

BoxAir Inverter P for commercial and industrial buildings

Air-to-water



Czech (EU)
product



A tradition
since 1994



Exported into
30 countries
worldwide



7-year
warranty



Online
control

BoxAir Inverter P

for commercial & industrial buildings

The most powerful air-to-water heat pumps in the Master Therm range.

Designed for heating and cooling of residential, commercial and industrial buildings, schools, offices, or sports grounds.

Easily connectible to the cascade and ensure a very high overall power of more than 1000 kW for large buildings and industrial plants.



BoxAir 60 Inverter P

**Compact
monobloc (30 kW).**



BoxAir 90 Inverter P

**Compact
monobloc (50 kW).**

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.

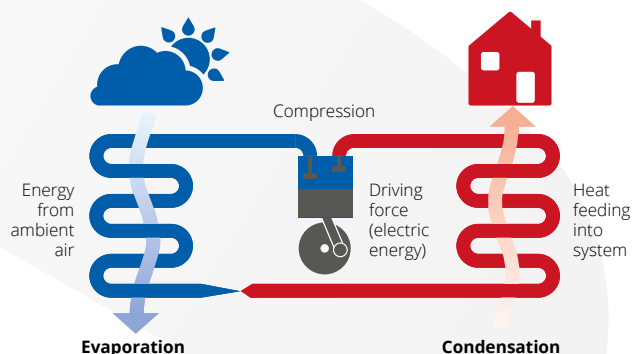


KEY FEATURES OF THE BOXAIR 60 / 90 Inverter P SERIES

- Power of up to 50 kW per compressor circuit
- Modbus RTU communication protocol
- MasterLAN power cascade control included
- Online control and monitoring
- Total cascade power of more than 1000 kW
- Active cooling as optional equipment



AIR-TO-WATER HEAT PUMPS



? HOW THEY WORK

Air-to-water heat pumps are based on the principle of extracting heat from the ambient air, the temperature of which can be many degrees Celsius below zero. The heat extracted from the environment is transferred by the heat pump to the heating water that heats the building or is used in the preparation of hot water. **The system achieves seasonal efficiencies of up to 4.5.**

👍 MAIN BENEFITS

The **high-end components** used and **the unique control system employed offer highly efficient and extremely quiet operation**, the ability to control up to 6 independent heating/cooling circuits and extended service life.

€ PROMPT RETURN ON INVESTMENT

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

❄️ HEATING AND COOLING

With a heat pump, a building or facility can be heated in winter and cooled in summer.

⚙️ POWER CASCASCADE FOR HIGH PERFORMANCE

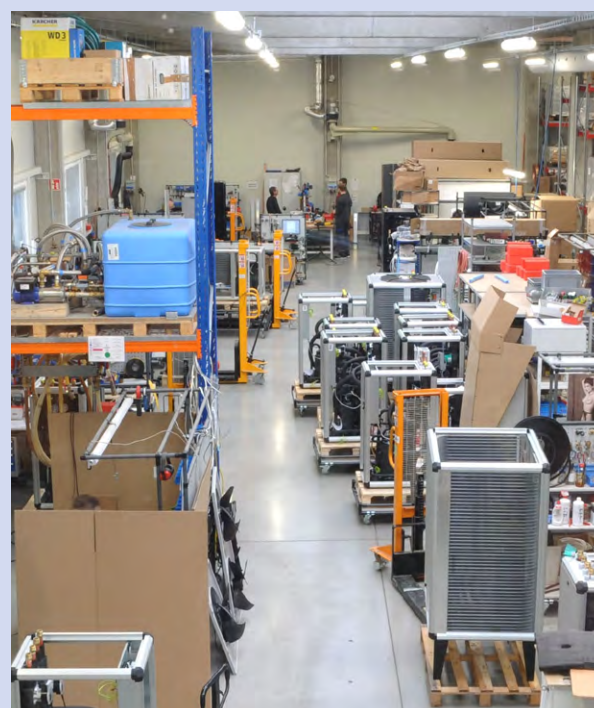
With the integrated MasterLAN software, **up to 16 heat pumps can be easily set up and connected to control power cascades of more than 1000 kW.**

MASTER THERM: A CZECH MANUFACTURING SINCE 1994

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



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



BoxAir 60 / 90 Inverter P

Compact monobloc

Highly efficient and environmentally friendly heat pump for heating and cooling commercial & administrative buildings, production or storage halls, schools, sports facilities, and other larger objects.

Refrigerant with minimum GWP

Maximally sustainable solutions with R290 refrigerant with the global warming potential = 3.

Absolutely safe

With integrated refrigerant leakage detector, automatic shut down of the unit, and check valves in the cooling circuit.



With high performance

BoxAir 90IP offers performance of 50 kW (A7W35), which makes it the most powerful air-to-water heat pump on our offer.

Handles temperatures up to 75 °C

Thanks to R290 refrigerant the outlet water temperature from the pump is up to 75 °C. Both for heating, as well as SHW.



BoxAir 60 Inverter P

Air-to-water unit with power of 30 kW is more compact in size.



A⁺⁺⁺ Energy efficiency



7-year warranty





online control

Unique Master Therm software for pump control

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



	Performance at A7W35	Object heat loss 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	SCOP	Class	SCOP	Class	°C	Regulation PLUS (pCO5)
 BoxAir 60 Inverter P	7–30	up to 25	4,54	A+++	3,51	A++	75	BA60IP-3-1-1
 BoxAir 90 Inverter P	12–50	up to 40	4,48	A+++	3,42	A++	75	BA90IP-3-1-1

KEY FEATURES

- Air-to-water system in a compact implementation
 - Frequency-controlled compressor with R290 refrigerant
 - **Power up to 50 kW per compressor circuit**
 - Easy installation and connection to the building's heating system without the need for modifications
 - **All internal components fully serviceable**
 - No indoor unit
 - MasterLAN power cascade control in basic equipment
 - Modbus RTU communication protocol in basic equipment
 - Built-in circulation pump with speed control
-
- Minimised noise due to ultra-quiet fans with infinitely variable speed control
-
- Smart grid integration: connectivity to the Internet incl. 24/7 monitoring, modbus/ BMS, integrated MID electricity meter, **communication with FV inverter and batteries**, connection to Smart Grids, etc.
 - Use for heating and cooling of the building incl. hot water preparation
 - Up to 16 pumps can be connected to power cascades
-
- Outdoor temperature range -20 °C to +40 °C
 - **Heating water / SHW temperature up to 75 °C**
 - Anti-legionella function from compressor only
 - Possibility of managing collaboration with other, external heat sources
 - Built-in bivalent power supply



Designed for	multiple-circuit heating systems
Main heating circuit	yes
Auxiliary heating circuit	independently 2 incl. mixing
Space temperature	in 2 zones
Hot water (SHW)	yes
Selectable	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.

Full (active) cooling mode

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

Room unit for auxiliary heating circuit

Terminal with temperature sensor for placing additional heating circuits in the reference rooms.

Room unit for auxiliary heating circuit with humidity sensor

An extra humidity sensor for eliminating condensation during cooling.

Expansion module for PLUS control

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

Expanded control module

For industrial/commercial applications.

Integrated electric meter 3x 65 A

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

RAL colour

Individual colour for pump panels.

Evaporator with corrosion resistant coating

Increased resistance for applications near the sea, etc.

BoxAir 60 / 90 Inverter P



BoxAir 60IP

BoxAir 90IP

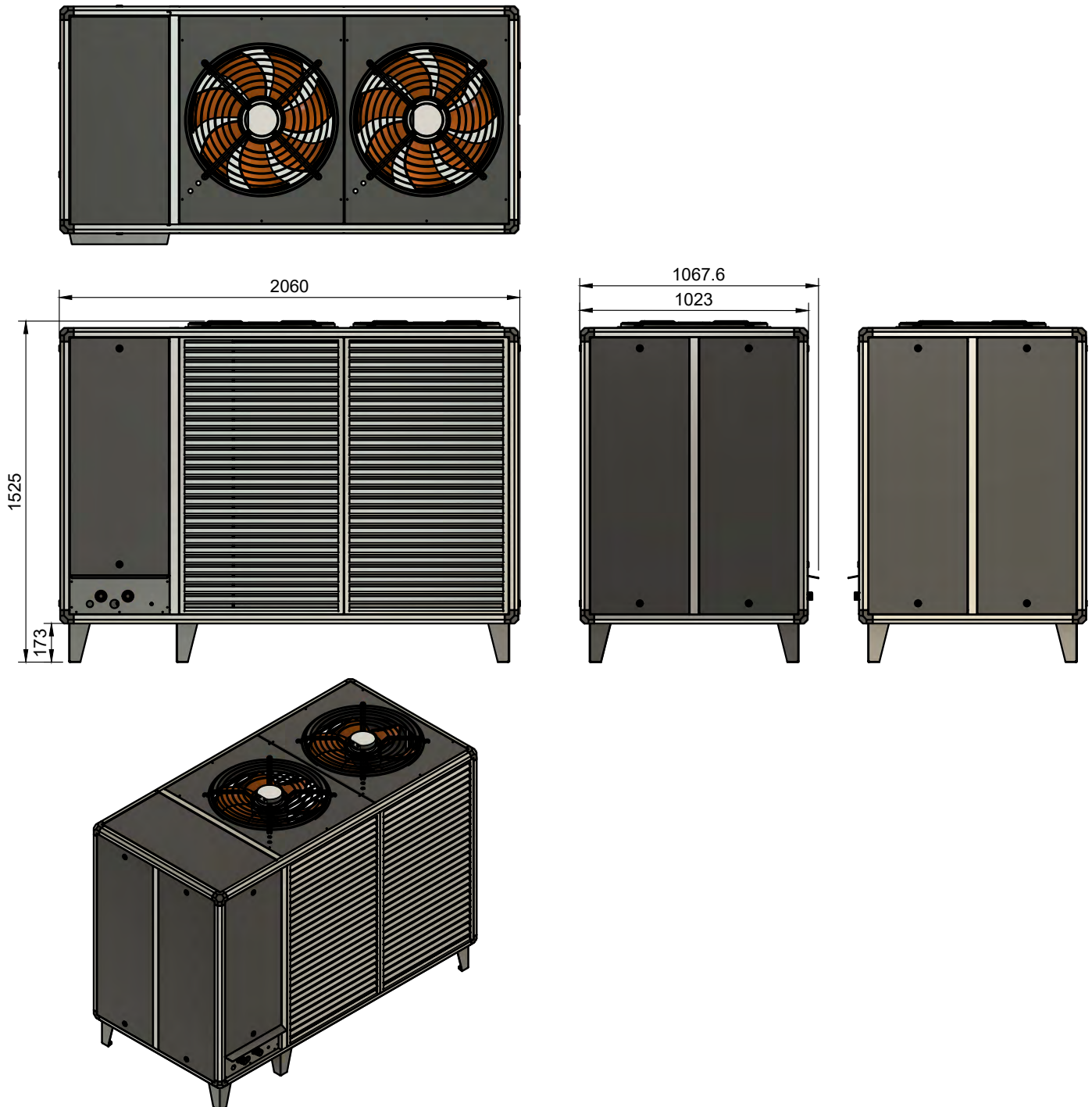
Power range at A7W35		kW	8–30	11–50
Object heat loss Q_z		kW	up to 25	up to 40
P-Design		kW	20	31
Power A7W35 ¹	60 rps	kW	18.5	25.16
	COP		5.02	4.56
Power A2W35	60 rps	kW	14.27	19.55
	COP		3.98	3.64
Power A-7W35	90 rps	kW	15.27	20.78
	COP		2.68	2.41
Power A-15W35	120 rps	kW	16.90	22.02
	COP		2.25	1.98
Seasonal energy efficiency heating – low-temperature operation at 35 °C	Power ³	kW	20.30	31.02
	SCOP		4.54	4.48
	η_s	%	179	176
	Class		A+++	A+++
Seasonal energy efficiency heating – medium-temperature operation at 55 °C	Power ³	kW	20.16	30.35
	SCOP		3.51	3.42
	η_s	%	137	134
	Class		A++	A++
Refrigerant			R290	R290
Electric circuit breaker ²			40 A"B"	40 A"B"
Compressor	Connection		3x 400 V	3x 400 V
Weight		kg	275	350
Mandatory leakage checks according to EP 517/2014			yes	yes
Maximum heating water / SHW temperature		°C	75	75
Heating capacity of the integrated electroboiler	bivalence regime	kW	7.5	15
	Backup power supply mode (and at temperatures below -20 °C)	kW	7.5 + 7.5	15 + 15
Acoustic performance L_w		dB(A)	66	TBA
Sound pressure level L_p at distance from outdoor unit	1 m	dB(A)	57	TBA
	5 m	dB(A)	45	TBA
	10 m	dB(A)	39	TBA

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

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

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

DIMENSIONS OF MODEL BA90IP



DIMENSIONS OF MODEL BA60IP

