

**MIKOTERM**  
electronic

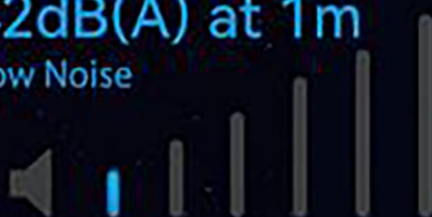
TOPLOTNE PUMPE  
HEAT PUMPS







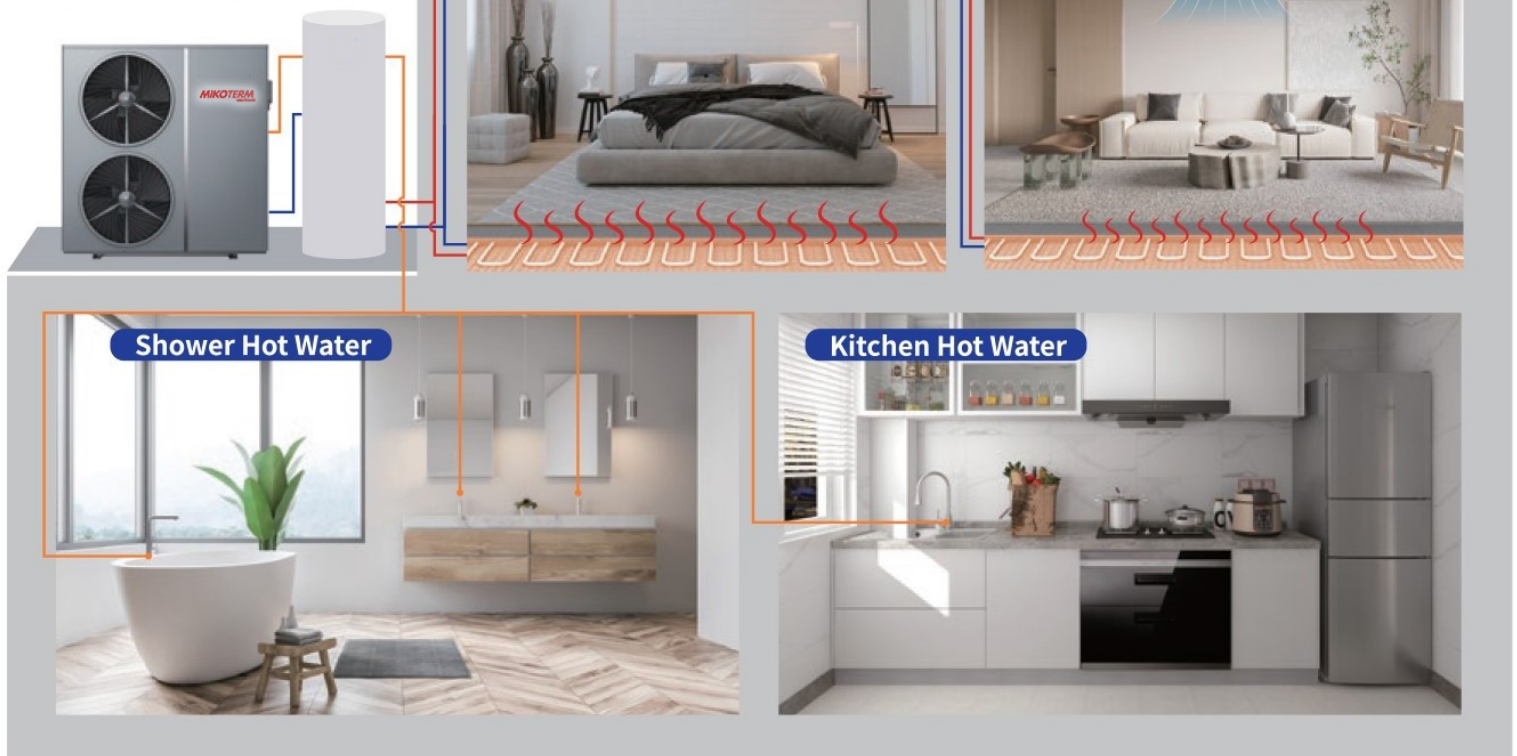
42dB(A) at 1m  
Low Noise



## Monobloc R32 EVI Heat Pump



**Heating & Cooling  
Heat Pump  
Residential  
EVI inverter**



***Obezbedite udobnost i komfor***

**Provide comfort**

Jedinica / Unit  
9kW, 13kW



monofazna / trofazna  
single-phase / three-phase

Jedinica / Unit  
16kW, 20kW, 26kW



trofazna  
three-phase



## **EVI tehnologija**

### **EVI technology**

EVI je skraćenica za "Enhanced Vapor Injection" i predstavlja tehnologiju koja se koristi na našim niskotemperaturnim toplotnim pumpama za postizanje većih performansi na nižim temperaturama do  $-25^{\circ}\text{C}$ . Sa EVI tehnologijom i inverterskim kompresorom, Mikoterm toplotne pumpe mogu da rade stabilno i da ostvare visoku efikasnost.

EVI stands for "Enhanced Vapor Injection" and is a technology used on our low-temperature heat pumps to achieve higher performance at lower temperatures as down as  $-25^{\circ}\text{C}$ . With EVI technology and inverter compressor, the Mikoterm heat pumps can work stably and achieve high efficiency.



## **Zagarantovana bezbednost**

### **Guaranteed Safety**

Rashladno sredstvo R32 se smatra ekološki prihvatljivim, ali nepravilno rukovanje i skladištenje mogu dovesti do potencijalnih bezbednosnih problema. Sve ovo se može izbeći korišćenjem Mikoterm toplotne pumpe R32 DC inverter, jer su dizajnirane sa sigurnosnim merama koje garantuju bezbednost.

The refrigerant R32 is considered to be environmentally friendly, but improper handling and storage might lead to potential safety issues. All of this can be avoided by using the Mikoterm heat pump R32 DC inverter since they are designed with safety measures to guarantee security.



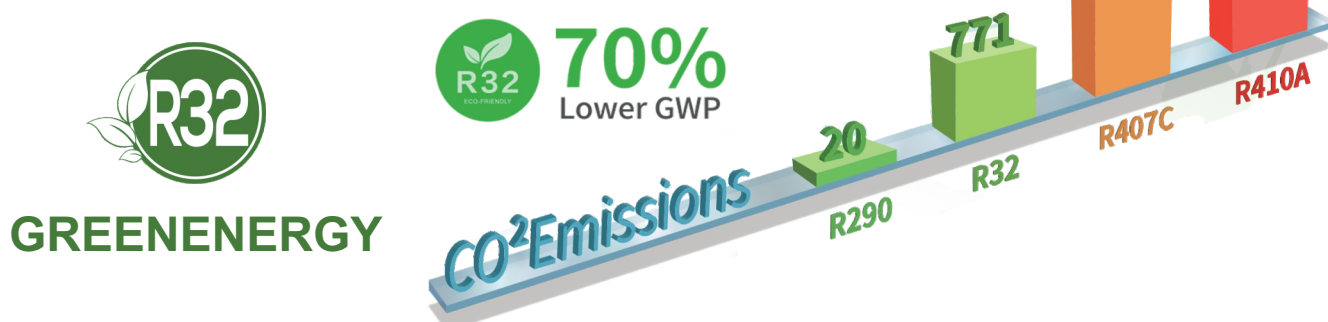


## R32 sa niskim GWP

### R32 Low GWP Refrigerant

U poređenju sa rashladnim sredstvima koja se danas široko koriste, kao što su R-410A i R407C, R32 ima mnogo manji potencijal globalnog zagrevanja, što utiče na očuvanje životne sredine.

Compared to the refrigerant widely used today, such as R-410A and R407C, R32 have much lower global warming potential, which affects the preservation of the environment.

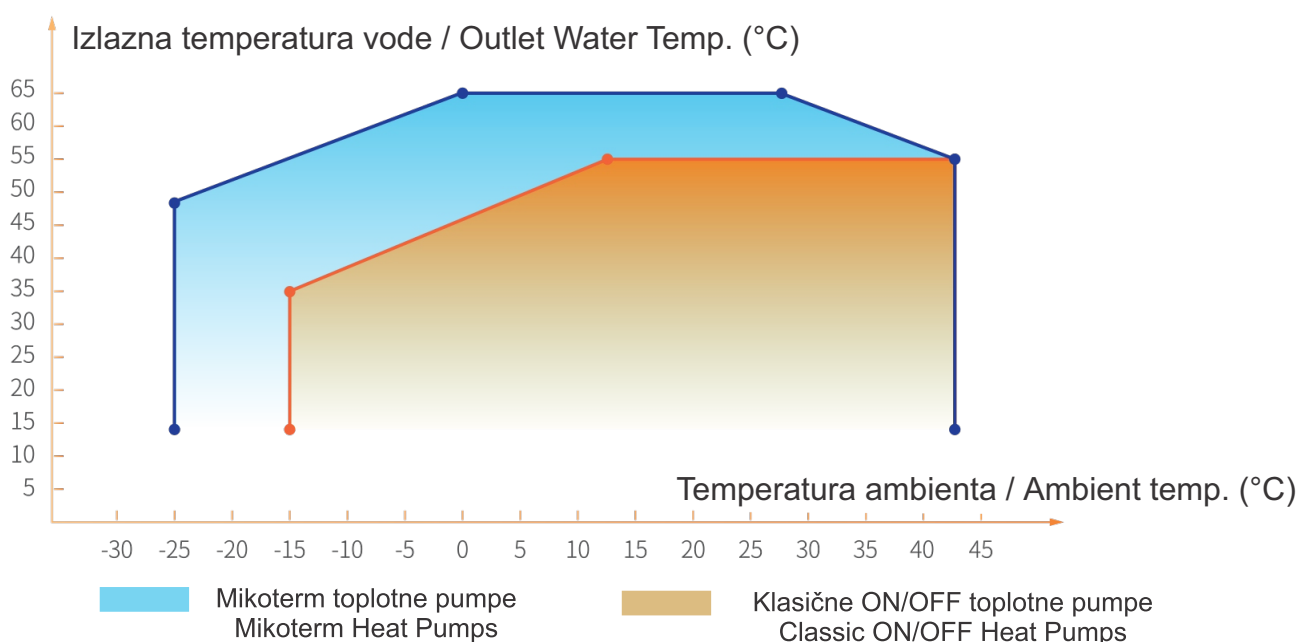


## Širi opseg rada

### Wider Running Range

Zahvaljujući inverteru i EVI tehnologiji, Mikoterm toplotne pumpe imaju širok raspon radnih temperatura za grejanje, hlađenje i toplu vodu za domaćinstvo. Može da dostigne visoku temperaturu vode u hladnom okruženju i stabilno radi na temperaturama okoline do -25°C.

Thanks to the inverter and EVI technology, the Mikoterm Heat Pumps features a wide operating temperature range to provide space heating, cooling, and domestic hot water. It can reach the high water temperature in a cold climate and work stably at ambient temperatures as low -25°C.

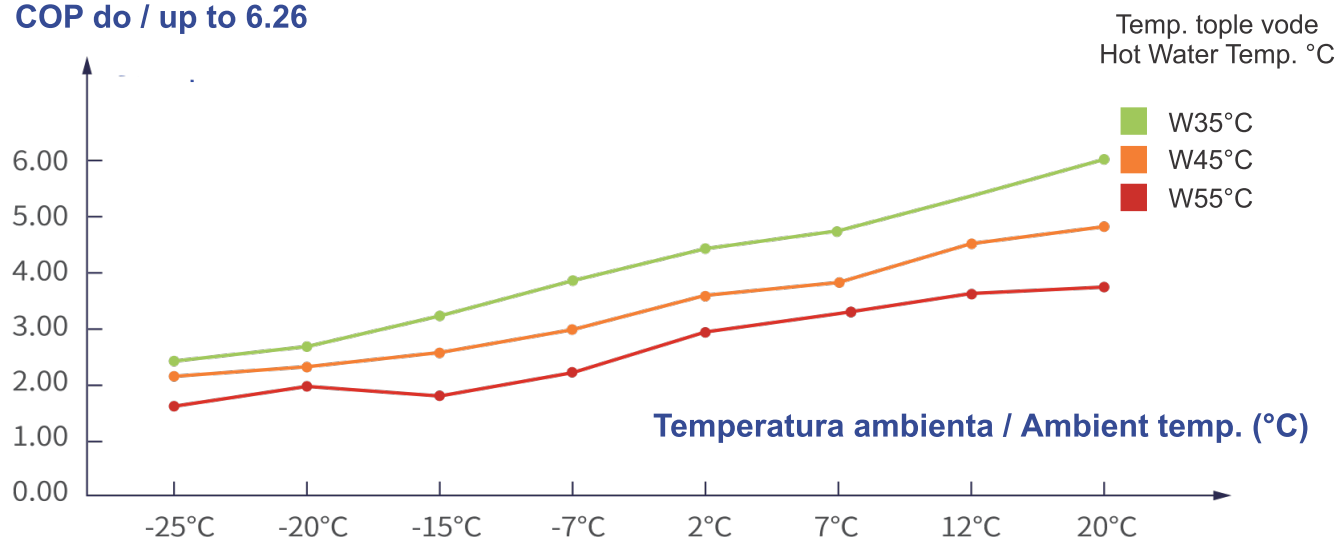


## Povećana efikasnost Increased efficiency

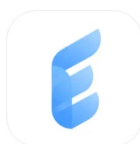
Sa maksimalnim COP-om od 6.26 i ErP ocenom A+++, Mikoterm EVI DC inverterska toplotna pumpa troši manje energije i stoga pomaže potrošačima da smanje račune za grejanje.

With a maximum COP of 6.26 and an ErP rating of A+++, the Mikoterm EVI DC inverter heat pump consumes less energy and therefore helps consumers reduce heating bills.

### COP do / up to 6.26



## IoT Funkcija IoT Function



Upravlajte svojom pumpom preko Eco-Home aplikacije  
Control your pump via the Eco-Home app

Uz pomoć IoT funkcije, servis ima mogućnost daljinske dijagnostike i kontrole.

With the help of the IoT function, the service has the possibility of remote diagnostics and control.



Kontrolišite sve jedinice preko e-home aplikacije

Controlling all units from E-home



Daljinsko uključivanje/isključivanje

Turn ON/OFF remotely



Izbor režima rada

Select working modes



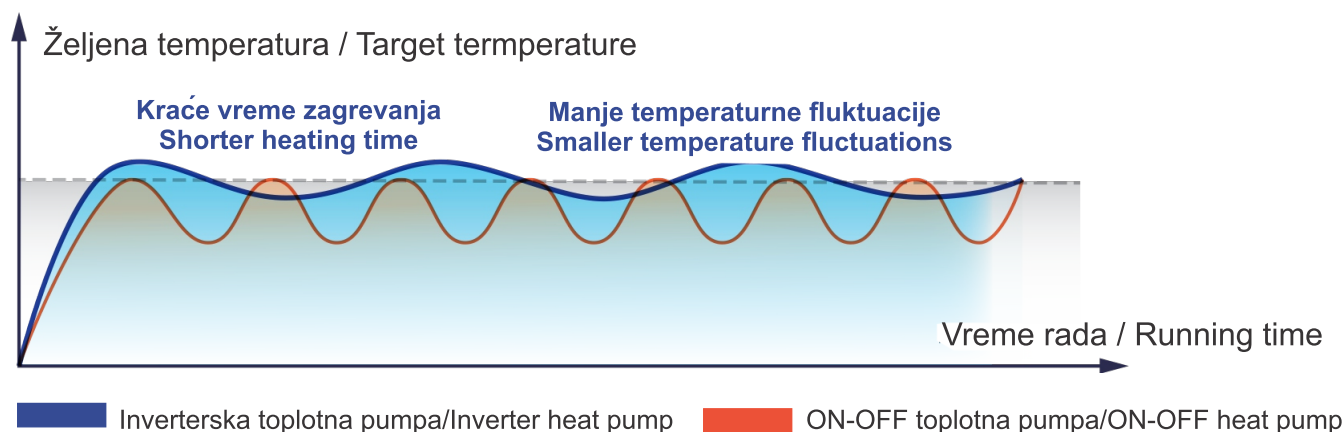


## Potpuna DC inverter tehnologija

### Full DC Inverter technology

Mikoterm toplotna pumpa kombinuje potpuni DC inverter sa dvostrukim rotacionim kompresorom sa inverterskim motorom bez četkica, tako da jedinica može automatski da cilja temperaturu, kako bi korisnicima pružila maksimalnu udobnost uz najniže troškove.

The Mikoterm heat pump combines a full DC inverter twin-rotary compressor with an inverter brushless motor, so the unit can target temperature automatically, to bring users maximum comfort at the lowest costs.

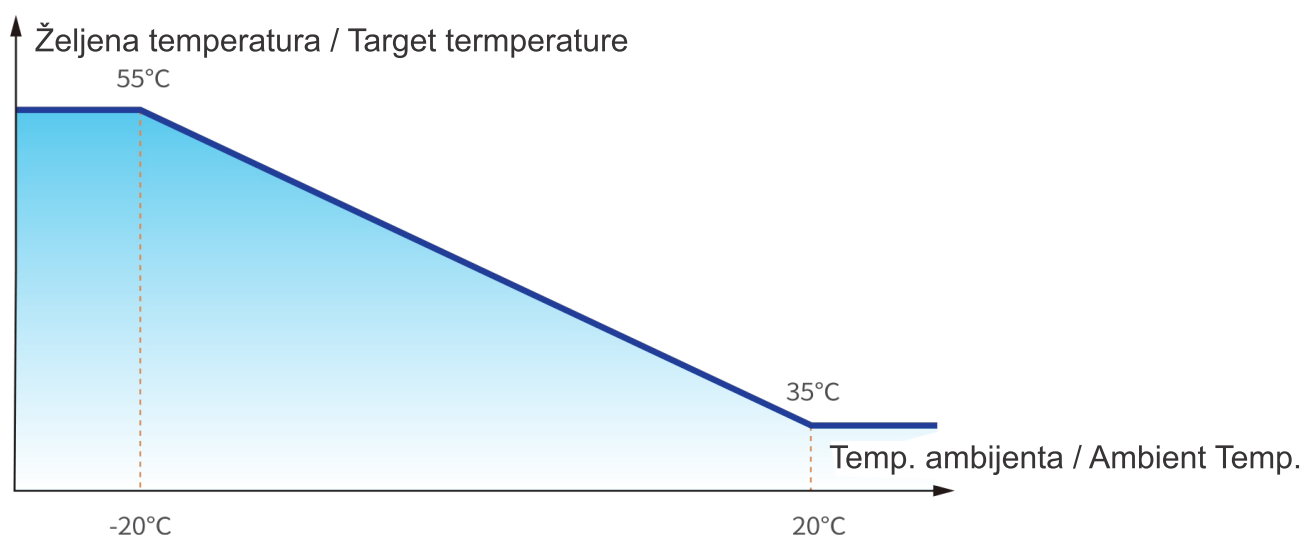


## Intelligentno podešavanje temperature vode

### Intelligent Water Temperature Adjustment

Jedinstvena logika upravljanja omogućava Mikoterm toplotnim pumpama da inteligentno podese temperaturu izlazne vode, u skladu sa temperaturom okoline u realnom vremenu. Zbog toga toplotna pumpa može da greje, hladi i obezbeđuje toplu vodu za domaćinstvo na konstantnoj temperaturi.

The unique control logic enables Mikoterm to adjust the outlet water temperature intelligently, according to the real-time ambient temperature. Therefore, the heat pump can deliver, cooling, and domestic hot water at a constant temperature.



## LCD ekran u boji - na dodir

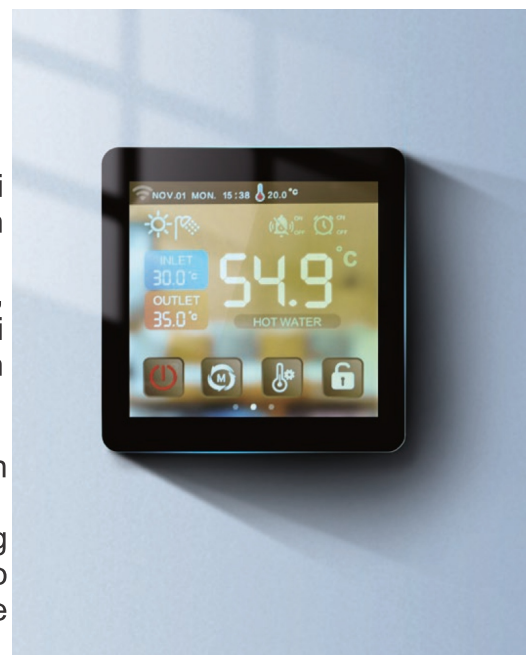
### Color LCD Display - Touch

Upravljanje Mikoterm toplotnim pumpama je veoma jednostavno i intuitivno, putem LCD kontrolera u boji od 4 inča, sa touch screen osetljivim ekranom.

Praćenje osnovnih i naprednih parametara, biranje režima rada (grejanje, hlađenje, AI, sanitarna voda), kaskadno umrežavanje (nisu potrebni nikakvni dodatni moduli), povezivanje putem WiFi mreže na jednostavan način i mnoge druge opcije su na raspolaganju korisniku.

Management of Mikoterm heat pumps is very simple and intuitive, through a 4-inch color LCD controller with a touch screen.

Monitoring of basic and advanced parameters, selection of operating modes (heating, cooling, AI, sanitary water), cascade connecting (no additional modules are required), connection via WiFi network in a simple way and many other options are available to the user.

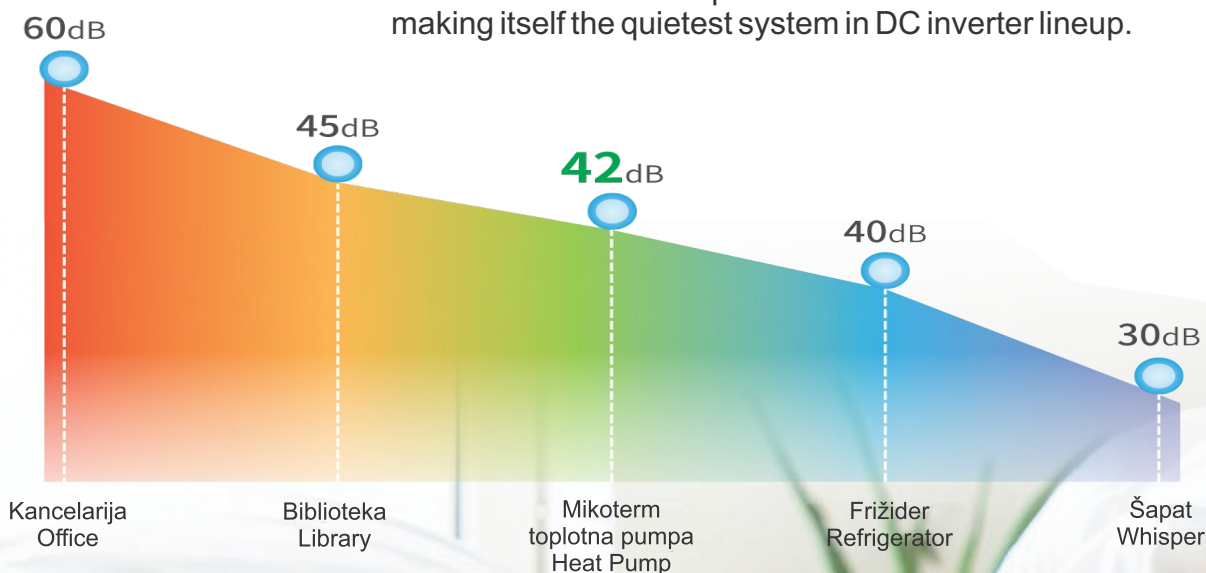


## Nizak nivo buke

### Low Noise

Pored DC invertera bez četkica, Mikoterm EVI toplotna pumpa koristi pojačane mere smanjenja zvuka kao što je dvostruka apsorpcija udara kompresora poznatog brenda. Nivoi zvuka počinju od 42 dB(A), što ga čini najtišim sistemom u liniji DC invertera.

In addition to brushless DC inverter, the Mikoterm EVI heat pump adopts reinforced sound reduction measures such as the dual shock absorption by the famous-brand compressor. The sound levels start as low as 42dB(A), making itself the quietest system in DC inverter lineup.





## Karakteristike / Characteristics

MODEL	mHP09M/02 mHP09T/02	mHP13M/02 mHP13T/02	mHP16T/02	mHP20T/02	mHP26T/02
[Space Heating/Grejanje prostora] Ambient Temp./Temp. ambijenta (DB/WB): 7°C/6°C, Water Temp./Temp vode (Inlet-ulaz/Outlet-izlaz): 30°C/35°C					
Max Heating Capacity/Max kapacitet grejanja (kW)	2.32~9.13	4.32~13.15	4.81~15.88	6.36~20.49	8.54~26.08
Power Input /Ulazna snaga (kW)	0.38~2.04	0.71~2.90	0.81~3.91	1.08~4.89	1.46~6.26
COP/Koeficijent iskorišćenja	6.11~4.48	6.08~4.53	5.94~4.06	5.89~4.19	5.85~4.17
[Space Heating/Grejanje prostora] Ambient Temp./Temp. ambijenta (DB/WB): 7°C/6°C, Water Temp./Temp vode (Inlet-ulaz/Outlet-izlaz):50°C/55°C.					
Max Heating Capacity/Max kapacitet grejanja (kW)	1.81~8.35	3.63~11.91	3.90~15.99	3.41~18.8	4.67~25.9
Power Input /Ulazna snaga (kW)	0.43~2.92	0.87~4.26	1.03~5.92	0.89~7.13	1.04~9.62
COP/Koeficijent iskorišćenja	4.21~2.86	4.17~2.80	3.79~2.70	3.83~2.64	4.49~2.69
[Space Cooling/Hladjenje prostora] Ambient Temp./Temp. ambijenta (DB/WB): 35°C / -, Water Temp./Temp vode (Inlet-ulaz/Outlet-izlaz): 12°C/7°C.					
Max Heating Capacity/Max kapacitet grejanja (kW)	1.43~7.93	4.06~9.52	2.63~13.66	3.31~17.4	4.37~21.4
Power Input /Ulazna snaga (kW)	0.32~2.48	1.05~3.62	0.59~4.81	0.76~6.14	1.02~7.32
EER/Koeficijent energetske efikasnosti	4.47~3.20	3.87~2.63	4.46~2.84	4.36~2.83	4.28~2.92
[Hot Water/Topla voda] Ambient Temp./Temp. ambijenta (DB/WB): 20°C/15°C, Water Temp. from/Temp. vode od 15°C to/do 55°C					
Max Heating Capacity/Maks. kapacitet grejanja (kW)	10.31	12.86	16.81	23.97	26.98
Power Input /Ulazna snaga (kW)	2.43	3.01	3.94	5.65	6.47
COP/Koeficijent iskorišćenja	4.25	4.27	4.27	4.24	4.17
Electric Heater Rated Input/Snaga el. grejača (kW)	3		3/6/9 (podesivo/adjustable)		
Max. Power Input/Maksimalna snaga (kW)	6.1(3.1+3)	7.4(4.4+3)	9.6(6.6+3) 12.6(6.6+6) 15.6(6.6+9)	10.5(7.5+3) 13.5(7.5+6) 16.5(7.5+9)	14.5(11.5+3) 17.5(11.5+6) 20.5(11.5+9)
Max. Running Current/Maks. struja (A)	27.8(14.1+13.7)	33.7(20+13.7)	25.2(11.5+13.7) 20.6(11.5+9.1) 25.2(11.5+13.7)	26.4(12.7+13.7) 21.8(12.7+9.1) 26.4(12.7+13.7)	33.2(19.5+13.7) 28.6(19.5+9.1) 33.2(19.5+13.7)
Max. Outlet Water Temp./Maks. temp. vode na izlazu (°C)	60				
Operation Range/Radni opseg temperature (°C)	-25 ~ 43				
Power Supply/Napajanje (V/Ph/Hz)	220-240V~/50Hz 380~415V/3N~/ 50Hz		380~415V/3N~/ 50Hz		
Rated Water Flow/Nazivni protok vode (m³/h)	1.6	2.1	2.7	3.4	4.4
Compressor Brand/Marka kompresora	Panasonic/Mitsubishi		Mitsubishi		
Circulating Pump Brand/Marka cirkulacione pumpe	Shinhoo				
Expansion Tank/Ekspanziona posuda (L)	2		5		
ErP Level/Stepen energetske efikasnosti (35°C)	A+++				
ErP Level/Stepen energetske efikasnosti (55°C)	A++				
Amount of R32 gas in the unit (kg)/Količina R32 gasa u jedinici (kg)	1,3	1,6	2,3	2,67	3,05
Sound Pressure Level at 1m/Nivo zvučnog pritiska na 1m (dB(A))	43~54	43~55	44~55	45~58	46~59
Water Pipe Connection/Hidraulični priključak (inch)	G1 1/4"				
Cable cross section/Presek kabla	3x6mm²/ 5x1,5mm²	3x6mm²/ 5x2,5mm²	5x4mm²	5x4mm²	5x6mm²
Fuse/Osigurač	40(A)/25(A)	40(A)/25(A)	32(A)	32(A)	40(A)
Dimensions (L×W×H)/Dimenzije (D×Š×V) (mm)	1263 × 440 × 875		1263 × 440 × 1377		
Net unit weight (kg)/Masa jedinice neto (kg)	107	111	120	135	140

☐ Monofazna struja / Single-phase current ☐ Trofazna struja / Three-phase current

**VENTILATOR SA DC MOTOROM**  
Motor ventilatora bez četkica obezbeđuje visoku efikasnost i nizak nivo buke

**FAN WITH A DC MOTOR**  
Brushless fan motor provides high efficiency and low noise level

**SPECIJALNI SLOJ ZAŠTITE POVRŠINA**  
Omogućava brzo i pravilno odmrzavanje

**HYDROPHILIC STEAMER SUR-FACE**  
Provides quick and correct defrosting

**UNUTRAŠNJE SPIRALNO OREBRENJECEVI**  
Značajno povećava efikasnost grejanja

**RIBBED STEAMER PIPES WITH A SPIRAL INNER STRUCTURE**  
Considerably increases heating efficiency

**INTEGRISANI TERMINALNI BLOK**  
Obezbeđuje brzo povezivanje kablova za napajanje

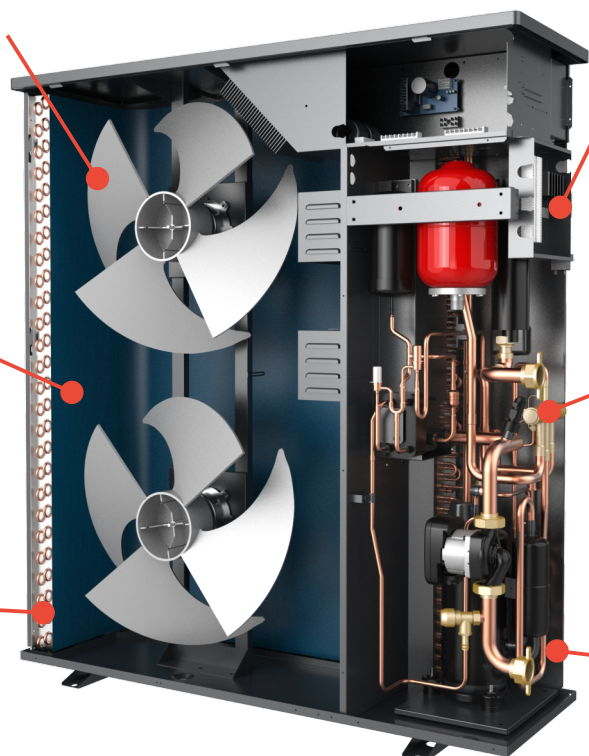
**INTEGRATED TERMINAL BLOCK**  
Assures quick connection of supply cords

**UGRAĐEN ELEKTRIČNI GREJAČ**  
Pružna podršku i zaštitu od ekstremno niskih temperatura

**BUILT-IN ELECTRIC HEATER**  
Provides support and protection from extremely low temperatures

**PAMUČNA ZAŠTITNA MREŽICA**  
Dodatno smanjenje buke pri radu

**COTTON RITECTIVE MESH**  
Additional reduction of operation noise



## Komponente / Components



Inverter kompresor  
Inverter Compressor  
Panasonic-Mitsubishi



DC inverter motor bez četkica  
Brushless DC Inverter motor



Pametna Wi-Fi kontrola  
Smart Wi-Fi Control



Jedinstvena zaštita ventilatora  
Unique Fan Guard

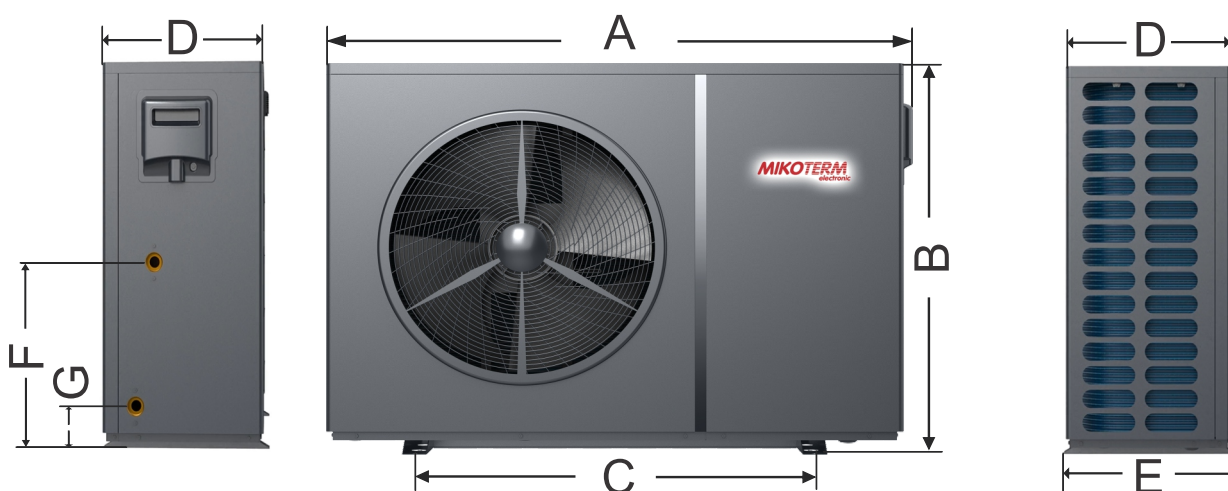


4-inčni ekran osetljiv na dodir  
4-inch Touch Screen Display

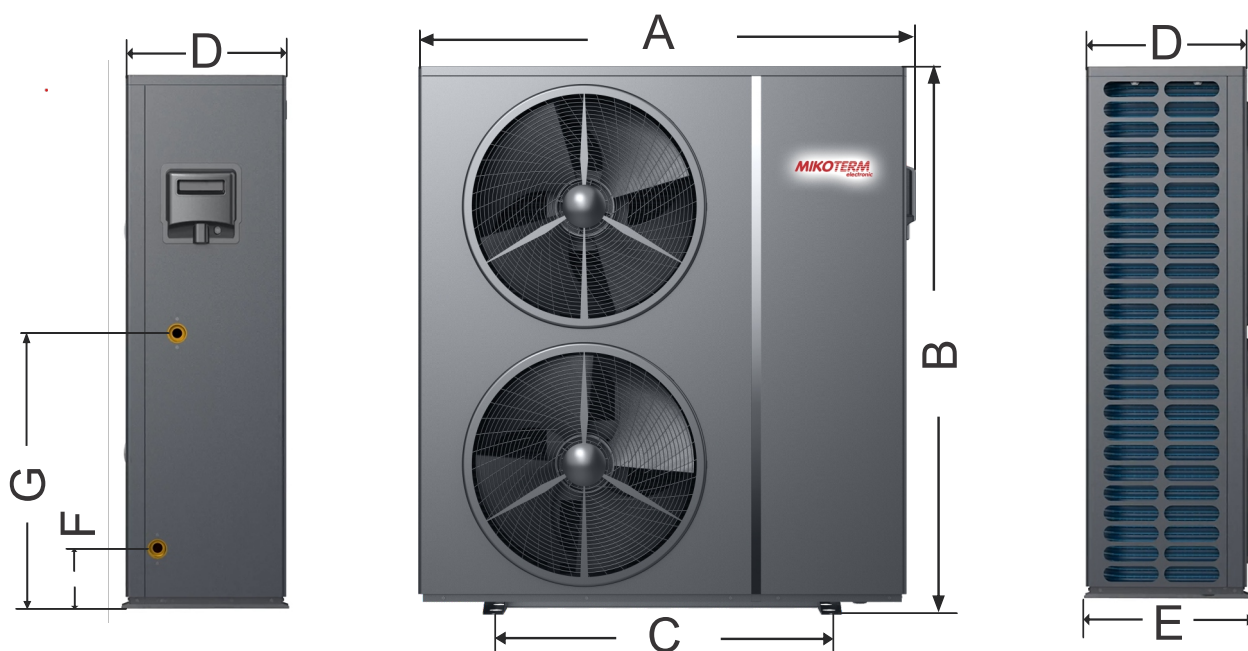


Dizajn skrivenih vijaka  
Hidden Screw Design





Model	A	B	C	D	E	F	G
mHP09M/02	1263	875	848	410	440	429	109
mHP09T/02							
mHP13M/02							
mHP13T/02							



Model	A	B	C	D	E	F	G
mHP16T/02	1263	1377	848	410	440	173	722
mHP20T/02							
mHP26T/02							



Pokretanje i rad na  
veoma niskim temperaturama.

**-25°C**

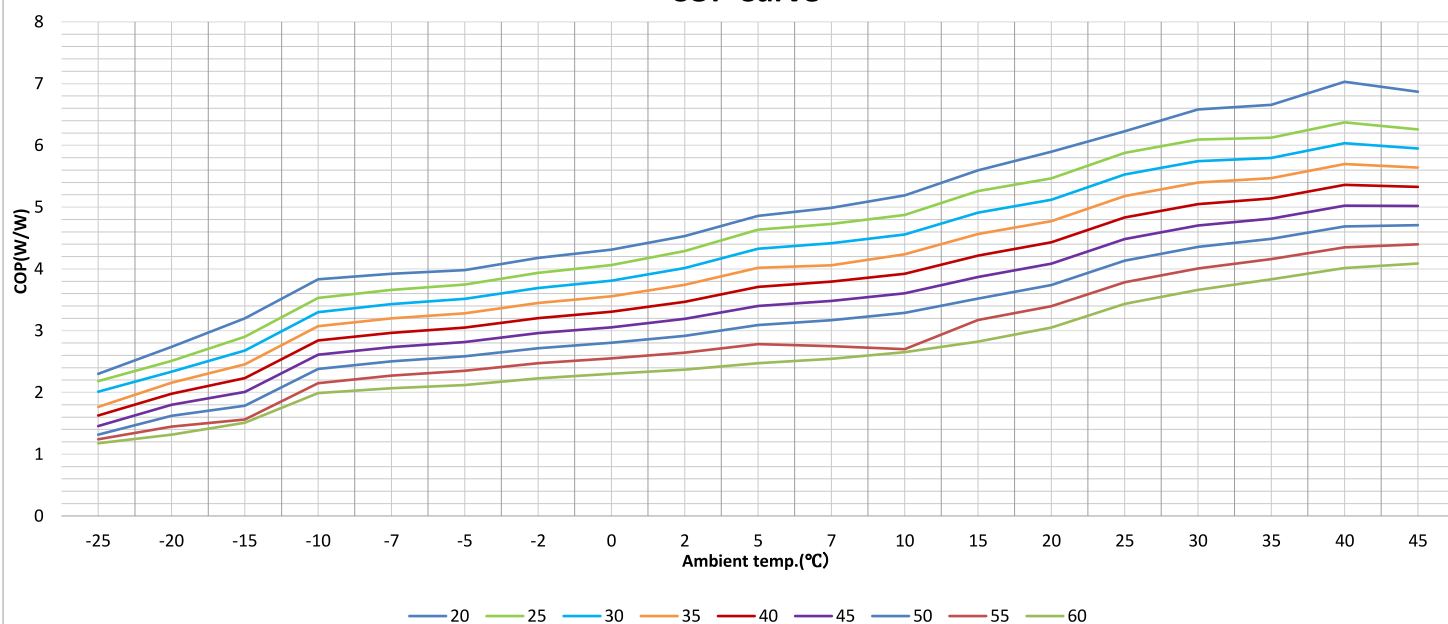
Starting and working  
at very low temperatures.

## COP do / up to 6.26

Zadržavanje visokog COP-a na niskim temperaturama. Minimalna radna temperatura -25°C  
Retention of high COP at low temperatures. Minimum working temperature -25°C

Outlet (°C)	Ambient (°C)	90Hz		85Hz		80Hz		75Hz		70Hz		65Hz		60Hz		55Hz			
		-25	-20	-15	-10	-7	-5	-2	0	2	5	7	10	15	20	25	30		35
30		1.89	2.60	2.86	3.27	3.57	3.76	4.09	4.31	4.52	4.80	5.01	5.16	5.76	6.18	6.59	6.92	7.37	7.82
35		1.72	2.32	2.57	2.87	3.14	3.35	3.47	3.55	3.79	4.15	4.53	4.69	5.16	5.57	5.96	6.22	6.67	7.11
40		1.55	2.05	2.32	2.67	2.91	3.05	3.17	3.25	3.41	3.65	3.92	4.15	4.57	5.07	5.33	5.57	5.87	6.27
45		1.44	1.85	2.12	2.52	2.61	2.75	2.87	2.95	3.07	3.25	3.61	3.87	4.23	4.62	4.83	5.07	5.37	5.69
50		1.32	1.67	1.88	2.07	2.19	2.35	2.52	2.64	2.76	2.85	3.12	3.37	3.77	4.06	4.27	4.45	4.77	4.99
55		1.24	1.46	1.63	1.75	1.82	1.90	1.99	2.05	2.17	2.35	2.80	2.75	3.22	3.51	3.77	3.96	4.07	4.30
60		1.07	1.35	1.48	1.62	1.71	1.78	1.85	1.89	1.96	2.03	2.27	2.44	2.84	3.02	3.28	3.52	3.67	4.01

COP Curve



### Primer/example:

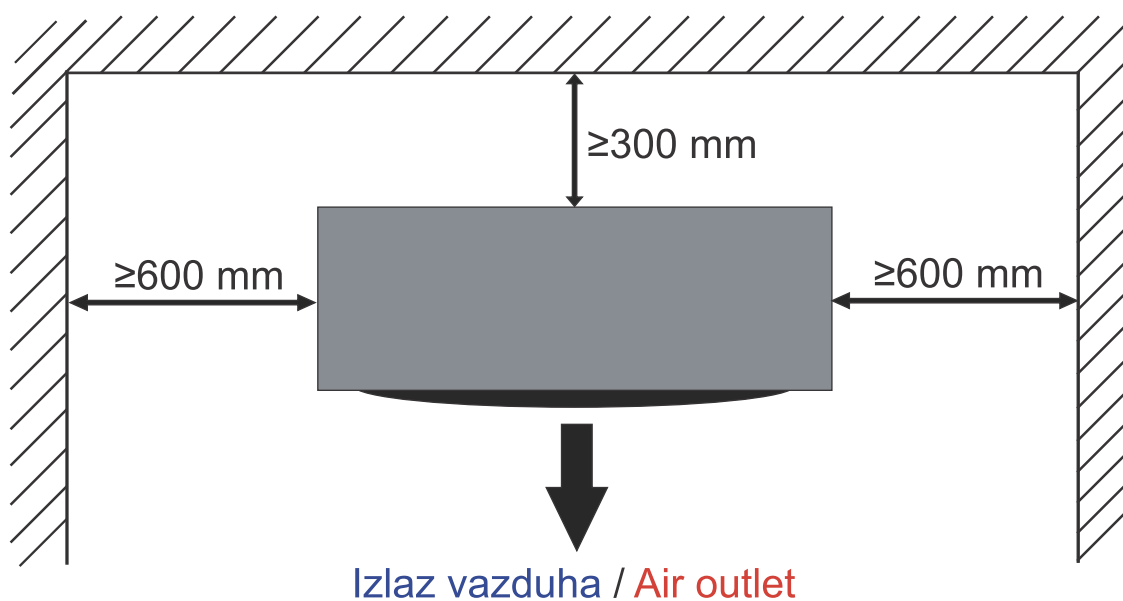
Temp. ambienta/ambient temp. -7°C, temp. vode u sistemu / temp.water in system 35°C, COP 3,2

Temp. ambienta/ambient temp. 7°C, temp. vode u sistemu / temp.water in system 35°C, COP 4,1

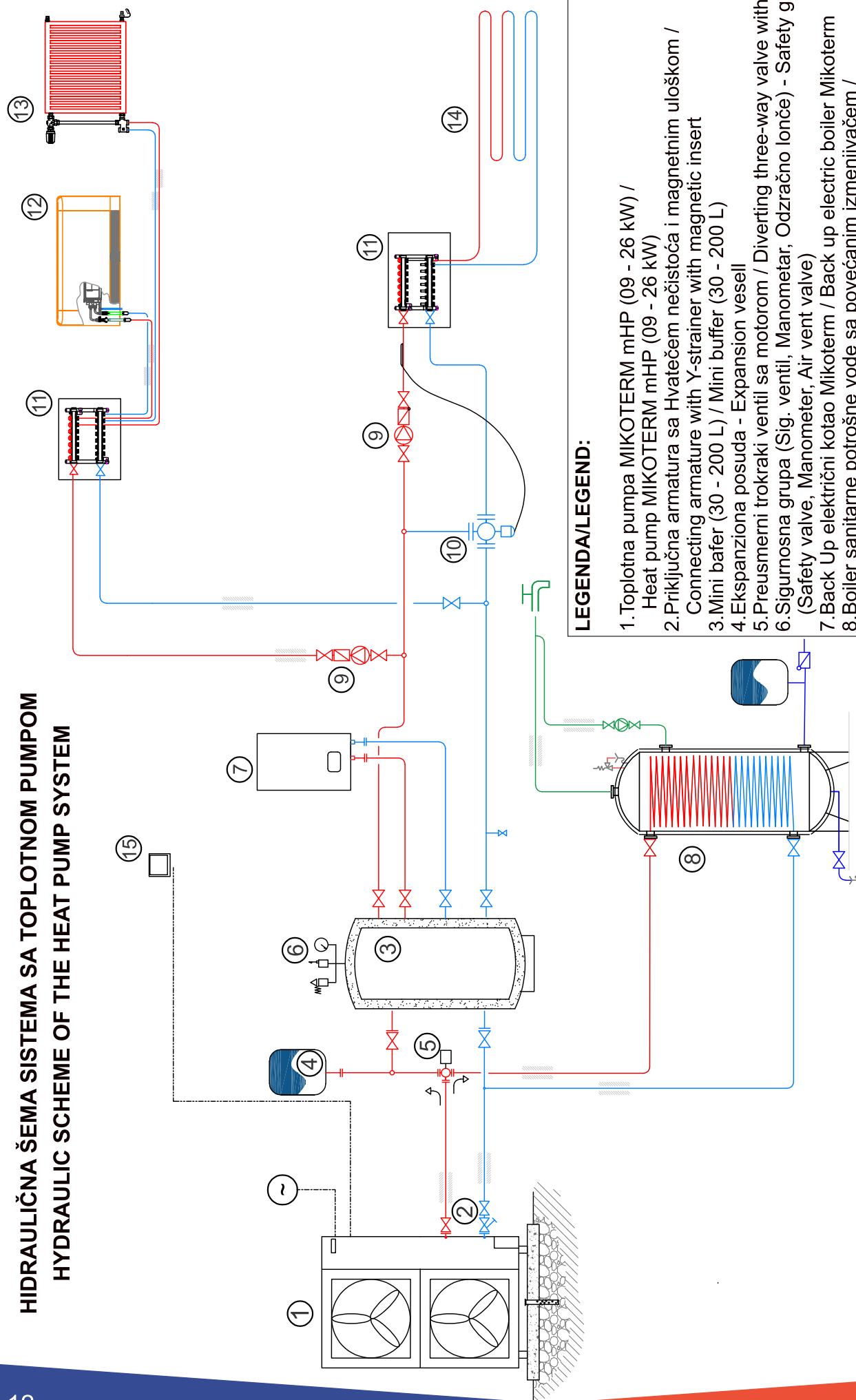




## Rastojanja za ugradnju / Distances for installation



# HIDRAULIČNA ŠEMA SISTEMA SA TOPLOTNOM PUMPOM HYDRAULIC SCHEME OF THE HEAT PUMP SYSTEM



## LEGENDA/LEGEND:

1. Toplotna pumpa MIKOTERM mHP (09 - 26 kW) / Heat pump MIKOTERM mHP (09 - 26 kW)
2. Priključna armatura sa Hvatečem nečistoća i magnetnim uloškom / Connecting armature with Y-strainer with magnetic insert
3. Mini bafer (30 - 200 L) / Mini buffer (30 - 200 L)
4. Ekspanziona posuda - Expansion vessel
5. Preusmerni trokraki ventil sa motorom / Diverter three-way valve with motor
6. Sigurnosna grupa (Sig. ventil, Manometar, Odzračno lonče) - Safety group (Safety valve, Manometer, Air vent valve)
7. Back Up električni kotao Mikoterm / Back up electric boiler Mikoterm
8. Bojler sanitarne potrošne vode sa povećanim izmenjivačem / DHW tank with enlarge exchanger
9. Pumpna grupa grejnog kruga / Pump group of the heating circuit
10. Mešni ventil podnog grejanja / Mix valve for floor heating
11. Razdelnik-Sabirnik / Distributor-Collector
12. Ventil konvektor (Fan-Coiler) / Fan Coiler
13. Radijator / Radiator
14. Podno grejanje / Floor heating
15. Kontroler toplotne pumpe / Heat pump controller



## Beleške / Notes

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**MIKOTERM**  
electronic

SCAN ME



Website



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office@mikoterm.com / prodaja@mikoterm.com

Proizvođač zadržava pravo svake promene nad proizvodima/  
The manufacturer reserves the right to make any changes to the products



PREDUZEĆE MIKOTERM  
DOO ALEKSANDROVO

Company ID: 17007203  
Dun & Bradstreet d.o.o. / 29.2.2024