter Split

Split with frequencycontrolled compressor

ZEMĚ-VODA / VODA-VODA



AquaMaster 150.2Z / 180.2 Z

Two-compressor ON/OFF models



AquaMaster 120 Z

The most powerful one-compressor ON/OFF model



















KEY FEATURES

- Air-to-water output up to 35 kW per compressor circuit in compact as well as split design
- Ground-to-water/water-to-water output of up to 64 kW
- · MasterLAN power cascade control included
- · Total cascade output of up to 1000 kW
- Modbus RTU communication protocol
- · Online control and monitoring
- Option for object cooling or waste heat recovery



MAIN BENEFITS

The high-end components used and the unique control system employed offer highly efficient and extremely quiet operation, the ability to control up to 6 independent heating/cooling circuits and extended service life. Additionally BoxAir Inverter and InverterSplit units are equipped with EVI (direct refrigerant injection into the compressor) technology, allowing for efficiency in extreme climate conditions and an outlet temperature of up to 64°C. The wide range of additional options also includes a bivalent source or a desuperheater for efficient hot water production.



PROMPT RETURN ON INVESTMENT

An investment proven in practice: In the industrial facilities implemented so far, the economic return is in the order of several years.



HEATING, COOLING AND RECOVERING

With a heat pump, a building or facility can be heated in winter, cooled in summer and efficiently powered with waste heat from industrial processes. The unique and extremely energy-efficient passive cooling (for ground-to-water and water-to-water) design can also be used.



POWER CASCASCADE FOR HIGH PERFORMANCE

With the integrated MasterLAN software, **up to 16 heat pumps can be easily set up and connected to control power cascades of hundreds of kW**.

MASTER THERM: A CZECH MANUFACTURING SINCE 1994

Master Therm is a manufacturer of air-to-water, ground-to-water and water-to-water heat pumps for single-family residences and apartment buildings as well as industrial facilities. All technical development and production of MasterTherm heat pumps is carried out in the Czech Republic.



More than two thirds of Master Therm's production is exported abroad, especially to Western Europe. Master Therm also carries out special projects such as heat recovery systems at the IT4Innovations supercomputer centre in Ostrava, cooling and recovery of waste heat from particle accelerators at the Institute of Nuclear Physics of the Czech Academy of Sciences and cooling and heat recovery of ČEZ Energo cogeneration units.



Air-to-water

In compact or split design

Extremely efficient solution for the heating and cooling of office buildings, production or warehouse halls, schools, sports facilities and other large-scale buildings.



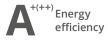


BoxAir 60 Inverter

Compact BoxAir Inverter 60I with continuously (frequency) controlled compressor to ensure the highest heating efficiency.

BoxAir 60 Inverter Split

Split design of air-to-water heat pump for large buildings with frequency-controlled compressor.







Unique Master Therm software for pump control

- Custom application for control of the cooling circuit and peripherals
- Equithermal MaR (measurement and control)
- Advanced temperature feedback control in the building based on indoor room temperature sensors
- Control via touchscreen terminal or **online application**
- Includes remote service monitoring and diagnostics
- Control of up to 6 heating circuits incl. optional solar connection





Model	Design	Compressor	Perfor- mance at A7W35	Ther- mal loss of the object Q _z	Seasonal efficier heating temper operation	ncy of z – low ature	Seasonal e efficienc heating – um-tempe operation	y of medi- rature	Acoustic pressure level L _p (5 m from outdoor units)	Order number (according to heating circuit control)
			kW	kW	SCOP	Class	SCOP	Class	dB(A)	Regulation PLUS
BoxAir 60 I	compact	inverter	10-35	do 28	4.50	A+++	3.45	A++	45	1BA-60I-1
BoxAir 60 IS	split	inverter	10-35	do 28	4.50	A+++	3.45	A++	45	1BA60IS-1

Main heating circuit		yes			
Auxiliary heating circuit	independently 2 incl. mixing				
Space temperature	in 2 zones				
Hot water (DHW)	yes				
Optional	up to 6 he	eating circuits			

Wiring diagrams, dimensions and detailed technical data

for all models can be found in the Technical Data section.

Optional equipment

7-year warranty on the complete pump

107Z

Extended warranty valid from commissioning of the pump. Only in combination with 10ICON.

Master Therm Online App

10ICON

Connecting the pump to a central Master Therm server allows you to control the pump online from anywhere using the web or app. Remote service access included.

Reverse cooling mode

10CH

Reverse operation of the pump allowing for long term cooling of the building in summer.

Room in unit for auxiliary heating circuit

10PAD Terminal with temperature sensor for placement in reference rooms of other heating circuits.

Phase monitor (ON/OFF models)

10SFC

Monitor protects 3-phase ON/OFF compressors against damage.

Softstart for soft start of compressor (ON/OFF models)

Reduces the starting current when starting the compressor.

Room unit for auxiliary heating circuit with humidity sensor

10PAD

10EK

Includes humidity sensor for eliminating condensation and humidity during cooling.

Expansion control module PLUS

Increases the number of regulated auxiliary heating circuits up to 6 (from the basic 2).

Integrated electric meter 3x 65 A 10EM65AMID

Integrated 3-phase electric meter for local measurement of electricity consumption. MID certification.

RAL colour sampler 1000

Individual colour for pump panels (RAL 9006 in basic equipment).

EXTRAS FOR BA60IS MODEL:

External electric boiler 7.5 + 7.5 kW 10ETA1M15

External electric boiler 12 + 18 kW 10ETA1M30

Desuperheater for high efficiency

hot water heating 10DESUP

BASIC FEATURES

- Air-to-water system in compact or split design
- With frequency-controlled (BoxAir Inverter and Inverter Split) or ON/OFF compressor (BoxAir and EasyMaster)
- Power up to 35 kW per compressor circuit



- Easy installation and connection to building heating systems
- Power cascade control by means of MasterLAN in standard equipment
- ModbusRTU communication protocol as standard
- Built-in circulator with speed control
- Minimised noise due to ultra-quiet fans with smooth speed control



• Use for heating and cooling of the building incl. hot water production



- Heating water temperature up to 64 °C (BA 60 I and BA 60 IS, Other 55 °C)
- Outdoor temperature range from -20 °C to +40 °C
- Built-in electric boiler 7.5 + 7.5 kW (BA60I and BA75Z)



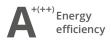
Ground-to-water / water-to-water

Powerful One and Two compressor models With one or two parallel ON/ OFF compressors for extremely efficient heating and cooling of large-scale buildings. Also suitable for industrial cooling and waste heat recovery systems from industrial processes.



AquaMaster 150.2 Z / 180.2 Z

Ground-to-water/water-to-water heat pump with two parallel ON/OFF compressors. Depending on the design, the output range is 57.7 or 64.4 kW.







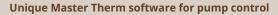
MasterTherm

AquaMaster 120 Z

The most powerful model of the single-compressor series AquaMaster with an output of 46.4 kW.

AquaMaster & AquaMaster Inverter

For large buildings, heat pumps from the standard ground-to-water/water-to-water range with outputs up to 33 kW are also suitable.



- Custom application for control of the cooling circuit and peripherals
- Equithermal MaR (measurement and control)
- Advanced temperature feedback control of the building based on indoor room temperature sensors
- Control via touchscreen terminal or **online application**
- Includes **remote service monitoring** and diagnostics
- Control of up to 6 heating circuits incl. optional solar connection





Regulation PLUS

Model	Perfor- mance at A7W35	Thermal loss of the object Q _z	Perfor- mance at W10W35	Seasonal energy efficiency heating – low temperature operation at 35 °C		heating -	rgy efficiency medium operation at °C	Order number
	kW	kW	kW	SCOP	Class	SCOP	Class	Regulation PLUS
AquaMaster 120 Z	46,4	do 46	60,8	4.97	A+++	3.35	A++	1AQ120Z-1
AquaMaster 150.2 Z	57,7	do 58	79,3	4.38	A++	3.19	A+	1AQ150.2Z-1
AquaMaster 180.2 Z	64,4	do 64	90,9	4.50	A++	3.35	A++	1AQ180.2Z-1

Designed for	multi-circuit heating systems
Main heating circuit	yes
Auxiliary heating circuit	independently 2 incl. mixing
Space temperature	in 2 zones
Hot water (DHW)	yes
Optional	up to 6 heating circuits

Wiring diagrams, Dimensions and detailed technical data for all models can be found in the Technical Data section.

Optional equipment

7-year warranty on the complete pump

107Z

Extended warranty valid from commissioning. Only in combination with 1OICON.

Master Therm Online application

10ICON

Online control and remote service access.

Desuperheater for high-efficiency hot water heating

10DESUP

Integrated device which, by means of a separate hydraulic circuit, removes the heat of superheated vapours at the compressor inlet and increases the efficiency of hot water heating. Operates in both heating and cooling modes of the facility.

Room unit for auxiliary heating circuit

10PAD

For reference rooms of other heating circuits (only for PLUS control).

.

Room unit for auxiliary heating circuit with humidity sensor

10PADH

With humidity sensor to eliminate air humidity condensation during cooling (only for PLUS control).

Phase monitor

10SFC

Protects 3-phase ON/OFF compressors against damage.

Softstart for soft start of compressor

Reduces the start-up current during compressor start-up.

PLUS control expansion module

10Ek

Reduces the number of reg. auxiliary heating circuits up to 6.

Integrated electric meter 3x 65 A 10EM65AMID

For local measurement of energy consumption. MID certification.

Electric boiler 4.5 kW/6,0 kW/7.5 kW

Built-in bivalent, or emergency, heat source.

10EKOT

Water-to-water design

Different evaporator and electrical equipment.

Colour according to RAL colour sampler

10CO

Individual colour for pump panels. Standard colour RAL 9006 silver.

BASIC FEATURES

Control of heating circuits

- Ground-to-water heat pump (or waterto-water on request)
- Independent of weather or outdoor temperature
- Very quiet operation and zero noise
- Power up to 64 kW
- Power cascade control MasterLAN in basic equipment
 - 2
- ModbusRTU communication protocol in basic equipment
- Built-in electronic circulators with speed control for primary and secondary circuits
- Built-in electrical switchgear with protection of all components
- Electronically controlled expansion valve
- Use for heating and cooling of the building including hot water production



- Reversible and extremely efficient passive cooling option
- Ready for industrial cooling and waste heat recovery
- Heating water temperature up to 60 °C
- Integrated electric boiler on request



Master Therm ONLINE









Technical Specifications

For large-scale and industrial facilities













Air-to-water





			BoxAir 60 I	BoxAir 60 IS
Design			Compact	Split
Compressor			Inverter	Inverter
Power range at A7W35		kW	10-35	10-35
Object heat loss Q _z		kW	up to 28	up to 28
Power A7W35 ¹		kW	22.3 (60 rpm)	22.3 (60 rpm)
_	СОР		4.84	4.84
Power A2W35		kW	15.7 (60 rpm)	15.7 (60 rpm)
_	СОР		3.6	3.6
Power A-7W35		kW	18.0 (90 rpm)	18.0 (90 rpm)
_	СОР		2.68	2.68
Power A-15W35		kW	20.6 (120 rpm)	20.6 (120 rpm)
	СОР		2.3	2.3
Seasonal energy efficiency	Power ³	kW	23	23
heating – low-temperature — operation at 35 °C —	SCOP		4.50	4.50
<u></u>	ηs	%	177	177
_	Class		A+++	A+++
– Seasonal energy efficiency	Power ³	kW	22	22
heating – medium-temperature — operation at 55 °C —	SCOP		3.45	3.45
operation at 55°C	ηs	%	135	135
_	Class		A++	A++
Refrigerant			R410a	R410a
Electric circuit breaker ²			40 A"B"	25 A"B"
Compressor	Connection		3x 400 V	3x 400 V
Weight		kg	275	200 + 80
Mandatory leakage checks according to EP 517/2014			yes	yes
Maximum heating water temperature		°C	64	64
Heating capacity of the integrated electroboiler	bivalence regime	kW	7.5	-/on request 7.5 or 12
_	Backup power supply mode (and at temperatures below -20 °C)	kW	7.5 + 7.5	–/on request 7.5 + 7.5 or 12 + 18
Acoustic performance L _w		dB(A)	66	66
Sound pressure level L _n at	of 1 m	dB(A)	57	57
distance from outdoor unit	of 5 m	dB(A)	45	45
_	of 10 m	dB(A)	39	39
Order number(according to heating circuit control) PLUS Regulation	Regulation PLUS		1BA60I-1	1BA60IS-1

Heating circuit control	Designed for	Main heating circuit	Auxiliary heating circuit	Space temperature	Heating Water	Optional
PLUS Regulation	multi-circuit heating systems	yes	independently 2 incl. mixing	in 2 zones	yes	up to 6 heating circuits

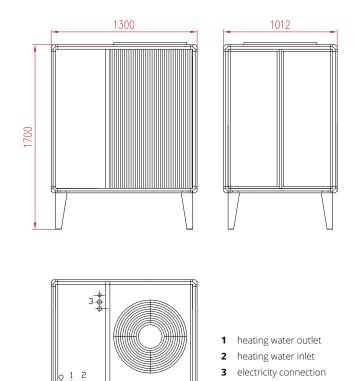
¹ Performance data according to EN 14 511, in accordance with EHPA requirements for the award of the Q quality mark. A7W35 60 Hz - air 7 °C, water 35 °C, compressor frequency 60 Hz.

² Recommended electrical protection value 3x 400 V, incl. auxiliary integrated electric boiler.

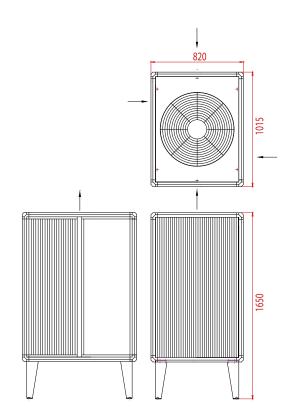
³ Design output at outdoor temperature of -10 °C according to EN 14 825.



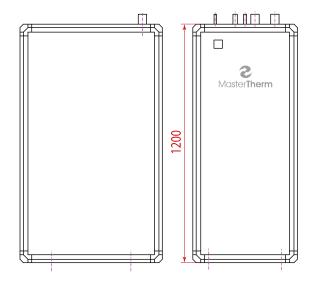
DIMENSIONS OF MODEL BA 60 I

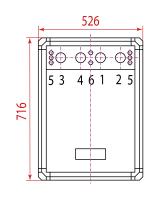


DIMENSIONS OF THE EXTERNAL UNIT OF MODEL BA 60 IS



DIMENSIONS OF THE INDOOR UNIT BA 60 IS





- 1 heating water outlet
- 2 heating water inlet
- 3 liquid
- 4 steam
- **5** electricity connection
- 6 desuperheater

Ground-to-water / water-to-water







			AquaMaster 120 Z	AquaMaster 150.2 Z	AquaMaster 180.2 Z
Power B0W35 ¹		kW	46.4	57.7	64.4
	COP		4.58	4.2	4.1
Plant heat loss Q _z		kW	up to 46	up to 58	up to 64
Power W10W35		kW	60.8	79.3	90.9
	COP	_	5.80	5.6	5.5
Seasonal energy efficiency heating – low	Power ³	kW	46	57	64
temperature operation at 35 °C	SCOP		4.97	4.38	4.5
	ηs	%	191	167	172
	Class		A+++	A++	A++
Seasonal energy efficiency heating – medium-	Power ³	kW	37.62	52	61
temperature operation at 55 °C	SCOP		3.35	3.19	3.35
	ηs	- %	126	119	126
	Class		A++	A+	A++
Approximate required length of the ground well (or the sum of the lengths of several wells)		m –	690	870	960
Refrigerant			R407c	R407c	R407c
Electric circuit breaker ²			3x 32 A"C"	3x 50 A"C"	3x 64 A"C"
Compressor	Connection		3x 400 V	3x 400 V	3x 400 V
Veight		- kg	250	420	420
Mandatory leakage checks according to EP 517/2014			yes	yes	yes
Maximum heating water temperature		°C –	60	60	60
Heating capacity of integrated electric boiler optional equipment)		kW	on request4.5–7.5	on request 4.5–7.5	on request 4.5-7.5
Acoustic performance L _w		dB(A)	60	60	60
Order number (according to heating circuit control)	PLUS Regulation		1AQ120Z-1	1AQ150.2Z-1	1AQ180.2Z-1

Heating circuit control	Designed for	Main heating circuit	Auxiliary heating circuit	Space temperature	Heating Water	Optional
PLUS Regulation	multi-circuit heating systems	yes	independently 2 incl. mixing	in 2 zones	yes	up to 6 heating circuits

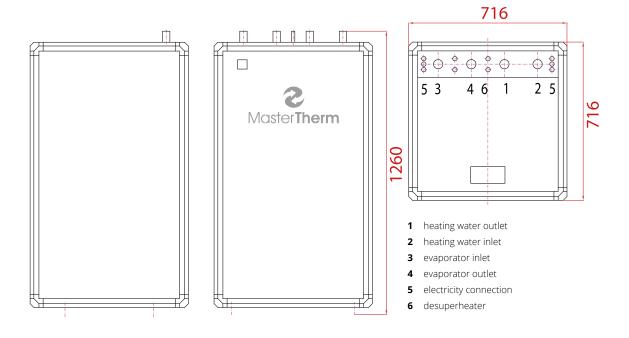
¹ Performance data according to EN 14 511, in accordance with EHPA requirements for the award of the Q quality mark. A7W35 60 Hz - air 7 °C, water 35 °C, compressor frequency 60 Hz.

² Recommended electrical protection value 3x 400 V, incl. auxiliary integrated electric boiler.

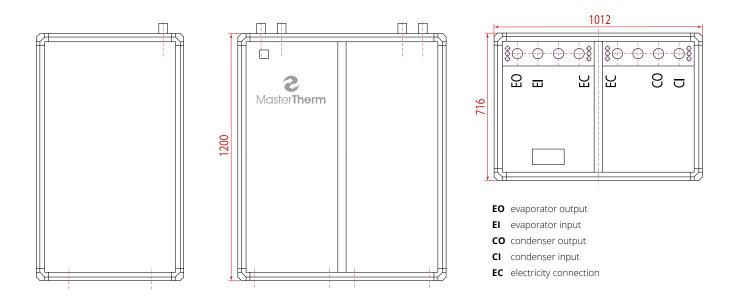
³ Design output at outdoor temperature of -10 °C according to EN 14 825.



DIMENSIONS OF MODEL AQ 120 Z



DIMENSIONS OF MODELS AQ 120 2.Z AND AQ 180.2 Z



kW

kW kW

kW

%

kW

%

m

kg

°C kW

dB(A)

Ground-to-water / water-to-water









From the standard AquaMaster AquaMaster Inverter series

Power range B0W35	
Power B0W35 ¹	
	COP
Object heat loss Q _z	
Power W10W35	
	COP
Seasonal energy efficiency heating –	Power ³
low temperature operation at 35 °C	SCOP
	ηs
	Class
Seasonal energy efficiency heating –	Power ³
medium-temperature operation at 55 °C	SCOP
	ηs
	Class
Approximate required length of the ground well (or the sum of the lengths of several wells)	
Refrigerant	
Electric circuit breaker ²	
Compressor	Connection
Weight	
Mandatory leak checks according to EP 517/2014	
Maximum heating water temperature	
Heating capacity of integrated electric boiler (optional equipment)	
Acoustic performance L _w	
Order number (according to heating circuit control) PLUS Regulation	Regulace PLUS

AquaMaster 60 Z	AquaMaster 75 Z	AquaMaster 90 Z		
-	-	-		
23.1	28.2	33.2		
4.2	4.1	4.3		
up to 23	up to 28	up to 33		
31.2	37.7	45.0		
5.4	5.2	5.4		
23	28	33		
4.27	4.25	4.42		
163	162	169		
A++	A++	A++		
22	26	30		
3.14	3.11	3.10		
118	116	116		
A+	A+	A+		
345	420	495		
R407c	R407c	R407c		
3x 25 A"C"	3x 25 A"C"	3x 32 A"C"		
3x 400 V	3x 400 V	3x 400 V		
245	255	275		
no	no	no		
60	60	60		
4.5-7.5	4.5-7.5	4.5-7.5		
51	51	51		
1AQ60Z-1	1AQ75Z-1	1AQ90Z-1		

AquaMaster Inverter 60 I	AquaMaster Inverter 90 I			
7–35	10-48			
20.2 (60 rpm)	31.3 (90 rpm)			
4.7	4.6			
up to 35	up to 48			
26.6 (60 rpm)	41.2 (90 rpm)			
6.2	5.9			
33	44			
5.02	4.87			
193	187			
A+++	A+++			
33	42			
3.97	3.87			
151	150			
A+++	A+++			
525	720			
R410a	R410a			
3x 32 A"B"	3x 40 A"B"			
3x 400 V	3x 400 V			
180	200			
no	no			
60	60			
7.5	7.5			
55	60			
1AQ60I-1	1AQ90I-1			

Heating circuit control	Designed for	Main heating circuit	Auxiliary heating circuit	Space temperature	Heating Water	Optional
PLUS Regulation	multi-circuit heating systems	yes	independently 2 incl. mixing	in 2 zones	yes	up to 6 heating circuits

¹ Performance data according to EN 14 511, in accordance with EHPA requirements for the award of the Q quality mark. A7W35 60 Hz - air 7 °C, water 35 °C, compressor frequency 60 Hz.

² Recommended electrical protection value 3x 400 V, incl. auxiliary integrated electric boiler.

³ Design output at outdoor temperature of -10 °C according to EN 14 825.





2024

Complete range of heat pumps from 1 to 70 kW with natural refrigerant R290

2023

New manufacturing facility fully completed and optimised to maximise production quantities

2022

New production facility to accommodate fast growing demand

2021

Master Therm Online & pGDx: new level of control and online diagnostics

2018

AQ ZHX: high-temperature heat pump for industry and heat recovery

2017

BoxAir Inverter Split (air-towater): split solution with compressor inside the inner unit

2016

BoxAir 60 Inverter (air-to-water) with EVI: heating and cooling of commercial and industrial buildings

2010

BoxAir Inverter (air-to-water): frequency-controlled compressor and fan

2008

AquaMaster Inverter (ground-to-water): frequency-controlled compressor

2004

AirMaster AKU (air-to-water): 1. heat pump with EEV on Czech market

1994

Foundation of Master Therm brand



Master Therm tepelná čerpadla, s. r. o.

ID number: 28892275 VAT: CZ28892275

Invoicing address

Václavské náměstí 819/43, 110 00 Praha 1, Czech Republic, EU member of Atrea group

Showroom and correspondence address

Okrajová 187, 253 01 Chýně, Czech Republic, EU

Production plant

Dolní Tříč 636, 512 43 Jablonec nad Jizerou, Czech Republic, EU

www.mastertherm.eu

Contact

E-mail: info@mastertherm.cz Telephone: +420 800 444 000

Service dispatch

E-mail: dispecink@mastertherm.cz Telephone: +420 773 744 701