MasterTherm

TEPELNÁ ČERPADLA

# Catalogue and Price List

2022/2023

www.mastertherm.eu

# 7 reasons to choose MasterTherm

MasterTherm HEAT PUMPS

## 1 Tradition - since 1994

Traditional and largest Czech producer. More than 10,000 heat pumps sold in more than 20 European countries. In-house research, development and production

## 2 System solutions

High reliability and long lifespan thanks to the robust and practical design. Decreased operational stress: superior design of exchangers, high quality regulation and protection system.

## 3 Innovation for future

Progressive electronic coolant injection technologies (EEV). Inverter compressors, "desuperheater" for heating of hot water. Active and passive cooling. Control and monitoring via the internet. Application for iOS and Android.

## 4 Export

Two thirds of sales are made abroad: Great Britain, the Netherlands, Belgium, Germany, Switzerland, Denmark, Poland, Slovakia, etc.

## 5 Seriousness

Truthful and complete information. Responsible approach to customers. Long-term company strategy based on quality of services.

## 6 Subsidies

Master Therm heat pumps are registered in many EU countries in national subsidy programs.

## 7 Awards and certificates

Eighteen important awards from international fairs. Quality management certificate, certificates from authorized Testing Institute, Q - Label certificate, HP Keymart certificate, etc.

European Quality Label for Heat Pumps ehpa

European certification mark
The Heat Pump KEYMARK
037

**Quality mark "Q-Label" (European Quality Certificate)** - The methodology for the qualitative evaluation of heat pumps Q-Label developed by the European Heat Pump Association (EHPA) is the most thorough and comprehensive system for measuring and certifying heat pumps on the European market.

**Heat Pump KEYMARK (quality certificate for the single European market)** - Master Therm heat pumps are certified according to the European Heat Pump KEYMARK program. The Heat Pump KEYMARK is a European independent quality certificate for heat pumps entering the European 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 standards)** - Performance parameters and conformity of product features with the requirements of the ČSN EN 14 511 standard. Engineering testing institute, state enterprise, Brno.

**BBA MCS (British Quality Certificate which allows to draw British government incentives)** - Master Therm heat pumps are certified by a major British certification authority BBA (British Board of Agriculture) according to the MCS standard (Microgeneration Certification Scheme) designed for heat production systems and electricity from renewable sources.

**Certificate ISO 9001:2015 (International Quality Certificate** - Certificate of quality management system according to ISO 9001:2015. Certification area: Production, sale, installation and service of heat pumps. Certification body: BUREAU VERITAS GROUP.

ISO 9001 BUREAU VERITAS Certification

# Heat pumps - specifications

MasterTherm HEAT PUMPS

| Model | Seasonal heating energy efficiency - low-temperature operation 35°C | | | | Seasonal heating energy efficiency - medium-temperature operation 55°C | | | | Leakage control of refrigerant circuit EP 517/2014 | Max. heating water temperature | STANDARD single-circuit heating systems (µPC) | PLUS multi-circuit heating systems (pCO5) | Acoustic power level Lw | Sound pressure level Lp (dBA) at a distance from the outdoor unit | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Power (kW) | SCOP | ηs % | Class | Power (kW) | SCOP | ηs % | Class | | °C | Price EUR EXW CZ | Price EUR EXW CZ | dB"A" | external unit dB"A" | | |
| | | | | | | | | | | | | | | 1 m | 5 m | 10 m |
| **BoxAir (air to water, compact)** | | | | | | | | | | | | | | | | |
| **BA75Z** | 31 | 3,61 | 141 | A+ | 30 | 2,92 | 114 | A+ | ano | 55 | - | 13 440,- | 69 | 60 | **48** | 42 |
| **BoxAir Inverter models BA22I - BA45I WITH NEW DESIGN (air to water, compact, inverter)** | | | | | | | | | | | | | | | | |
| **BA22I** | 5 | 4,18 | 172 | A++ | 4 | 3,22 | 130 | A++ | no | 60 | 7 770,- | 8 210,- | 58 | 49 | **37** | 31 |
| **BA26I** | 7 | 4,39 | 168 | A++ | 6 | 3,35 | 126 | A++ | no | 60 | 7 890,- | 8 340,- | 58 | 49 | **37** | 31 |
| **BA30I** | 8 | 4,48 | 187 | A+++ | 7 | 3,44 | 141 | A++ | no | 60 | 9 500,- | 9 940,- | 58 | 49 | **37** | 31 |
| **BA37I** | 11 | 4,43 | 176 | A+++ | 10 | 3,45 | 137 | A++ | no | 60 | 10 160,- | 10 590,- | 62 | 53 | **41** | 35 |
| **BA45I** | 13 | 4,37 | 172 | A+++ | 12 | 3,47 | 136 | A++ | no | 60 | 10 810,- | 11 250,- | 62 | 53 | **41** | 35 |
| **BA60I** | 23 | 4,50 | 177 | A+++ | 22 | 3,45 | 135 | A++ | yes | 64 | - | 15 190,- | 66 | 57 | **45** | 39 |
| **BoxAir Inverter - models BA22I - BA45I WITH OLD DESIGN - DISCOUNTED PRICE (air to water, compact, inverter)** | | | | | | | | | | | | | | | | |
| **BA22I** | 5 | 4,18 | 172 | A++ | 4 | 3,22 | 130 | A++ | no | 60 | 7 400,- | 7 820,- | 58 | 49 | **37** | 31 |
| **BA26I** | 7 | 4,39 | 168 | A++ | 6 | 3,35 | 126 | A++ | no | 60 | 7 510,- | 7 940,- | 58 | 49 | **37** | 31 |
| **BA30I** | 8 | 4,48 | 187 | A+++ | 7 | 3,44 | 141 | A++ | no | 60 | 9 050,- | 9 470,- | 58 | 49 | **37** | 31 |
| **BA37I** | 11 | 4,43 | 176 | A+++ | 10 | 3,45 | 137 | A++ | no | 60 | 9 680,- | 10 090,- | 62 | 53 | **41** | 35 |
| **BA45I** | 13 | 4,37 | 172 | A+++ | 12 | 3,47 | 136 | A++ | no | 60 | 10 290,- | 10 710,- | 62 | 53 | **41** | 35 |
| **BoxAir Inverter Split (air to water, split, inverter, outdoor or indoor installation)** | | | | | | | | | | | | | | | | |
| **BA22IS** | 5 | 4,18 | 172 | A++ | 4 | 3,22 | 130 | A++ | no | 60 | - | 9 700,- | 55 | 46 | **34** | 28 |
| **BA26IS** | 7 | 4,39 | 168 | A++ | 6 | 3,35 | 126 | A++ | no | 60 | - | 9 820,- | 55 | 46 | **34** | 28 |
| **BA37IS** | 8 | 4,48 | 187 | A+++ | 7 | 3,44 | 141 | A++ | no | 60 | - | 10 680,- | 62 | 53 | **41** | 35 |
| **BA45IS** | 11 | 4,43 | 176 | A+++ | 10 | 3,45 | 137 | A++ | no | 60 | - | 11 430,- | 62 | 53 | **41** | 35 |
| **BA60IS** | 13 | 4,37 | 172 | A+++ | 12 | 3,47 | 136 | A++ | yes | 64 | - | 16 470,- | 58 | 49 | **37** | 31 |
| **BoxAir Inverter Split Combi (air to water, split, inverter, built-in stainless steel tray 170 l, outdoor or indoor installation)** | | | | | | | | | | | | | | | | |
| **BA22ISC** | 7 | 4,39 | 168 | A++ | 6 | 3,35 | 126 | A++ | no | 60 | - | 11 270,- | 55 | 46 | **34** | 28 |
| **BA26ISC** | 8 | 4,48 | 187 | A+++ | 7 | 3,44 | 141 | A++ | no | 60 | - | 11 630,- | 55 | 46 | **34** | 28 |
| **BA37ISC** | 11 | 4,43 | 176 | A+++ | 10 | 3,45 | 137 | A++ | no | 60 | - | 13 720,- | 62 | 53 | **41** | 35 |
| **EasyMaster (air-water, on-off, split with the possibility of indoor installation)** | | | | | | | | | | | | | | | | |
| **EM60Z** | 25 | 3,56 | 140 | A+ | 24 | 2,86 | 111 | A+ | yes | 55 | - | 13 470,- | 69 | 60 | **48** | 42 |
| **EM75Z** | 31 | 3,61 | 141 | A+ | 30 | 2,92 | 114 | A+ | yes | 55 | - | 14 750,- | 69 | 60 | **48** | 42 |
| **AquaMaster (brine to water, water to water, on-off)** | | | | | | | | | | | | | | | | |
| **AQ22Z** | 8 | 4,5 | 172 | A++ | 7 | 3,17 | 117 | A+ | no | 60 | 6 610,- | 7 030,- | 48 | | | |
| **AQ26Z** | 10 | 4,34 | 166 | A++ | 9 | 3,11 | 116 | A+ | no | 60 | 6 870,- | 7 320,- | 48 | | | |
| **AQ30Z** | 11 | 4,29 | 164 | A++ | 11 | 3,10 | 116 | A+ | no | 60 | 7 160,- | 7 590,- | 48 | | | |
| **AQ37Z** | 14 | 4,46 | 170 | A++ | 13 | 3,16 | 118 | A+ | no | 60 | 7 820,- | 8 240,- | 49 | | | |
| **AQ45Z** | 17 | 4,61 | 176 | A++ | 16 | 3,19 | 120 | A+ | no | 60 | 8 190,- | 8 610,- | 49 | | | |
| **AQ60Z** | 23 | 4,27 | 163 | A++ | 22 | 3,14 | 118 | A+ | no | 60 | - | 10 350,- | 51 | | | |
| **AQ75Z** | 28 | 4,25 | 162 | A++ | 26 | 3,11 | 116 | A+ | no | 60 | - | 10 820,- | 51 | | | |
| **AQ90Z** | 33 | 4,42 | 169 | A++ | 30 | 3,10 | 116 | A+ | no | 60 | - | 11 330,- | 51 | | | |
| **AQ120.2Z** | 47 | 4,51 | 172 | A++ | 43 | 3,22 | 121 | A+ | yes | 60 | - | 19 520,- | 60 | | | |
| **AQ150.2Z** | 57 | 4,38 | 167 | A++ | 52 | 3,19 | 119 | A+ | yes | 60 | - | 21 140,- | 60 | | | |
| **AQ180.2Z** | 64 | 4,5 | 172 | A++ | 61 | 3,35 | 126 | A++ | yes | 60 | - | 21 820,- | 60 | | | |
| **AQ240.2Z** | 93 | 5,44 | 210 | A+++ | 75 | 3,81 | 145 | A++ | yes | 60 | - | 25 830,- | 60 | | | |
| **AquaMaster Inverter (brine to water, water to water, inverter)** | | | | | | | | | | | | | | | | |
| **AQ17I** | 5 | 4,65 | 179 | A+++ | 4 | 3,53 | 133 | A++ | no | 60 | 6 790,- | - | 49 | | | |
| **AQ22I** | 7 | 4,61 | 177 | A+++ | 6 | 3,53 | 133 | A++ | no | 60 | 8 070,- | 8 510,- | 48 | | | |
| **AQ26I** | 9 | 4,83 | 185 | A+++ | 8 | 3,74 | 141 | A++ | no | 60 | 8 420,- | 8 860,- | 48 | | | |
| **AQ30I** | 11 | 4,85 | 186 | A+++ | 11 | 3,78 | 143 | A++ | no | 60 | 8 830,- | 9 260,- | 48 | | | |
| **AQ37I** | 15 | 5 | 193 | A+++ | 14 | 3,94 | 151 | A+++ | no | 60 | 9 510,- | 9 950,- | 48 | | | |
| **AQ45I** | 21 | 4,8 | 184 | A+++ | 19 | 3,70 | 151 | A+++ | no | 60 | 10 160,- | 10 590,- | 48 | | | |
| **AQ60I** | 33 | 5,02 | 193 | A+++ | 33 | 3,97 | 151 | A+++ | no | 60 | - | 13 320,- | 55 | | | |
| **AQ90I** | 44 | 4,87 | 187 | A+++ | 42 | 3,87 | 150 | A+++ | no | 60 | - | 15 850,- | 60 | | | |
| **AquaMaster Inverter Combi (brine to water, water to water, inverter, built-in stainless steel tray 170 l)** | | | | | | | | | | | | | | | | |
| **AQ22IC** | 7 | 4,61 | 177 | A+++ | 6 | 3,53 | 133 | A++ | no | 60 | 10 840,- | 11 280,- | 48 | | | |
| **AQ26IC** | 9 | 4,83 | 185 | A+++ | 8 | 3,74 | 141 | A++ | no | 60 | 11 130,- | 11 580,- | 48 | | | |
| **AQ30IC** | 11 | 4,85 | 186 | A+++ | 11 | 3,78 | 143 | A++ | no | 60 | 11 960,- | 12 400,- | 48 | | | |
| **AQ37IC** | 15 | 5 | 193 | A+++ | 14 | 3,94 | 151 | A+++ | no | 60 | 12 280,- | 12 710,- | 48 | | | |

*From September 2015, heat pumps must be equipped with an energy label. The energy label is used to classify individual heat pumps according to their energy efficiency (heating efficiency). The highest rating is class A ++, the lowest class G. The decisive factor for determining energy efficiency is the seasonal heating factor SCOP. The methodology for determining energy efficiency is given by the standard ČSN EN 14 825.*

*Master Therm heat pumps are tested and certified accredited Engineering testing institute, s.p. in Brno.*

STROJÍRENSKÝ ZKUŠEBNÍ ÚSTAV CERTIFIKOVÁNO

# NEW BoxAir Inverter

air - water

inverter

| model | A7W35 | Heat loss Qz (kW) | A7W35 60Hz[1] | | A2W35 60Hz | | A-7W35 80Hz | | A-15W35 90Hz | | Seasonal heating energy efficiency - low-temperature operation 35°C | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Power (kW) | | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW)[3] | SCOP | ηs % | Class |
| **BoxAir 22I** | **2-7** | **do 5,5** | 4,9 | **4,7** | 3,6 | 3,5 | 3,6 | 2,8 | 3,2 | 2,6 | 5 | **4,18** | 172 | **A++** |
| **BoxAir 26I** | **3-9** | **do 8,5** | 8,1 | **4,8** | 5,8 | 3,5 | 5,5 | 2,8 | 5,1 | 2,5 | 7 | **4,39** | 168 | **A++** |
| **BoxAir 30I** | **5-12** | **do 10** | 8,65 | **5,2** | 6,25 | 3,8 | 6,0 | 2,9 | 5,3 | 2,4 | 8 | **4,48** | 187 | **A+++** |
| **BoxAir 37I** | **5-17** | **do 13** | 11,5 | **4,7** | 8,8 | 3,7 | 8,7 | 2,8 | 8,2 | 2,3 | 11 | **4,43** | 176 | **A+++** |
| **BoxAir 45I** | **7-22** | **do 16** | 15,3 | **4,7** | 10,6 | 3,5 | 11,1 | 2,75 | 9,8 | 2,2 | 13 | **4,37** | 172 | **A+++** |

1) Performance data according to ČSN EN 14 511, in accordance with the EHPA requirements for quality mark Q. A7W35 60 Hz - air 7 °C, water 35 °C, compressor frequency 60 Hz
2) Recommended value of el. 3x400V fuse, incl. Auxiliary integrated electric boiler. The units 22I, 26I and 30I can also be connected to a 1x230V network with 40A"B"(22I), resp. 50A"B"(26I, 30I).
3) Design power at outdoor temperature -10 ° C according to ČSN EN 14 825.

| Options | Order code | Price EUR EXW CZ |
|---|---|---|
| Internet connection - WIFI, ethernet, only with touch screen pGDx | 10ICON | 350,- |
| Full cooling mode (for air/water HP) | 10CH | 296,- |
| Terminal pAD - temperature compensation for next heat. circuit | 10PAD | 189,- |
| Terminal pADh - temperature compensation for next heat. circuit with dew point watching (floor cooling) | 10PADH | 291,- |
| Extended control module (up to 6 heat. circuits+SHW, for PLUS v. only) | 10EK | 438,- |
| Energy meter 3x65A, display, MID | 10EM65AMID | 398,- |
| Heat pump colour on demand, RAL code | 10CO | 266,- |
| Silver colour RAL 9006 | | FOC |
| RAL 9006 | | |

## Standard equipment

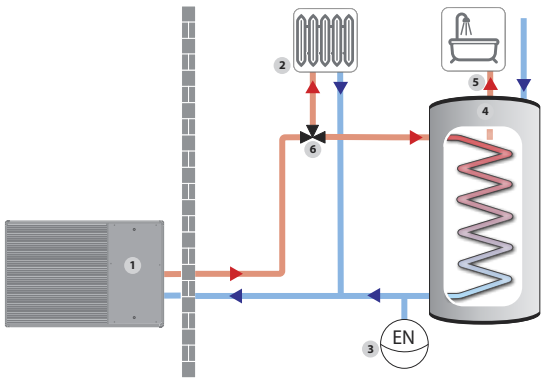
- ✔ pGDx touch screen with room termostat functionality
- ✔ New ultra-quiet fans with stepless speed control
- ✔ Equitherm control system MaR
- ✔ Built-in immersion heater and circulation pump
- ✔ Electronically controlled coolant injection

## Features

- ▶ Outdoor compact – NEW DESIGN
- ▶ Use for heating, cooling and SHW heating
- ▶ The temperature of heating water to 60 °C
- ▶ Outdoor temperature range from +40°C to -20°C
- ▶ Easy installation without opening the cooling circuit
- ▶ Low demand on the volume of heating water in heating system
- ▶ Possibility to control up to 6 heating circuits and SHW heating
- ▶ Remote access and online service diagnostics
- ▶ Cascade connection support
- ▶ Minimum demands on interior spaces
- ▶ Zero noise level inside the building
- ▶ New condensate drain solution

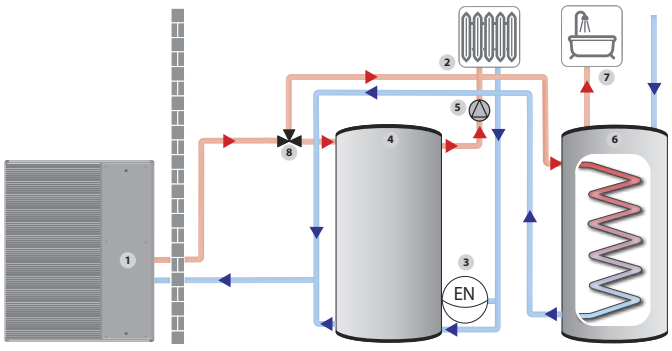
**Heat pump connected directly to the heating system with 3wv for domestic hot water (dhw) preparation.** ***1-heat pump, 2-heating system, 3-expansion vessel, 4-dhw tank with coil, 5-dhw outlet, 6-3way valve***

The heat pump (1) is directly connected to heating system. Heating water temperature is controlled according to a weather compensation curve. Production of hot water is a priority over the heating system by switching the 3wv (6) to the dhw tank (4). The heat pump increases the outlet water temperature until the requested dhw temperature is achieved, once achieved the heat pump switches the 3wv back to heating operation. This type of system is ideally suited to underfloor heating systems (ufh) but also systems with radiators with a large volume of heating water utilising our pAD room terminal. This solution limits the possibility of local zone control (independent loop ufh, thermostatic valves on radiators).




**Heat pump connected to a buffer tank and 3wv to the domestic hot water cylinder (dhw)** ***1-heat pump, 2-heating system, 3-expansion vessel, 4-buffer tank, 5-heating circulator pump, 6-dhw tank with coil, 7- dhw outlet, 8-3way valve***

Heat pump (1) connected to the heating system through a buffer tank (4) which has the function of thermal buffer and a low loss header. Heating water temperature is controlled according to a weather compensation curve. The flow to the heating system is controlled by the main heating circulation pump. Production of hot water is a priority over the heating system by switching the 3wv (8) to the dhw tank (6). The heat pump increases the outlet water temperature until the requested dhw temperature is achieved, once achieved the heat pump switches the 3wv back to heating operation. This solution is ideally suited to systems with low heat buffering capacity and systems that require independent room zone control. Additionally, this type of system has the ability to integrate a secondary source of heat into the buffer tank (4) such as a wood stove with back boiler.

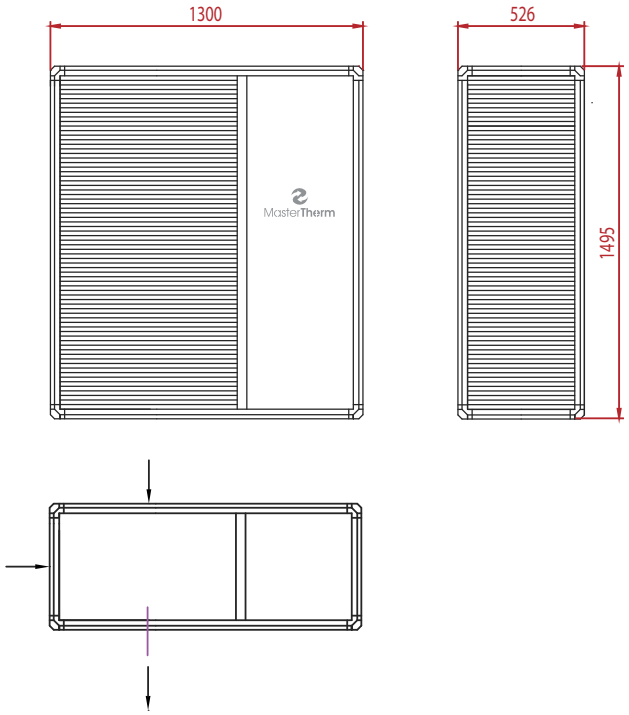


-20°C Minimal Source temp. | 60°C Heating water temperature | A+++ Energy efficiency | Heating and cooling | Ecological Refrigerant R410a | Apps | Czech product

MasterTherm HEAT PUMPS

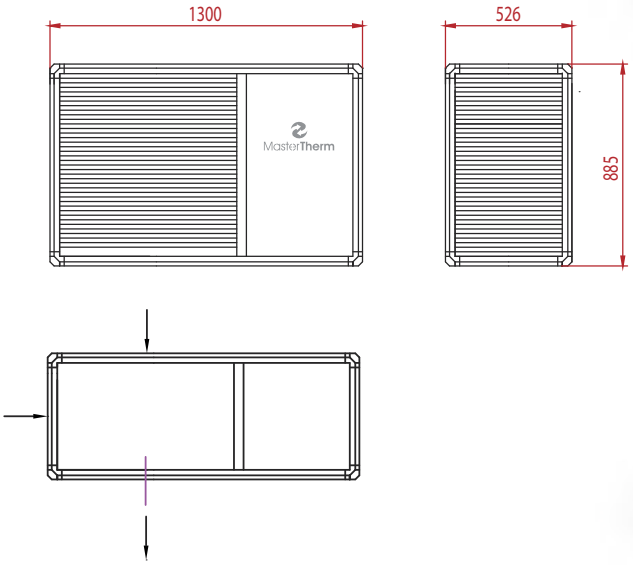
| Seasonal heating energy efficiency - medium-temperature operation 55°C | | | | Circuit breaker[2] | | Compressor, supply voltage 3ph/1ph | Weight (kg) | Leakage control of refrigerant circuit EP 517/2014 | STANDARD (µPC) Price EUR EXW CZ | PLUS (pCO5) Price EUR EXW CZ |
|---|---|---|---|---|---|---|---|---|---|---|
| Power (kW)[3] | SCOP | ηs % | Class | 3 phase units | 1 phase units | | | | | |
| 4 | **3,22** | 130 | **A++** | 16A"B" | 20A"B" | 1x230/1x230 V~ | 115 | ne | **7 770,-** | **8 210,-** |
| 6 | **3,35** | 126 | **A++** | 20A"B" | 20A"B" | 1x230/1x230 V~ | 120 | ne | **7 890,-** | **8 340,-** |
| 7 | **3,44** | 141 | **A++** | 25A"B" | 25A"B" | 1x230/1x230 V~ | 155 | ne | **9 500,-** | **9 940,-** |
| 10 | **3,45** | 137 | **A++** | 25A"B" | 25A"B" | 3x400/1x230 V~ | 165 | ne | **10 160,-** | **10 590,-** |
| 12 | **3,47** | 136 | **A++** | 32A"B" | 32A"B" | 3x400/1x230 V~ | 165 | ne | **10 810,-** | **11 250,-** |

*Dimensions and connections: BA30I and BA45I:*




| Heating circuits control | STANDARD (µPC) | PLUS (pCO5) |
|---|---|---|
| Intended for | single-circuit heating systems | multi-circuit heating systems |
| Main heating circuit | Yes | Yes |
| Secondary heating circuit | - | 2 independent including mixing |
| Room temperature | In 1 zone | In 2 zones |
| SHW | Yes | Yes |
| Optional | - | Up to 6 heating circuits |

*Dimensions and connections: BA22I and BA26I*




# BoxAir Inverter

air - water

inverter

| model | A7W35 | Heat loss Qz (kW) | A7W35 60Hz[1] | | A2W35 60Hz | | A-7W35 80Hz | | A-15W35 90Hz | | Seasonal heating energy efficiency - low-temperature operation 35°C | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Power (kW) | | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW)[3] | SCOP | ηs % | Class |
| **BoxAir 22I** | **2-7** | **do 5,5** | 4,9 | **4,7** | 3,6 | 3,5 | 3,6 | 2,8 | 3,2 | 2,6 | 5 | **4,18** | 172 | **A++** |
| **BoxAir 26I** | **3-9** | **do 8,5** | 8,1 | **4,8** | 5,8 | 3,5 | 5,5 | 2,8 | 5,1 | 2,5 | 7 | **4,39** | 168 | **A++** |
| **BoxAir 30I** | **5-12** | **do 10** | 8,65 | **5,2** | 6,25 | 3,8 | 6,0 | 2,9 | 5,3 | 2,4 | 8 | **4,48** | 187 | **A+++** |
| **BoxAir 37I** | **5-17** | **do 13** | 11,5 | **4,7** | 8,8 | 3,7 | 8,7 | 2,8 | 8,2 | 2,3 | 11 | **4,43** | 176 | **A+++** |
| **BoxAir 45I** | **7-22** | **do 16** | 15,3 | **4,7** | 10,6 | 3,5 | 11,1 | 2,75 | 9,8 | 2,2 | 13 | **4,37** | 172 | **A+++** |

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

[2] Recommended value of el. 3x400V fuse, incl. Auxiliary integrated electric boiler. The units 22I, 26I and 30I can also be connected to a 1x230V network with 40A"B"(22I), resp. 50A"B"(26I, 30I).

[3] Design power at outdoor temperature -10 °C according to ČSN EN 14 825.

| Options | Order code | Price EUR EXW CZ |
|---|---|---|
| Internet connection - WIFI, ethernet, only with touch screen pGDx | **10ICON** | **350,-** |
| Full cooling mode (for air/water HP) | **10CH** | **296,-** |
| Terminal pAD - temperature compensation for next heat. circuit | **10PAD** | **189,-** |
| Terminal pADh - temperature compensation for next heat. circuit with dew point watching (floor cooling) | **10PADH** | **291,-** |
| Extended control module (up to 6 heat. circuits+SHW, for PLUS v. only) | **10EK** | **438,-** |
| Energy meter 3x65A, display, MID | **10EM65AMID** | **398,-** |
| Heat pump colour on demand, RAL code | **10CO** | **266,-** |
| Silver colour RAL 9006 | | **FOC** |
| RAL 9006 | | |

## Standard equipment

- ✔ pGDx touch screen with room termostat functionality
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- ✔ Built-in immersion heater and circulation pump
- ✔ Electronically controlled coolant injection

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- ▶ Use for heating, cooling and SHW heating
- ▶ The temperature of heating water to 60 °C
- ▶ Outdoor temperature range from +40°C to -20°C
- ▶ Easy installation without opening the cooling circuit
- ▶ Low demand on the volume of heating water in heating system
- ▶ Possibility to control up to 6 heating circuits and SHW heating
- ▶ Remote access and online service diagnostics
- ▶ Cascade connection support
- ▶ Minimum demands on interior spaces
- ▶ Zero noise level inside the building
- ▶ New condensate drain solution

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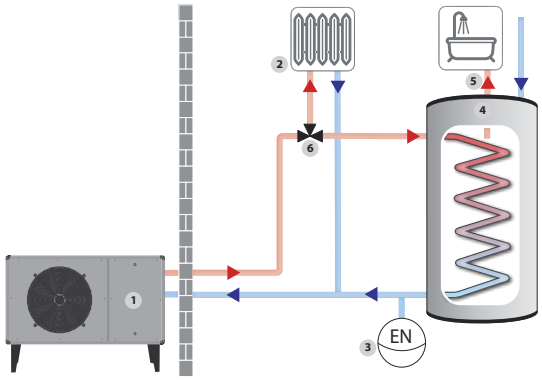
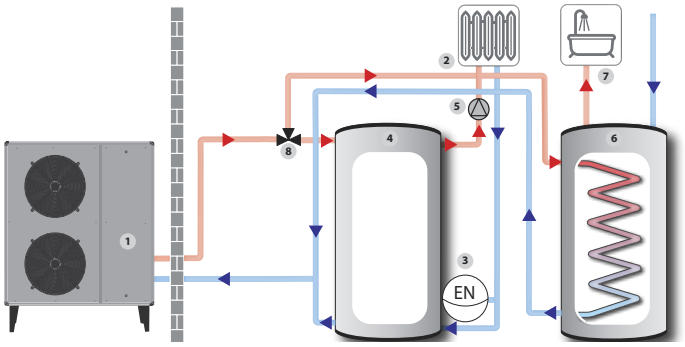



**Heat pump connected to a buffer tank and 3wv to the domestic hot water cylinder (dhw)** ***1-heat pump, 2-heating system, 3-expansion vessel, 4-buffer tank, 5-heating circulator pump, 6-dhw tank with coil, 7- dhw outlet, 8-3way valve***

Heat pump (1) connected to the heating system through a buffer tank (4) which has the function of thermal buffer and a low loss header. Heating water temperature is controlled according to a weather compensation curve. The flow to the heating system is controlled by the main heating circulation pump. Production of hot water is a priority over the heating system by switching the 3wv (8) to the dhw tank (6). The heat pump increases the outlet water temperature until the requested dhw temperature is achieved, once achieved the heat pump switches the 3wv back to heating operation. This solution is ideally suited to systems with low heat buffering capacity and systems that require independent room zone control. Additionally, this type of system has the ability to integrate a secondary source of heat into the buffer tank (4) such as a wood stove with back boiler.

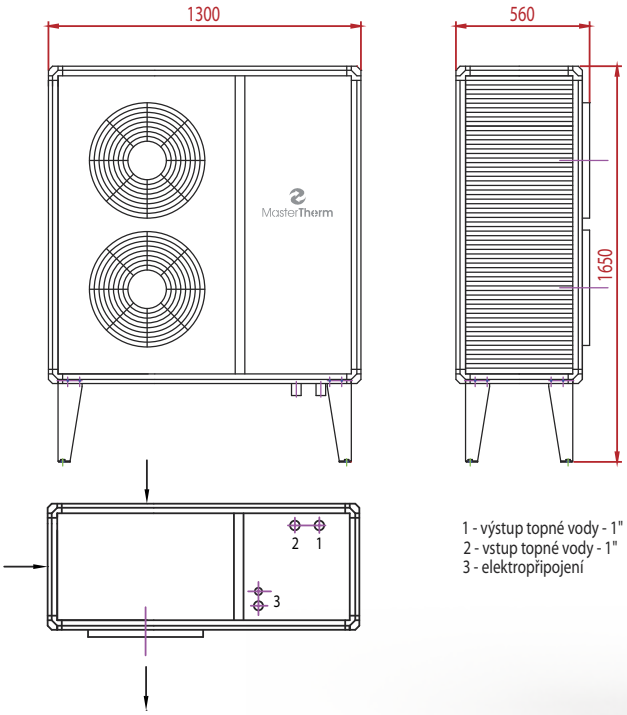


-20°C Minimal Source temp. | 60°C Heating water temperature | A+++ Energy efficiency | Heating and cooling | Ecological Refrigerant R410a | Apps | Czech product

MasterTherm HEAT PUMPS

| Seasonal heating energy efficiency - medium-temperature operation 55°C | | | | Circuit breaker[2] | | Compressor, supply voltage 3ph/1ph | Weight (kg) | Leakage control of refrigerant circuit EP 517/2014 | STANDARD (µPC) Price EUR EXW CZ | PLUS (pCO5) Price EUR EXW CZ |
|---|---|---|---|---|---|---|---|---|---|---|
| Power (kW)[3] | SCOP | ηs % | Class | 3 phase units | 1 phase units | | | | | |
| 4 | **3,22** | 130 | **A++** | 16A"B" | 20A"B" | 1x230/1x230 V~ | 115 | ne | **7 400,-** | **7 820,-** |
| 6 | **3,35** | 126 | **A++** | 20A"B" | 20A"B" | 1x230/1x230 V~ | 120 | ne | **7 510,-** | **7 940,-** |
| 7 | **3,44** | 141 | **A++** | 25A"B" | 25A"B" | 1x230/1x230 V~ | 155 | ne | **9 050,-** | **9 470,-** |
| 10 | **3,45** | 137 | **A++** | 25A"B" | 25A"B" | 3x400/1x230 V~ | 165 | ne | **9 680,-** | **10 090,-** |
| 12 | **3,47** | 136 | **A++** | 32A"B" | 32A"B" | 3x400/1x230 V~ | 165 | ne | **10 290,-** | **10 710,-** |

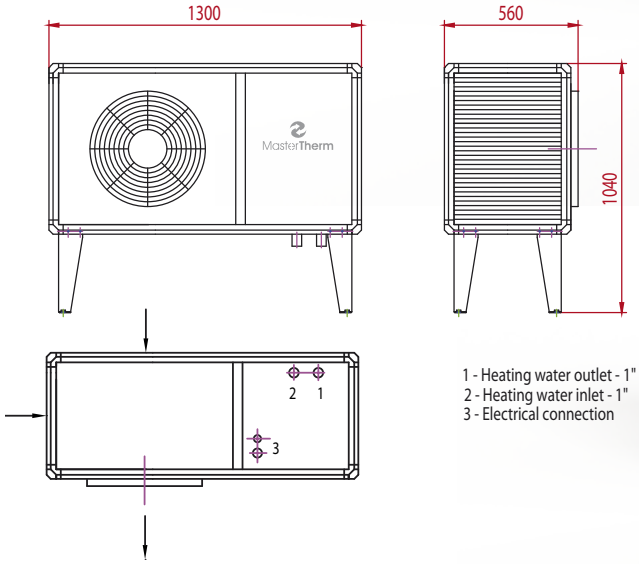
*Dimensions and connections: BA30I and BA45I:*




1 - výstup topné vody - 1"
2 - vstup topné vody - 1"
3 - elektropřipojení

| Heating circuits control | STANDARD (µPC) | PLUS (pCO5) |
|---|---|---|
| Intended for | single-circuit heating systems | multi-circuit heating systems |
| Main heating circuit | Yes | Yes |
| Secondary heating circuit | - | 2 independent including mixing |
| Room temperature | In 1 zone | In 2 zones |
| SHW | Yes | Yes |
| Optional | - | Up to 6 heating circuits |

*Dimensions and connections: BA22I and BA26I*




1 - Heating water outlet - 1"
2 - Heating water inlet - 1"
3 - Electrical connection

# NEW BoxAir Inverter Split

air - water

inverter

| Model | A7W35 | Heat loss Qz (kW) | A7W35 60Hz[1] | | A2W35 60Hz | | A-7W35 80Hz | | A-15W35 90Hz | | Seasonal heating energy efficiency - low-temperature operation 35°C | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Power (kW) | | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW)[3] | SCOP | ηs % | Class |
| **BoxAir-22IS** | **2-7** | **do 5,5** | 4,9 | **4,7** | 3,6 | 3,5 | 3,6 | 2,8 | 3,2 | 2,6 | 5 | **4,18** | 172 | **A++** |
| **BoxAir-26IS** | **3-9** | **do 8,5** | 8,1 | **4,6** | 5,6 | 3,5 | 5,5 | 2,8 | 5,1 | 2,4 | 7 | **4,39** | 168 | **A++** |
| **BoxAir-37IS** | **5-17** | **do 13** | 11,5 | **4,7** | 8,8 | 3,7 | 8,7 | 2,8 | 8,2 | 2,3 | 11 | **4,43** | 176 | **A+++** |
| **BoxAir-45IS** | **7-22** | **do 16** | 15,3 | **4,7** | 10,6 | 3,5 | 11,1 | 2,75 | 9,8 | 2,2 | 13 | **4,37** | 172 | **A+++** |

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

2) Recommended value of el. 3x400V fuse, incl. Auxiliary integrated electric boiler. The units can also be connected to a 1x230V network with 40A"B"(22I), resp. 50A"B"(26I).

3) Design power at outdoor temperature -10 °C according to ČSN EN 14 825.

| Options | Order code | Price EUR EXW CZ |
|---|---|---|
| Internet connection - WIFI, ethernet, only with touch screen pGDx | 10ICON | 350,- |
| Full cooling mode (for air/water HP) | 10CH | 296,- |
| Desuperheater for highly efficient SHW heating | 10DESUP | 322,- |
| Terminal pAD - temperature compensation for next heat. circuit | 10PAD | 189,- |
| Terminal pADh - temperature compensation for next heat. circuit with dew point watching (floor cooling) | 10PADH | 291,- |
| Extended control module (up to 6 heat. circuits+SHW, for PLUS v. only) | 10EK | 438,- |
| Energy meter 3x65A, display, MID | 10EM65AMID | 398,- |
| Heat pump colour on demand, RAL code - external or internal unit | 10CO | 266,- |
| Silver colour RAL 9006 | | FOC |
| Console for hanging the outdoor units on the wall | | FOC |
| RAL 9006 | | |

## Standard equipment

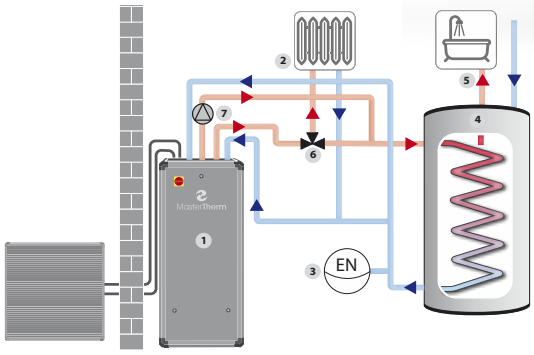
- ✔ pGDx touch screen with room termostat functionality
- ✔ Variable output Inverter Compressor
- ✔ New ultra-quiet fans with stepless speed control
- ✔ Equitherm control system MaR
- ✔ Built-in immersion heater and circulation pump
- ✔ Electronically controlled coolant injection

## Features

- ▶ Split construction – NEW DESIGN
- ▶ Use for heating, cooling and SHW heating
- ▶ The temperature of heating water to 60 °C
- ▶ Outdoor temperature range from +40°C to -20°C
- ▶ Distance between indoor and outdoor unit up to 15 m
- ▶ Low demand on the volume of heating water in heating system
- ▶ Possibility to control up to 6 heating circuits and SHW heating
- ▶ Remote access and online service diagnostics
- ▶ Cascade connection support
- ▶ Outdoor unit without compressor - extremely quiet
- ▶ New condensate drain solution

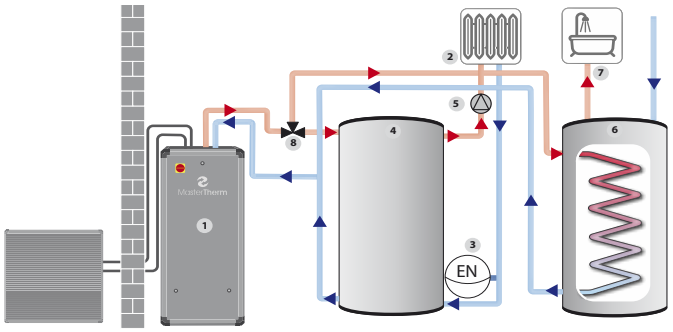
**Heat pump connected directly to the heating system with 3wv for domestic hot water (dhw) preparation.**
***1-heat pump, 2-heating system, 3-expansion vessel, 4-dhw tank with coil, 5-dhw outlet, 6-3way valve, 7- desuperheater circulator pump***

The heat pump (1) is directly connected to heating system. Heating water temperature is controlled according to a weather compensation curve. Production of hot water is a priority over the heating system by switching the 3wv (6) to the dhw tank (4). The heat pump increases the outlet water temperature until the requested dhw temperature is achieved, once achieved the heat pump switches the 3wv back to heating operation. This type of system is ideally suited to underfloor heating systems (ufh) but also systems with radiators with a large volume of heating water utilising our pAD room terminal. The desuperheater (optional equipment) is a additional exchanger which harvests high potential energy from compressor outlet. An independent circuit with circulator pump (9) is used for high efficiency dhw preparation during heating mode. This solution limits the possibility of local zone control (independent loop ufh, thermostatic valves on radiators).




**Heat pump connected to a buffer tank and 3wv to the domestic hot water cylinder (dhw)**
***1-heat pump, 2-heating system, 3-expansion vessel, 4-buffer tank, 5-heating circulator pump, 6-dhw tank with coil, 7- dhw outlet, 8-3way valve***

The heat pump (1) is directly connected to heating system. Heating water temperature is controlled according to a weather compensation curve. Production of hot water is a priority over the heating system by switching the 3wv (6) to the dhw tank (4). The heat pump increases the outlet water temperature until the requested dhw temperature is achieved, once achieved the heat pump switches the 3wv back to heating operation. This type of system is ideally suited to underfloor heating systems (ufh) but also systems with radiators with a large volume of heating water utilising our pAD room terminal. This solution limits the possibility of local zone control (independent loop ufh, thermostatic valves on radiators). The desuperheater (optional equipment) is a additional exchanger which harvests high potential energy from compressor outlet. An independent circuit with circulator



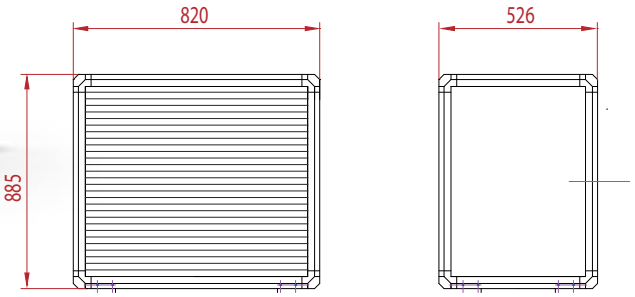
-20°C Minimal Source temp. | 60°C Heating water temperature | A+++ Energy efficiency | Heating and cooling | Ecological Refrigerant R410a | Apps | Czech product

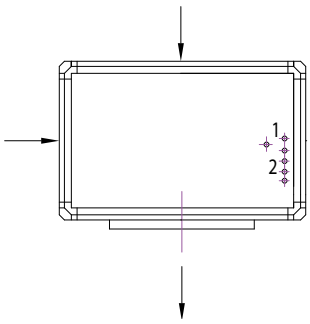
MasterTherm HEAT PUMPS

| Seasonal heating energy efficiency - medium-temperature operation 55°C | | | | Circuit breake[2] | | Compressor, supply voltage 3ph/1ph | Size h x w x d (mm) | Weight (kg) | Leakage control of refrigerant circuit EP 517/2014 | Price EUR EXW CZ |
|---|---|---|---|---|---|---|---|---|---|---|
| Power (kW)[3] | SCOP | ηs % | třída | 3 phase units | 1 phase units | | | | | |
| 4 | **3,22** | 130 | **A++** | 16A"B" | 20A"B" | 1x230/1x230 V~ | 1200x526x716 | 160 | no | **9 700,-** |
| 6 | **3,35** | 126 | **A++** | 20A"B" | 20A"B" | 1x230/1x230 V~ | 1200x526x716 | 165 | no | **9 820,-** |
| 10 | **3,45** | 137 | **A++** | 25A"B" | | 3x400 V~ | 1200x526x716 | 165 | no | **10 680,-** |
| 12 | **3,47** | 136 | **A++** | 32A"B" | | 3x400 V~ | 1200x526x716 | 170 | no | **11 430,-** |

| Heating circuits control | PLUS (pCO5) |
|---|---|
| Intended for | multi-circuit heating systems |
| Main heating circuit | Yes |
| Secondary heating circuit | 2 independent including mixing |
| Room temperature | In 2 zones |
| SHW | Yes |

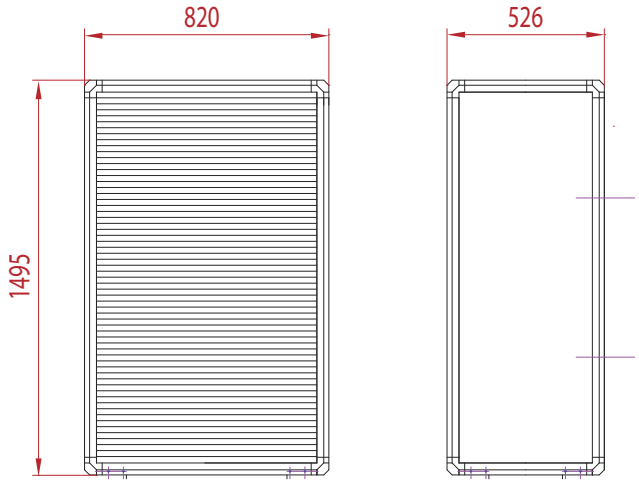
*External unit BA22IS and 26IS:*

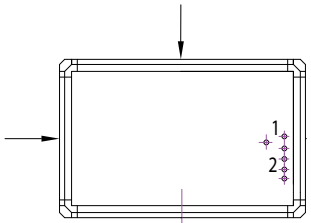



1 - Refrigerant
2 - Power supply

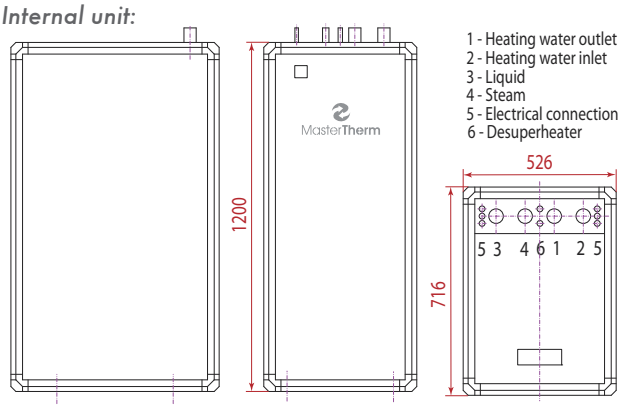
*External unit BA37IS and 45IS:*




1 - Refrigerant
2 - Power supply

*Internal unit:*




1 - Heating water outlet
2 - Heating water inlet
3 - Liquid
4 - Steam
5 - Electrical connection
6 - Desuperheater

# NEW BoxAir Inverter Split Combi

air - water air - water

| Model | A7W35 | Heat loss Qz (kW) | A7W35 60Hz[1] | | A2W35 60Hz | | A-7W35 80Hz | | A-15W35 90Hz | | Seasonal heating energy efficiency - low-temperature operation 35°C | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Power (kW) | | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW)[3] | SCOP | ηs % | Class |
| **BoxAir-22ISC** | **2-7** | **do 5,5** | 4,9 | **4,7** | 3,6 | 3,5 | 3,6 | 2,8 | 3,2 | 2,6 | 5 | **4,18** | 172 | **A++** |
| **BoxAir-26ISC** | **3-9** | **do 8,5** | 8,1 | **4,6** | 5,6 | 3,5 | 5,5 | 2,8 | 5,1 | 2,4 | 7 | **4,39** | 168 | **A++** |
| **BoxAir-37ISC** | **5-17** | **do 13** | 11,5 | **4,7** | 8,8 | 3,7 | 8,7 | 2,8 | 8,2 | 2,3 | 11 | **4,43** | 176 | **A+++** |

1) Performance data according to ČSN EN 14 511, in accordance with the EHPA requirements for quality mark Q. A7W35 60 Hz - air 7 °C, water 35 °C, compressor frequency 60 Hz
2) Recommended value of el. 3x400V fuse, incl. Auxiliary integrated electric boiler. The units can also be connected to a 1x230V network with 40A"B"(22I), resp. 50A"B"(26I).
3) Design power at outdoor temperature -10 °C according to ČSN EN 14 825.

| Options | Order code | Price EUR EXW CZ |
|---|---|---|
| Internet connection - WIFI, ethernet, only with touch screen pGDx | 10ICON | 350,- |
| Full cooling mode (for air/water HP) | 10CH | 296,- |
| Desuperheater for highly efficient SHW heating | 10DESUP | 322,- |
| Terminal pAD - temperature compensation for next heat. circuit | 10PAD | 189,- |
| Terminal pADh - temperature compensation for next heat. circuit with dew point watching (floor cooling) | 10PADH | 291,- |
| Extended control module (up to 6 heat. circuits+SHW, for PLUS v. only) | 10EK | 438,- |
| Energy meter 3x65A, display, MID | 10EM65AMID | 398,- |
| Heat pump colour on demand, RAL code | 10CO | 266,- |
| Silver colour RAL 9006 | | FOC |
| Console for hanging the outdoor units on the wall | | FOC |

RAL 9006

## Standard equipment

- ✔ Stainless steel tray with a capacity of 170 l with integrated solar exchanger
- ✔ pGDx touch screen with room termostat functionality
- ✔ Variable output Inverter Compressor
- ✔ New ultra-quiet fans with stepless speed control
- ✔ Equitherm control system MaR
- ✔ Built-in immersion heater and circulation pump
- ✔ Electronically controlled coolant injection

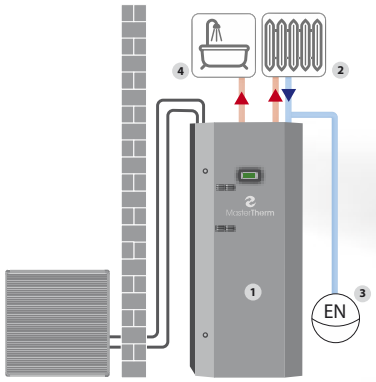
## Features

- ▶ Fully equipped machinery room on area 0,4 m² only
- ▶ Split construction – NEW DESIGN
- ▶ Use for heating, cooling and SHW heating
- ▶ The temperature of heating water to 60 °C
- ▶ Outdoor temperature range from +40°C to -20°C
- ▶ Distance between indoor and outdoor unit up to 15 m
- ▶ Low demand on the volume of heating water in heating system
- ▶ Possibility to control up to 6 heating circuits and SHW heating
- ▶ Remote access and online service diagnostics
- ▶ Cascade connection support
- ▶ Outdoor unit without compressor - extremely quiet
- ▶ New condensate drain solution

### Heat pump connected directly to the heating system with in-built 170l dhw cylinder

*1-heat pump, 2-heating system, 3-expansion vessel, 7-dhw outlet*

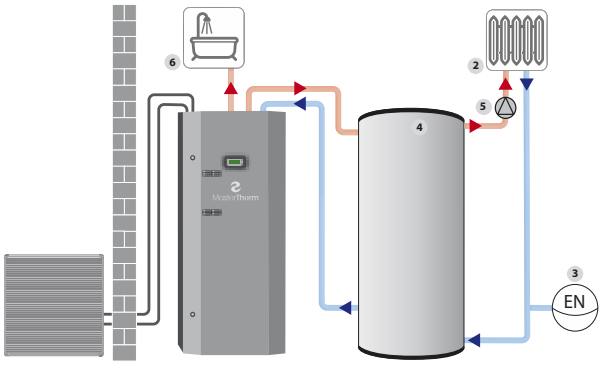
The heat pump (1) is directly connected to heating system. Heating water temperature is controlled according to a weather compensation curve. Production of hot water is a priority over the heating system and is prepared via the internal cylinder. This type of system is ideally suited to underfloor heating systems (ufh) but also systems with radiators with a large volume of heating water utilising our pAD room terminal. This solution limits the possibility of local zone control (independent loop ufh, thermostatic valves on radiators).




### Heat pump connected to a buffer tank with in-built 170l dhw cylinder

*1-heat pump, 2-heating system, 3-expansion vessel, 4- buffer tank, 5- heating circulation pump, 7-dhw outlet*

Heat pump (1) connected to the heating system through a buffer tank (4) which has the function of thermal buffer and a low loss header. Heating water temperature is controlled according to a weather compensation curve. The flow to the heating system is controlled by the main heating circulation pump. Production of hot water is a priority over the heating system and is prepared via the internal cylinder. This solution is ideally suited to systems with low heat buffering capacity and systems that require independent room zone control. Additionally, this type of system has the ability to integrate a secondary source of heat into the buffer tank (4) such as a wood stove with back boiler.



-20°C Minimal Source temp. | 60°C Heating water temperature | A+++ Energy efficiency | Heating and cooling | Ecological Refrigerant R410a | Apps | Czech product

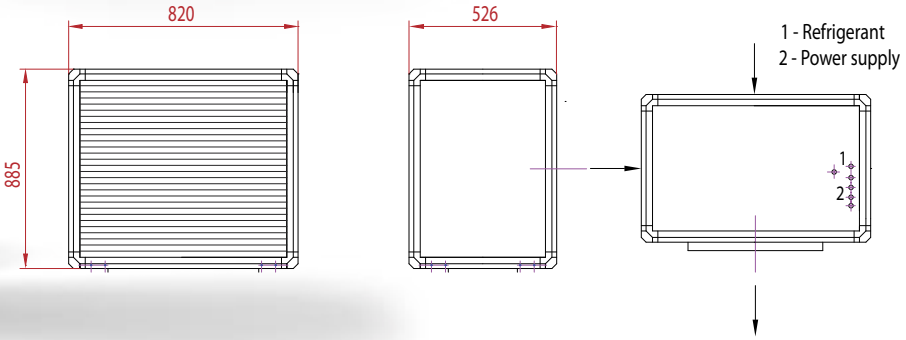
MasterTherm HEAT PUMPS

| Seasonal heating energy efficiency - medium-temperature operation 55°C | | | | Circuit breaker [2] | | Compressor, supply voltage 3ph/1ph | Size h x w x d (mm) | Weight (kg) | Leakage control of refrigerant circuit EP 517/2014 | Price EUR EXW CZ |
|---|---|---|---|---|---|---|---|---|---|---|
| Power (kW)[3] | SCOP | ηs % | Class | 3 phase units | 1 phase units | | | | | |
| 4 | **3,22** | 130 | **A++** | 16A"B" | 20A"B" | 1x230/1x230 V~ | 1850x690x650 | 260 | no | **11 270,-** |
| 6 | **3,35** | 126 | **A++** | 20A"B" | 20A"B" | 1x230/1x230 V~ | 1850x690x650 | 265 | no | **11 630,-** |
| 10 | **3,45** | 137 | **A++** | 25A"B" | | 3x400 V~ | 1850x690x650 | 275 | no | **13 720,-** |

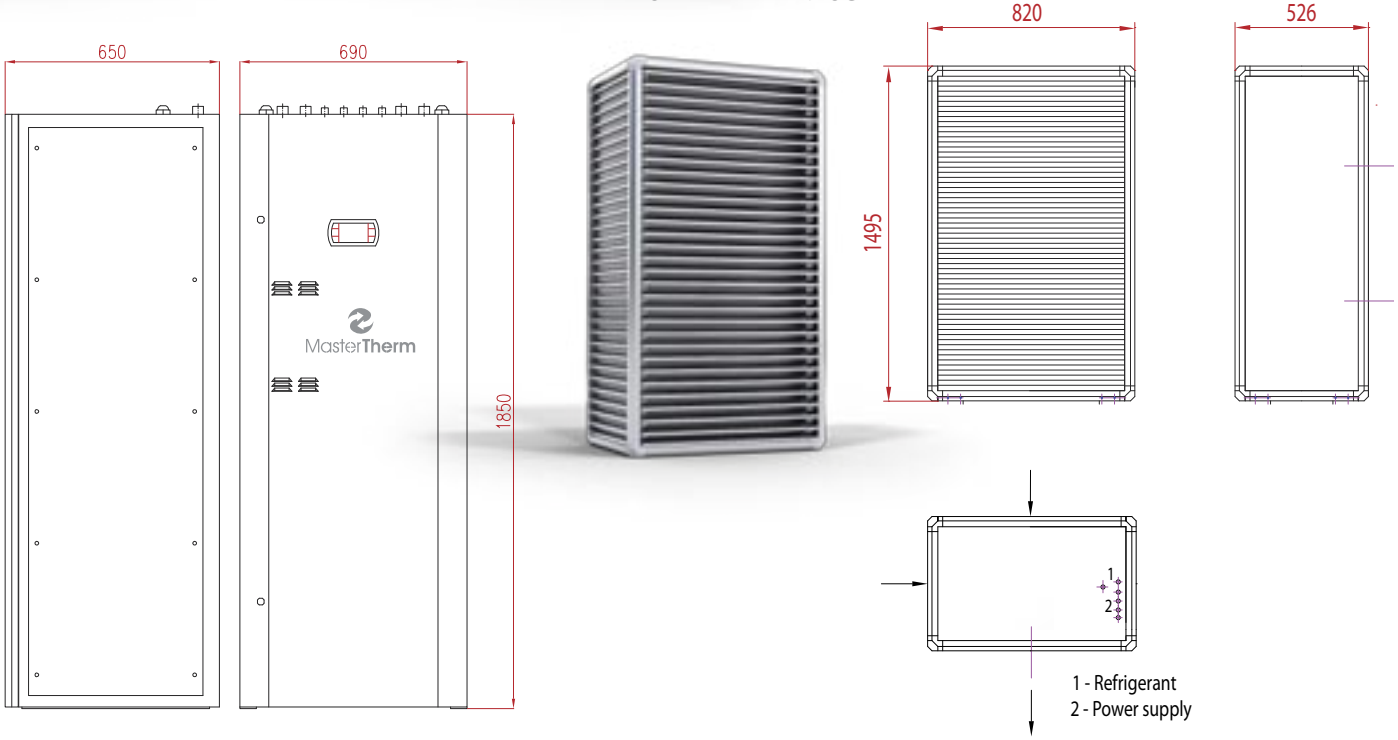
*Internal unit:*


*External unit: BA22ISC and BA26ISC*

| Heating circuits control | PLUS (pCO5) |
|---|---|
| Intended for | multi-circuit heating systems |
| Main heating circuit | Yes |
| Secondary heating circuit | 2 independent including mixing |
| Room temperature | In 2 zones |
| SHW | Yes |




*External unit: BA37ISC*



# AquaMaster

brine- water

water - water

| Model | B0W35[1] | | W10W35 | | Seasonal heating energy efficiency - low-temperature operation 35°C | | | | Seasonal heating energy efficiency - medium-temperature operation 55°C | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Power (kW) | COP | Power (kW) | COP | Power (kW)[3] | SCOP | ηs % | Class | Power (kW)[3] | SCOP | ηs % | Class |
| **AquaMaster_22Z** | **7,8** | **4,5** | 10,4 | 5,9 | 8 | **4,50** | 172 | **A++** | 7 | **3,17** | 117 | **A+** |
| **AquaMaster_26Z** | **10,1** | **4,4** | 13,3 | 5,7 | 10 | **4,34** | 166 | **A++** | 9 | **3,11** | 116 | **A+** |
| **AquaMaster_30Z** | **11,4** | **4,4** | 14,9 | 5,5 | 11 | **4,29** | 164 | **A++** | 11 | **3,10** | 116 | **A+** |
| **AquaMaster_37Z** | **14,1** | **4,3** | 18,4 | 5,4 | 14 | **4,46** | 170 | **A++** | 13 | **3,16** | 118 | **A+** |
| **AquaMaster_45Z** | **17,2** | **4,4** | 22,5 | 5,5 | 17 | **4,61** | 176 | **A++** | 16 | **3,19** | 120 | **A+** |
| **AquaMaster_60Z** | **23,1** | **4,2** | 31,2 | 5,4 | 23 | **4,27** | 163 | **A++** | 22 | **3,14** | 118 | **A+** |
| **AquaMaster_75Z** | **28,2** | **4,1** | 37,7 | 5,2 | 28 | **4,25** | 162 | **A++** | 26 | **3,11** | 116 | **A+** |
| **AquaMaster_90Z** | **33,2** | **4,3** | 45,0 | 5,4 | 33 | **4,42** | 169 | **A++** | 30 | **3,10** | 116 | **A+** |
| **AquaMaster_120.2Z** | **46,8** | **4,2** | 64,6 | 5,6 | 47 | **4,51** | 172 | **A++** | 43 | **3,22** | 121 | **A+** |
| **AquaMaster_150.2Z** | **57,7** | **4,2** | 79,3 | 5,6 | 57 | **4,38** | 167 | **A++** | 52 | **3,19** | 119 | **A+** |
| **AquaMaster_180.2Z** | **64,4** | **4,1** | 90,9 | 5,5 | 64 | **4,50** | 172 | **A++** | 61 | **3,35** | 126 | **A++** |
| **AquaMaster_240.2Z** | **91,5** | **4,7** | 121,6 | 6,1 | 93 | **5,44** | 210 | **A+++** | 75 | **3,81** | 145 | **A++** |

1) Performance data according to ČSN EN 14 511. B0W35 - antifreeze mixture 0 °C, water 35 °C.
2) Recommended value of el. 3x 400 V fuse as standard, without auxiliary electric boiler
3) Design power at outdoor temperature -10 °C according to ČSN EN 14 825.

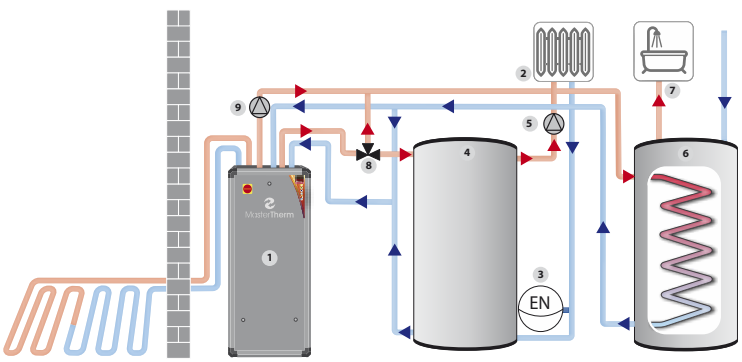
| Options | Order code | Price EUR EXW CZ |
|---|---|---|
| Internet connection - WIFI, ethernet, only with touch screen pGDx | **10ICON** | **350,-** |
| Full cooling - reversing (AQ22Z - AQ90Z) | **1AQZR** | **1243,-** |
| Pasive cooling module (AQ22Z - AQ37Z) | **10PC** | **1122,-** |
| Components set for external passive cooling (AQ45Z - 90Z) | **10PCEXT** | **1530,-** |
| Desuperheater for highly efficient SHW heating) | **10DESUP** | **322,-** |
| Terminal pAD - temperature compensation for next heat. circuit | **10PAD** | **189,-** |
| Terminal pADh - temperature compensation for next heat. circuit with dew point watching (floor cooling) | **10PADH** | **291,-** |
| Three phase relay | **10SF** | **80,-** |
| Softstart - prices are in accessories catalogue | | |
| Extended control module (up to 6 heating circuits + SHW, for PLUS v. only) | **10EK** | **438,-** |
| Energy meter 3x65A, display, MID | **10EM65AMID** | **398,-** |
| AQ electric heater 4,5kW/6kW/7,5kW | **10EKOT45/60/75** | **413,-** |
| Water to water version | **10AQWW** | **FOC,-** |
| Silver colour RAL 9006 | | **FOC,-** |
| RAL 9006 | | |

## Standard equipment

- ✔ pGDx touch screen with room termostat functionality
- ✔ Electronic circulation pumps on both sides (except AQ240.2Z)
- ✔ Equitherm control system MaR
- ✔ Built-in electrical switchboard with protection of all components
- ✔ Electronically controlled coolant injection

## Features

- ▶ Use for heating, cooling and SHW heating
- ▶ Active or passive cooling or combination thereof
- ▶ The temperature of heating water to 60 °C
- ▶ Very quiet operation
- ▶ Possibility to control up to 6 heating circuits and SHW heating
- ▶ Water/water construction on request
- ▶ Connection to vertical or horizontal ground collector
- ▶ Cascade connection support
- ▶ Remote access and online service diagnostics




**Heat pump connected to a buffer tank and 3wv to the domestic hot water cylinder (dhw) with desuperheater.** ***1-heat pump, 2-heating system, 3-expansion vessel, 4-buffer tank, 5-heating circulation pump, 6-dhw tank with coil, 7- dhw outlet, 8-3way valve, 9-desuperheater circulation pump***
Heat pump (1) connected to the heating system through a buffer tank (4) which has the function of thermal buffer and a low loss header. Heating water temperature is controlled according to a weather compensation curve. The flow to the heating system is controlled by the main heating circulation pump. Production of hot water is a priority over the heating system by switching the 3wv (8) to the dhw tank (6). The heat pump increases the outlet water temperature until the requested dhw temperature is achieved, once achieved the heat pump switches the 3wv back to heating operation. When dhw requested temperature is achieved the heat pump controller moves 3wv back to heating operation. The desuperheater (optional equipment) is a additional exchanger which harvests high potential energy from compressor outlet. An independent circuit with circulator pump (9) is used for high efficiency dhw preparation during heating mode.

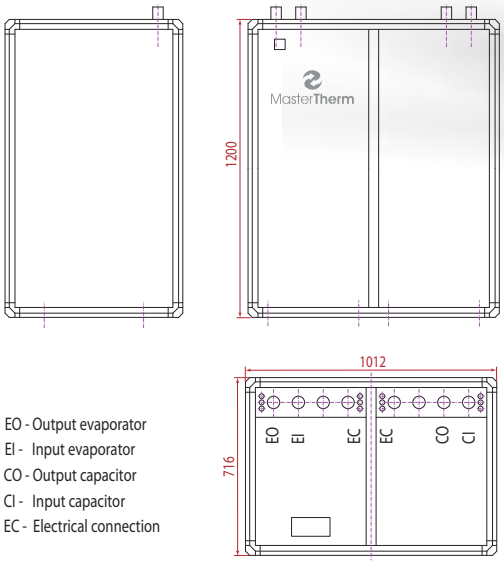
on/off | 60°C Heating water temperature | Heating and cooling | A+++ Energy efficiency | Ecological Refrigerant R407c | Apps | Czech product

MasterTherm HEAT PUMPS

| Circuit breaker[2] | | Compressor, supply voltage 3ph/1ph | Weight (kg) | Leakage control of refrigerant circuit EP 517/2014 | STANDARD (µPC) Price EUR EXW CZ | PLUS (pCO5) Price EUR EXW CZ |
|---|---|---|---|---|---|---|
| 3 phase units | 1 phase units | | | | | |
| 3x 9A"C" | 20A"C" | 3x400/1x230 V~ | 140 | no | 6 610,- | 7 030,- |
| 3x 13A"C" | 25A"C" | 3x400/1x230 V~ | 160 | no | 6 870,- | 7 320,- |
| 3x 13A"C" | 32A"C" | 3x400/1x230 V~ | 165 | no | 7 160,- | 7 590,- |
| 3x 16A"C" | 32A"C" | 3x400/1x230 V~ | 180 | no | 7 820,- | 8 240,- |
| 3x 16A"C" | - | 3x400 V~ | 190 | no | 8 190,- | 8 610,- |
| 3x 25A"C" | - | 3x400 V~ | 245 | no | - | 10 350,- |
| 3x 25A"C" | - | 3x400 V~ | 255 | no | - | 10 820,- |
| 3x 32A"C" | - | 3x400 V~ | 275 | no | - | 11 330,- |
| 3x 50A"C" | - | 3x400 V~ | 420 | yes | - | 19 520,- |
| 3x 50A"C" | - | 3x400 V~ | 420 | yes | - | 21 140,- |
| 3x 64A"C" | - | 3x400 V~ | 420 | yes | - | 21 820,- |
| 3x 63A"C" | - | 3x400 V~ | 420 | yes | - | 25 830,- |


| Heating circuits control | STANDARD (µPC) | PLUS (pCO5) |
|---|---|---|
| Intended for | single-circuit heating systems | multi-circuit heating systems |
| Main heating circuit | Yes | Yes |
| Secondary heating circuit | - | 2 independent including mixing |
| Room temperature | In 1 zone | In 2 zones |
| SHW | Yes | Yes |
| Optional | - | Up to 6 heating circuits |

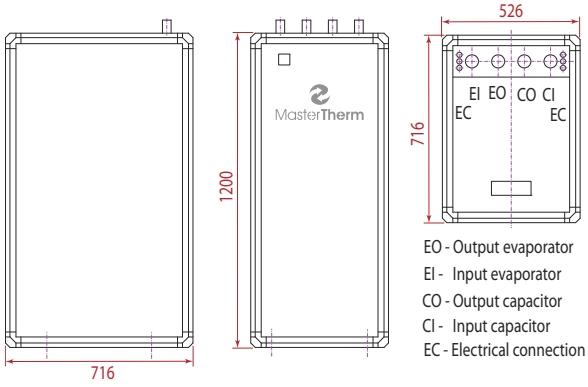

*Dimensions and connections 120.2Z – 180.2Z[4]:*




EO - Output evaporator
EI - Input evaporator
CO - Output capacitor
CI - Input capacitor
EC - Electrical connection

[4] AQ240.2Z - dimensions identical, connection rear 2 "see technical data sheet

*Dimensions and connections: 22Z – 90Z*




EO - Output evaporator
EI - Input evaporator
CO - Output capacitor
CI - Input capacitor
EC - Electrical connection

# AquaMaster Inverter

brine- water

water - water

| Model | B0W35 | B0W35[1] | | W10W35 | | Seasonal heating energy efficiency - low-temperature operation 35°C | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Power kW | Power kW | COP | Power kW | COP | Power kW [4] | SCOP | ηs % | Class |
| **AquaMaster Inverter-17l** | **1–5** | **2,95** | **4,3** | 3,79 | 5,51 | 5 | **4,65** | 179 | **A+++** |
| **AquaMaster Inverter-22l** | **2–7** | **4,4** | **4,5** | 5,8 | 5,9 | 7 | **4,61** | 177 | **A+++** |
| **AquaMaster Inverter-26l** | **3–9** | **7,6** | **4,5** | 10,2 | 6,0 | 9 | **4,83** | 185 | **A+++** |
| **AquaMaster Inverter-30l** | **4–12** | **7,9** | **4,6** | 10,3 | 6,1 | 11 | **4,85** | 186 | **A+++** |
| **AquaMaster Inverter-37l** | **5–15** | **10,5** | **4,7** | 14,2 | 6,3 | 15 | **5,00** | 193 | **A+++** |
| **AquaMaster Inverter-45l** | **7–22** | **14,0** | **4,6** | 19,2 | 6,3 | 21 | **4,80** | 184 | **A+++** |
| **AquaMaster Inverter-60l** | **7–35** | **20,2** | **4,7** | 26,6 | 6,2 | 33 | **5,02** | 193 | **A+++** |
| **AquaMaster Inverter-90l** | **10–48** | **31,3** [3] | **4,6** | 41,2 [3] | 5,9 | 44 | **4,87** | 187 | **A+++** |

1) Performance data according to ČSN EN 14 511, in accordance with the EHPA requirements for quality mark Q. B0W35 60 Hz - antifreeze mixture 0 °C, water 35 °C, compressor frequency 60 Hz | 2) Recommended value of el. Safety in basic equipment, without auxiliary electric boiler | 3) Data for 90l at 90 Hz | 4) Design power at outdoor temperature -10 °C according to ČSN EN 14 825.

| Options | Order code | Price EUR EXW CZ |
|---|---|---|
| Internet connection - WIFI, ethernet, only with touch screen pGDx | 10ICON | 350,- |
| Full cooling - reversing (AQ22Z - AQ90Z) | 1AQZR | 1243,- |
| Pasive cooling module (AQ22Z - AQ37Z) | 10PC | 1122,- |
| Components set for external passive cooling (AQ45Z - 90Z) | 10PCEXT | 1530,- |
| Desuperheater for highly efficient SHW heating) | 10DESUP | 322,- |
| Terminal pAD - temperature compensation for next heat. circuit | 10PAD | 189,- |
| Terminal pADh - temperature compensation for next heat. circuit with dew point watching (floor cooling) | 10PADH | 291,- |
| Extended control module (up to 6 heating circuits + SHW, for PLUS v. only) | 10EK | 438,- |
| Energy meter 1x25A, display, MID (AQ17I - AQ30I) | 10EM25AMID | 157,- |
| Energy meter 3x65A, display, MID | 10EM65AMID | 398,- |
| AQ electric heater 4,5kW/6kW/7,5kW | 10EKOT45/60/75 | 413,- |
| Water to water version | 10AQWW | FOC,- |
| Silver colour RAL 9006 | | FOC,- |
| RAL 9006 | | |

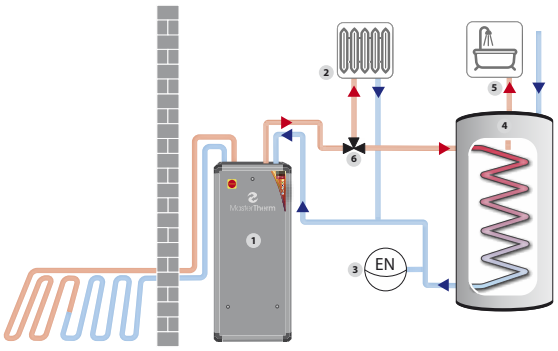
## Standard equipment

- ✔ pGDx touch screen with room termostat functionality
- ✔ Variable output Inverter Compressor
- ✔ Electronic circulation pumps with continuous speed control
- ✔ Equitherm control system MaR
- ✔ Built-in electrical switchboard with protection of all components
- ✔ Electronically controlled coolant injection

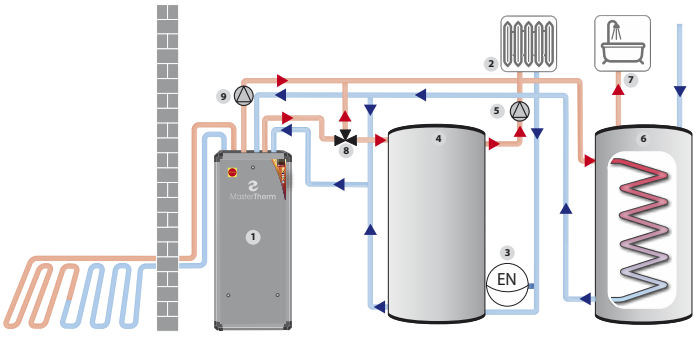
## Features

- ▶ Use for heating, cooling and SHW heating
- ▶ Active or passive cooling or combination thereof
- ▶ Continuous flow control of primary circuit
- ▶ The temperature of heating water to 64 °C
- ▶ Very quiet operation
- ▶ Possibility to control up to 6 heating circuits and SHW heating
- ▶ Water/water construction on request
- ▶ Connection to vertical or horizontal ground collector
- ▶ Cascade connection support
- ▶ Remote access and online service diagnostics

**Heat pump connected directly to the heating system with 3wv for domestic hot water (dhw) preparation.**
***1-heat pump, 2-heating system, 3-expansion vessel, 4-dhw tank with coil, 5-dhw outlet, 6-3way valve***
The heat pump (1) is directly connected to heating system. Heating water temperature is controlled according to a weather compensation curve. Production of hot water is a priority over the heating system by switching the 3wv (6) to the dhw tank (4). The heat pump increases the outlet water temperature until the requested dhw temperature is achieved, once achieved the heat pump switches the 3wv back to heating operation. This type of system is ideally suited to underfloor heating systems (ufh) but also systems with radiators with a large volume of heating water utilising our pAD room terminal. This solution limits the possibility of local zone control (independent loop ufh, thermostatic valves on radiators).




**Heat pump connected to a buffer tank and 3wv to the domestic hot water cylinder (dhw) with desuperheater.** ***1-heat pump, 2-heating system, 3-expansion vessel, 4-buffer tank, 5-heating circulation pump, 6-dhw tank with coil, 7- dhw outlet, 8-3way valve, 9-desuperheater circulation pump***
Heat pump (1) connected to the heating system through a buffer tank (4) which has the function of thermal buffer and a low loss header. Heating water temperature is controlled according to a weather compensation curve. The flow to the heating system is controlled by the main heating circulation pump. Production of hot water is a priority over the heating system by switching the 3wv (8) to the dhw tank (6). The heat pump increases the outlet water temperature until the requested dhw temperature is achieved, once achieved the heat pump switches the 3wv back to heating operation. When dhw requested temperature is achieved the heat pump controller moves 3wv back to heating operation. The desuperheater (optional equipment) is a additional exchanger which harvests high potential energy from compressor outlet. An independent circuit with circulator pump (9) is used for high efficiency dhw preparation during heating mode.

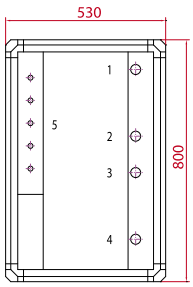


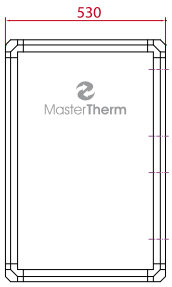
inverter | 60°C Heating water temperature | A+++ Energy efficiency | Heating and cooling | Ecological Refrigerant R410a | Apps | Czech product | European Quality Label for Heat Pumps ehpa

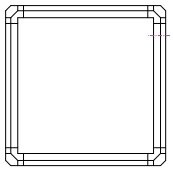
MasterTherm HEAT PUMPS

| Seasonal heating energy efficiency - medium-temperature operation 55°C | | | | Circuit breaker[2] | | Compressor, supply voltage 3ph/1ph | hmotnost (kg) | Leakage control of refrigerant circuit EP 517/2014 | STANDARD (µPC) Price EUR EXW CZ | PLUS (pCO5) Price EUR EXW CZ |
|---|---|---|---|---|---|---|---|---|---|---|
| Power kW [4] | SCOP | ηs % | Class | 3 phase units | 1 phase units | | | | | |
| 4 | **3,53** | 133 | **A++** | 1x 20 A"B" | 20A"B" | 1x230/1x230 V~ | 60 | no | **6 790,-** | **-** |
| 6 | **3,53** | 133 | **A++** | 1x 20 A"B" | 20A"B" | 1x230/1x230 V~ | 160 | no | **8 070,-** | **8 510,-** |
| 8 | **3,74** | 141 | **A++** | 1x 20 A"B" | 20A"B" | 1x230/1x230 V~ | 160 | no | **8 420,-** | **8 860,-** |
| 11 | **3,78** | 143 | **A++** | 1x 25 A"B" | 25A"B" | 1x230/1x230 V~ | 160 | no | **8 830,-** | **9 260,-** |
| 14 | **3,94** | 151 | **A+++** | 3x 20 A"B" | 32A"B" | 3x400/1x230 V~ | 165 | no | **9 510,-** | **9 950,-** |
| 19 | **3,70** | 151 | **A+++** | 3x 20 A"B" | 32A"B" | 3x400/1x230 V~ | 170 | no | **10 160,-** | **10 590,-** |
| 33 | **3,97** | 151 | **A+++** | 3x 32 A"B" | - | 3x400 V~ | 180 | no | **-** | **13 320,-** |
| 42 | **3,87** | 150 | **A+++** | 3x 40 A"B" | - | 3x400 V~ | 200 | no | **-** | **15 850,-** |

*Dimensions and connections: AQ17I*



1 - Heating water outlet - 5/4"
2 - Heating water inlet - 5/4"
3 - Evaporator input - 5/4"
4 - Evaporator output - 5/4"
5 - Electrical connection

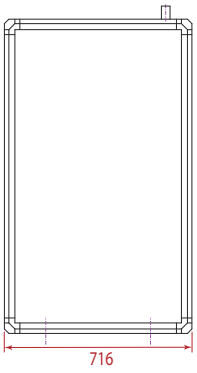
| Heating circuits control | STANDARD (µPC) | PLUS (pCO5) |
|---|---|---|
| Intended for | single-circuit heating systems | multi-circuit heating systems |
| Main heating circuit | Yes | Yes |
| Secondary heating circuit | - | 2 independent including mixing |
| Room temperature | In 1 zone | In 2 zones |
| SHW | Yes | Yes |
| Optional | - | Up to 6 heating circuits |

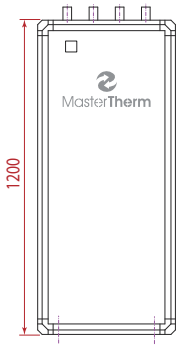

Model AQ17I

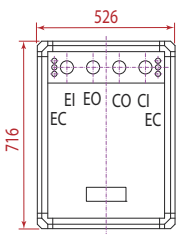

Model AQ22I to AQ60I


Model AQ90I

*Dimensions and connections: AQ22I – AQ60I:*

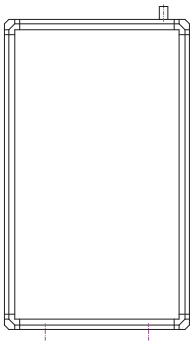


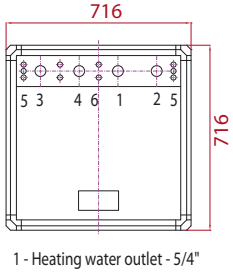




EO - Output evaporator
EI - Input evaporator
CO - Output capacitor
CI - Input capacitor
EC - Electrical connection

*Dimensions and connections: AQ90I*




1 - Heating water outlet - 5/4"
2 - Heating water inlet - 5/4"
3 - Evaporator input - 5/4"
4 - Evaporator output - 5/4"
5 - Electrical connection
6 - Desuperheater - 2x15mm

# AquaMaster Inverter Combi

brine- water

water - water

| Model | B0W35 | B0W35[1)] | | W10W35 | | Seasonal heating energy efficiency - low-temperature operation 35°C | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Power kW | Power kW | COP | Power kW[3)] | COP | Power kW | SCOP | ηs % | Class |
| **AquaMaster Inverter 22IC** | **2–7** | 4,4 | **4,5** | 5,8 | 5,9 | 7 | **4,61** | 177 | **A+++** |
| **AquaMaster Inverter 26IC** | **3–9** | 7,6 | **4,5** | 10,2 | 6,0 | 9 | **4,63** | 185 | **A+++** |
| **AquaMaster Inverter 30IC** | **4–12** | 7,9 | **4,6** | 10,3 | 6,1 | 11 | **4,85** | 186 | **A+++** |
| **AquaMaster Inverter 37IC** | **5–15** | 10,5 | **4,7** | 14,2 | 6,3 | 15 | **5,00** | 193 | **A+++** |

1) Performance data according to ČSN EN 14 511, in accordance with the EHPA requirements for quality mark Q. B0W35 60Hz - antifreeze mixture 0 °C, water 35 °C, compressor frequency 60Hz
2) Recommended value of el. 3x400V fuse with basic equipment incl. Electric boiler.
The 22IC and 30 ICs can also be connected to a 1x230V grid with 40A "B" (22IC) 50A "B" (30IC)
3) Design power at outdoor temperature -10 °C according to ČSN EN 14 825.

| Options | Order code | Price EUR EXW CZ |
|---|---|---|
| Internet connection - WIFI, ethernet, only with touch screen pGDx | **10ICON** | **350,-** |
| Pasive cooling module (AQ22Z - AQ37Z) | **10PC** | **1122,-** |
| Terminal pAD - temperature compensation for next heat. circuit | **10PAD** | **189,-** |
| Terminal pADh - temperature compensation for next heat. circuit with dew point watching (floor cooling) | **10PADH** | **291,-** |
| Extended control module (up to 6 heating circuits + SHW, for PLUS v. only) | **10EK** | **438,-** |
| Energy meter 1x25A, display, MID (AQ17I - AQ30I) | **10EM25AMID** | **157,-** |
| Energy meter 3x65A, display, MID | **10EM65AMID** | **398,-** |
| AQ electric heater 4,5kW/6kW/7,5kW | **10EK0T45/60/75** | **413,-** |
| Water to water version | **10AQWW** | **FOC,-** |
| Silver colour RAL 9006 | | **FOC,-** |
| RAL 9006 | | |

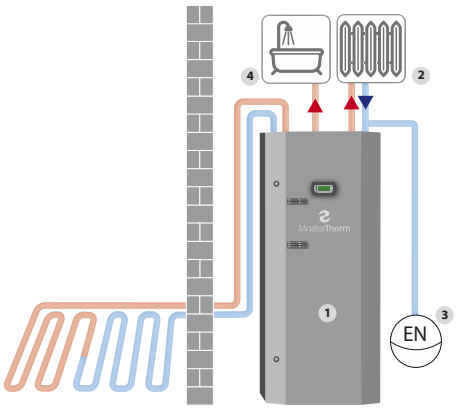
## Standard equipment

- ✔ Stainless steel tray with a capacity of 170 l with integrated solar exchanger
- ✔ pGDx touch screen with room termostat functionality
- ✔ Special compressor with variable speed control
- ✔ Electronic circulation pumps with continuous speed control
- ✔ Equitherm control system MaR
- ✔ Built-in electrical switchboard with protection of all components
- ✔ Electronically controlled coolant injection

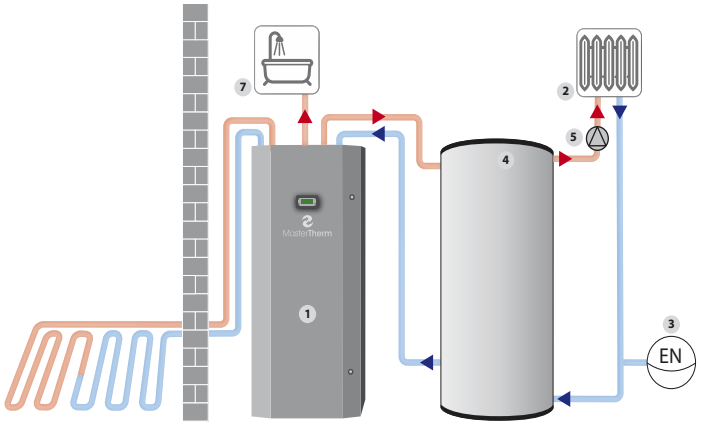
## Features

- ▶ Fully equipped machinery room on area 0,4 m²
- ▶ Use for heating, cooling and SHW heating
- ▶ Passive cooling possibility
- ▶ Continuous flow control of primary circuit
- ▶ High efficiency hot water heating, heating water temperature up to 60 °C
- ▶ Very quiet operation
- ▶ Possibility to control up to 6 heating circuits and SHW heating
- ▶ Water/water construction on request
- ▶ Connection to vertical or horizontal ground collector
- ▶ Cascade connection support
- ▶ Remote access and online service diagnostics

**Heat pump connected directly to the heating system with in-built 170l dhw cylinder.**
***1-heat pump, 2-heating system, 3-expansion vesel, 7-dhw outlet***
The heat pump (1) is directly connected to heating system. Heating water temperature is controlled according to a weather compensation curve. Production of hot water is a priority over the heating system and is prepared via the internal cylinder. This type of system is ideally suited to underfloor heating systems (ufh) but also systems with radiators with a large volume of heating water utilising our pAD room terminal. This solution limits the possibility of local zone control (independent loop ufh, thermostatic valves on radiators).




**Heat pump connected to a buffer tank with in-built 170l dhw cylinder .**
***1-heat pump, 2-heating system, 3-expansion vesel, 4- buffer tank, 5- heating circulation pump, 7-dhw outlet***
Heat pump (1) connected to the heating system through a buffer tank (4) which has the function of thermal buffer and a low loss header. Heating water temperature is controlled according to a weather compensation curve. The flow to the heating system is controlled by the main heating circulation pump. Production of hot water is a priority over the heating system and is prepared via the internal cylinder. This solution is ideally suited to systems with low heat buffering capacity and systems that require independent room zone control. Additionally, this type of system has the ability to integrate a secondary source of heat into the buffer tank (4) such as a wood stove with back boiler.

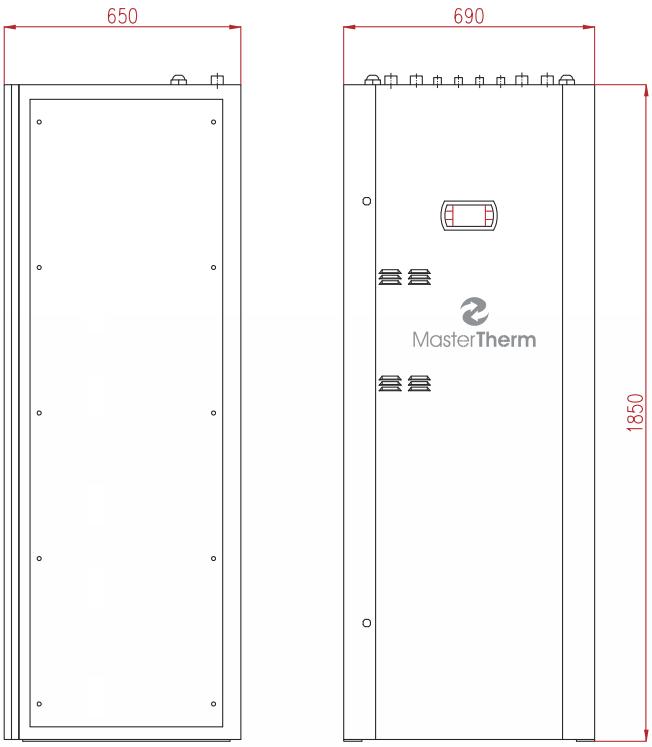


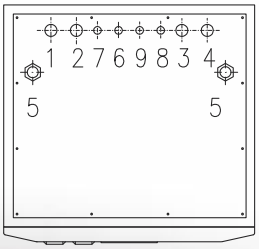
inverter | 60°C Heating water temperature | A+++ Energy efficiency | Heating and cooling | Ecological Refrigerant R410a | Apps | Czech product

MasterTherm HEAT PUMPS

| Seasonal heating energy efficiency - medium-temperature operation 55°C | | | | Circuit breaker[2] | | Compressor, supply voltage 3ph/1ph | Weight (kg) | Leakage control of refrigerant circuit EP 517/2014 | STANDARD (µPC) Price EUR EXW CZ | PLUS (pCO5) Price EUR EXW CZ |
|---|---|---|---|---|---|---|---|---|---|---|
| Power kW[3] | SCOP | ηs % | Class | 3 phase units | 1 phase units | | | | | |
| 6 | **3,53** | 133 | **A++** | 1x20 A"B" | 20A"B" | 1x230/1x230 V~ | 270 | no | **10 840,-** | **11 280,-** |
| 8 | **3,74** | 141 | **A++** | 1x20 A"B" | 20A"B" | 1x230/1x230 V~ | 270 | no | **11 130,-** | **11 580,-** |
| 11 | **3,78** | 143 | **A++** | 1x25 A"B" | 20A"B" | 1x230/1x230 V~ | 275 | no | **11 960,-** | **12 400,-** |
| 14 | **3,94** | 151 | **A+++** | 3x20 A"B" | 25A"B" | 1x230/1x230 V~ | 280 | no | **12 280,-** | **12 710,-** |

*Dimensions and connections:*




*1 - Water / Mix Input*
*2 - Water / Mix Output*
*3 - Heating water outlet*
*4 - Heating water inlet*
*5 - Electrical connection*
*6 - HW Input*
*7 - HW Output*
*8 - CW Input*
*9 - CW Output*

| Heating circuits control | STANDARD (µPC) | PLUS (pCO5) |
|---|---|---|
| Intended for | single-circuit heating systems | multi-circuit heating systems |
| Main heating circuit | Yes | Yes |
| Secondary heating circuit | - | 2 independent including mixing |
| Room temperature | In 1 zone | In 2 zones |
| SHW | Yes | Yes |
| Optional | - | Up to 6 heating circuits |

# Heat Pumps
## FOR LARGE OBJECTS

air - water

inverter

| Model | A7W35 | Heat loss Qz (kW) | A7W35 | | A2W35 | | A-7W35 | | A-15W35 | | Seasonal heating energy efficiency - low-temperature operation 35°C | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Power kW | | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW) | COP | Power (kW)[3] | SCOP | ηs % | Class |
| **BoxAir Inverter** (compact, inverter) | | | 60 Hz | | 60 Hz | | 90 Hz | | 120 Hz | | | | | |
| **BA60I** | **10-35** | **do 28** | 22,3 | **4,84** | 15,7 | 3,60 | 18,0 | 2,68 | 20,6 | 2,30 | 23 | **4,50** | 177 | **A+++** |
| **BoxAir Inverter Split** (split, inverter) | | | 60 Hz | | 60 Hz | | 90 Hz | | 120 Hz | | | | | |
| **BA60IS** | **10-35** | **do 28** | 22,3 | **4,84** | 15,7 | 3,60 | 18,0 | 2,68 | 20,6 | 2,30 | 23 | **4,50** | 177 | **A+++** |
| **BoxAir** ( compact, on-off) | | | | | | | | | | | | | | |
| **BA75Z** | **30,8** | **do 31** | 30,8 | **4,0** | 23,2 | 3,2 | 18,5 | 2,6 | | | 31 | **3,61** | 141 | **A+** |
| **EasyMaster** (split, on-off) | | | | | | | | | | | | | | |
| **EM60Z** | **24,6** | **do 25** | 24,6 | **4,1** | 18,8 | 3,2 | 15,0 | 2,7 | | | 25 | **3,56** | 140 | **A+** |
| **EM75Z** | **30,8** | **do 31** | 30,8 | **4,0** | 23,2 | 3,2 | 18,5 | 2,6 | | | 31 | **3,61** | 141 | **A+** |

1) Performance data according to ČSN EN 14 511, in accordance with the EHPA requirements for quality mark Q.
A7W35 60 Hz - air 7 °C, water 35 °C, compressor frequency 60 Hz
2) Recommended value of el. 3x400V fuse, incl. Auxiliary integrated electric boiler.
3) Design power at outdoor temperature -10 ° C according to ČSN EN 14 825.

| Options | Order code | Price EUR EXW CZ |
|---|---|---|
| Internet connection - WIFI, ethernet, only with touch screen pGDx | **10ICON** | **350,-** |
| Full cooling mode (for air/water HP) | **10CH** | **296,-** |
| Terminal pAD - temperature compensation for next heat. circuit | **10PAD** | **189,-** |
| Terminal pADh - temperature compensation for next heat. circuit with dew point watching (floor cooling) | **10PADH** | **291,-** |
| Three phase relay (for on-off models) | **10SF** | **80,-** |
| Softstart - prices are in accessories catalogue | | |
| Extended control module (up to 6 heating circuits + SHW, for PLUS v. only) | **10EK** | **438,-** |
| Energy meter 3x65A, display, MID | **10EM65AMID** | **398,-** |
| Heat pump colour on demand, RAL code - external or internal unit | **10CO** | **266,-** |
| Silver colour RAL 9006 | | **FOC,-** |
| **For models EM60Z, EM75Z and BA60IS:** | | |
| External electric heater 7,5 + 7,5 kW | **10ETA1M15** | **1755,-** |
| External electric heater 12 + 18 kW | **10ETA1M30** | **1979,-** |
| Desuperheater for highly efficient SHW heating | **10DESUP** | **322,-** |
| RAL 9006 | | |


*BA60IS, EM60Z-75Z (split)*

### Standard equipment

- ✔ Electric boiler 7,5+7,5 kW (for model BA60I and BA75Z)
- ✔ pGDx touch screen with room termostat functionality
- ✔ Electronically controlled coolant injection
- ✔ New low-noise fan
- ✔ Equitherm control system MaR
- ✔ Variable output Inverter Compressor (BA60I, BA60IS)
- ✔ Built-in circulation pump

### Features

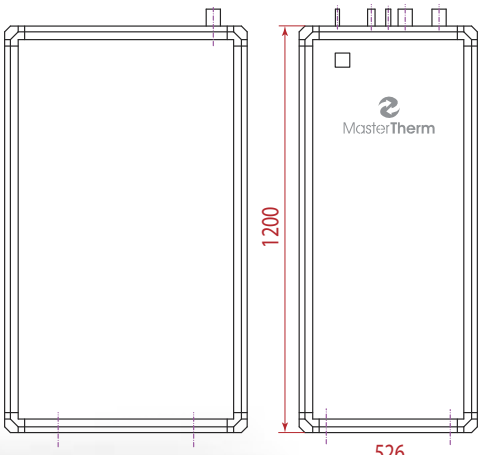
- ▶ Use for heating and cooling
- ▶ The temperature of heating water to (BA60I a BA60IS)
- ▶ Temperatures range from +40 °C do -20 °C
- ▶ Very easy installation
- ▶ Quiet operation
- ▶ Control up to 6 heating circuits
- ▶ Cascade control Master Lan
- ▶ Possibility of remote control and monitoring
- ▶ Communication protocol ModBUS RTU
- ▶ Power up to 35 kW (A7W35) per one compressor circuit

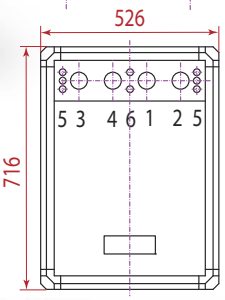
-20°C Minimal Source temp. | 64°C Heating water temperature | A+++ Energy efficiency | Heating and cooling | Ecological Refrigerant R410a | Apps | Czech product

MasterTherm HEAT PUMPS

| Seasonal heating energy efficiency - medium-temperature operation 55°C | | | | Max. heating water temparature (°C) | Circuit breaker[2] | Compressor, supply voltage 3ph/1ph | Weight (kg) | Leakage control of refrigerant circuit EP 517/2014 | Price EUR EXW CZ |
|---|---|---|---|---|---|---|---|---|---|
| Power (kW)[3] | SCOP | ηs % | Class | | | | | | |
| 22 | **3,45** | 135 | **A++** | 64 | 40A"B" | 3x400V | 275 | yes | **15 190,-** |
| 22 | **3,45** | 135 | **A++** | 64 | 25A"B" | 3x400V | 200+80 | yes | **16 470,-** |
| 30 | **2,92** | 114 | **A+** | 55 | 40A"B" | 3x400V | 275 | yes | **13 440,-** |
| 24 | **2,86** | 111 | **A+** | 55 | 25A"B" | 3x400V | 200+80 | yes | **13 470,-** |
| 30 | **2,92** | 114 | **A+** | 55 | 25A"B" | 3x400V | 200+80 | yes | **14 750,-** |

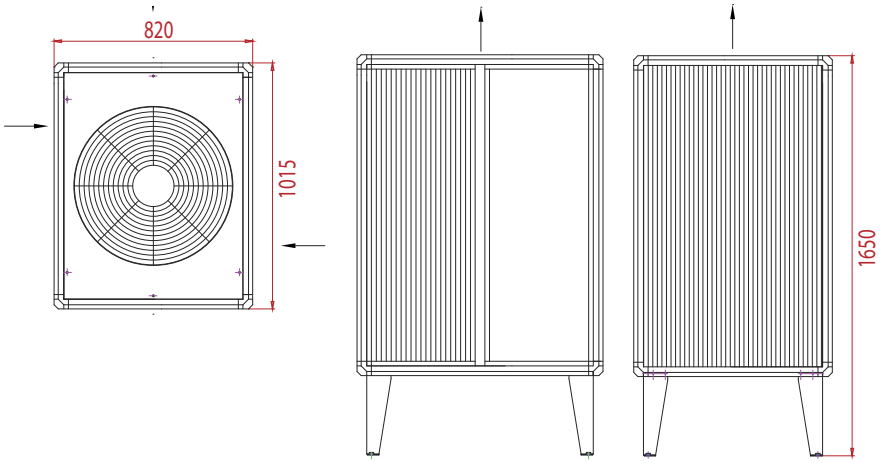
*Internal unit BA60IS, EM60Z and EM75Z:*



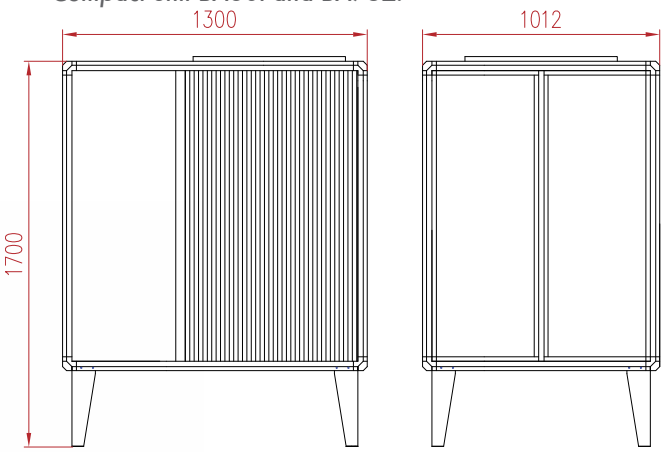



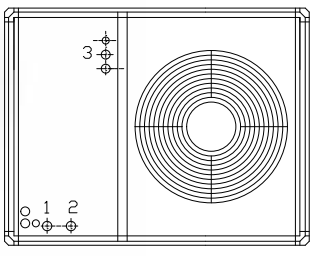

1 - Heating water outlet
2 - Heating water inlet
3 - Liquid
4 - Steam
5 - Electrical connection
6 - Desuperheater

*External unit BA60IS, EM60Z and EM75Z:*




*Compact unit BA60I and BA75Z:*




1 - Heating water outlet
2 - Heating water inlet
3 - Electrical connection

*BA60I, BA75Z (compact)*

# AQ ZHX

## FOR COOLING AND HEAT RECOVERY

brine- water

water - water

| Model | B0W35 | | W10/W35 | | W40/W65 | |
|---|---|---|---|---|---|---|
| | Power kW | COP | Power kW | COP | Power kW | COP |
| **AQ40ZHX** | 13,80 | 3,94 | **19,62** | **5,57** | 38,56 | 5,92 |
| **AQ50ZHX** | 18,59 | 4,19 | **26,1** | **5,82** | 51,30 | 6,19 |
| **AQ60ZHX** | 23,39 | 4,09 | **32,91** | **5,61** | 63,58 | 5,76 |
| **AQ75ZHX** | 28,24 | 4,13 | **39,47** | **5,67** | 76,31 | 5,86 |
| **AQ100.2ZHX** | 37,18 | 4,09 | **52,21** | **5,69** | 96,78 | 5,78 |

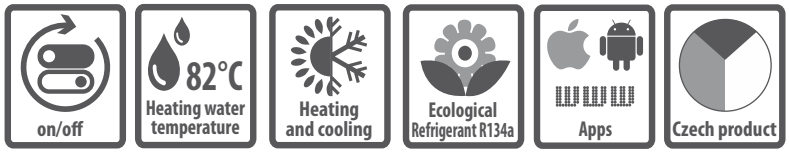
| Options | Order code | Price EUR EXW CZ |
|---|---|---|
| Internet connection - WIFI, ethernet, only with touch screen pGDx | 10ICON | 350,- |
| Desuperheater for highly efficient SHW heating | 10DESUP | 322,- |
| Extended control module (up to 6 heating circuits + SHW, for PLUS v. only) | 10EK | 438,- |
| Energy meter 3x65A, display, MID | 10EM65AMID | 398,- |
| Silver colour RAL 9006 | | FOC,- |
| RAL 9006 | | |

### Standard equipment

- ✔ Built-in circulation pumps
- ✔ Cascade control Master Lan
- ✔ pGDx touch screen with room termostat functionality
- ✔ Electronically controlled coolant injection
- ✔ Built-in electrical switchboard with component protection

### Features

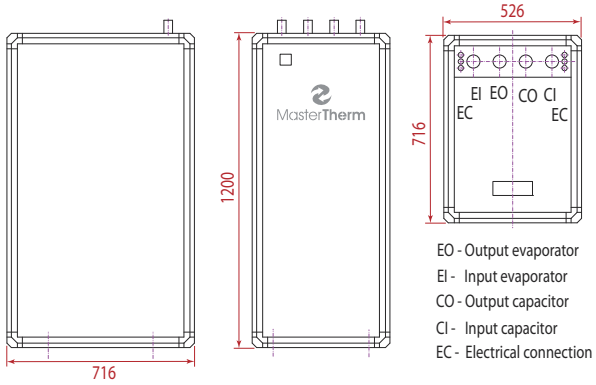
- ▶ The temperature of heating water to 82 °C
- ▶ The temperature of source water 45 °C
- ▶ Eeasy installation
- ▶ Very quiet operation
- ▶ Control up to 6 heating circuits
- ▶ Possibility of remote control and monitoring
- ▶ Communication protocol ModBUS RTU




MasterTherm
HEAT PUMPS

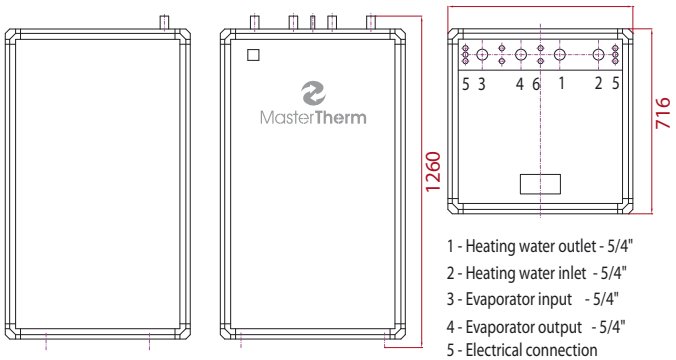
| Max. heating water temparature (°C) | Circuit breaker | Compressor | Refrigerant | Weight (kg) | Leakage control of refrigerant circuit EP 517/2014 | Price EUR EXW CZ |
|---|---|---|---|---|---|---|
| 82 | 3x20A"C" | scroll 3x400 V | R134a 4,2 kg | 230 | no | 16 750,- |
| 82 | 3x25A"C" | scroll 3x400 V | R134a 4,4 kg | 230 | no | 17 670,- |
| 82 | 3x32A"C" | scroll 3x400 V | R134a 4,4 kg | 230 | no | 19 760,- |
| 82 | 3x40A"C" | scroll 3x400 V | R134a 6,0 kg | 400 | no | 22 680,- |
| 82 | 3x50A"C" | scroll 3x400 V | R134a 10 kg | 400 | yes | 30 620,- |

*Dimensions and connections: AQ40ZHX – AQ50ZHX*



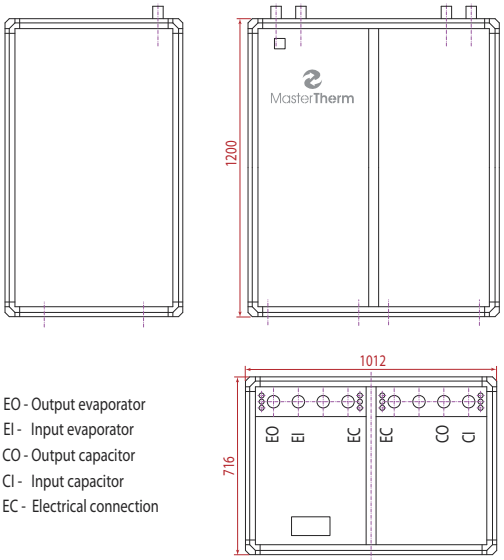

EO - Output evaporator
EI - Input evaporator
CO - Output capacitor
CI - Input capacitor
EC - Electrical connection

*Dimensions and connections: AQ60ZHX*




1 - Heating water outlet - 5/4"
2 - Heating water inlet - 5/4"
3 - Evaporator input - 5/4"
4 - Evaporator output - 5/4"
5 - Electrical connection
6 - Desuperheater - 2x15mm

*Dimensions and connections: AQ75ZHX – AQ100ZHX*




EO - Output evaporator
EI - Input evaporator
CO - Output capacitor
CI - Input capacitor
EC - Electrical connection

# Optional HP equipment specifiction

MasterTherm HEAT PUMPS

## Warranty

A standard warranty period of 24 months from the date of handover to the end user and no more than 30 months from the date of handover to the Partner is provided on all Master Therm heat pumps. Master Therm can also provide an extended warranty on its heat pumps. More detailed conditions are given in General Commercial Terms and Conditions of Cooperation (hereafter the "GCTCC")..

## Internet connection = Master Therm ON-LINE

It enables data connection of the heat pump to the central server of the manufacturer via the Internet (Wi-Fi or UTP cable). It offers remote control via a web interface or applications for smartphones (iOS or Android) and service diagnostics and monitoring of the heat pump operation by the Master Therm service department.

## Cooling mode by reversing

With this option the heat pump can be operated in reversing mode and in the summer living spaces of the house can be cooled by "compressor". Depending on the type of heat pump the heat is dissipated into the surrounding air, ground or water. Cooling water must be treated with an antifreeze liquid. For ground-water heat pumps the range of models for which this option can be ordered is listed.

## Passive cooling module

Option of ground-water heat pumps for direct heat dissipation from the interior to the ground collector (flat or vertical). It enables extremely economical summer cooling without the need for compressor work. It supports thermal regeneration of ground collectors after the heating season. In the stated range of models this option is built into the heat pump, for bigger models is this option as an external solution.

## Desuperheater for highly efficient SHW heating

An integrated option-device which uses a separate hydraulic circuit to remove the heat of superheated steam at the outlet of the compressor. It is usually used for highly efficient SHW preparation. If the heat pump compressor is in operation (in both heating and cooling mode) part of its heat energy is permanently discharged to the SHW cylinder.

## Extended control module

Increases the number of regulated heating circuits of PLUS controller up to a total of 6 (from the basic 2 heating circuits).

## Room terminal for heating circuit

Room terminal with temperature sensor for placing in the reference room of the secondary heating circuit (only for PLUS controller). The main function is comfortable temperature setting in the heated/cooled zone of the secondary circuit. The installation of the terminal can be replaced by supplying a room temperature sensor only. Settings can then be made on the main panel of the heat pump or via internet.

## Room terminal for heating circuit with humidity sensor

Room terminal with temperature and humidity sensor for placing in the reference room of the secondary heating circuit (only for PLUS controller). In cooling mode it allows you to control the cooling water temperature so that the dew point temperature in the room is not exceeded and humidity does not condense. It is mainly used for cooling by floor or wall systems.

## Modifications for internal installation of the evaporator

The outdoor evaporator of the air-water split heat pump is being replaced by an evaporator type for installation inside the building. It enables installation of air-water heat pump inside the building (Indoor Split) with the supply and exhaust of outdoor air by an insulated air ducts.

## Three phase relayí

Protects 3-phase ON-OFF compressors against damage due to the opposite direction of operation in the event of a random change in phase sequence.

## Softstart

Reduces the starting current when ON-OFF heat pump compressor starts. Inverter technology eliminates the need for softstart.

## Integrated electricity meter 1x25A, 3x65A, 1x100A

Built in electricity meter for measuring electricity consumption. LCD panel, MID certification, data transfer to the heat pump controller.

## Electric boiler 4,5 kW / 6,0 kW / 7,5 kW

Built in bivalent respectively emergency heat source for ground-water or water-water heat pumps (electric boiler for air-water heat pumps is part of the basic equipment).

## Water-water design

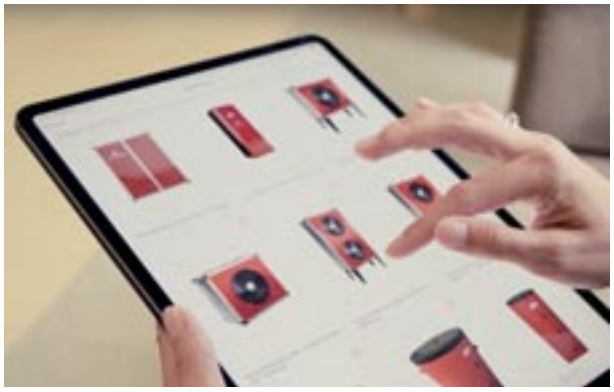
The water-water heat pump for the use of groundwater or surface water is equipped with a more resistant evaporator against sediment (coax) and modified electrical construction.

## Color choice according to the RAL swatch

The outdoor housing of the heat pump will be delivered in an individually selected color according to the RAL swatch.

# Visualization of heat pump installation

## using augmented reality in a tablet or phone



1. Install free application and select the heat pump according to your requirements.
2. Click on "Show in AR" and scan the floor until the heat pump appears.
3. You can move, rotate heat pump or change its color.
4. In description of each heat pump you will find information about size, color, components, etc.

MasterTherm
TEPELNÁ ČERPADLA

# Master Therm AR

Augmented Reality Application

YouTube

**www.mastertherm.eu**

## Nuclear Physics Institute of the ASCR Řež near Prague, Czechia

MasterTherm HEAT PUMPS

Unique use of heat pumps for reverse extraction of heat by connection to process at a state-of-the-art research facility. The water-water MasterTherm heat pumps have a total installed heating/cooling power capacity of 850 kW/680 kW will cool individual research devices and the recovered heat will be used for year-round domestic hot water heating and heating. The thermal heat pumps will be also used for efficient absorbing of surplus energy in combination with a system of dry coolers located on the roof. The solution includes production of cooling water for the air-conditioning system and under favourable conditions free cooling of the technology. During the heating season, when there is a lack of technological heat, the building can be heated using the system of water-water heat pumps and glycol circuit by acquiring thermal energy from the surrounding air (air-water). The system is able to operate in this mode by sub-coolers (i.e. additional coolers of liquid coolants), which utilize the unused heat of the cooling circuit for defrosting the dry coolers without any increase of total energy consumption. It is a remarkable solution and innovative installation of water-water thermal pumps which combines reverse extraction of heat, top-notch technological cooling and heating of the building in the air-water mode, uniquely without any defrosting energy demands.

**Total heating output:**
856 kW (20/14°C x 35/45°C)

**Total cooling output:**
688 kW (20/14°C x 35/45°C)

**Type of heat pumps:** air to water

**COP:** 5,09 (20/14°C x 35/45°C)

## Supercomputer centrum IT4 Innovations Ostrava, Czechia

Unique system of heat recovery from aprox. 2Pflop supercomputer "salomon" in national supercomputing center in It4 inovations building in ostrava. Cooling is done by water loop on 30–50°C. Water loop cooling system on this temperatures by itself can save tens of percent of cooling operating costs, allso thanks to possibility of freecooling. Recovered energy is transfered to 5 heat pumps Master Therm AQ 180.2X with total heating capacity of 450 kW (W40W60). On secondary side is possible to reach up to 60°C with wery high efficiency. Energy is used to building heating and sanitary hot water preparation.

**Total heating output:**
450,5 kW (W40W60)

**Total power in:**
90,5 kW (W40W60)

**COP:** 5,0 (W40W60)

**Annual energy saving compared to a conventional solution:**
2 200 GJ

**Annual financial savings:**
>38 500 EUR/Year

## HVM Plasma Ltd.
## Prague, Czechia

MasterTherm HEAT PUMPS

A sophisticated cooling system of the production process with a bespoke design water-to-water heat pump system with increased efficiency as the system is combined with outdoor dry-type cooler for possibility of free cooling. Very high efficiency system due to re-use of process heat for heating the entire building and hot water heating. Furthermore the system can produce direct cooling water for air conditioning for the entire building. Cooling is accurately defined by the temperature gradient which helps to optimize the production process (hi-tech thin-film technique).
This project was awarded the title of Environmental Construction of the Year.

**Installed heating power of heat pumps:**
1 270 kW

**Type of heat pumps:**
water to water

**Annual energy saving compared to a conventional solution:**
940 MWh

**Annual financial savings:**
96 000 EUR

**Return on investment:**
4 Year

## Apartment Complex with Services
## Borová, Czechia

**Installed heating power of heat pumps:**
214 kW

**Type of heat pumps:**
air to water

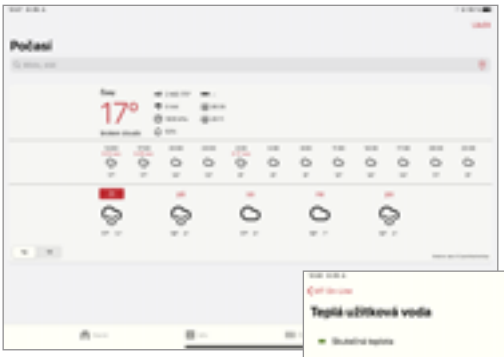
Originally intended to be a four-star hotel with spa but was purchased by an investor part complete as a shell and converted in a block of apartments with all the necessary convenience for the elderly. The system encompasses 6 two-compressor units with each unit delivering 35.7 kW, total peak power of 214 kW. The system is used to provide heating of the entire building via a underfloor heating system and 2,000 litres of domestic hot water. Additionally fresh air into the building can be heated and cooled at the same time through air-conditioning. Installation price of the heating 240 000 EUR

# Control via internet

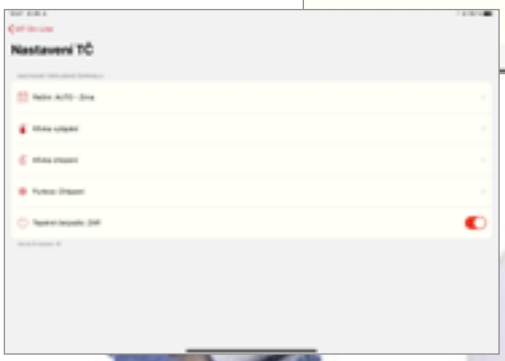
## using a computer, tablet or phone


### Advantages of new internet connection:

- Extremely easy connection of the heat pump to the internet
- Convenient heat pump control including all heating circuits and SHW
- Access from anywhere via web interface
- On-line automatic monitoring - reporting of error conditions
- Control using the app. from computers, tablets and smartphones
- No fixed fees for static IP address
- No router and internal network setup








**You can try control from smartphone or tablet now! Download applications from the App Store or Google play (Android Market).**

*After installing the application enter the following information in the connection dialog.*

*Name:* demo / *Password:* mt-demo










# NEW, USER FRIENDLY CONTROL OF YOUR MASTER THERM HEAT PUMP


ilustrační obrázek

The pGDx touch screen is new main control panel for all Master Therm heat pumps. Pleasant graphical design will guide you through clear setting which is easy and intuitive. New touch screen is now additionally equipped with room temperature and humidity sensor and integrates the function of a room device to control the temperature of the heated / cooled space.

**Basic characteristics:**

- 4,3" touch screen with a resolution of 480x272 pixels and its own 1GHz processor
- the functions of the room terminal unit in reference room and main control display of the heat pump combined into one device
- clear control, easy adjustment of room temperature and hot water temperature with the + and - buttons
- if the function of room terminal unit is not required touch screen can be built into the heat pump or located in the machinery room
- it is possible to assign room terminal panels or temperature sensors of heating circuits to the display and control everything from one place
- internet communication with secured cloud server is used for remote access to the heat pump and for online service diagnostics
- allows ethernet and WiFi internet connection as well
- supports online upgrades and allows continuous development of functionality
- graphical design unified with web interface and Master Therm mobile applications available for Android and iOS
- supports other useful functions such as communication within the so-called Smart Grids for efficient management of electricity production and consumption

**With new pDGx control panel and internet connection your Master Therm heat pump will be ready for the future!**

MasterTherm HEAT PUMPS

**Show room:** Master Therm tepelná čerpadla s.r.o., Okrajová 187, 253 01 Chýně, Praha západ
Tel.: +420 311 516 567, Zelená linka: 800 444 000, info@mastertherm.cz, **www.mastertherm.cz**