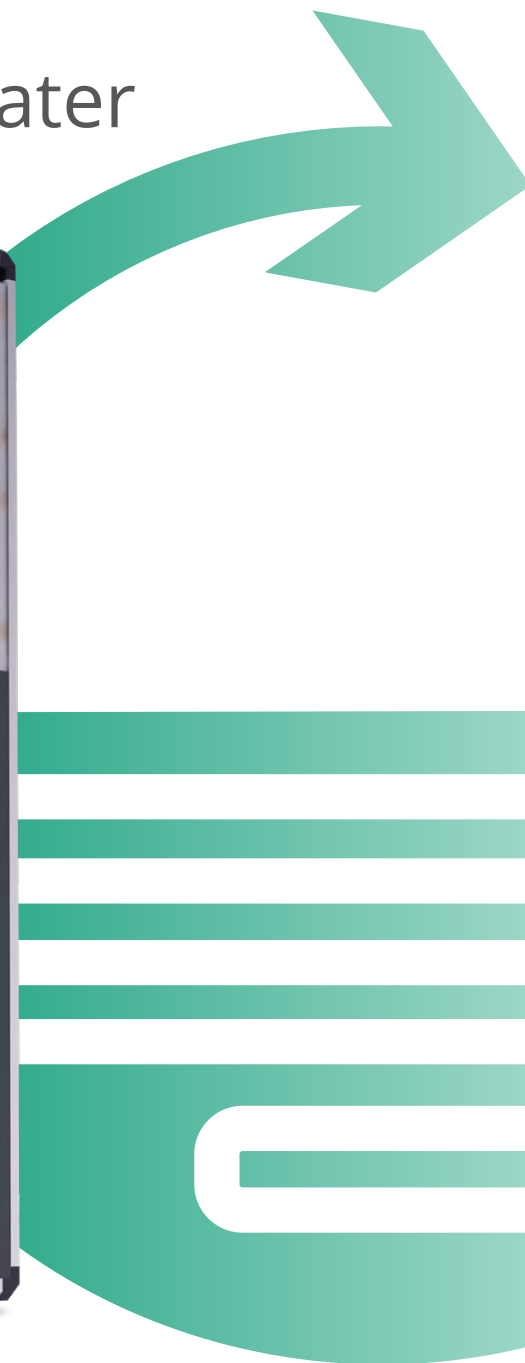


AquaMaster Inverter P Series

Residential ground-to-water



Czech (EU)
product



A tradition
since 1994



Exported into
30 countries
worldwide



7-year
warranty



Online
control

AquaMaster Inverter P

AquaMaster Inverter P is the latest range of heat pumps based on R290 natural refrigerant. It offers even higher performance, efficiency and outlet water temperature up to 75 °C.

By harnessing energy directly from the ground, the AquaMaster Inverter P is marked by a year-round best efficiency, exceptional reliability, and durability.

Suitable for heating and cooling of individual houses and complexes of properties with shared ground wells or horizontal collectors.



AquaMaster Inverter Combi P

With integrated SHW tank.

What does R290 refrigerant bring?

R290 or pure propane is a refrigerant with minimal impact on the environment (global warming potential GWP = 3, ozone depletion potential = 0). Despite its purely natural origin it has suitable thermodynamic properties for heat transfer. This is what R290 heat pumps successfully use to allow even higher heating efficiency and higher output temperature water (up to 75 °C). Safety is assured via a hermetically sealed cooling circuit, leak sensor, automatic shutdown pumps and check valves in the line.

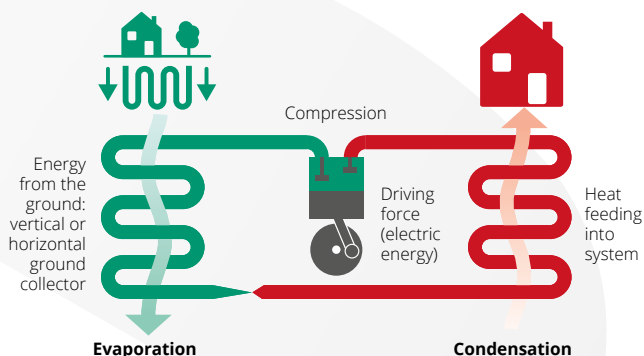


KEY FEATURES OF THE AquaMaster Inverter P SERIES

- High efficiency and future-proofing with near-zero GWP refrigerant R290
- Power up to 6 kW
- Independent of outside temperature or weather
- All internal components fully serviceable
- High reliability and easy maintenance
- Warranty and after-warranty service directly from the manufacturer
- Passive cooling mode as optional
- Integrated control system for up to 6 heating circuits
- Online control and monitoring



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 than that 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 m² 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, it has supplied 170 AquaMaster Inverter heat pumps for a development project in Cardiff, UK, where the pumps are connected to a system of 79 shared ground boreholes. Master Therm also implements special projects such as the system heat recovery in the supercomputer centre at IT4Innovations in Ostrava or reuse of heat within the ČEZ Energo units.



AquaMaster Inverter Combi P

With integrated SHW tank

Extremely compact, quiet and efficient ground-to-water heat pump with an output of up to 6 kW. Ready for low-carbon & sustainable properties.

All in one

Thanks to the compact design the unit occupies minimum space (only 0.3 m²). Available in both left and right configurations.

Total safety

With integrated refrigerant leak detector and automatic shut down of the unit. Thanks to minimum refrigerant volume inside the unit there is no need for ventilation.



Easy installation

Significant time- and cost-saving due to the "all-in-one" solution. A kit for a quick installation (expansion tank, pressure gauge, filter, fittings) also available.

Integrated stainless steel cylinder of 150 l

SHW temperature up to 65 °C. Anti-legionella function from compressor only. No backup heat required.

A⁺⁺⁺ energy efficiency

 7-year warranty

 online control

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
- Cooperation with photovoltaics: **in-built connection to PV inverter**
- Smart tariff & Smart Grid: **automatic optimization of heat pump's operation based on future spot electricity prices**



| Model | Performance at B0W35 | P-Design | Thermal loss of the object Qz | Seasonal energy efficiency of heating at 35 °C low temperature operation | | Seasonal energy efficiency of heating at 55 °C medium temperature operation | | Maximum heating / SHW temperature | Order number (according to heating circuit control) | |
|----------------------------------|----------------------|----------|-------------------------------|--|-------|---|-------|-----------------------------------|---|----------------------------------|
| | kW | kW | kW | SCOP | Class | SCOP | Class | °C | Regulation STANDARD (µPC) | Regulation PLUS (pCO5) |
| AquaMaster 17ICP | 1-6 | 4 | up to 6 | 4,87 | A+++ | 3,76 | A++ | 75 / 65 | AQ17ICP-1-0-0 | AQ17ICP-1-1-0 |
| 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 (SHW) | | | | | | | | | yes | yes |
| Optionally | | | | | | | | | – | up to 6 heating circuits |

Optional equipment

7-year warranty on the complete pump

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

Master Therm Online App

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.

Passive cooling module

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

Passive cooling in external casing.

Room unit for auxiliary heating circuit

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

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

Expansion module for PLUS control

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

Integrated electric meter 1x 25 A

Built-in 1-phase electric meter for local measurement of electricity consumption. MID certification.

RAL colour

Individual colour for pump panels.

Left-side outlets and inlets

Outlets and inlets on the left side of the pump housing (on the right as standard).

KEY FEATURES

- Extremely compact ground-to-water heat pump
- Frequency-controlled compressor with R290 refrigerant
- **Integrated stainless-steel SHW tank with a volume of 150 l**
- Minimum space requirement (0.3 m²)
- Easy installation incl. quick installation kit
- Full serviceability of all components
- Indoor unit sound attenuated to the level of ordinary refrigerators



- Use for **heating and cooling of the building** including SHW preparation
- **Passive cooling module as optional**
- Smart home integration: connectivity to the Internet including 24/7 monitoring, modbus/BMS, integrated MID electric meter
- **Communication with PV inverter and batteries**, connection into Smart Grids etc.
- Integrated circulation pumps for primary and secondary circuit incl. a 3-way valve
- Optional circulation pump on the side primary circuit with a 2-way zonal valve



- **Heating water temperature up to 75 °C**
- **SHW temperature up to 65 °C**
- Anti-legionella function from compressor only



AquaMaster Inverter Combi P



**AquaMaster
17ICP**

| | | | |
|---|--------------------|----|------------|
| Power B0W35 | | | 6 |
| Power B0W35 ¹ | 60 rps | kW | 3.87 |
| | COP | | 4.29 |
| Thermal loss of the object Q _z | | kW | up to 6 |
| P-Design | | kW | 4 |
| Power W10W35 | 60 rps | kW | 5.23 |
| | COP | | 5.75 |
| Seasonal heating energy efficiency at 35 °C low temperature operation | Power ³ | kW | 3.87 |
| | SCOP | | 4.87 |
| | η _s | % | 187 |
| | Class | | A+++ |
| Seasonal heating energy efficiency at 55 °C medium temperature operation | Power ³ | kW | 3.52 |
| | SCOP | | 3.76 |
| | η _s | % | 143 |
| | Class | | A++ |
| Refrigerant | | | R290 |
| Electric circuit breaker ² | | | 1x 20 A"B" |
| Compressor | Connection | | 1x 230 V |
| Weight / operational weight | | kg | 105 / 260 |
| Maximum heating water temperature | | °C | 75 |
| Maximum sanitary hot water temperature | | °C | 65 |
| Approximate required length of ground well (or the sum of the length of several wells) | | m | 90 |

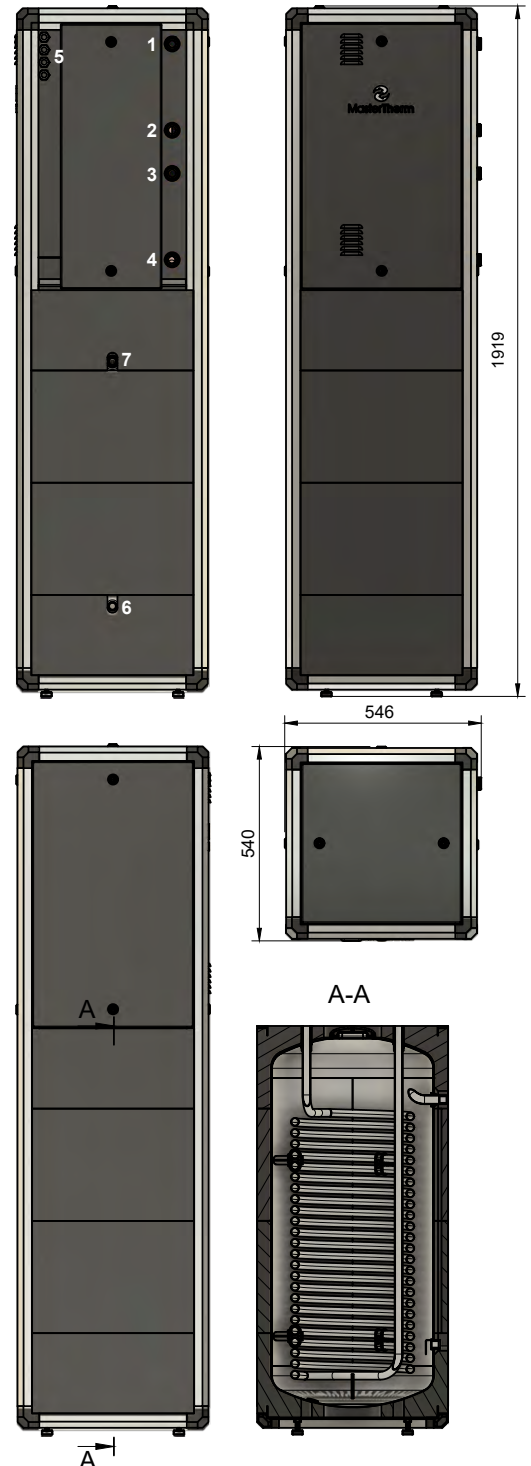
1 Performance data according to EN 14 511, B0W35 60 Hz – antifreezing mix 0 °C, water 35 °C, compressor frequency 60 Hz.

2 Recommended value of electrical protection in basic equipment, without auxiliary electric boiler.

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

DIMENSIONS OF MODEL AQ17ICP

- 1 heating water outlet – 5/4"
- 2 heating water inlet – 5/4"
- 3 evaporator inlet – 5/4"
- 4 evaporator outlet – 5/4"
- 5 electrical connection
- 6 SHW Inlet 1/2"ID
- 7 SHW Outlet 1/2"ID



MASTER THERM HOLDS THE FOLLOWING CERTIFICATES:

European certification mark
The Heat Pump KEYMARK



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).



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.



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) standard, designed for systems for the production of heat and electricity from re-newable sources.

ISO 9001
BUREAU VERITAS
Certification



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.

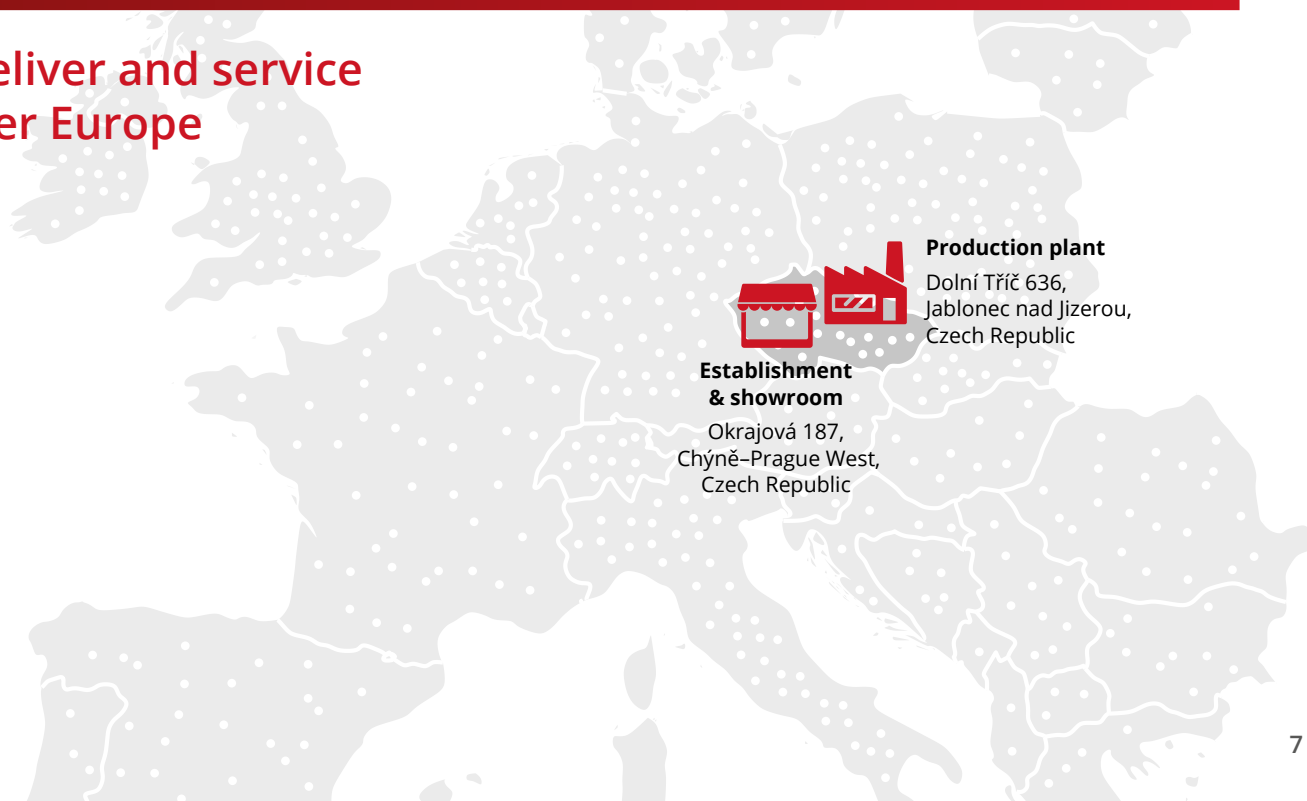


Type conformity assessment protocol

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.

**We deliver and service
all over Europe**



Production plant

Dolní Tříč 636,
Jablonec nad Jizerou,
Czech Republic

Establishment & showroom

Okrajová 187,
Chýně-Prague West,
Czech Republic

7 reasons to choose Master Therm

1 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.

2 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 with 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 an 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.

7 Subsidies



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