

DC Inverter heat pumps Gorenje

Product information

Model: **Aerogor POWER EVI Inverter 18 AS**

Type: air-water (split system)



Touchscreen Control unit

English language

*Symbolic picture.

TECHNICAL SPECIFICATION: Heat pump air-water Aerogor POWER EVI Inverter 18 AS

MODEL	Unit	Aerogor POWER EVI Inverter 18 AS
ErP Energy efficiency class (floor/radiator heating)		A+ / A+
SCOP 35°C (floor heating) EN 14825	kW/kW	3,42
P _{design} for SCOP EN 14825	kW	13,48
Heating capacity* at A2/W35 (EN 14511):	kW	17,71
COP* (Coefficient of performance) at A2/W35 (EN 14511):	kW/kW	3,69
Heating capacity* at A7/W35 (EN 14511):	kW	17,90
COP* (Coefficient of performance) at A7/W35 (EN 14511):	kW/kW	3,91
*At 93-94% or 70/80 Hz of max. compressor frequency. Maximum compressor frequency at A2/A7/W35 is 75/85 Hz.		
Heating mode (A7/W35)**; According to EN 14511.		
Heating capacity**	kW	8,2 - 18,0
Rated input power**	kW	1,85 - 4,60
COP - Coefficient of Performance**	kW/kW	3,91 - 4,43
Cooling mode (A35/W7)***; According to EN 14511.		
Cooling capacity***	kW	6,4 - 15,1
Rated input power***	kW	2,19 - 6,42
EER - Energy Efficiency Ratio***	kW/kW	2,35 - 2,92
Voltage	V/Hz/Ph	380-415/50/3
Type of compressor	/	Scroll EVI DC Inverter
Max. temperature of heating water	°C	55
Operating range - source temp. in: heating/cooling mode	°C	-25°C to +45°C / 0°C to +65°C
Refrigerant specification		
Type of refrigerant/Refrigerant - mass (factory pre-charged)	type/kg	R410A/6,6
Type of connection/max. distance between outdoor-indoor unit (see details on page 7)	/	Refrigerant connection / 30 m
Dimensions of refrigerant pipes connectors	Liquid - Gas	3/8" - 3/4"
Fan		
Fan type	/	Axial
Air flow	m ³ /h	4500
Rated power	W	2 x 80
Water side heat exchanger		
Type	/	Plate heat exchanger
Pressure drop	kPa	35
Dimensions of water piping connection		
Allowable flow - secondary (water) side		
Min. / Nominal / Max. water flow	m ³ /h	1,86/3,09/3,70
Net dimensions		
Indoor unit (WxHxD) (see details on page 6)	mm	512 x 932 x 303,5
Outdoor unit (WxHxD) (see details on page 6)	mm	1443 x 1294 x 460
Net weight		
Indoor unit/Outdoor unit	kg	55/180
SERIAL INTEGRATED COMPONENTS		
Electrical flow heater	kW/ph	6 kW (3ph / 2 stages)
Circulation water pump - A energy class	type	Grundfos UPMXL GEO 25-125 130
3-way diverting valve for DHW tank		External (in delivery)
Fuse for heat pump	A/type	1 x 3p/16A/C
Fuse for electrical flow heater	A/type	3 x 1p/10A/C
Sound power level according to EN12102 (indoor/outdoor)****	dB(A)	51,8/72,7 (+/- 1,5 dB)
****See details on page 5		

Outdoor unit :



Indoor unit - Hydrobox :

Aerogor POWER EVI Inverter 18 AS



Outdoor unit—description of components:

- Type of compressor: OEM Mitsubishi EVI + Carel compressor drive
- Voltage supply—heat pump: 380-415/50/3 [V/Hz/Ph]
- Operating range of compressor: 30 - 100 Hz
- Additional heat exchanger for EVI function
- Type of expansion valves: Carel EEV
- Type of fan: 2 x DC fan with speed control
- Type of outdoor unit controller: CAREL
- Active cooling with 4-way reversible valve

Indoor unit—description of components:

- Type of plate heat exchanger: SWEP B26H×48/1P-SC-M9.65
- Type of circulating pump: Grundfos UPMXL GEO 25-125 130
- Energy class of circulating pump: A
- Safety kit: pressure gauge, air-vent valve, safety valve
- Dimension of water connectors: DN 32 (bight diameter)
- Control unit and HMI: TLCD 4827 Touch screen
- Electrical flow heater: 6 kW (2 kW + 4 kW)
 - 1st stage: 2 kW
 - 2nd stage: 6 kW

Voltage supply –el. flow heater: 380-415/50/3 [V/Hz/Ph]

Serial integrated flow switch

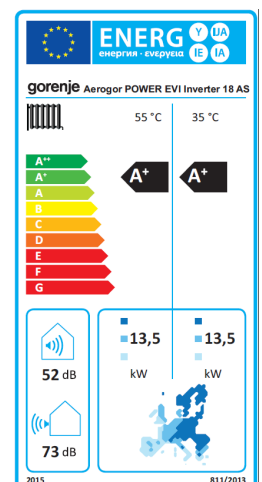
Serial attached components:

- 1x Three-way diverting valve for system with DHW tank
- 1 x Communication cable 20 m (indoor/outdoor unit)

1 x Set for Wi-fi module

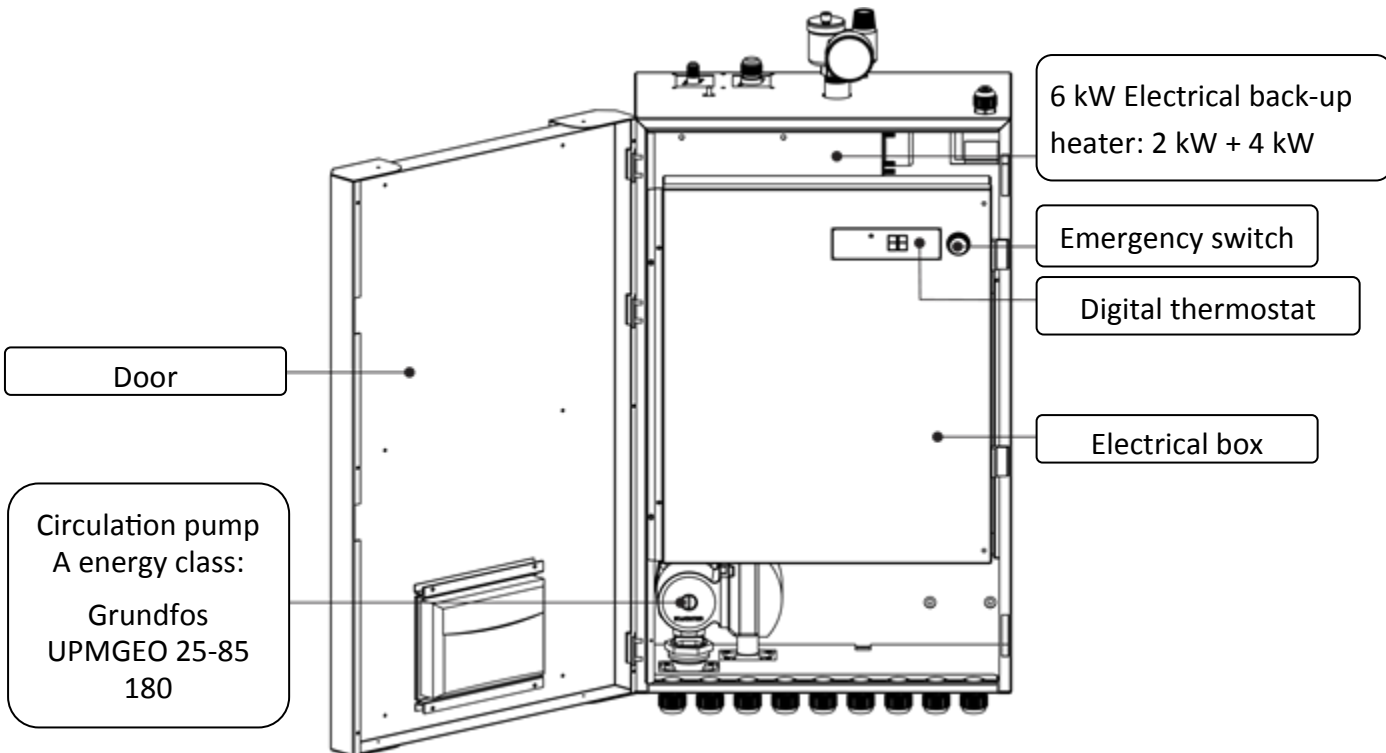
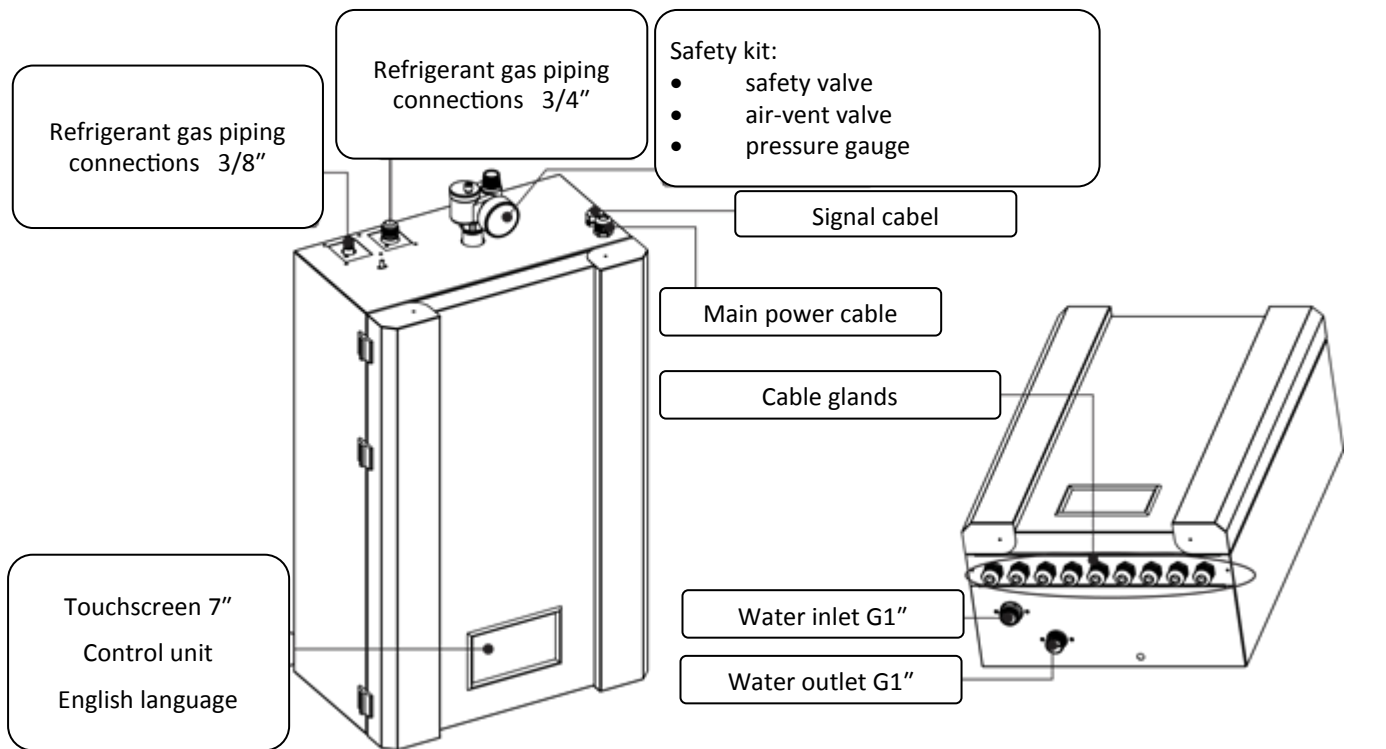
6 x temperature sensors:

- Room temperature sensor (TR)
- Temp. sensor for outlet water temp. or buffer tank (TC)
- Temp. sensor for DHW tank (TW)
- 2 x temp. sensors for mixing heating circuits (TV1, TV2)
- Additional outdoor ambient sensor (Ta) (enable installation of the Ta sensor on the north part of the house where is minimum influence of the sun)

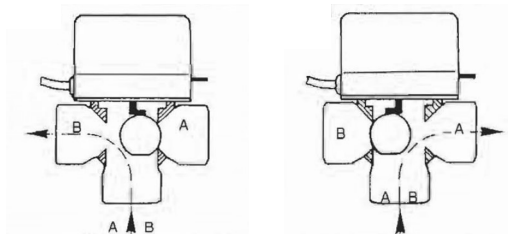


Position of components

Indoor unit: Aerogor POWER EVI Inverter 18 AS



3-Way diverting valve
(In delivery)



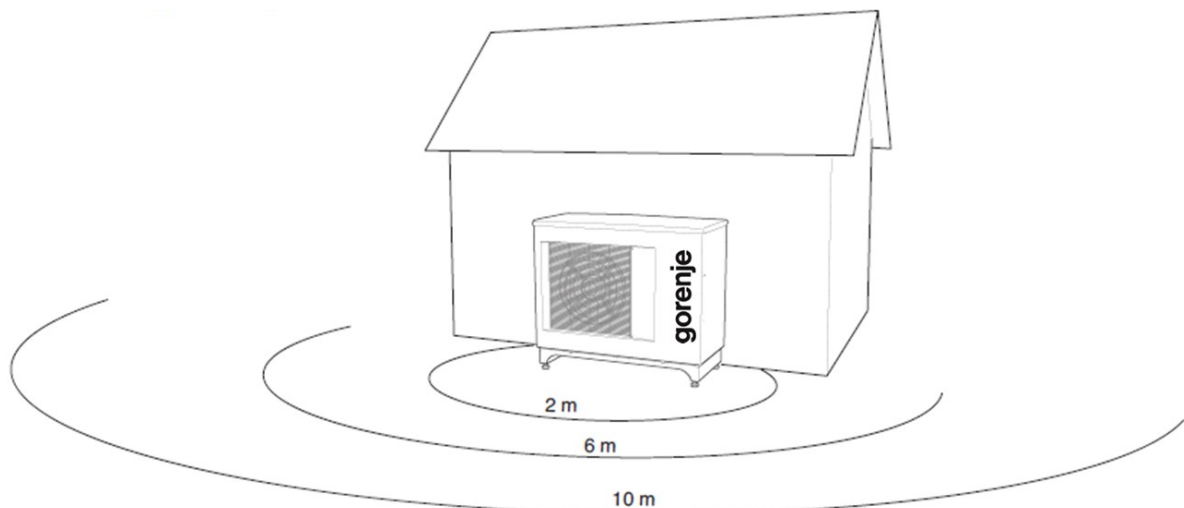
Attached components for Aerogor POWER EVI Inverter 18 AS

Name	Quantity	Picture
Installation manuals, warranty statement/card	1	
Overflow water pipe	1	
Safety kit	1	
TR – room temperature sensor + extension cable 20 m	1	
TC – sensor for outlet water temperature/buffer tank + extension cable 10 m	1	
TW - temp. sensor for DHW tank + extension cable 10 m	1	
TV1 - temp. sensor for Mixing valve 1 + extension cable 10 m	2	
TV2 - temp. sensor for Mixing valve 2 + extension cable 10 m	2	
Communication cable between indoor and outdoor unit 20 m	1	
Indoor unit bracket	1	
Expansion bolts	2	
Ta - additional Outdoor ambient sensor	1	
Set for WI-FI module (adapter, antenna, connection cable)	1	

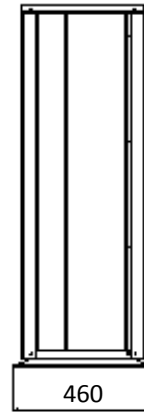
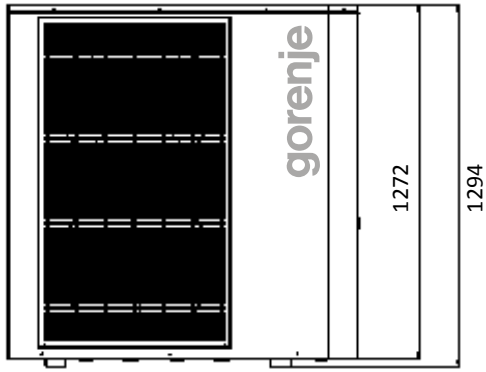
Sound power/pressure levels of heat pump air-water Aerogor POWER EVI Inverter 18 AS

Model name	Sound power level Lw(A)	Sound pressure level [dB(A)] on distance*						
		*1 m	*2 m	*4 m	*5 m	*8 m	*10 m	*15 m
Aerogor POWER EVI	72,7	64,72	58,70	52,68	50,74	46,65	44,72	41,2

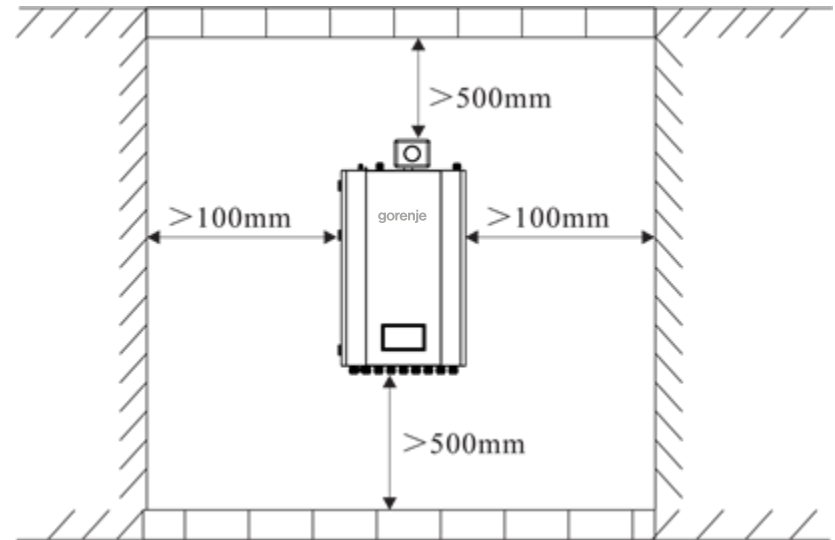
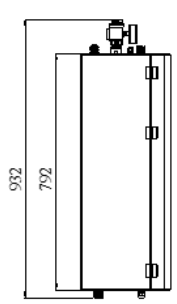
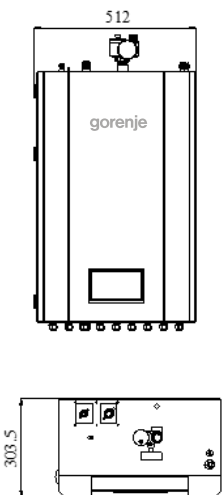
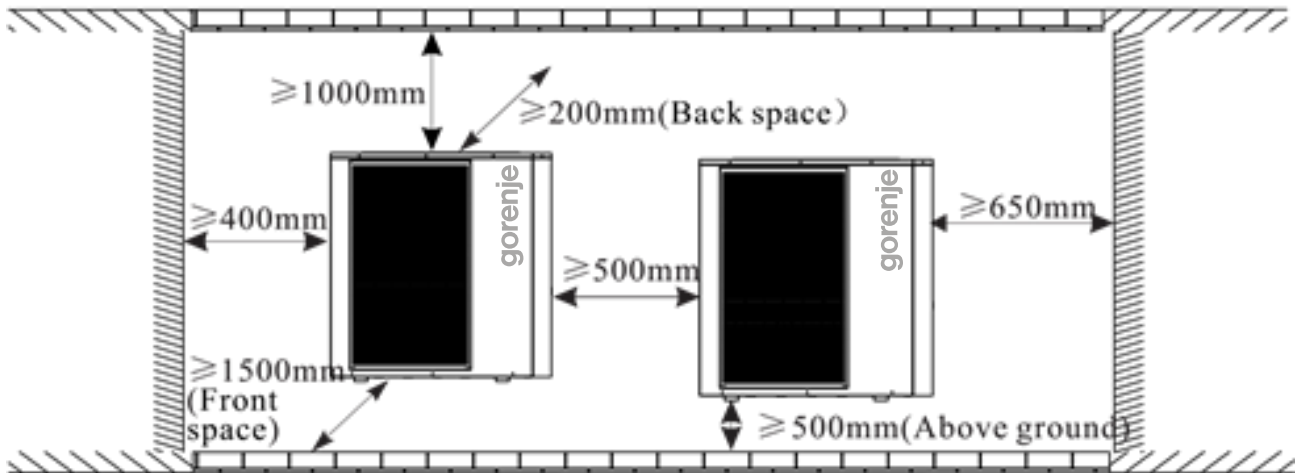
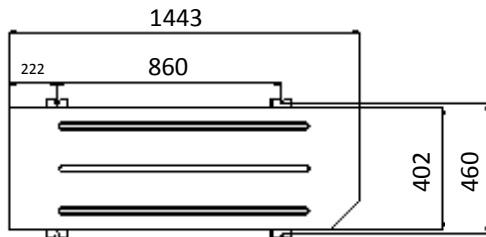
According to standard EN 12102. Sound measurement according to EN ISO 3744. Measurement precision (standard deviation in dB): +/- 1,5 dB



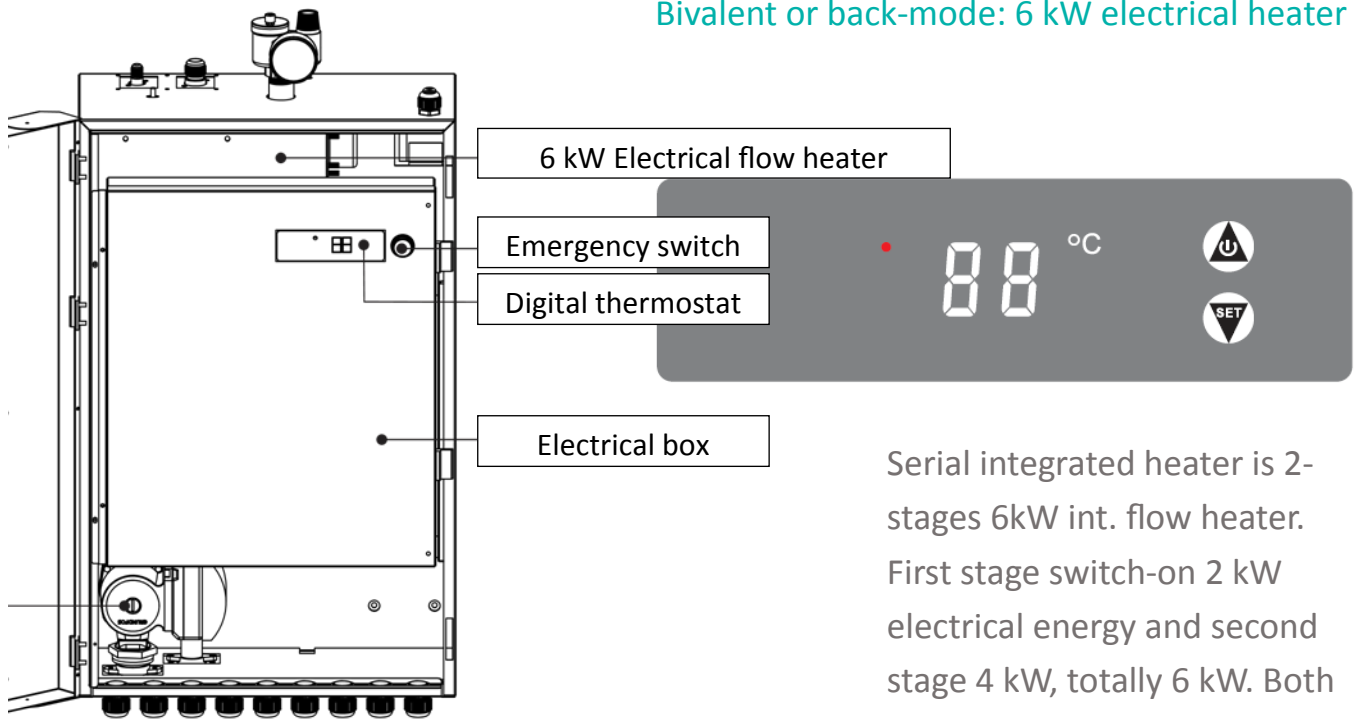
DIMENSIONS OF INDOOR AND OUTDOOR UNIT



Dimensions in: [mm]



Bivalent or back-mode: 6 kW electrical heater



Serial integrated heater is 2-stages 6kW int. flow heater. First stage switch-on 2 kW electrical energy and second stage 4 kW, totally 6 kW. Both levels are controlled by control unit of heat pump and additional digital thermostat.

Gas charging for Aerogor POWER EVI Inverter 18 AS

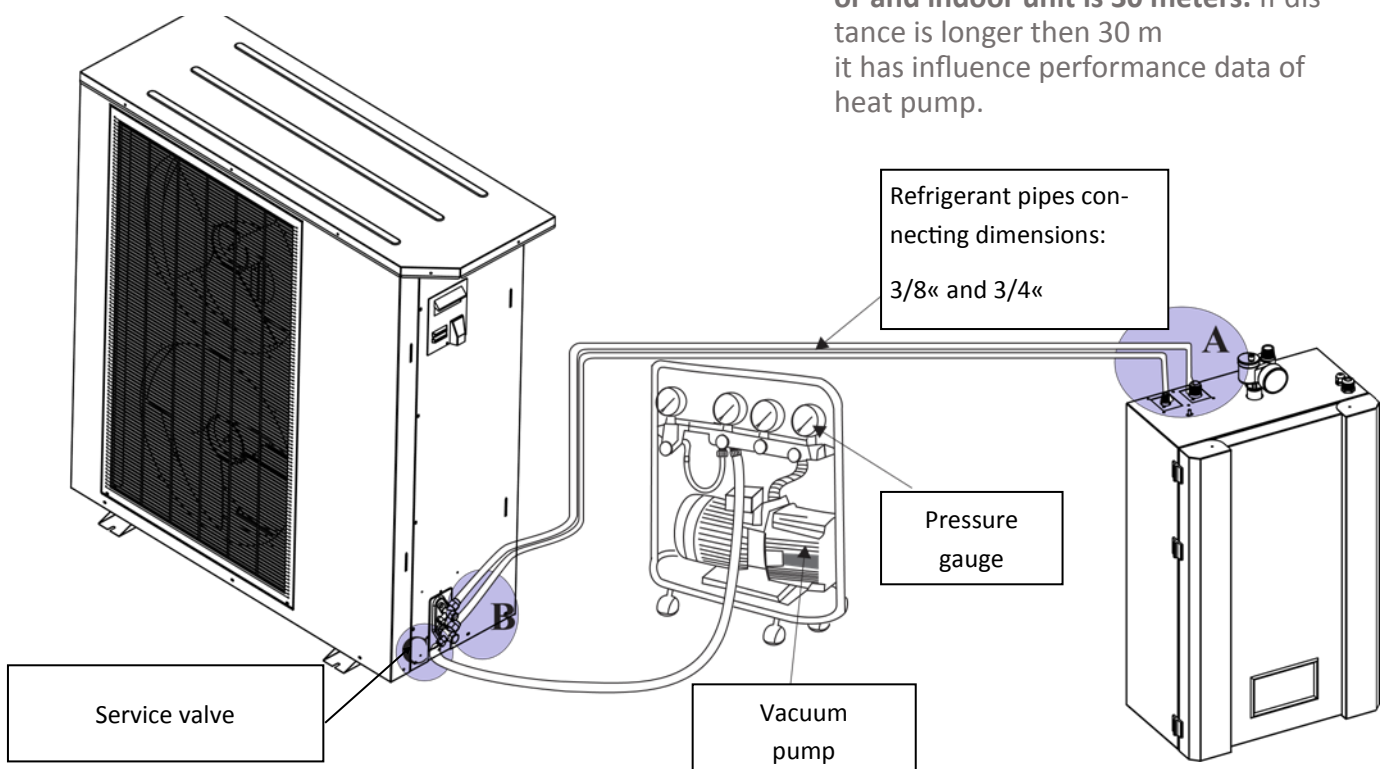
Outdoor unit is pre-charged with **6,6 kg** of refrigerant gas R410A. This volume of refrigerant gas is enough for a **15 m** long refrigerant pipe connection. **For every additional meter is obligatory to supplement 60 g refrigerant gas in the system.**

If refrigerant pipe system is 20 m long, installer need to add 300 g refrigerant gas in the system:

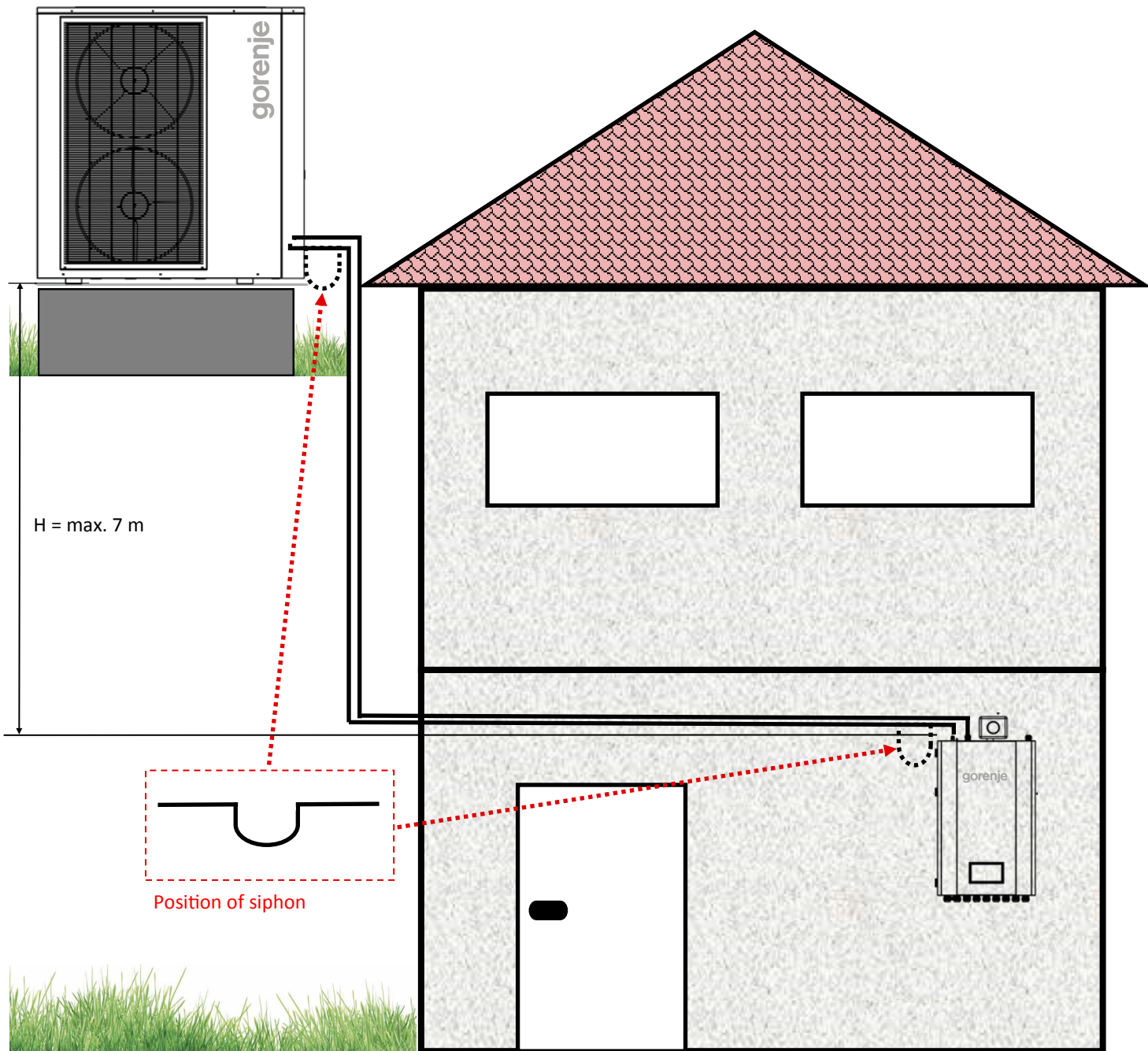
$$(20 - 15) [m] \times 60 [g/m] = 5 [m] \times 60 [g/m] = 300 [g]$$

Min. refrigerant pipe length: 3 m

Maximum pipe length between outdoor and indoor unit is 30 meters. If distance is longer then 30 m it has influence performance data of heat pump.



Height difference between outdoor and indoor unit



Outdoor unit is above Indoor unit

Maximum height difference is 7 m.

Totally pipe length distance can be maximum 30 m. In case of 7 m height distance between indoor and outdoor unit, horizontal pipe distance can be maximum 21 m. **In that case is obligatory to integrated 2 siphons.** Each siphons takes 1 m pipe distance.

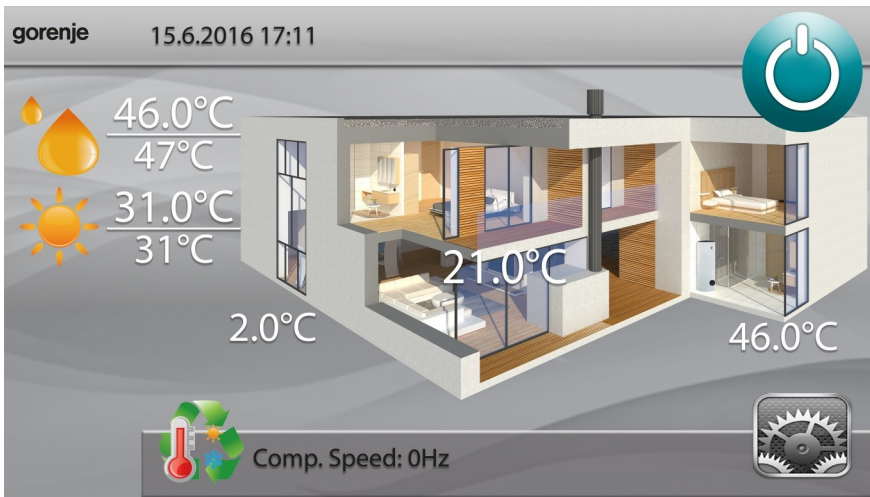
Outdoor unit is below Indoor unit

Maximum height difference is 5 m.

Totally pipe length distance can be maximum 30 m. In case of 5 m height distance between indoor and outdoor unit, horizontal pipe distance can be maximum 25 m.

Model name	Outdoor unit is above Indoor unit max. height difference [m]/Number of siphons	Outdoor unit is below Indoor unit max. height difference [m]/Number of siphons
Aerogor POWER EVI Inverter 18 AS	7 m / 2 siphons	5 m / 0 siphon

INTELLIGENT ELECTRONIC CONTROL UNIT + VARIABLE SPEED COMPRESSOR



WI-FI Control (Service application)



Basic configuration enable regulation of:

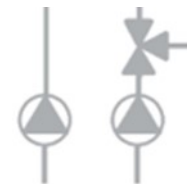
- **2 mixing (proportional 24VDC/0-10V, for example ESBE ARA 639)**

REGULATION OF 2 HEATING CIRCUITS

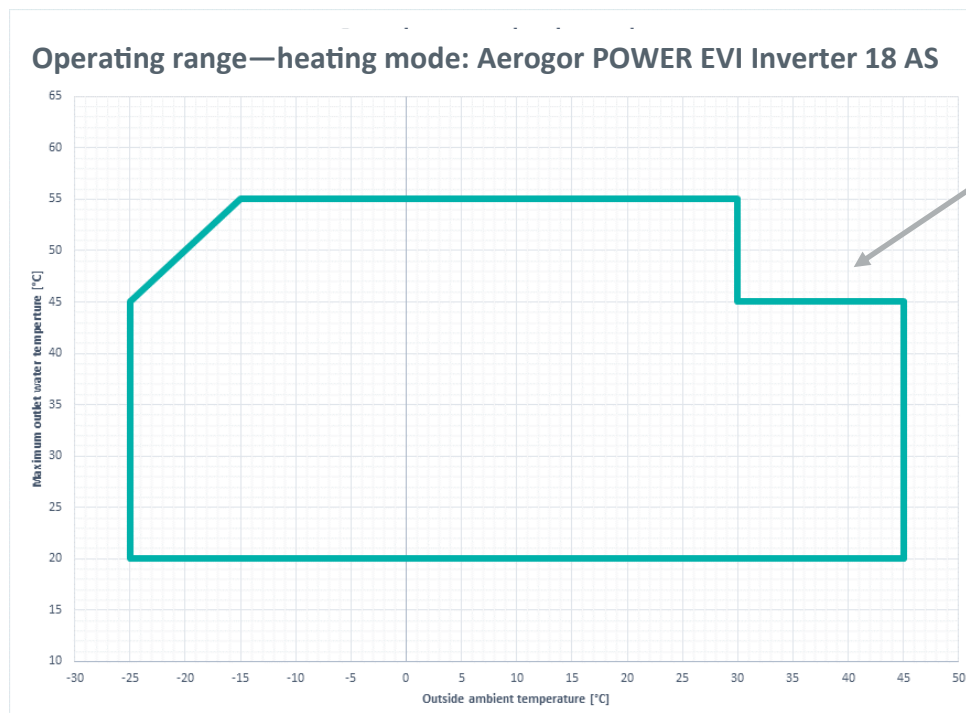
or **2 direct heating circuits**

2 X DIRECT HEATING/COOLING CIRCUITS

- **3-way diverting valve** (for DHW water tank)
- **Switching ON/OFF 6 kW electrical flow heater** (2 stages working mode)
- **Switching ON/OFF bivalent heating source**
- **Anti - legionella function**
- **Drying (curing) screeds mode**
- **Sleep function mode—silent mode**



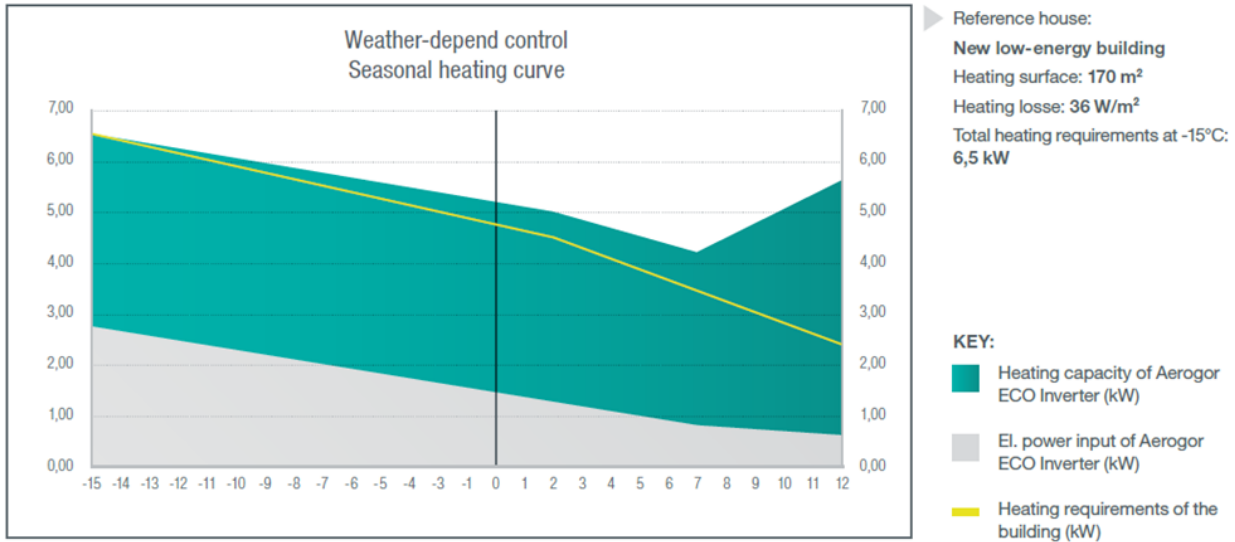
DC Inverter compressor is optimal solution for low and high temperature applications. ECO mode limitation enable energy saving during the summer time - it also protect a working envelope of the most important component in heat pump - compressor.



ECO mode:

Limited water temperature for energy saving in summer time.

INTELLIGENT ELECTRONIC CONTROL UNIT + VARIABLE SPEED COMPRESSOR

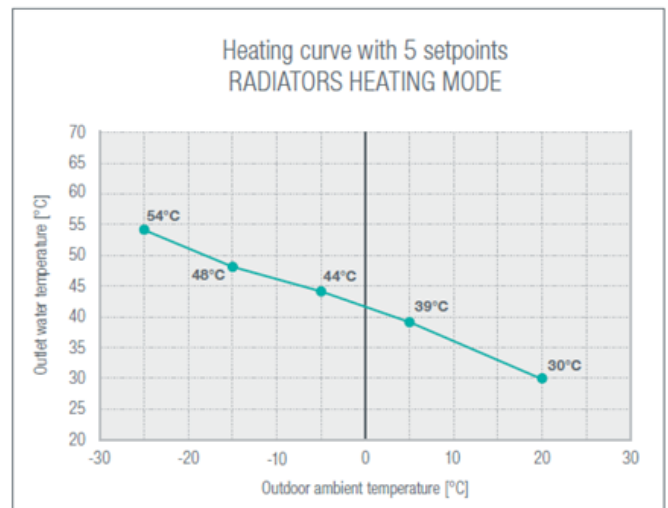
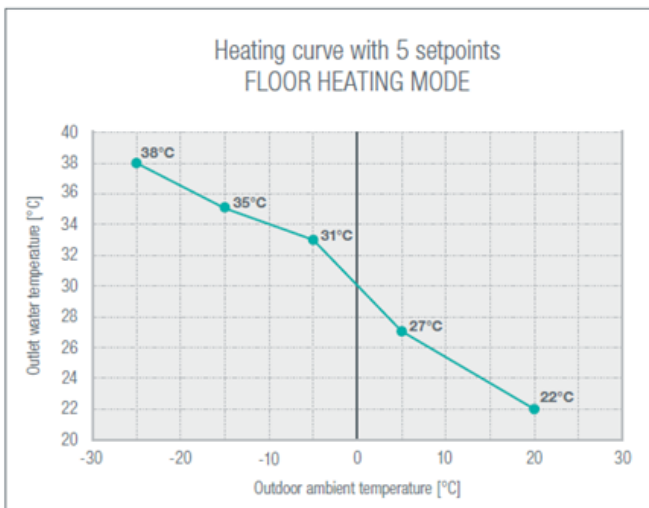


Description of heating curve function: The heating curve generates the flow temperature setpoint, which is used to maintain a certain flow temperature depending on the prevailing weather conditions. The heating curve can be adjusted via a number of settings, thus matching heat output and room temperature to individual needs.

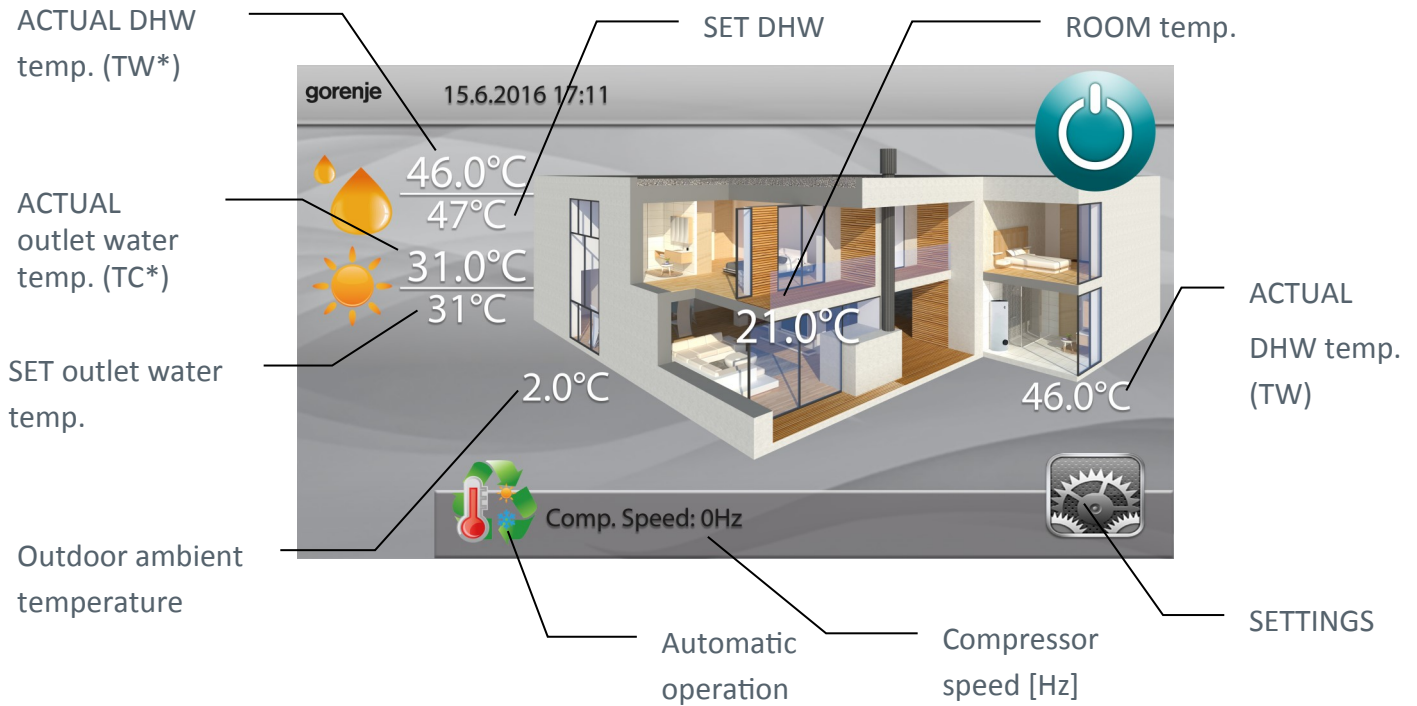
ADJUSTABLE HEATING CURVE

The heating curve depends on the characteristics of the building being heated, which is the only warranty that the heat pump, regardless of the outdoor temperature, will always heat up the water to the lowest acceptable temperature. End user can very easily change or adopt 5 different setpoints of heating curve. The most important are C and D points (outdoor ambient temperature -5°C to 5°C).

RADIATORS HEATING SYSTEMS			FLOOR HEATING SYSTEMS		
	Outdoor temperature	Outlet water temperature of heat pump	Outdoor temperature	Outlet water temperature of heat pump	
A	-25°C	54	-25	38	
B	-15°C	48	-15	35	
C	-5°C	44	-5	31	
D	5°C	39	5	27	
E	20°C	30	20	22	



INTELLIGENT ELECTRONIC CONTROL UNIT + VARIABLE SPEED COMPRESSOR

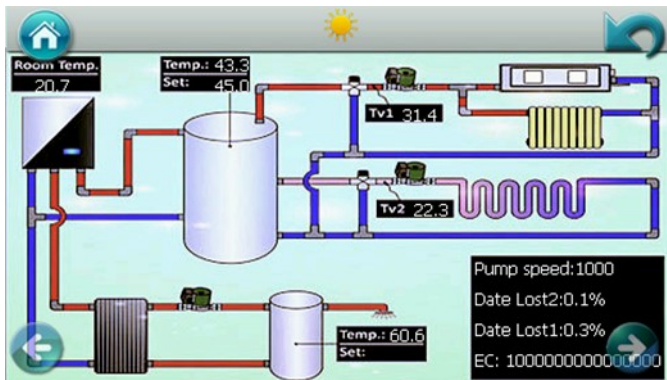


*TC temp. sensor.for buffer tank or outlet water

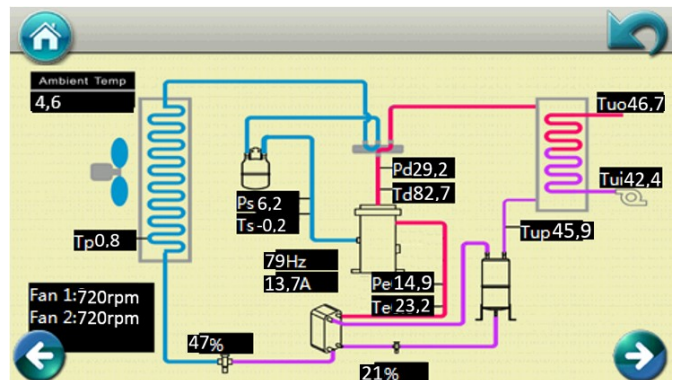
*TW temp. sensor for DHW tank (sanitary water)

SIMPLE AND EASY DIAGNOSTIC OF THE HEATING SYSTEM AND HEAT PUMP

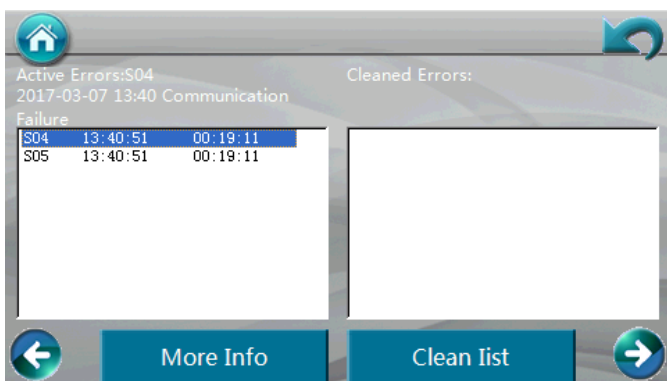
Hydraulic scheme of the heating system



Scheme of heat pump refrigerant system



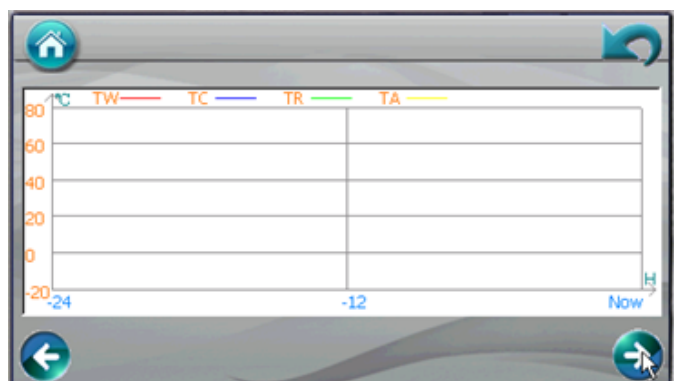
Notes/Errors



Active errors

Error history

24 hours diagnostic graphs



Modern control unit enable not only regulation of heat pump's operation but also some other special functions:

AUTOMATIC OPERATION - HEATING/COOLING/DHW

Heat pump can operate in 3 different modes: Heating/Cooling/DHW. Intelligent control unit enable automatic switching between:

- heating and cooling mode
- heating and DHW mode
- cooling and DHW mode



SLEEP FUNCTION - SILENT OPERATION MODE

In this mode HEAT PUMP adjusts outlet water temperature or room temperature to **save energy** and lowers the **operation noise by reducing the working speed** of the compressor and fan motor for optimum sleeping comfort.



REDUCED SETPOINT - HOLIDAYS MODE

Serial integrated Vacation Mode allows the users to set the system to operate under minimized vacation settings between the programmed starting and ending time of their vacation periods. System will switch back to normal mode at the ending time of vacation mode properly, so that the occupants will be welcome with proper heating temperature and sanitary hot water, upon returning from their vacations.



ROOM TEMPERATURE COMPENSATION FUNCTION

When the water temperature control function is utilized, users can still connect the room temperature sensor (serial integrated) to allow the intelligent control unit to adjust the outlet water temperature automatically based on the difference between the desired room temperature and the actual room temperature measured.

- +30 °C
- +20 °C
- +10 °C
- 0 °C
- 10 °C
- 20 °C
- 25 °C



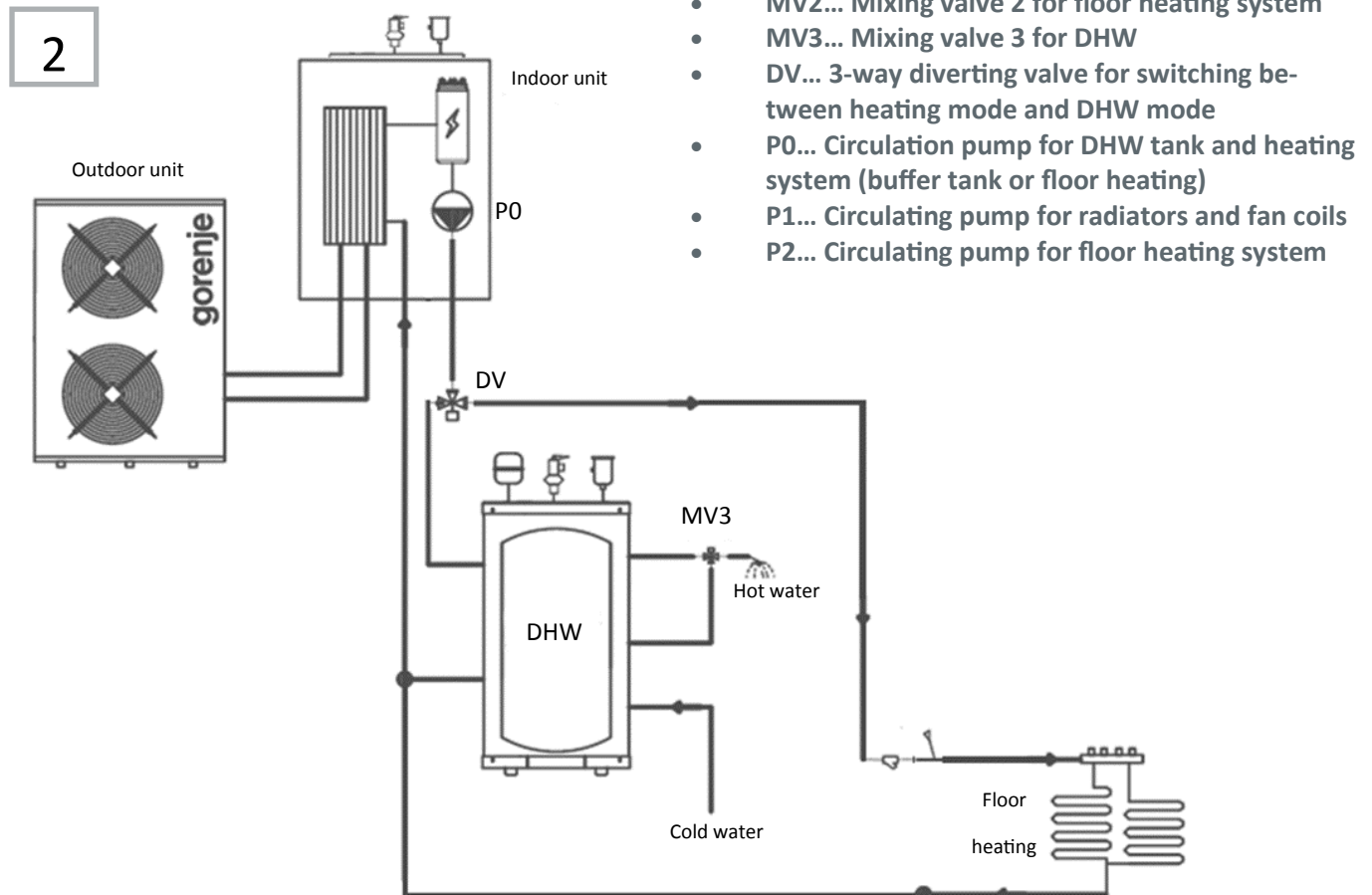
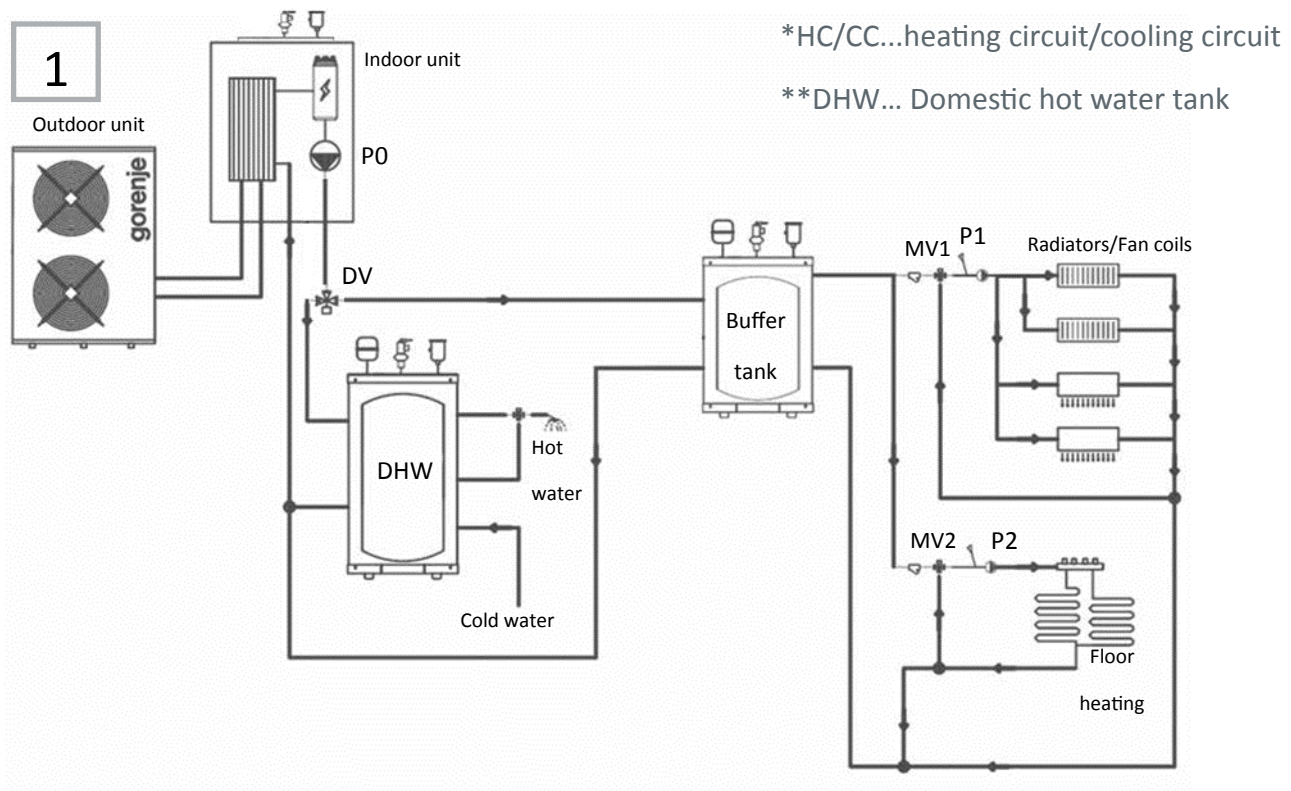
DHW STORAGE FUNCTION

This function enables time setting of DHW mode for 7 days per week and 365 days per year. For example: heat pump heat up the sanitary hot water on the morning time between 5.00 - 7.00 and on the afternoon/evening time between 15.00 - 23.00. It enable energy saving and lower costs on an annual level.



SYSTEM SCHEME 1: buffer tank + DHW tank + 1 mixing HC/CC* + 1 direct HC/CC*

SYSTEM SCHEME 2: DHW** tank + 1 direct HC/CC*



Concrete foundation for heat pump **Aerogor POWER EVI Inverter 18 AS**

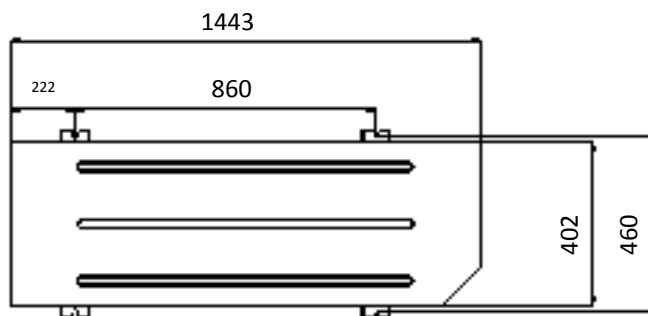
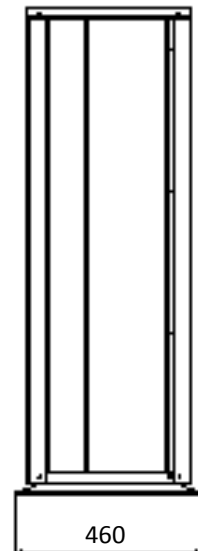
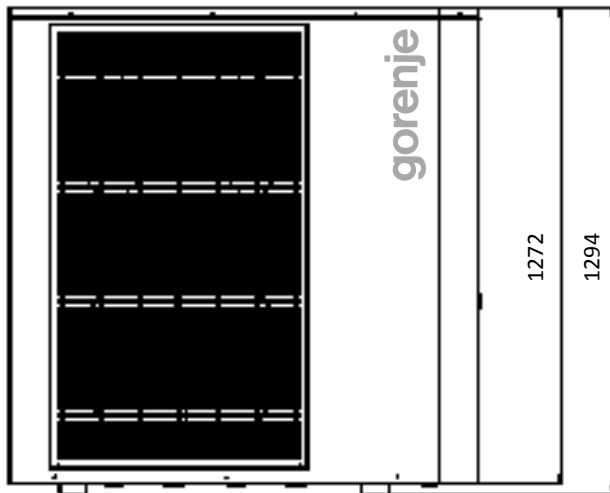
Correct



Incorrect



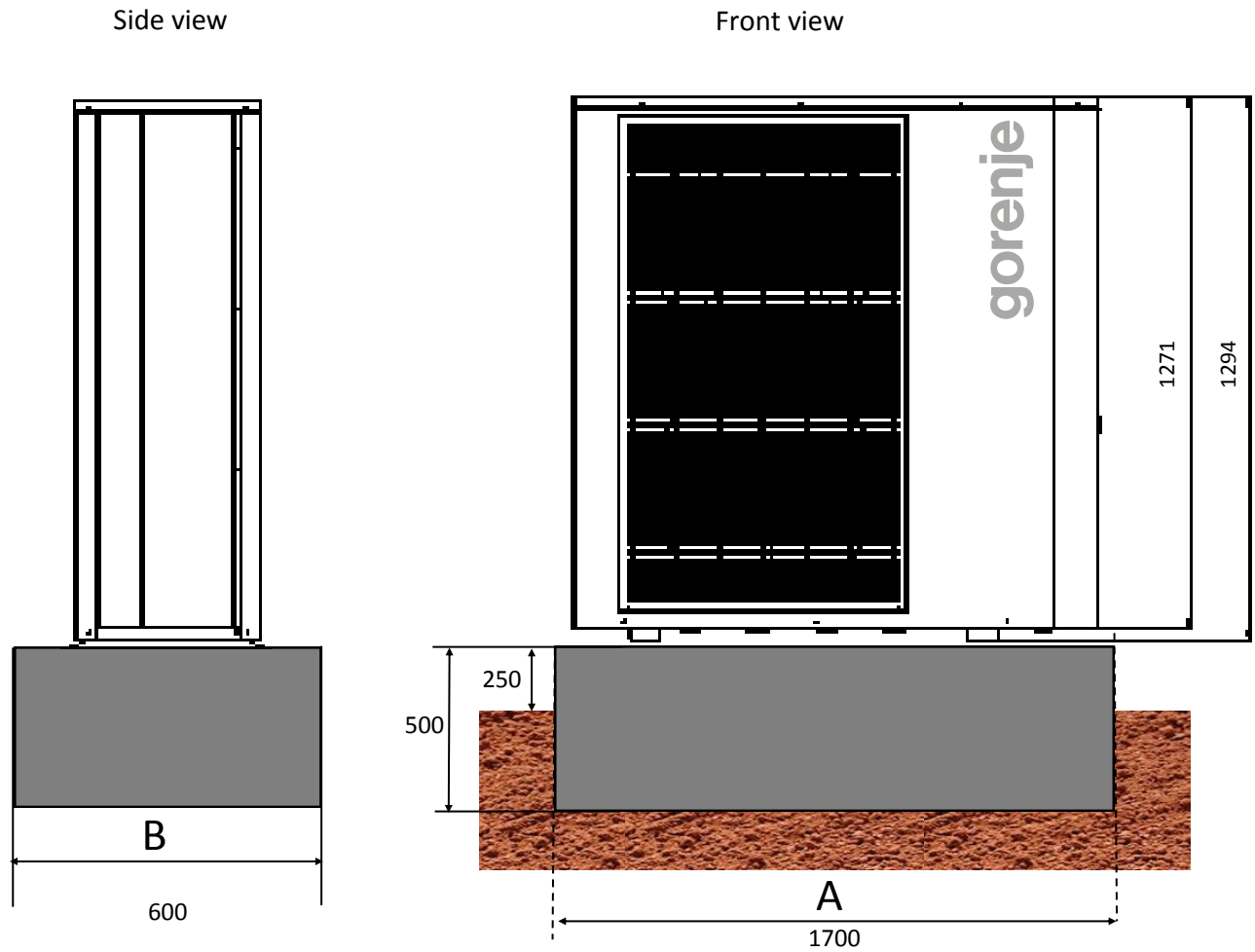
Dimensions of outdoor unit **Aerogor POWER EVI Inverter 18 AS**



Dimensions in: [mm]

Concrete foundation for heat pump **Aerogor POWER EVI Inverter 18 AS**

Outdoor unit of heat pump



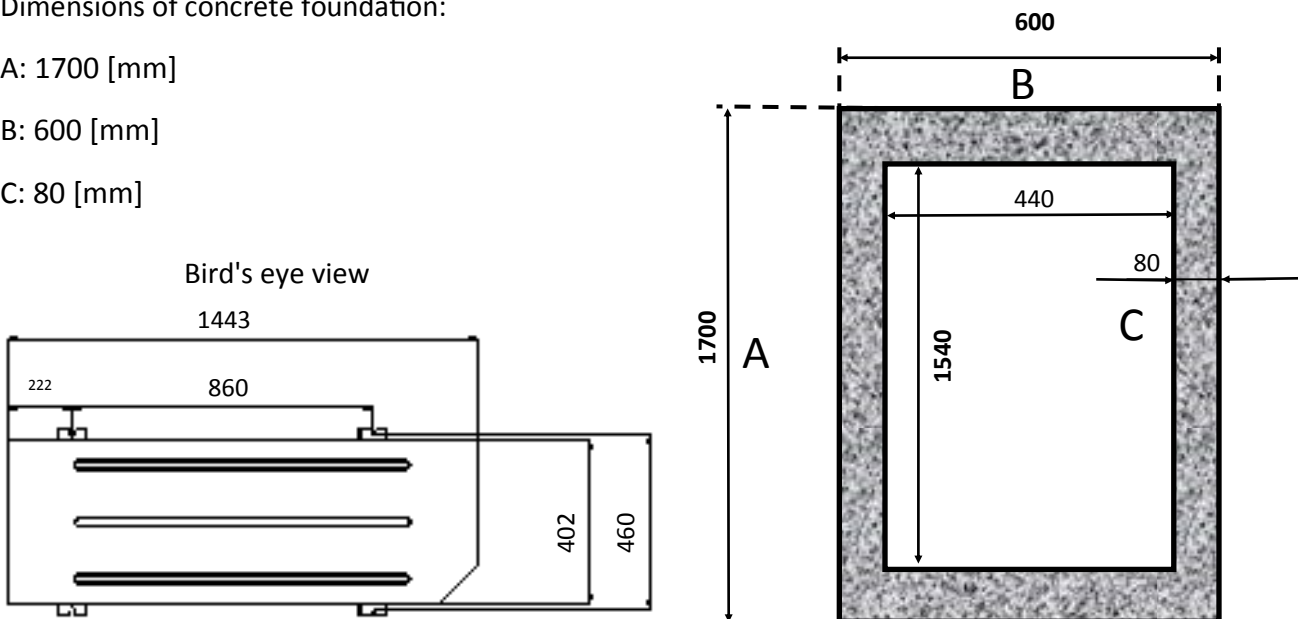
Dimensions of concrete foundation:

A: 1700 [mm]

B: 600 [mm]

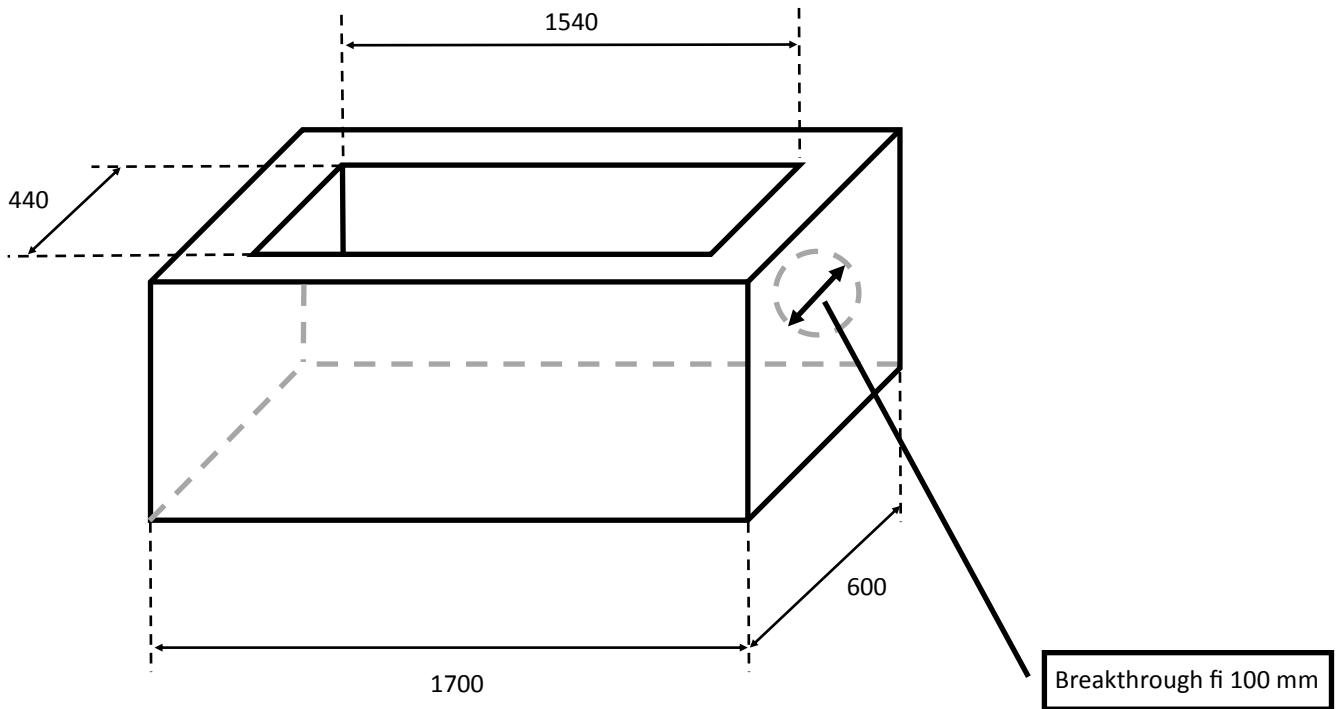
C: 80 [mm]

Bird's eye view of concrete foundation

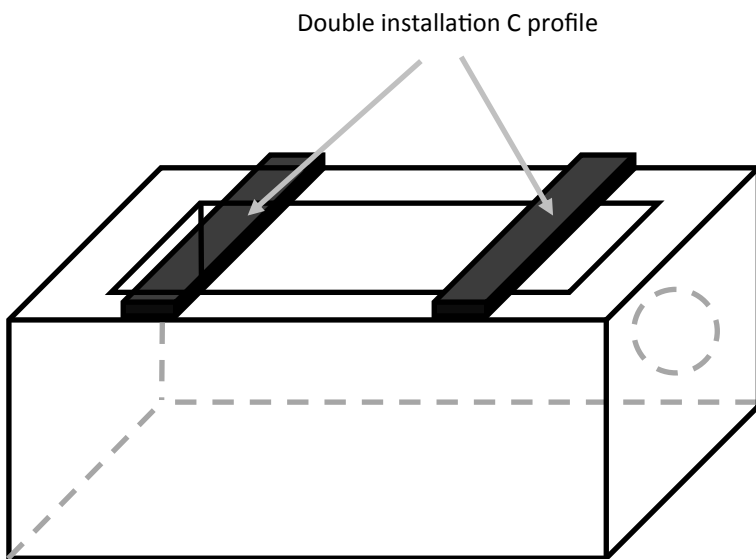


Dimensions in: [mm]

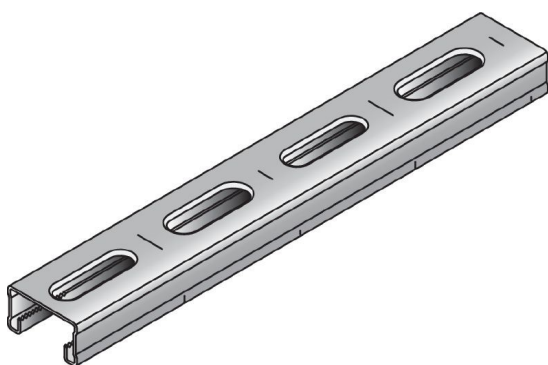
Concrete foundation for heat pump **Aerogor POWER EVI Inverter 18 AS**



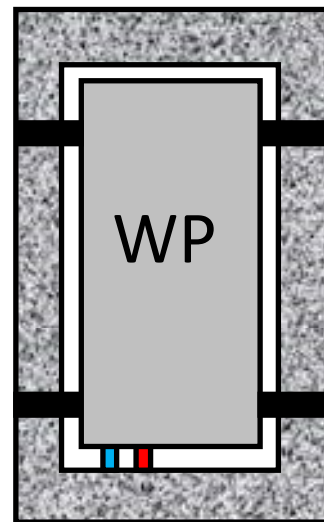
Installation of C profile and legs of heat pump on the concrete foundation



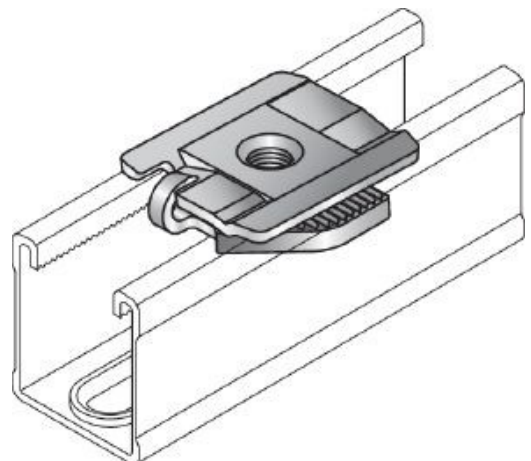
MM-C-16 Double installation profile



Bird's eye view



MM-S Connector for hose clamp



Components for long life time and better efficiency

Magnetic dirt separator

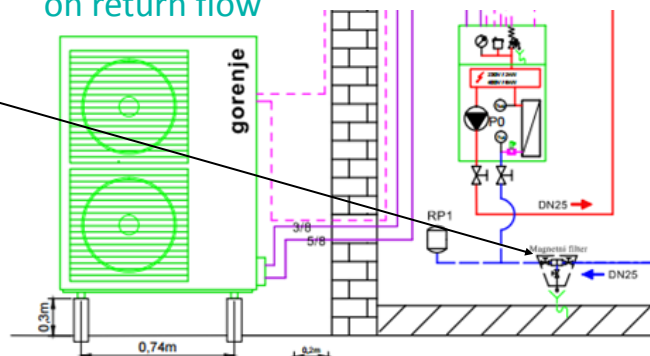
Multifunction device with dirt separator and strainer. Specific for the complete cleaning of the hydraulic circuit, to protect continuously generator and components. Main features of dirt separator:

- ⇒ enable desired water flow in the system
- ⇒ Optimum water flow enable declared heating capacity and COP of heat pump
- ⇒ Enable long life time of heat pump



Position in the installation system:

on return flow



GORENJE D.D.

HVAC (heating, ventilation and air-condition)

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