



sa Vama od
since **1994**



*Za toplinu
vašeg doma*

*For the warmth
of your home*

KATALOG PROIZVODA PRODUCT CATALOG

Kvalitet i korektno poslovanje



POUZDANOST
RELIABILITY



SIGURNOST
SAFETY



KVALITET
QUALITY

Mikoterm doo je osnovan 1994. godine, kao privatno preduzeće za proizvodnju opreme za grejanje. Primarna proizvodnja je bazirana na električne kotlove za domaćinstva, dok portfolio obuhvata i kotlove velikih snaga, mobilne kotlove, kotlove za podršku drugih uređaja itd.

Za proizvodnju ovih uređaja koristimo najsavremenije mašine i alate za obradu i zaštitu lima, što garantuje vrhunsku preciznost, izuzetnu završnu obradu i dugotrajnost svih mašinskih delova. Funkcionalan i savremen dizajn je zaštitni znak naših uređaja.

Električne instalacije u našim kotlovima izvedene su uz poštovanje svih važećih propisa EU, a ugrađene komponente su od renomiranih domaćih i svetskih proizvođača, pažljivo birane tokom višedecenijskog poslovanja i stalnog unapređivanja i razvoja proizvoda. Projektni tim Mikoterma čine stučnjaci koji imaju dugogodišnje iskustvo u ovoj oblasti.

Od 2000. Mikoterm izvozi svoje proizvode van granica Srbije, kako u zemlje regiona i Evrope, a i šire: Crna Gora, Bosna i Hercegovina, Severna Makedonija, Albanija, Slovenija, Hrvatska, UK, Rumunija, Mađarska, Austrija, Nemačka, Švedska, Norveška, Holandija, Belgija, Švajcarska, Letonija, Litvanija, Uzbekistan, Libija. Za nekoliko poznatih evropskih kompanija Mikoterm radi OEM proizvodnju: Centrometal, Bosch, Adveco, Enerent.

Sa ponosom možemo da kažemo da je Mikoterm danas najveći proizvođač električnih kotlova u Srbiji.

Mikoterm doo was founded in 1994 as a private company for the production of heating equipment. The primary production is based on electric boilers for households, while the portfolio also includes boilers of high power, mobile boilers, boilers to support other devices, etc.

For the production of these devices, we use the most modern machines and tools for the processing and protection of sheet metal, which guarantees top precision, exceptional finishing and durability of all machine parts. Functional and contemporary design is the trademark of our devices.

The electrical installations in our boilers are made in compliance with all valid EU regulations, and the built-in components are from renowned domestic and international manufacturers, carefully selected during decades of business and constant product improvement and development. The Mikoterm project team consists of experts who have many years of experience in this field.

Since 2000, Mikoterm has been exporting its products outside of Serbia, both to the countries of the region and Europe, and beyond: Montenegro, Bosnia and Herzegovina, North Macedonia, Albania, Slovenia, Croatia, UK, Romania, Hungary, Austria, Germany, Sweden, Norway, Netherlands, Belgium, Switzerland, Latvia, Lithuania, Uzbekistan, Libya. Mikoterm work OEM production for several well-known European companies: Centrometal, Bosch, Adveco, Enerent. We can proudly say that Mikoterm is today the largest producer of electric boilers in Serbia.

O nama / About us



Mikoterm dosta vodi računa o zaštiti životne sredine pa je na svom objektu sagradio solarnu elektranu kapaciteta 58kW, a sistemi grejanja i hlađenja na objektima su bazirani na energetski najefikasnijim rešenjima. Sva dobijena solarna energije se primarno koristi za sopstvene potrebe, dok se eventualni višak proizvedene energije prenosi u distribucionalnu nacionalnu mrežu.

Mikoterm pays a lot of attention to the protection of the environment, so it built a solar power plant with a capacity of 58kW on its premises, and the heating and cooling systems on the premises are based on the most energy-efficient solutions. All obtained solar energy is primarily used for own needs, while any excess energy produced is transferred to the national distribution network.

Od avgusta 2022.godine Mikoterm se nalazi na novoj lokaciji, Industrijska zona Aleksandrovo, Niška 211, 18252 Merošina. U svom vlasništvu ima poslovnu zgradu od 500 m² i proizvodni pogon od 2500 m² sa potpuno opremljenim magacinskim prostorom.

From August 2022, Mikoterm is located in a new location, Industrial zone Aleksandrovo, Niska 211, 18252 Merosina.

It owns an office building of 500 m² and a production plant of 2500 m² with fully equipped warehouse space.

MIKOTERM
electronic



Objekti su kompletno izgrađeni u skladu sa najvišim standardima i uređeni po potrebama zaposlenih za postizanje visoke efikasnosti proizvodnje. Kompleks Mikoterma je u celosti u skladu sa prirodnim ambijentom koji ga okružuje, nalazi se na prometnom putu koji povezuje dve opštine, a u blizini je i veza sa auto-putem.

The facilities are completely built in accordance with the highest standards and arranged according to the needs of the employees to achieve high production efficiency. The Mikoterm complex is completely in harmony with the natural environment that surrounds it, it is located on a busy road that connects two municipalities, and there is also a highway connection nearby.

Sertifikati koji potvrđuju naš kvalitet / Certificates - confirmation of our quality



Deklaracije i atesti za proizvode
Declarations and certificates for products



- 01**  **mTronic 7000 6kW÷24kW**
Električni blok kotlovi / Electric block boilers
- 03**  **eCompact Uz 6kW÷16kW**
Električni blok kotlovi / Electric block boilers
- 05**  **eCompact Plus 6kW÷27kW**
Električni blok kotlovi / Electric block boilers
- 07**  **eTK 6kW÷45kW**
Električni kotlovi / Electric boilers
- 09**  **TK-Profesional 40kW÷60kW**
Električni kotlovi velike snage / Electric high power boilers
- 11**  **TK-Profesional 70kW÷100kW**
Električni kotlovi velike snage / Electric high power boilers
- 13**  **TK-Profesional 120kW÷240kW**
Električni kotlovi velike snage / Electric high power boilers
- 15**  **CPK09-M**
Kaskadni regulator / Cascade regulator
- 16**  **SOLAR**
Diferencijalni termostat / Differential thermostat
- 17**  **eMobile 10,8÷36kW**
Mobilni električni kotao / Mobile electric boiler
- 19**  **TK-eLG 6kW**
Podrška toplotne pumpe / Support the heat pump
- 21**  **EVCS 11kW-22kW**
Električni punjači za automobile / Electric car chargers



mTronic 7000

Skenirajte QR kod i posetite stranicu sajta
Scan the QR code and visit the site page



Kotao mTronic 7000 je unapredena verzija kotla eTronic 7000 koji je razvijen za potrebe Nemačke kompanije ROBERT BOSCH. Uredaj spada u red najmodernijih na tržištu. Upravljanje kotlom se vrši preko velikog LCD displeja uz podršku procesorske jedinice. Procesorska jedinica obezbeđuje praćenje svih bitnih parametara kotla i samog sistema grejanja, čime je osiguran dugotrajan rad uređaja. LCD displej omogućuje pregledno i precizno podešavanje vitalnih parametara na uređaju. Podešavanje je maksimalno uprošćeno preko 4 soft touch tastera. Preko procesorske jedinice može se pratiti vreme rada svakog grejača posebno, kao i celog uređaja. Režim rada može se podešiti na normalan i režim protiv zamrzavanja. Preciznim projektovanjem obezbeđen je i veoma lak rad serviserima i instalaterima. Maksimalno je uprošćeno utvrđivanje eventualne greške i njenog otklanjanje. Što se sigurnosnog dela kotla tiče izведен je procesorskom kontrolom i mehaničkim zaštitama - uređaj ima 4 stepena zaštite. Takođe ima i alarme upozorenja ako se neki parametri nalaze u kritičnim vrednostima. Sve u svemu mTronic 7000 je uređaj koji je trenutno najnapredniji po funkcijama i sigurnosti.

The mTronic 7000 boiler is an improved version of the eTronic 7000 boiler developed for the needs of the German company ROBERT BOSCH. The device is among the most modern on the market. The boiler is controlled via a large LCD display with the support of a processor unit. The processor unit ensures monitoring of all important parameters of the boiler and the heating system itself, which ensures long-term operation of the device. The LCD display allows clear and precise adjustment of vital parameters on the device. The setting is maximally simplified via 4 soft touch keys. The operating time of each heater separately, as well as the entire device, can be monitored via the processor unit. The operating mode can be set to normal and anti-freeze mode. Precise design ensures very easy work for service technicians and installers. Determining a possible error and eliminating it is maximally simplified. Boiler safety is ensured through processor control and mechanical protections. The device has 4 levels of protection. It also has warning alarms if some parameters are in critical values. All in all, mTronic 7000 is a device that is currently the most advanced in terms of functions and security.



kW 6÷24

m² ≤240 floor heating
≤180 radiator heating

% 99

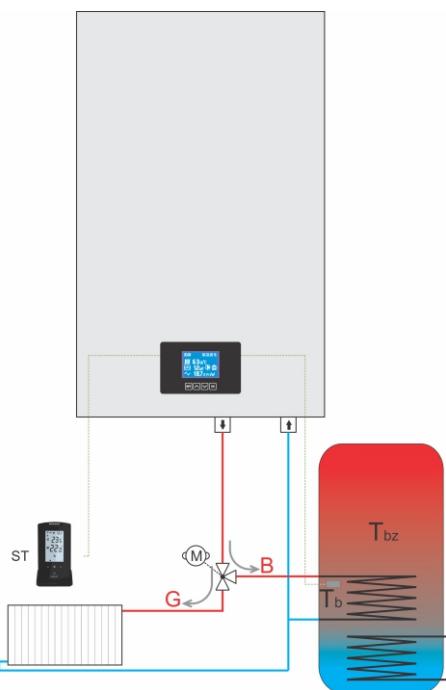
IP 40

KG 23÷25

za objekte u skladu sa/for buildings in accordance with
EN ISO 52016-1:2017

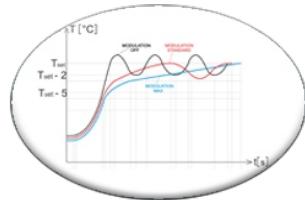
Pregled prednosti / overview of advantage:

- Električni kotao za grejanje i pripremu sanitarnе vode pomoću akumulacionog bojlera.
Electric boiler for heating and domestic hot water preparation by means of an storage boiler.
- Uključivanje/isključivanje grejača sa praćenjem njihovog vremena rada (ravnometerno angažovanje grejača) - obezbeđuje duži radni vek uređaja.
Heater on / off, with monitoring their operating time (balancing the operating time of the heaters) - provides longer device life.
- Sigurnosni termostat sa daljinskim naponskim okidačem (bez napajanja u redovnom radu, duži radni vek).
Safety temperature limiter with remote voltage trigger (without power supply in regular operation, longer working life).
- Najnoviji model visoko efikasne pumpe sa širokim izborom režima rada.
The latest model of a highly efficient pump with a wide choice of operating modes.
- Svi parametri sistema prikazani na korisničkom interfejsu. Jednostavno podešavanje temperature i snage sistema grejanja.
All system parameters displayed on the user interface. Easy adjustment of temperature and power of the heating system.
- Digitalno merenje temperature i precizna regulacija. Digitalni senzor pritiska vode u sistemu.
Digital temperature measurement and precise control. Digital water pressure sensor in the system.
- Daljinsko upravljanje preko sobnog termostata.
Remote control via room thermostat.
- Zaštita od smrzavanja pomoću zasebnog programa.
Frost protection using a separate program.



Zaštita od smrzavanja / Frost protection

Modulacija snage / Power modulation



Grejanje ili priprema potrošne tople vode / Heating or preparation of DHW

Tehničke karakteristike / Technical characteristics

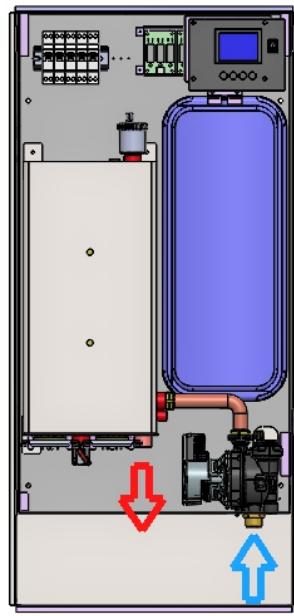
Model		mT-6kW	mT-9kW	mT-12kW	mT-18kW	mT-24,3kW
grejne grupe	heating groups	3 × 2 kW	6 × 1,5 kW	6 × 2 kW	9 × 2 kW	9 × 2,7 kW
podešavanje snage	power steps	3 × 2 kW	6 × 1,5 kW	6 × 2 kW	9 × 2 kW	9 × 2,7 kW
minimalna snaga	minimum power	2 kW	1,5 kW	2 kW	2 kW	2,7 kW
maksimalna snaga	maximum power	6 kW	9 kW	12 kW	18 kW	24,3 kW
potrebni glavni osigurači za trofazno napajanje	main circuit breakers for three phase power supply	3 × 16A	3 × 20A	3 × 25A	3 × 32A	3 × 40A
potrebni glavni osigurači za monofazno napajanje	main circuit breakers for single-phase power supply	1 × 32A	1 × 50A	/	/	/
potreban mrežni kabl za trofazno napajanje	power cable for three phase power supply	5 × 2,5 mm ²	5 × 2,5 mm ²	5 × 4 mm ²	5 × 4 mm ²	5 × 6 mm ²
potreban mrežni kabl za monofazno napajanje	power cable for single-phase power supply	3 × 4 mm ²	3 × 6 mm ²	/	/	/
preporučena grejna * površina-podno/radijat. grejanje	recommended heating * surface-floor/radiator heating	≤60m ² f.h. ≤40m ² r.h.	≤90m ² f.h. ≤60m ² r.h.	≤120m ² f.h. ≤80m ² r.h.	≤180m ² f.h. ≤120m ² r.h.	≤240m ² f.h. ≤160m ² r.h.
priklučak na elektro mrežu	inlet for power cable	3 strane / ways - gornje / top, donje / bottom, između zida / from wall				
priklučak na hidrauličnu instalaciju	connection for hydraulic instalation	G 3/4 " sa donje strane / from bottom side				
pumpa	pump	visoko efikasna pumpa / highly efficient pump				
ekspanziona posuda	expansion vessel	Zilio Italy 8L				
sigurnosni ventil	safety valve	integrisan unutra / integrated inside				
slavina za pražnjenje kotla	drain valve	da / yes				
dimenziije VxŠxD	dimensions HxWxD	710×430×230 mm				
težina kotla bez vode	weight of boiler without water	25 kg				
stепен IP заштите	Ingress Protection rating	IP 40				
opseg regulacije temperature kotla	temperature range	10 ÷ 80 °C				
sigurnosni termostat	safety thermostat	95 °C				
min. max. radni pritisak	min.max. work pressure	0,3 bar ÷ 2,6 bar				
priprema sanitarnе vode	domestic hot water	da / yes				
tajmer za pripremu sanitarnе vode	timer for domestic hot water mode	da / yes				
monofazna konekcija	single phase connection	da / yes	da / yes	ne / no	ne / no	ne / no

*za objekte u skladu sa / for buildings in accordance with EN ISO 52016-1:2017, f.h.-podno grejanje/floor heating, r.h.-radijatorsko grejanje/radiator heating



Električni kotao eCompact Uz je unapređena verzija prethodnog uzidnog kotla. Kao i kod pomenutog modela i u ovom se nalazi procesorska jedinica koja kontroliše i upravlja radom kotla. Podesavanje i praćenje svih bitnih parametara je olakšano preko plavog LCD displeja. Na njemu možete pratiti trenutnu temperaturu, snagu i pritisak. Takođe na displeju se ispisuju i zadate vrednosti pomenutih parametara. Unutar kotla se nalazi visokoefikasna cirkulaciona pumpa koja u sebi sadrži sigurnosni ventil, dodatno odzračno lonče, transmitter pritiska kao i slavinu za punjenje i pražnjenje. Za razliku od prethodnog modela, ovaj kotao je opremljen većom ekspanzionom posudom od 10 litara. Predviđen je za ugradnju u zid minimalne debljine 131 mm. Elegantan spoljni dizajn i veoma lak i pregledan pristup unutrašnjim komponentama je bitna prednost u odnosu na ostale kotlove na tržištu. Pored mehaničke zaštite predviđena je i elektronska koja isključuje dovod faze na grejače u slučaju prekoračenja zadate ili maksimalne dozvoljene temperature, kao i u slučaju previsokog ili nedovoljnog pritiska. Sve greške u radu se ispisuju u njegovu internu memoriju, tako da je rad servisera veoma olakšan. Veliku primenu našao je u izgradnji stambenih objekata. Izrađuje se u dve varijante, sa i bez razdelnika. Kod većeg modela, moguće je ugraditi sabirnik i razdelnik do 7 krugova, za radijatorsko ili podno grejanje, tako da dodatni ormarić nije potreban. Ukoliko je neophodno proširiti sistem dodatnim ormarićem, to se može učiniti preko bočnih otvora na kućištu, tako da sve cevi mogu biti sakrivene.

The eCompact Uz electric boiler is an improved version of the previous built-in boiler. As with the mentioned model, this one also has a processor unit that controls and manages the operation of the boiler. Adjustment and monitoring of all important parameters is facilitated via the blue LCD display. You can monitor the current temperature, power and pressure on it. The display also shows the set values of the mentioned parameters. Inside the boiler there is a highly efficient circulation pump that contains a safety valve, an additional air vent, a pressure transmitter as well as a filling and emptying tap. Unlike the previous model, this boiler is equipped with a larger expansion tank of 10 liters. It is intended for installation in a wall with a minimum thickness of 131 mm. Elegant exterior design and very easy and clear access to internal components is a significant advantage over other boilers on the market. In addition to mechanical protection, electronic protection is also provided, which excludes the supply of phase to the heaters in case of exceeding the set or maximum allowable temperature, as well as in case of too high or insufficient pressure. All operating errors are written to its internal memory, so the work of the service technician is very easy. He found great application in the construction of residential buildings. It is made in two variants, with and without manifold. With the larger model, it is possible to install a busbar and manifold up to 7 circuits, for radiator or underfloor heating, so that no additional cabinet is needed. If it is necessary to expand the system with an additional cabinet, this can be done through the side openings on the housing, so that all the pipes can be hidden.

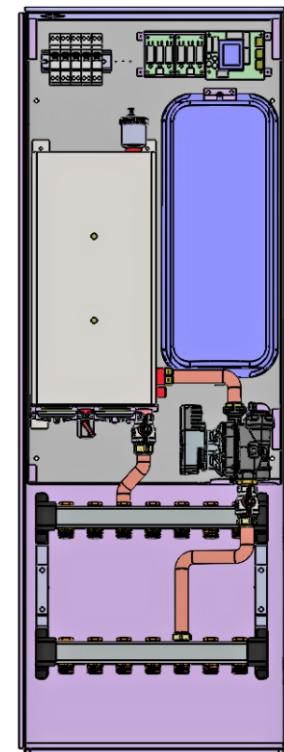


957x452x131mm

eCompact Uz
bez razdelnika /
without manifold



1260x452x131mm



eCompact Uz
sa razdelnikom /
with manifold

kW 6÷16

m²

≤160 floor heating
≤140 radiator heating

za objekte u skladu sa/for buildings in accordance with
EN ISO 52016-1:2017

% 99

IP 20

KG 28÷35

Pregled prednosti / overview of advantage:

- > Električni kotao za grejanje sa izborom radnog režima (radijatorsko ili podno grejanje).
Electric heating boiler with operating mode selection (radiator heating or underfloor heating).
- > Uključivanje/isključivanje grejača sa praćenjem njihovog vremena rada (ravnometerno angažovanje grejača) - obezbeđuje duži radni vek uređaja.
Heater on / off, with monitoring their operating time (balancing the operating time of the heaters) - provides longer device life.
- > Sigurnosni termostat sa daljinskim naponskim okidačem (bez napajanja u redovnom radu, duži radni vek).
Safety temperature limiter with remote voltage trigger (without power supply in regular operation, longer working life).
- > Najnoviji model visoko efikasne pumpe sa širokim izborom režima rada.
The latest model of a highly efficient pump with a wide choice of operating modes.
- > Korisnički interfejs omogućava lako praćenje parametara kompletног sistema grejanja.
User interface for easy monitoring of all parameters of the complete heating system.
- > Digitalno merenje temperature i precizna regulacija. Digitalni senzor pritiska vode u sistemu.
Digital temperature measurement and precise control. Digital water pressure sensor in the system.
- > Daljinsko upravljanje preko sobnog termostata.
Remot control via room thermostat.
- > Ušteda prostora zbog načina ugradnje (u zid).
Space saving due to installation method (in wall).
- > Duži model ima mogućnost ugradnje razdelnika 3-7 krugova.
The longer model has the option of installing a manifold with 3-7 circles.

Tehničke karakteristike / Technical characteristics

Model		eC UZ-6kW	eC UZ-9kW	eC UZ-12kW	eC UZ-16kW
grejne grupe	heating groups	3 × 2 kW	6 × 1,5 kW	6 × 2 kW	6 × 2,7 kW
minimalna snaga	minimum power	2 kW	1,5 kW	2 kW	2,7 kW
maksimalna snaga	maximum power	6 kW	9 kW	12 kW	16 kW
potrebiti glavni osigurači za trofazno napajanje	main circuit breakers for three phase power supply	3 × 16A	3 × 20A	3 × 25A	3 × 32A
potrebiti glavni osigurači za monofazno napajanje	main circuit breakers for single-phase power supply	1 × 32A	1 × 50A	/	/
potreban mrežni kabl za trofazno napajanje	power cable for three phase power supply	5 × 2,5 mm ²	5 × 2,5 mm ²	5 × 4 mm ²	5 × 4 mm ²
potreban mrežni kabl za monofazno napajanje	power cable for single-phase power supply	3 × 4 mm ²	3 × 6 mm ²	/	/
preporučena grejna * površina-podno/radijat.	recommended heating * surface-floor/radiator	≤60m ² f.h. ≤40m ² r.h.	≤90m ² f.h. ≤60m ² r.h.	≤120m ² f.h. ≤80m ² r.h.	≤160m ² f.h. ≤110m ² r.h.
priklučak na elektro mrežu	inlet for power cable	2 strane / ways - gornje / top, leve strane / left side			
priklučak na hidrauličnu instalaciju	connection for hydraulic instalation	G 3/4 " sa donje strane / from bottom side			
pumpa	pump	visoko efikasna pumpa / highly efficient pump			
ekspanziona posuda	expansion vessel	Zilio Italy 10L			
sigurnosni ventil	safety valve	integriran unutra / integrated inside			
slavina za punjenje i pražnjenje kotla	filling and drain valve	da / yes			
težina kotla bez vode	weight of boiler without water	28-35 kg			
opseg regulacije temperature kotla u radijatorskom režimu	temperature range in radiator mode	10 ÷ 80 °C			
opseg regulacije temperature kotla u podnom režimu	temperature range in underfloor mode	10 ÷ 50 °C			
sigurnosni termostat	safety thermostat	95 °C			
min. max. radni pritisak	min.max. work pressure	0,3 bar ÷ 2,6 bar			
stopen IP zaštite	Ingress Protection rating	IP 20			
procesorska jedinica	processor unit	da / yes			
monofazna konekcija	single phase connection	da / yes	da / yes	ne / no	ne / no

*za objekte u skladu sa / for buildings in accordance with EN ISO 52016-1:2017, f.h.-podno grejanje/floor heating, r.h.-radijatorsko grejanje/radiator heating



Serija eCompact Plus su blok kotlovi koji su istih dimenzija kao i mTronic, identičnim hidrauličnim delom kotla, ali za manje zahtevne korisnike. Namjenjen je isključivo za grejanje, nije predviđen za pripremu potrošne tople vode. Kontrola rada je preko mikroprocesorske jedinice. Korisnički modul se sastoji od dva 7-segmentna displeja i led dioda koje signaliziraju koji se parametar ispisuje na displeju i 3 soft touch tastera ispod displeja za maksimalno uprošćeno podešavanje.

Ovaj kotao se svojom funkcionalnošću i kvalitetom pozicionirao u kategoriji premium kotlova. Pouzdanost u radu i servisne karakteristike su kao i kod svih Mikoterm modela na vrhunskom nivou.

The eCompact Plus series are block boilers of the same dimensions as the mTronic, identical to the hydraulic part of the boiler, but for less demanding users. It is intended exclusively for heating, it is not intended for the preparation of domestic hot water. Operation is controlled via a microprocessor unit.

The user module consists of two 7-segment displays and led diodes that signal which parameter is displayed on the display and 3 soft touch buttons below the display for maximum simplified adjustment.

With its functionality and quality, this boiler has positioned itself in the category of premium boilers. Reliability and service characteristics are, as with all Mikoterm models, at the highest level.



kW 6÷27

m²

≤270 floor heating
≤200 radiator heating

za objekte u skladu sa/for buildings in accordance with
EN ISO 52016-1:2017

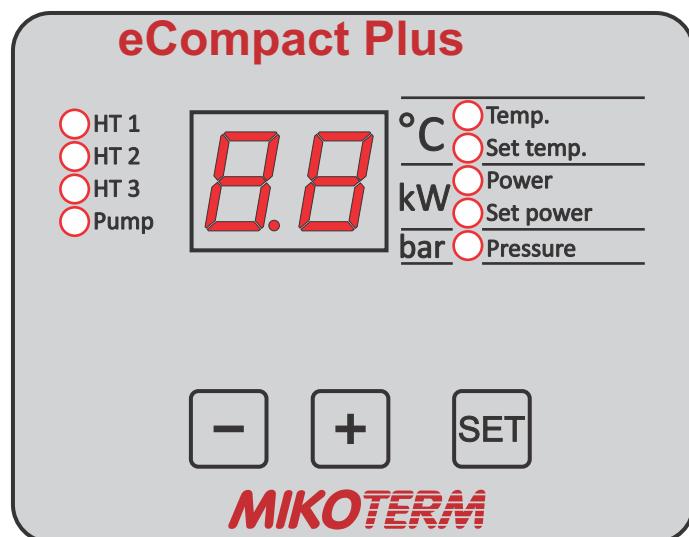
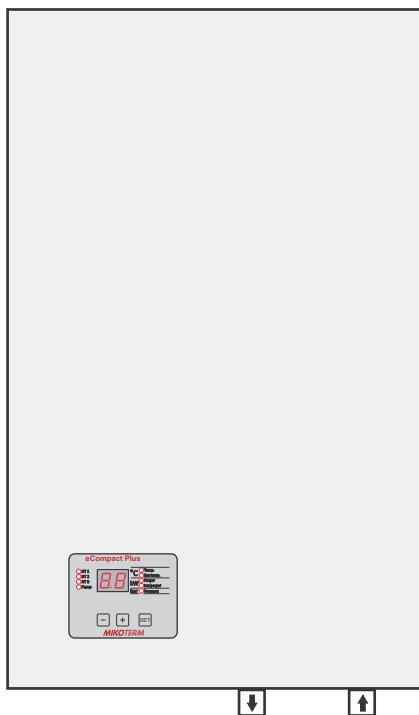
% 99

IP 40

KG 23÷25

Pregled prednosti / overview of advantage:

- Električni kotao za grejanje.
Electric boiler for heating.
- Uključivanje/isključivanje grejača sa praćenjem njihovog vremena rada (ravnomerno angažovanje grejača) - obezbeđuje duži radni vek uređaja.
Heater on / off, with monitoring their operating time (balancing the operating time of the heaters) - provides longer device life.
- Sigurnosni termostat sa daljinskim naponskim okidačem (bez napajanja u redovnom radu, duži radni vek).
Safety temperature limiter with remote voltage trigger (without power supply in regular operation, longer working life).
- Najnoviji model visoko efikasne pumpe sa širokim izborom režima rada.
The latest model of a highly efficient pump with a wide choice of operating modes.
- Jednostavan pregled svih parametara sistema preko korisničkog interfejsa.
Easy overview of all system parameters via user interface.
- Digitalno merenje temperature i precizna regulacija. Digitalni senzor pritiska vode u sistemu.
Digital temperature measurement and precise control. Digital water pressure sensor in the system.
- Daljinsko upravljanje preko sobnog termostata.
Remot control via room thermostat.



Izgled komandne table /
Control panel view

Tehničke karakteristike / Technical characteristics

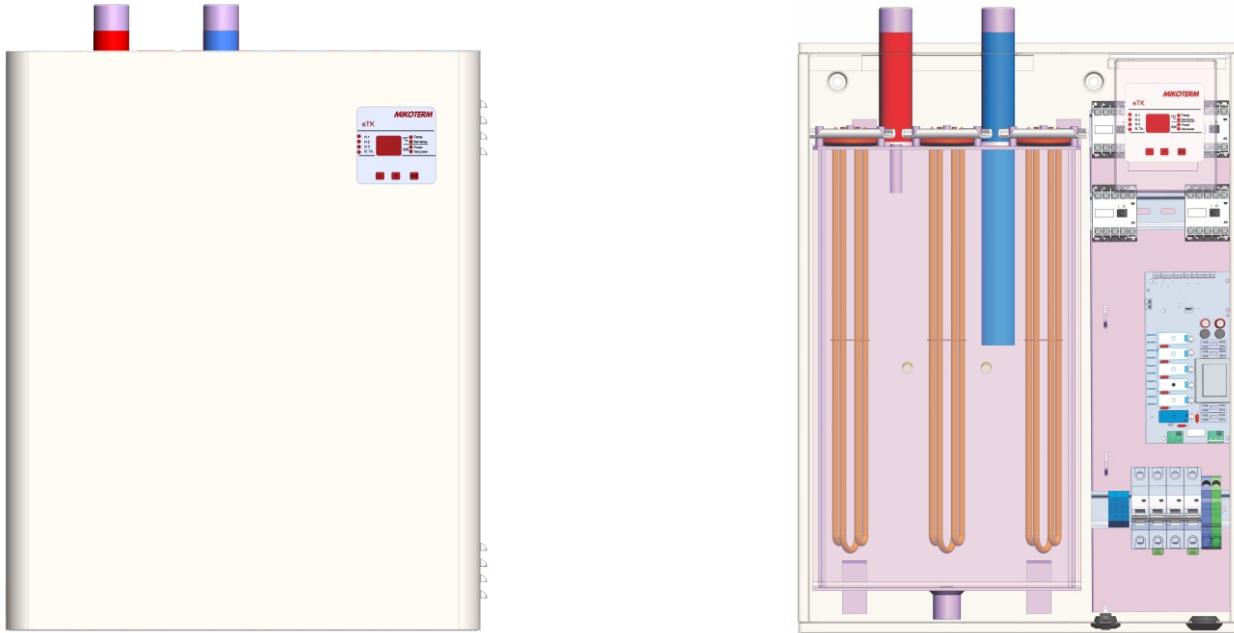
Model	CP-6kW	CP-9kW	CP-12kW	CP-18kW	CP-24 kW	CP-27 kW
stepeni snage	power steps	3 × 2 kW	3 × 3 kW	3 × 4 kW	3 × 6 kW	3 × 8 kW
minimalna snaga	minimum power	2 kW	3 kW	4 kW	6 kW	8 kW
maksimalna snaga	maximum power	6 kW	9 kW	12 kW	18 kW	24 kW
potrebni glavni osigurači za trofazno napajanje	main circuit breakers for three phase power supply	3 × 16A	3 × 20A	3 × 25A	3 × 32A	3 × 40A
potrebni glavni osigurači za monofazno napajanje	main circuit breakers for single-phase power supply	1 × 32A	1 × 50A	/	/	/
potreban mrežni kabl za trofazno napajanje	power cable for three phase power supply	5 × 2,5 mm ²	5 × 2,5 mm ²	5 × 4 mm ²	5 × 4 mm ²	5 × 6 mm ²
potreban mrežni kabl za monofazno napajanje	power cable for single-phase power supply	3 × 4 mm ²	3 × 6 mm ²	/	/	/
preporučena grejna * površina-podno/radijat.	recommended heating * surface-floor/radiator	≤60m ² f.h. ≤40m ² r.h.	≤90m ² f.h. ≤60m ² r.h.	≤120m ² f.h. ≤80m ² r.h.	≤180m ² f.h. ≤120m ² r.h.	≤240m ² f.h. ≤160m ² r.h.
priklučak na elektro mrežu	inlet for power cable	3 strane / ways - gornje / top, donje / bottom, između zida / from wall				
priklučak na hidrauličnu instalaciju	connection for hydraulic installation	G 3/4 " sa donje strane / from bottom side				
pumpa	pump	visoko efikasna pumpa / highly efficient pump				
ekspanziona posuda	expansion vessel	Zilio Italy 8L				
sigurnosni ventil	safety valve	integriran unutra / integrated inside				
slavina za pražnjenje kotla	drain valve	da / yes				
dimenzije VxŠxD	dimensions HxWxD	710x430x230 mm				
težina kotla bez vode	weight of boiler without water	25 kg				
opseg regulacije temperature kotla	temperature range	10 ÷ 80 °C				
sigurnosni termostat	safety thermostat	95 °C				
min. max. radni pritisak	min.max. work pressure	0,4 bar ÷ 2,6 bar				
stepen IP zaštite	Ingress Protection rating	IP 40				
procesorska jedinica	processor unit	da / yes				
monofazna konekcija	single phase connection	da / yes	da / yes	ne / no	ne / no	ne / no

*za objekte u skladu sa / for buildings in accordance with EN ISO 52016-1:2017, f.h.-podno grejanje/floor heating, r.h.-radijatorsko grejanje/radiator heating



Model eTK namenjen je zidnoj montaži. Male dimenzije čine ovaj model pogodan za montažu u bilo kom delu objekta. Našli su primenu kao osnovni izvor energije ali vrlo često i kao backup rešenje uz kotlove na pelet, gas, drva... Kotao može kontrolisati rad eksterne cirkulacione pumpe. Kotлом управља микропроцесорски терморегулатор који оптимално користи сваки грејач. Корисник у сваком trenutku на дисплеју има приказ trenutне temperature ili kretanjem kroz meni, brzo i lako, može pregledati sve parametre sistema. Ovaj model kao i ostali ima mogućnost upravljanja preko sobnog termostata. Za razliku od prethodnog modela, pored dodate mikroprocesorske jedinice, osigurana je maksimalna bezbednost dodavanjem sigurnosnog sklopa koji čine 3P automatski osigurač sa naponskim okidačem, koji u slučaju pregrevanja prekida glavno napajanje. Napredni softver, na osnovu dinamičkih promena temperature modulira angažovanu snagu grejača, tako da se uz najmanji utrošak energije precizno održava zadata temperatura kotla.

The eTK model is intended for wall mounting. Small dimensions make this model suitable for installation in any part of the building. They have found use as a basic source of energy, but very often as a backup solution with pellet, gas, wood boilers... The boiler can control the operation of the external circulation pump. The boiler is controlled by a microprocessor thermoregulator that optimally uses each heater. The user can see the current temperature on the display at any time or by moving through the menu, quickly and easily, can view all system parameters. This model, like the others, has the option of control via a room thermostat. In this model, in addition to the added microprocessor unit, maximum safety is ensured by adding a safety assembly that consists of a 3P circuit breaker with voltage trigger, which in case of overheating interrupts the main power supply. Advanced software, according to dynamic temperature changes modulates the engaged power of the heaters, so that the set boiler temperature is precisely maintained with the least energy consumption.



kW 6÷45

m²

≤420 floor heating
≤300 radiator heating

za objekte u skladu sa/for buildings in accordance with
EN ISO 52016-1:2017

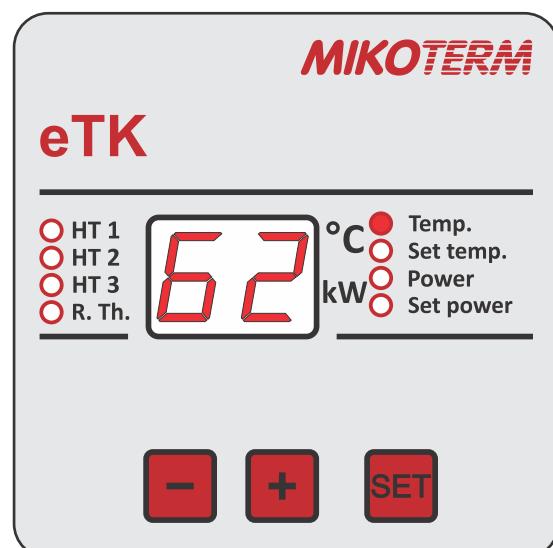
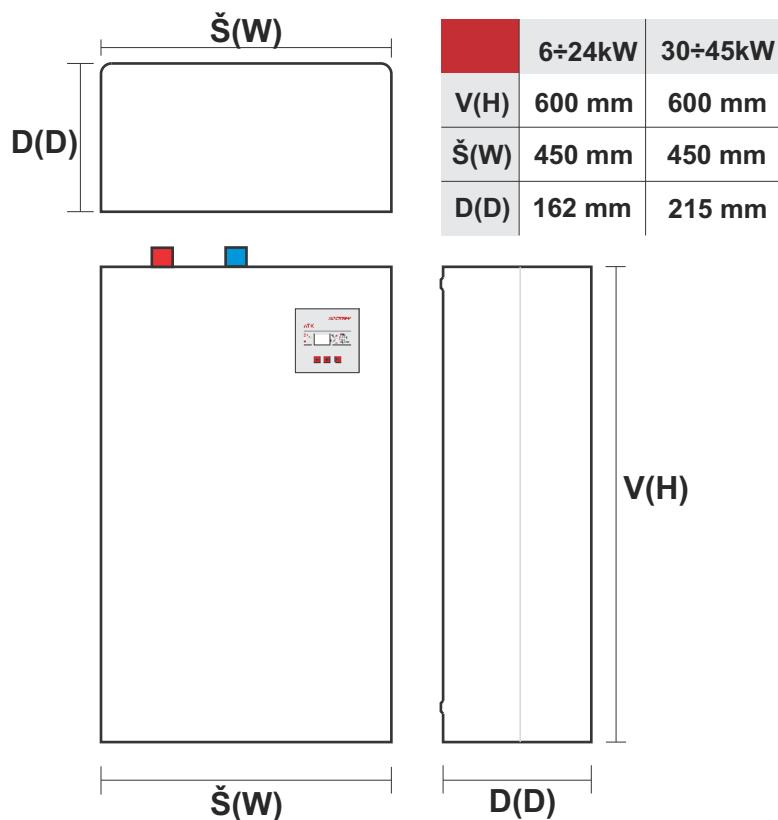
% 99

IP 20

KG 20÷27,5

Pregled prednosti / overview of advantages:

- > Električni kotao za grejanje (zidna montaža).
Electric boiler for heating (wall mounting).
- > Uključivanje/isključivanje grejača sa praćenjem njihovog vremena rada (ravnomerno angažovanje grejača) - obezbeđuje duži radni vek uređaja.
Heater on / off, with monitoring their operating time (balancing the operating time of the heaters) - provides longer device life.
- > Sigurnosni termostat sa daljinskim naponskim okidačem (bez napajanja u redovnom radu, duži radni vek).
Safety temperature limiter with remote voltage trigger (without power supply in regular operation, longer working life).
- > Jednostavan pregled svih parametara sistema preko korisničkog interfejsa.
Easy overview of all system parameters via user interface.
- > Digitalno merenje temperature i precizna regulacija.
Digital temperature measurement and precise control.
- > Daljinsko upravljanje preko sobnog termostata.
Remot control via room thermostat.
- > Mogućnost upravljanja eksternom cirkulacionom pumpom.
The possibility of controlling an external circulation pump.



Izgled komandne table /
Control panel view

Tehničke karakteristike / Technical characteristics

Model		eTK-6kW	eTK-9kW	eTK-12kW	eTK-18kW	eTK-24 kW	eTK-30 kW	eTK-36kW	eTK-40kW	eTK-45kW		
stepen korisnosti		utility level	99%	99%	99%	99%	99%	99%	99%	99%		
stepeni snage		power steps	3×2kW	3×3kW	3×4kW	3×6kW	3×8kW	3x10kW	3x12kW	3x13,3kW		
broj stepena snage		number of power degrees	3	3	3	3	3	3	3	3		
potrebbni glavni osigurači za trofazno napajanje		main circuit breakers for three phase power supply	3×16A	3x20A	3x25A	3x32A	3x40A	3x50A	3x63A	3x80A		
potrebbni glavni osigurači za monofazno napajanje		main circuit breakers for single-phase power supply	1×32A	1×50A	/	/	/	/	/	/		
potreban mrežni kabl za trofazno napajanje		power cable for three phase power supply	5×2,5mm ²	5×2,5mm ²	5×4mm ²	5×4mm ²	5×6mm ²	5×10mm ²	5×10mm ²	5×16mm ²		
potreban mrežni kabl za monofazno napajanje		power cable for single-phase power supply	3x4mm ²	3x6mm ²	/	/	/	/	/	/		
zapremina vode u kotlu		volume of water in the boiler	14,2 l	14,2 l	14,2 l	14,2 l	14,2 l	21 l	21 l	21 l		
težina kotla bez vode		weight of boiler without water	20 kg	20,5 kg	21 kg	21,5 kg	22 kg	26,3 kg	27 kg	27,5 kg		
dimenzije VxŠxD		dimensions H×W×D	600×450×162 mm						600×450×215 mm			
pozicija hidr. priključaka		pipe position	odozgo / from above									
hidraulični priključci		hydro connection	1" SN									
maksimalni pritisak		maximum pressure	3 bar									
minimalni pritisak		minimum pressure	0,5 bar									
opseg regulacije temperature kotla		temperature range	10 ÷ 80 °C									
sigurnosni termostat		safety thermostat	95 °C									
stepen IP zaštite	Ingress Protection rating		IP 20									
preporučena grejna*	recommended heating*	površina-podno/radijat.	≤60m ² f.h. ≤40m ² r.h.	≤90m ² f.h. ≤60m ² r.h.	≤120m ² f.h. ≤80m ² r.h.	≤180m ² f.h. ≤120m ² r.h.	≤240m ² f.h. ≤160m ² r.h.	≤300m ² f.h. ≤200m ² r.h.	≤360m ² f.h. ≤240m ² r.h.	≤400m ² f.h. ≤270m ² r.h.	≤420m ² f.h. ≤300m ² r.h.	

*za objekte u skladu sa / for buildings in accordance with EN ISO 52016-1:2017, f.h.-podno grejanje/floor heating, r.h.-radijatorsko grejanje/radiator heating



Električni toplovodni kotlovi **TK-Profesional** namenjeni su za zagrevanje većih prostora, kuća, stambenih zgrada, proizvodnih hala, poslovnih prostora itd. Odlikuju se robusnom konstrukcijom, jednostavnom montažom, pouzdanim radom i dugim vekom eksploracije. Tehnička rešenja su ono što naše proizvode izdvaja ispred konkurenčije. Kotlovi snage 40kW i jači opremljeni su mikroprocesorskim termoregulatorom sa grafičkim LCD displejem. Konstrukcija kotla omogućava lak pristup svim komponentama. Odzračivanje je automatsko, a regulacija temperature i snage veoma precizna pomoću mikroprocesorskog termoregulatora. Ovi kotlovi su predviđeni za podnu montažu. Minimalni protok je osiguran ugradnjom indikatora protoka. Precizna niveličacija uređaja se ostvaruje preko podešivih stopica. Električna veza omogućava daljinsko upravljanje kotlom dodavanjem sobnog termostata i vremenskog prekidača. TK-Profesional 40-60kW opcionalno se mogu povezati na centralizovani sistem nadzora i upravljanja (BMS, SCADA,...), preko RS485 RTU modula, pomoću ModBus protokola. Moguće je povezivanje do 10 kotlova iste snage u kaskadu uz dodatni Kaskadni regulator CPK09-M.

Electric hot water boilers **TK-Profesional** are intended for heating larger spaces, houses, residential buildings, production halls, business premises, etc. They are characterized by robust construction, easy installation, reliable operation and long service life. Technical solutions are what set our products apart from the competition. Boilers with a power of 40 kW and more are equipped with a microprocessor thermoregulator with a graphic LCD display. The construction of the boiler allows easy access to all components. Venting is automatic, and temperature and power regulation is very precise using a microprocessor thermoregulator. These boilers are designed for floor mounting. Minimum flow is ensured by installing a flow switch. Precise leveling of the device is achieved through adjustable feet. The electrical connection allows remote control of the boiler by adding a room thermostat and a timer. TK-Professional 40-60kW boilers can optionally be connected to a centralized monitoring and control system (BMS, SCADA,...), via an RS485 RTU module, using the ModBus protocol. It is possible to connect up to 10 boilers of the same power in a cascade with an additional Cascade regulator CPK09-M.



kW 40÷60

m² ≤600 floor heating
≤480 radiator heating

za objekte u skladu sa/for buildings in accordance with
EN ISO 52016-1:2017

% 99

IP 20

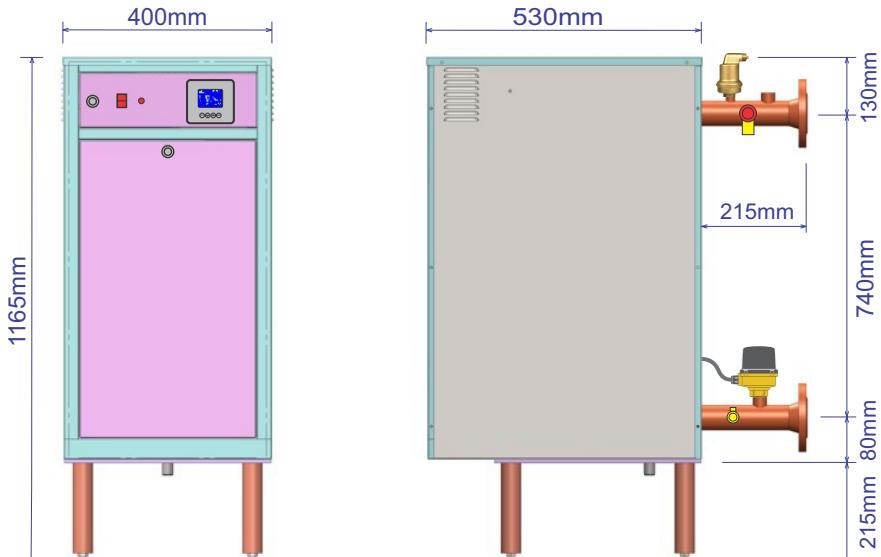
KG 72÷75

Pregled prednosti / overview of advantages:

- > Električni kotao za zagrevanje većih prostora, kuća, zgrada, proizvodnih hala.
Electric boiler for heating larger spaces, houses, buildings, production halls.
- > Dugi vek eksploracije, jednostavna montaža.
Long service life, easy installation.
- > Daljinsko nadzor i upravljanje preko RS485 RTU modula, pomoću ModBus protokola.
Remote monitoring and management via RS485 RTU module, using ModBus protocol.
- > Svi parametri sistema prikazani na korisničkom interfejsu. Jednostavno podešavanje temperature i snage sistema grejanja.
All system parameters displayed on the user interface. Easy adjustment of temperature and power of the heating system.
- > Daljinsko upravljanje preko sobnog termostata.
Remote control via room thermostat.
- > Vodenje temperature kotla prema spoljnoj temperaturi - O.T.C. režim rada (opcional).
Boiler temperature control according to outdoor temperature - O.T.C. operating mode (optional).
- > Digitalno merenje temperature i precizna regulacija. Digitalni senzor pritiska vode u sistemu.
Digital temperature measurement and precise control. Digital water pressure sensor in the system.
- > Sigurnosni sklopovi za potpunu bezbednost - isključivanje napajanja na signal sigurnog termostata.
Safety circuits for complete safety - switching off the power to the signal of the safe thermostat.
- > Zaštita od smrzavanja pomoću zasebnog programa.
Frost protection using a separate program.



Izgled komandne table /
Control panel view



Tehničke karakteristike / Technical characteristics

Model		TK-Profesional 40kW	TK-Profesional 50kW	TK-Profesional 60kW
grejne grupe	heating groups	4 × 10 kW	5 × 10 kW	6 × 10 kW
osigurači grejača	heater fuses	4 × 3P C25A	5 × 3P C25A	6 × 3P C25A
maksimalna nazivna struja	maximum required current	3 × 58A	3 × 72,5A	3 × 87A
potrebiti glavni osigurači	main circuit breakers	3 × 63 A	3 × 80 A	3 × 100 A
potreban mrežni kabl	power cable	Cu 3 × 16 mm ²	Cu 3 × 25 mm ²	Cu 3 × 35 mm ²
potreban zaštitni vod	protective platoon required	Cu 1 × 16 mm ²	Cu 1 × 25 mm ²	Cu 1 × 35 mm ²
težina	weight	72kg	72kg	75kg
preporučena grejna površina-podno/radijat.	recommended heating surface-floor/radiator *	≤400m ² f.h. ≤320m ² r.h.	≤500m ² f.h. ≤400m ² r.h.	≤600m ² f.h. ≤480m ² r.h.
dimenzija A	dimension A		1165 mm	
dimenzija B	dimension B		400 mm	
dimenzija C	dimension C		530 mm	
zapremina vode u kotlu	volume of water in the boiler		60 l	
priklučni napon	power supply		3N ~ 400 / 230V 50Hz	
priklučak na hidrauličnu mrežu	hydraulic connection		DN 40 (6/4"); PN 16	
min i max radni pritisak	min and max pressure		0,4 bar ÷ 4 bar	
ventil sigurnosti	safety valve		½col 4,5 bar	
stepen IP zaštite	Ingress Protection rating		IP 20	
opseg regulacije temperature kotla	temperature range		10 ÷ 90 °C	
sigurnosni termostat	safety thermostat		95 °C	

*za objekte u skladu sa / for buildings in accordance with EN ISO 52016-1:2017, f.h.-podno grejanje/floor heating, r.h.-radijatorsko grejanje/radiator heating



Kotlovi TK-Profesional 70-100kW kao i ostali iz ove serije se proizvode po najstrožim standardima sigurnosti EU. Kontrola i regulacija rada kotlova je izvedena preko mikroprocesorske jedinice koja dobija informacije od digitalnih senzora pritiska i temperature. Na displeju su prikazani svi parametri sistema, kao i upozorenja o približavanju graničnim vrednostima temperature i pritiska ili greške u slučaju prekoračenja dozvoljenih vrednosti. Automatika i izvršne komponente su fizički odvojene od suda kotla. Minimalni protok je osiguran ugradnjom indikatora protoka. Precizna nivelacija uređaja se ostvaruje preko podesivih stopica. Temperatura ambijenta automatike se kontroliše i po potrebi prinudnom ventilacijom održava na optimalnom nivou za bezbedan rad. Kotlovi TK-Profesional 70-100kW opcionalno se mogu povezati na centralizovani sistem nadzora i upravljanja (BMS, SCADA,...), preko RS485 RTU modula, pomoću ModBus protokola. Moguće je povezivanje do 10 kotlova iste snage u kaskadu uz dodatni Kaskadni regulator CPK09-M.

TK-Profesional 70-100kW boilers as well as others from this series are produced according to the strictest EU safety standards. Control and regulation of boiler operation is performed through a microprocessor unit that receives information from digital pressure and temperature sensors. The display shows all system parameters, as well as warnings about approaching the temperature and pressure limit values, or errors in case of exceeding the permitted values. The automation are physically separated from the boiler vessel. Minimum flow is ensured by installing a flow switch. Precise leveling of the device is achieved through adjustable feet. The ambient temperature of the automation is controlled and, if necessary, by forced ventilation maintained at an optimal level for safe operation. TK-Professional 70-100kW boilers can optionally be connected to a centralized monitoring and control system (BMS, SCADA,...), via an RS485 RTU module, using the ModBus protocol. It is possible to connect up to 10 boilers of the same power in a cascade with an additional Cascade regulator CPK09-M.



kW 70÷100

m²

≤1000 floor heating
≤700 radiator heating

% 99

IP 20

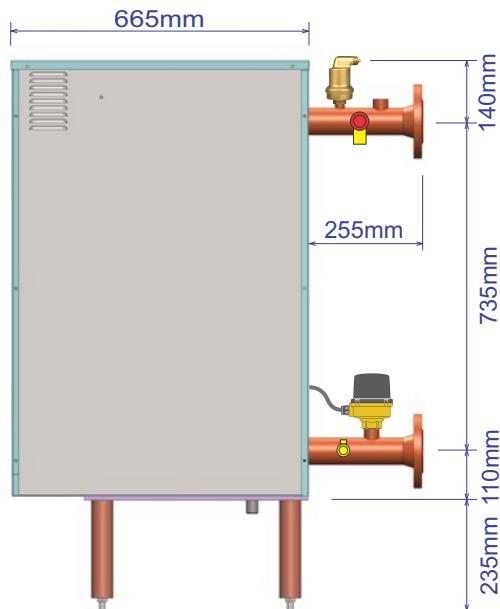
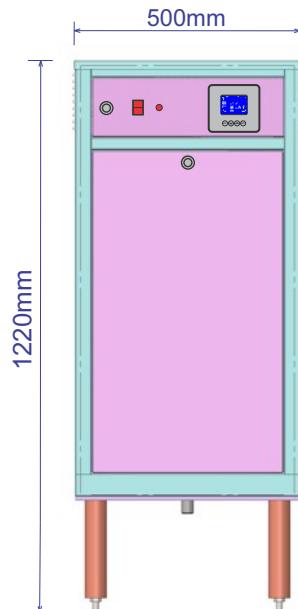
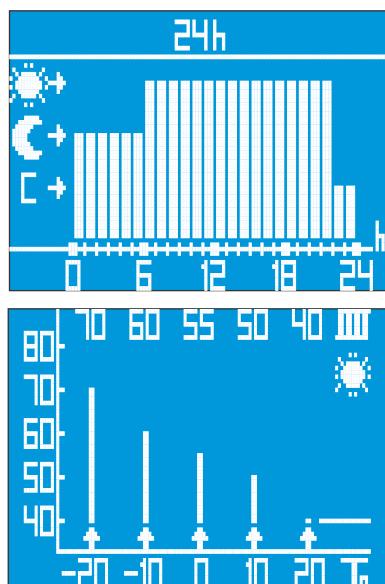
KG 92÷120

za objekte u skladu safor buildings in accordance with
EN ISO 52016-1:2017

Pregled prednosti / overview of advantage:

- > Električni kotao za zagrevanje većih prostora, kuća, zgrada, proizvodnih hala.
Electric boiler for heating larger spaces, houses, buildings, production halls.
- > Dugi vek eksploracije, jednostavna montaža, zaštita od smrzavanja pomoću zasebnog programa.
Long service life, easy installation, frost protection using a separate program.
- > Svi parametri sistema prikazani na korisničkom interfejsu. Jednostavno podešavanje temperature i snage sistema grejanja.
All system parameters displayed on the user interface. Easy adjustment of temperature and power of the heating system.
- > Daljinski nadzor i upravljanje preko RS485 RTU modula, pomoću ModBus protokola.
Remote monitoring and management via RS485 RTU module, using ModBus protocol.
- > Vodenje temperature kotla prema spoljnoj temperaturi - O.T.C. režim rada (opcionalno).
Boiler temperature control according to outdoor temperature - O.T.C. operating mode (optional).
- > Digitalno merenje temperature i precizna regulacija. Digitalni senzor pritiska vode u sistemu.
Digital temperature measurement and precise control. Digital water pressure sensor in the system.
- > Zaštitni elementi: Sigurnosni termostat, Sigurnosni ventil, Indikator protoka-nije dozvoljen rad grejača bez protoka vode.
Safety elements: Safety thermostat, Safety valve, Flow indicator-heater operation without water flow is not allowed.
- > Sigurnosni sklopovi za potpunu bezbednost-isključivanje napajanja na signal sigurnog termostata.
Safety circuits for complete safety-switching off the power to the signal of the safe thermostat.

Postignite optimalan komfor na ekonomičan način uz O.T.C. režim rada / Achieve optimal comfort in an economical way with O.T.C. operating modes



Tehničke karakteristike / Technical characteristics

Model		TK-Pro. 70kW	TK-Pro. 80kW	TK-Pro. 90kW	TK-Pro. 100kW
grejne grupe	heating groups	7 × 10 kW	8 × 10 kW	9 × 10 kW	10 × 10 kW
osigurači grejača	heater fuses	7 × 3P C25A	8 × 3P C25A	9 × 3P C25A	5 × 3P C40A
maksimalna nazivna struja	maximum required current	3 × 101,5A	3 × 116A	3 × 130A	3 × 145A
potrebnii glavni osigurači	main circuit breakers	3 × 125 A	3 × 125 A	3 × 160 A	3 × 160 A
potreban mrežni kabl	power cable	Cu 3 × 35 mm ²	Cu 3 × 50 mm ²	Cu 3 × 50 mm ²	Cu 3 × 70 mm ²
potreban zaštitni vod	protective platoon required	Cu 1 × 25 mm ²	Cu 1 × 25 mm ²	Cu 1 × 35 mm ²	Cu 1 × 35 mm ²
težina	weight	92kg	106kg	110kg	120kg
preporučena grejna * površina-podno/radijat.	recommended heating * surface-floor/radiator	≤700m ² f.h. ≤560m ² r.h.	≤800m ² f.h. ≤640m ² r.h.	≤900m ² f.h. ≤720m ² r.h.	≤1000m ² f.h. ≤800m ² r.h.
dimenzija A	dimension A	1220 mm			
dimenzija B	dimension B	500 mm			
dimenzija C	dimension C	665 mm			
zapremina vode u kotlu	volume of water in the boiler	90 l			
prikazujući napon	power supply	3N ~ 400V 50Hz			
priklučak na hidrauličnu mrežu	hydraulic connection	DN 50 (2"); PN 16			
indikator protoka min/max protok za rad grejača	flow switch min/max flow for enabled heating	3m ³ /h + 9m ³ /h			
min i max radni pritisak	min and max pressure	0,4 bar ÷ 4 bar			
ventil sigurnosti	safety valve	3/4" 4,5 bar			
stepen IP zaštite	Ingress Protection rating	IP 20			
opseg regulacije temperature kotla	temperature range	10 ÷ 90 °C			
sigurnosni termostat	safety thermostat	95 °C			

*za objekte u skladu sa / for buildings in accordance with EN ISO 52016-1:2017, f.h.-podno grejanje/floor heating, r.h.-radijatorsko grejanje/radiator heating



Kotlovi TK-Profesional 120-240kW su kompaktni uređaji namenjeni za zagrevanje većih stambenih ili poslovnih objekata. Sud kotla je izrađen od čeličnog lima, ispitana na pritisak od 6 bara, dok je maksimalni radni pritisak 4 bara. Prirubnice pomoću kojih se kotao povezuje na grejunu instalaciju nalaze se sa zadnje strane kotla. Na povratnoj cevi kotla (donjoj) se nalazi slavina za punjenje i pražnjenje, a na potisnoj cevi (gornjoj) sigurnosni ventil i automatsko odzračno ionče. Donja vrata pokrivaju razvodnu tablu sa kompletom automatskom kotla i rednim stezalkama za priključenje napojnog kabla, kao i pomoćnim klemama za povezivanje komande za cirkulacionu pumpu i sobnog termostata. Kotlovi su opremljeni sa "Multistage protection" sistemom zaštite, koji permanentno prati temperaturu i pritisak u sistemu. Minimalni protok je osiguran ugradnjom indikatora protoka. Precizna niveličanja uređaja se ostvaruje preko podešivih stopica. U slučaju približavanja pritiska ili temperature nedozvoljenim vrednostima prikazuje na displeju odgovarajuća upozorenja, a u slučaju prekoračenja graničnih vrednosti pritiska ili temperature isključuje sve grejače, odnosno u trećem stepenu zaštite isključuje kompletno napajanje uređaja pomoću naponskih okidača, čime je garantovana bezbednost. Kotlovi TK-Profesional 120-240kW opcionalno se mogu povezati na centralizovani sistem nadzora i upravljanja (BMS, SCADA,...), preko RS485 RTU modula, pomoću ModBus protokola. Moguće je povezivanje do 10 kotlova iste snage u kaskadu uz dodatni Kaskadni regulator CPK09-M.

Boilers TK-Professional 120-240kW are compact devices intended for heating larger residential or commercial buildings. The boiler vessel is made of (sheet) steel, tested at a pressure of 6 bar, while the maximum working pressure is 4 bar. The flanges used to connect the boiler to the heating system are located on the back of the boiler. On the return pipe of the boiler (lower) there is a tap for filling and emptying, and on the pressure pipe (upper) there is a safety valve and a valve for automatic deaeration. The lower door covers the switchboard with boiler automation and clamps for connecting the power cable, as well as auxiliary clamps for connecting the circulation pump and the room thermostat. The boilers are equipped with a "Multistage protection" protection system, which permanently monitors the temperature and pressure in the system. Minimum flow is ensured by installing a flow switch. Precise leveling of the device is achieved through adjustable feet. If the pressure or temperature approaches the impermissible values, it displays the appropriate warnings on the display, and in the event that the pressure or temperature limit values are exceeded, it switches off all heaters. In the third level of protection, it switches off the complete power supply of the device with the help of voltage triggers, which guarantees safety. TK-Professional 120-240kW boilers can optionally be connected to a centralized monitoring and control system (BMS, SCADA,...), via an RS485 RTU module, using the ModBus protocol. It is possible to connect up to 10 boilers of the same power in a cascade with an additional Cascade regulator CPK09-M.



kW 120÷240

m² ≤2400 floor heating
≤1600 radiator heating

% 99

IP 20

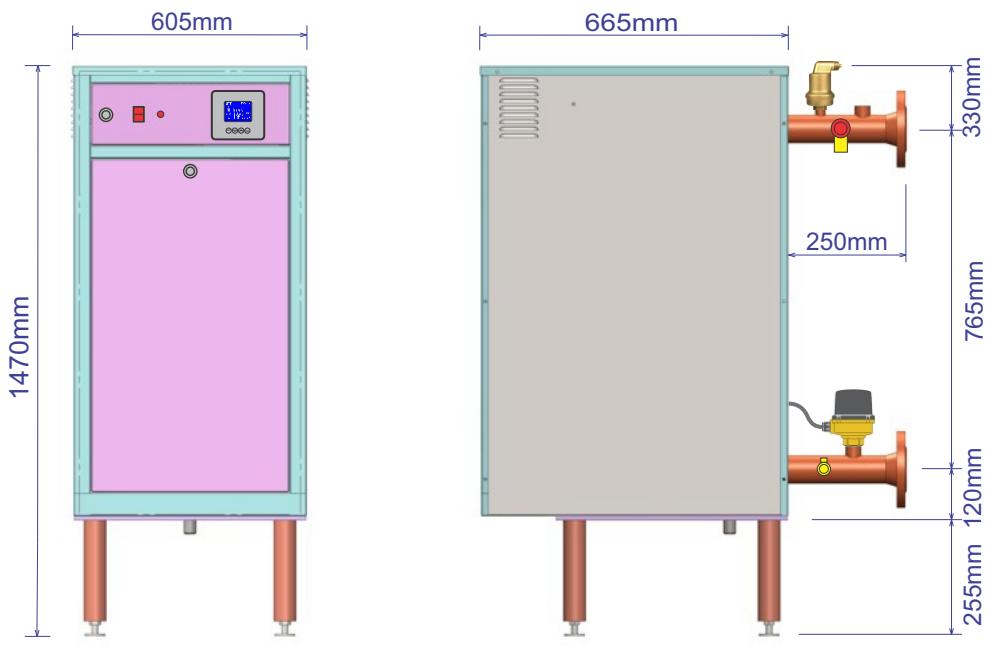
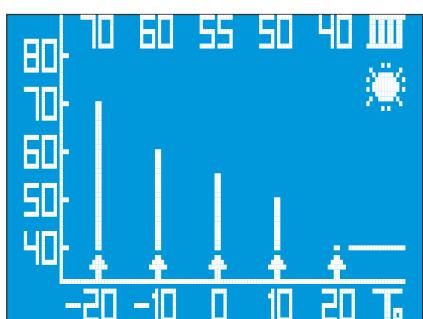
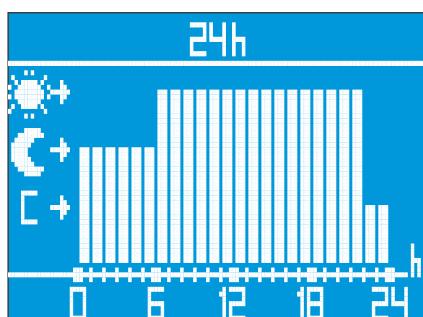
KG 150÷270

za objekte u skladu sa/s for buildings in accordance with
EN ISO 52016-1:2017

Pregled prednosti / overview of advantage:

- > Dugi vek eksploracije, jednostavna montaža, zaštita od smrzavanja pomoću zasebnog programa.
Long service life, easy installation, frost protection using a separate program.
- > Daljinski nadzor i upravljanje preko RS485 RTU modula, pomoću ModBus protokola.
Remote monitoring and management via RS485 RTU module, using ModBus protocol.
- > Svi parametri sistema prikazani na korisničkom interfejsu. Jednostavno podešavanje temperature i snage sistema grejanja.
All system parameters displayed on the user interface. Easy adjustment of temperature and power of the heating system.
- > Vođenje temperature kotla prema spoljnoj temperaturi - O.T.C. režim rada (opcionalno).
Boiler temperature control according to outdoor temperature - O.T.C. operating mode (optional).
- > Digitalno merenje temperature i precizna regulacija. Digitalni senzor pritiska vode u sistemu, daljinsko upravljanje preko sobnog termostata.
Digital temperature measurement and precise control. Digital water pressure sensor in the system, remote control via room thermostat.
- > Zaštitni elementi: Sigurnosni termostat, Sigurnosni ventil, Indikator protoka-nije dozvoljen rad grejača bez protoka vode.
Safety elements: Safety thermostat, Safety valve, Flow indicator-heater operation without water flow is not allowed.
- > Sigurnosni sklopovi za potpunu bezbednost - isključivanje napajanja na signal sigurnog termostata "Multistage protection" sistem zaštite sa 3 stepena zaštite.
Safety circuits for complete safety - switching off the power supply to the signal of the safe thermostat "Multistage protection" protection system with 3 levels of protection.

Postignite optimalan komfor na ekonomičan način uz O.T.C. režim rada / Achieve optimal comfort in an economical way with O.T.C. operating modes



Tehničke karakteristike / Technical characteristics

Model		TK-Pro.120kW	TK-Pro.140kW	TK-Pro.160kW	TK-Pro.180kW	TK-Pro.200kW	TK-Pro.240kW
grejne grupe	heating groups	6 × 20 kW	7 × 20 kW	8 × 20 kW	9 × 20 kW	10 × 20 kW	6 × 40 kW
osigurači grejača	heater fuses	6 × 3P C40A	7 × 3P C40A	8 × 3P C40A	9 × 3P C40A	10 × 3P C40A	12 × 3P C40A
maksimalna nazivna struja	maximum required current	3 × 174A	3 × 203A	3 × 232A	3 × 261A	3 × 290A	3 × 248A
potrebnii glavni osigurači	main circuit breakers	3 × 200 A	3 × 250 A	3 × 250 A	3 × 300 A	3 × 315 A	3 × 400 A
potreban mrežni kabl	power cable	2 kabla Cu 3 × 35 mm ²	2 kabla Cu 3 × 50 mm ²	2 kabla Cu 3 × 50 mm ²	2 kabla Cu 3 × 70 mm ²	2 kabla Cu 3 × 70 mm ²	2 kabla Cu 3 × 95 mm ²
potreban zaštitni vod	protective platoon required	Cu 1 × 35 mm ²	Cu 1 × 35 mm ²	Cu 1 × 50 mm ²	Cu 1 × 50 mm ²	Cu 1 × 70 mm ²	Cu 1 × 70 mm ²
težina	weight	150kg	170kg	190g	220kg	240kg	270kg
zapremina vode u kotlu	volume of water in the boiler	130 l	130 l	170 l	170 l	170 l	170 l
priklučak na hidrauličnu mrežu	hydraulic connection	DN65(2½");PN16	DN65(2½");PN16	DN65(2½");PN16	DN65(2½");PN16	DN65(2½");PN16	DN65(2½");PN16
ventil sigurnosti	safety valve	3/4" 4,5 bar					
preporučena grejna * površina-podno/radijat.	recommended heating * surface-floor/radiator	≤1200m ² f.h. ≤1000m ² r.h.	≤1400m ² f.h. ≤1150m ² r.h.	≤1600m ² f.h. ≤1300m ² r.h.	≤1800m ² f.h. ≤1450m ² r.h.	≤2000m ² f.h. ≤1600m ² r.h.	≤2400m ² f.h. ≤2000m ² r.h.
dimenzija AxBxC	dimension AxBxC	1470×605×665 mm					
priklučni napon	power supply	3N ~ 400V 50Hz					
indikator protoka min/max protok za rad grejača	flow switch min/max flow for enabled heating	3m ³ /h ÷ 9m ³ /h					
min i max radni pritisak	min and max pressure	0,4 bar ÷ 4 bar					
stепен IP заштите	Ingress Protection rating	IP 20					
radna temperatura	working temperature	10 ÷ 90 °C					
sigurnosni termostat	security thermostat	95 °C					

*za objekte u skladu sa / for buildings in accordance with EN ISO 52016-1:2017, f.h.-podno grejanje/floor heating, r.h.-radijatorsko grejanje/radiator heating

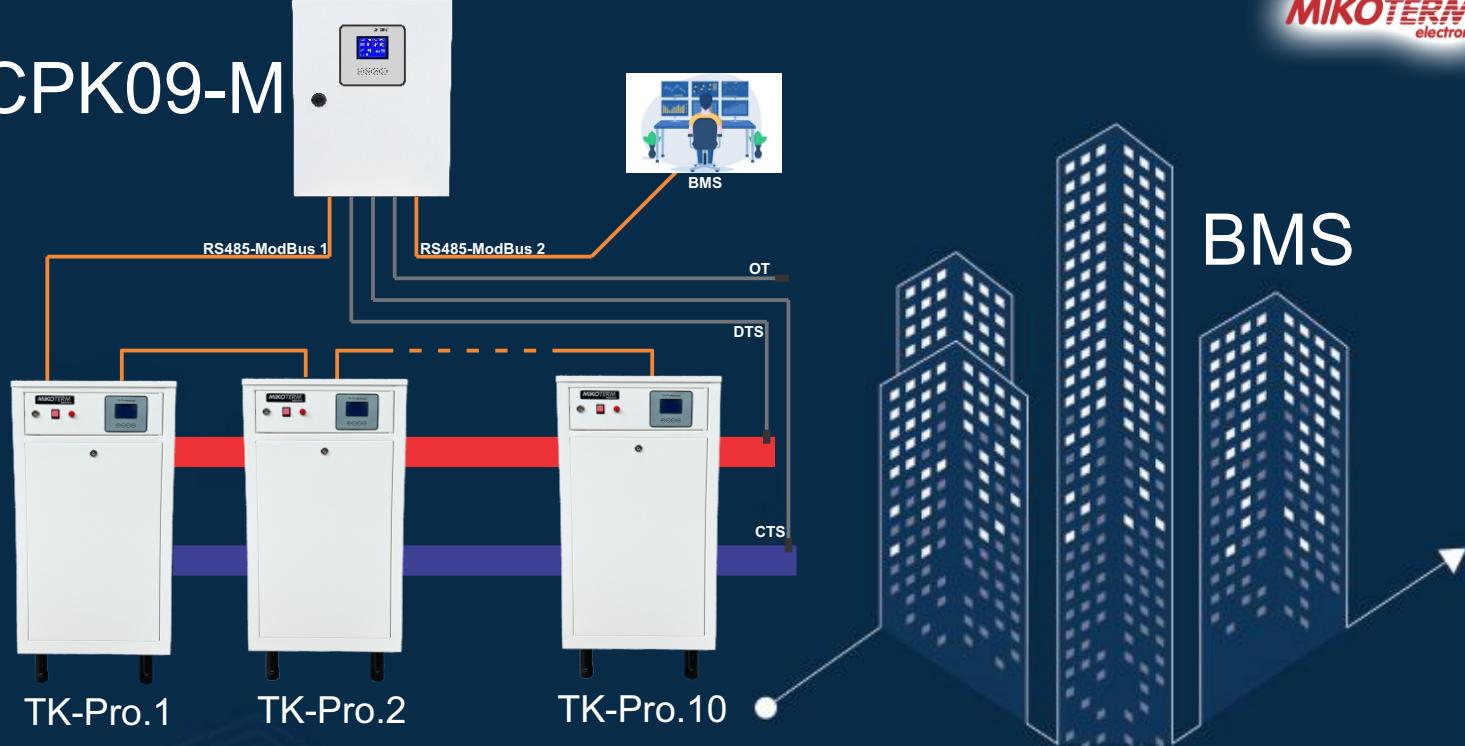


Kaskadni regulator **CPK09-M** je uređaj namenjen kontroli i upravljanju sistema više paralelnog povezanih kotlova serije **TK-Profesional** iste nominalne snage, kojima korisnik upravlja kao jednim kotлом. Takođe, CPK09-M se može povezati na BMS, odnosno, centralizovani sistem nadzora i upravljanja, preko ModBus RTU (RS485) protokola, što daje mogućnost sagledavanja kotlarnice kao dela celokupnog objekta, a time i preciznije upravljanje i uštedu energije. Kaskadni regulator CPK09-M pruža mogućnost kontrole do 10 kotlova paralelnog povezanih i podešenih za rad u kaskadnom režimu. Oni se prikazuju kao jedan veći kotao, čija je snaga jednaka ukupnoj snazi svih povezanih kotlova. Podešavanje zadate snage i zadate temperature potisnog voda sistema kaskadno vezanih kotlova moguće je direktno na kaskadnom regulatoru, kao i daljinski preko ModBus komunikacije. Kaskadni kontroler vrši raspodelu snage po pojedinačnim kotlovima tako da svi raspoloživi kotlovi budu što ravnomernije opterećeni, odnosno, da rade u što optimalnijem režimu po njih - kako bi radni vek svakog kotla bio što duži. Ukoliko u nekom periodu eksploracije nije potrebno angažovanje svih kotlova povezanih u kaskadu (zbog manje potrebne snage), pojedini kotlovi se mogu jednostavno isključiti. Kaskadni regulator će nastaviti rad sa preostalim uključenim kotlovima, sve što treba uraditi je de-čekirati isključene kotlove u konfiguracionoj listi Kaskadnog regulatora. Opciono, kaskadni regulator može voditi temperaturu razdelnika prema spoljnjim uslovima (Outdoor Temperature Compensation).

Cascade regulator **CPK09-M** is a device intended for the control and management of a system of several parallel-connected boilers of the **TK-Profesional** series with the same nominal power, which the user controls as one boiler. Also, CPK09-M can be connected to BMS, that is, a centralized monitoring and control system, via the ModBus RTU (RS485) protocol, which gives the possibility of viewing the boiler room as part of the entire facility, and thus more precise management and energy saving. Cascade regulator CPK09-M provides the ability to control up to 10 boilers connected in parallel and set to work in cascade mode. They are displayed as one larger boiler, the power of which is equal to the total power of all connected boilers. Setting the set power and set temperature of the pressure line of the system of cascade connected boilers is possible directly on the cascade regulator, as well as remotely via ModBus communication. The cascade controller distributes power to individual boilers so that all available boilers are loaded as evenly as possible, that is, they work in the most optimal mode for them - so that the working life of each boiler is as long as possible. If during operation there is a communication interruption between the cascade regulator and one of the boilers, the maximum available power is reduced by the power of the boiler from which the cascade regulator does not receive information. If in a certain period of exploitation it is not necessary to engage all the boilers connected in a cascade (due to less required power), individual boilers can simply be turned off. The cascade regulator will continue to work with the remaining boilers on, all that needs to be done is to de-check the boilers that have been switched off in the configuration list of the Cascade regulator. Optionally, the cascade regulator can control the temperature of the distributor according to the external conditions (Outdoor Temperature Compensation).

MIKOTERM
electronic

CPK09-M



Kaskadni regulator CPK09-M



Skenirajte QR kod i posetite stranicu sajta
Scan the QR code and visit the site page

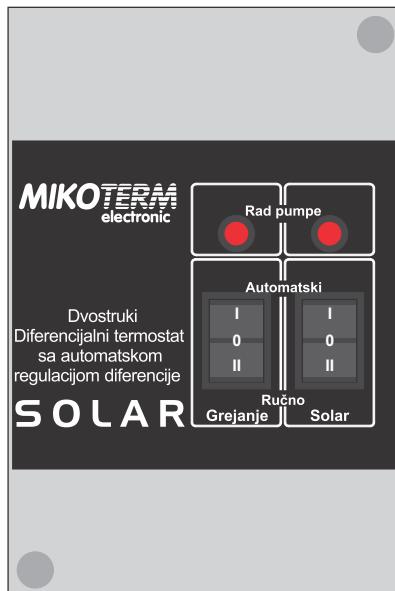
Diferencijalni termostat SOLAR / Differential thermostat SOLAR

Elektronski konfigurisan termostat za upravljanje solarnim sistemima. Automatska regulacija diferencije od 15 °C do 7 °C. Veoma pouzdan i tačan termostat. Elektronika upravlja kompletним radom termostata i veoma preciznim senzorima obezbeđuje najbolje iskorишћenje sunčeve energije. Izrađuje se u dve varijante:

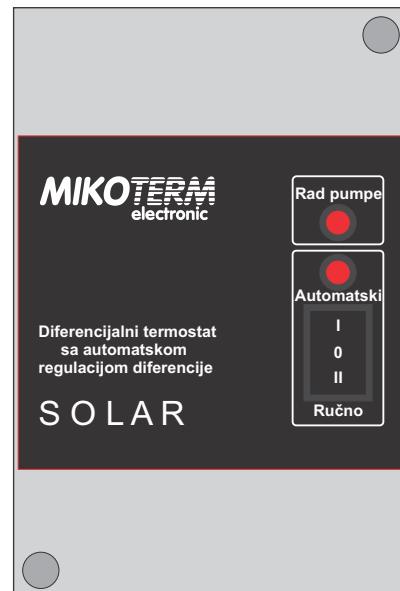
- Diferencijalni termostat SOLAR za upravljanje solarnim sistemom
- Diferencijalni termostat SOLAR za upravljanje solarnim sistemom i grejanjem

Electronically configured thermostat for controlling solar systems. Automatic differential control from 15 °C to 7 °C. Very reliable and accurate thermostat. The electronics control the complete operation of the thermostat and provide the best use of solar energy with very precise sensors. It is made in two variants:

- Differential thermostat SOLAR for solar system control
- Differential thermostat SOLAR for solar system and heating control



Za upravljanje solarnim sistemom i grejanjem
For managing the solar system and heating



Za upravljanje solarnim sistemom
For solar system management

Mobilna električna grejna jedinica eMobile je generator toplove za zatvorene sisteme grejanja. Proizvodi se u tri varijante, snage 10,8kW; 21,6kW i 36kW. Za kontrolu rada zadužen je mikroprocesorski termoregulator (CPU), na čijem displeju su prikazani svi zadati trenutni parametri sistema. Merenja temperature i pritiska vrše se digitalnim senzorima što obezbeđuje visoku preciznost. Uređaji od 21,6kW i 36kW se mogu koristiti za sušenje betonske košuljice, prema standardu DIN EN 1264-4. U tu svrhu CPU (21,6kW i 36kW) ima integrisana dva fiksna programa i jedan podesiv program sa maksimalnim trajanjem od 30 dana. Jedinice od 21,6kW i 36kW su opremljene sa tri tipa industrijskih utikača što daje mogućnost upotrebe različitih priključaka na terenu. Sve grejne jedinice su opremljene visoko efikasnom pumpom, ekspanzionom posudom i električnim i hidrauličnim sigurnosnim elementima po EU standardima.

The eMobile mobile electric heating unit is a heat generator for closed heating systems. It is produced in three variants, power 10.8kW; 21.6kW and 36kW. The microprocessor thermoregulator (CPU) is in charge of the operation control, and its display shows all the set current system parameters. Temperature and pressure measurements are performed with digital sensors, which ensures high accuracy.

Devices of 21.6kW and 36kW can be used for drying concrete screed, according to DIN EN 1264-4. For this purpose, the CPU (21.6kW and 36kW) has integrated two fixed programs and one configurable program with a maximum duration of 30 days. The 21.6kW and 36kW units are equipped with three types of industrial plugs, which allows the use of different connections in the field.

All heating units are equipped with a highly efficient pump, expansion vessel and electrical and hydraulic safety elements according to EU standards.



eMobile 10,8kW



eMobile 21,6



eMobile 36kW

kW 10,8; 21,6; 36

m² ≤410 floor heating
≤340 radiator heating

za objekte u skladu sa/for buildings in accordance with
EN ISO 52016-1:2017
pri spoljnoj temp. 0 °C i naponu 230V/at an external
temp. of 0 °C and a voltage of 230V

% 99

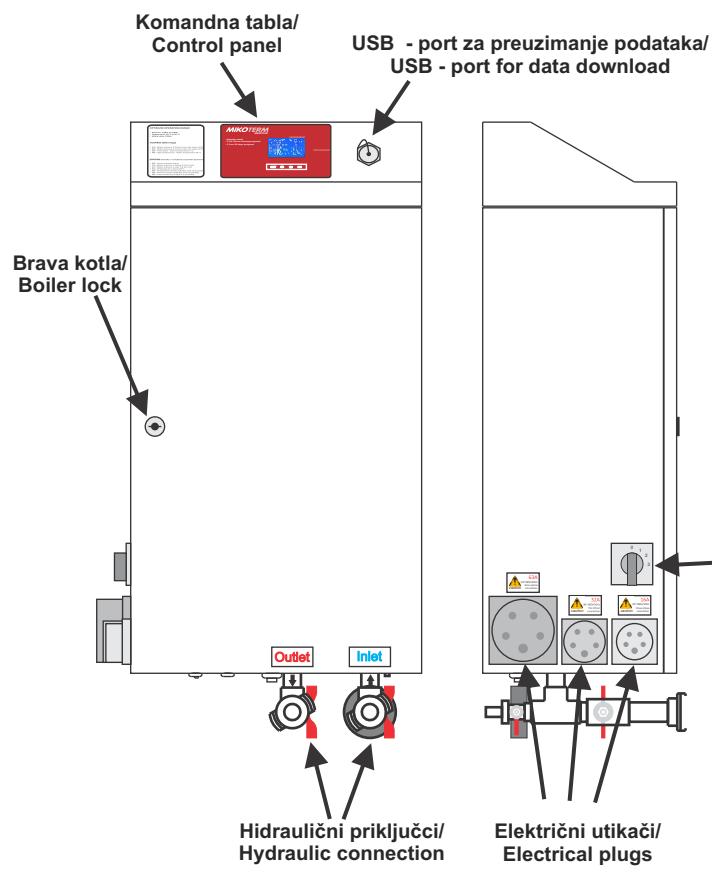
IP 44

KG 25÷60

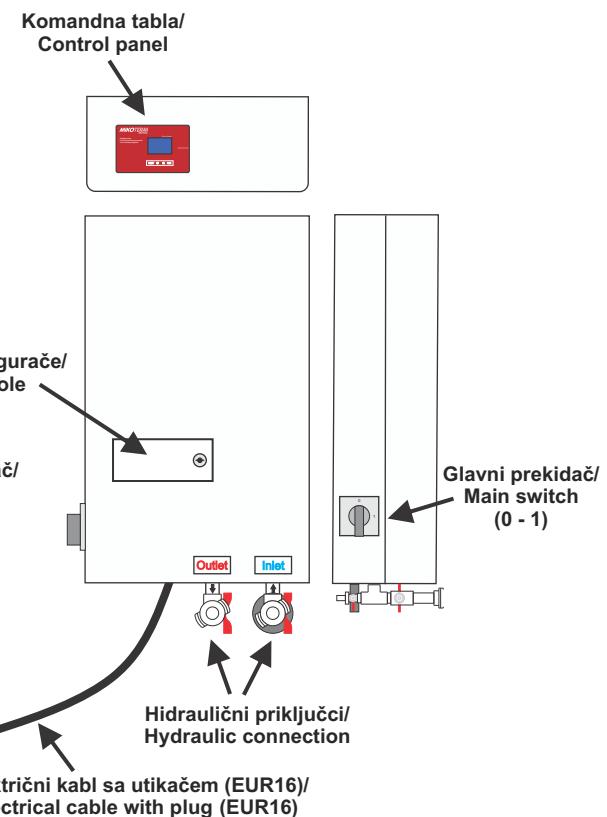
Pregled prednosti / overview of advantage:

- > Modulacija angažovane snage (moguć izbor: max/standard/off).
Modulation of engaged power (possible choice: max / standard / off).
- > Programi za sušenje estriha (21,6 i 36kW).
Screed drying programs (21,6 and 36kW).
- > Izbor jezka (21,6 i 36kW): engleski, nemački i francuski.
Language selection (21,6 and 36kW): english, german, french.
- > Snimanje datoteke u internu memoriju i preuzimanje preko USB port-a do 10 datoteka, svaka do 30 dana (21,6 and 36kW).
File recording in internal memory and download via USB port - up to 10 files, up to 30 days each (21,6 and 36kW).
- > Električni i hidraulični sigurnosni elementi prema EU standardima.
Electrical and hydraulic safety elements according to EU standards.
- > 3 tipa industrijskih utikača (21,6 i 36kW) omogućavaju prilagođenje uslovima na terenu. Maksimalna snaga se automatski ograničava prema utikaču koji se koristi.
3 types of industrial plugs (21.6 and 36kW) allow adaptation to field conditions. Maximum power is automatically limited by the plug used.

eMobile 21,6 - 36kW



eMobile 10,8kW



Tehničke karakteristike / Technical characteristics

eMobile		eMobile - 10,8 kW	eMobile - 21,6 kW	eMobile - 36 kW
snaga	power	10,8 kW	21,6 kW	36 kW
grejne grupe	heating groups	6 × 1,8 kW	9 × 2,4 kW	4 × 9 kW
ekspanziona posuda	expansion vessel	Zilio Italy 8L	Zilio Italy10L	Zilio Italy 10L
napajanje	power supply	3N~230/400V 50Hz; 16A 3N~230/400V 50Hz; 16A 3N~230/400V 50Hz; 32A	1N~230V 50Hz; 16A 3N~230/400V 50Hz; 16A 3N~230/400V 50Hz; 32A	1N~230V 50Hz; 16A 3N~230/400V 50Hz; 32A 3N~230/400V 50Hz; 63A
nominalna struja	rated current	3×15,6A	3×31,3A	3×52,2A
težina kotla bez vode	weight of boiler without water	25 kg	60 kg	60 kg
dužina kabla	cable length	5 m	---	---
min.max. radni pritisak	min.max. work pressure	0,6 bar ÷ 2,6 bar	0,4 bar ÷ 2,6 bar	0,4 bar ÷ 2,6 bar
dimenziije	dimensions	1120x559x503mm	1120x600x550mm	1120x600x550mm
opseg temperature	temperature range	10 ÷ 80 °C	10 ÷ 90 °C	10 ÷ 90 °C
preporučena grejna površina pri spoljnoj temp. 0 °C i naponu 230V	recommended heating surface at an external temp. of 0 °C and a voltage of 230V	≤120 floor heating ≤100 radiator heating	≤250 floor heating ≤200 radiator heating	≤410 floor heating ≤340 radiator heating
sigurnostni termostat	safety thermostat		95 °C	
sigurnosni ventil	safety valve		3 bar	
pumpa	pump		visoko efikasna pumpa/highly efficient pump	
stopen zaštite	ingress protection rating		IP 44	
dolazni hidraulični priključak	inlet hydraulic connection		IG 3/4 MS	
odlazni hidraulični priključak	output hydraulic connection		IG 3/4 MS	

*za objekte u skladu sa / for buildings in accordance with EN ISO 52016-1:2017



Kotao TK-eLG namenjen je podršci toplotne pumpe i može raditi samo u paru sa toplotnom pumpom vazduh/voda **LG Therma V Monobloc**. Postoji mogućnost prilagođavanja drugim toplotnim pumpama, da bi mogao raditi uz toplotne pumpe drugih proizvođača potreбno je prilagoditi senzor temperature prema konkretnoj toplotnoj pumpi. Ovaj uređaj nema radni termostat (ima zaštitni termostat), već informaciju sa senzora temperature prosleđuje termoregulatoru toplotne pumpe. Termoregulator toplotne pumpe donosi odluku da li će se i kada uključiti električni grejač. Električni kotao TK-eLG ima važnu ulogu za pravilan rad toplotne pumpe koja koristi ekološki gas R32 za koji standard ne dozvoljava ugradnju električnih grejača u kućište toplotne pumpe. Kontrolna jedinica toplotne pumpe aktiviraće kotao TK-eLG u sledećim situacijama: 1. Ukoliko je temperatura vode manja od $\approx 20^{\circ}\text{C}$, toplotna pumpa neće moći da startuje bez pripreme (zagrevanja) pomoću električnog grejača. 2. Odleđivanje (defrost) kada je temperatura vazduha niska može biti dugotrajno ili neizvodljivo bez pomoći električnog grejača. 3. U ekstremno hladnim danima kada COP toplotne pumpe ima najmanju vrednost, el. kotao se uključuje kao podrška (backup) da bi zagrevanje objekta ostalo na komfornom nivou. 4. U slučaju otkazivanja (servisiranja) toplotne pumpe električni kotao preuzima zagrevanje objekta – uz dodatni regulacioni termostat za kontrolu rada kotla. Kotao Mikoterm TK-eLG predviđen je za montažu na zid. Kotao se učvršćuje na zid pomoću isporučenog montažnog seta.

The **TK-eLG** boiler is intended to support the heat pump and can only work in pair with the heat pump air / water **LG Therma V Monobloc**. There is a possibility of adaptation to other heat pumps, in order to be able to work with heat pumps of other manufacturers, it is necessary to adapt the temperature sensor according to the specific heat pump. This device does not have a working thermostat (it has a protective thermostat), but forwards the information from the temperature sensor to the thermoregulator of the heat pump. The thermoregulator of the heat pump decides whether and when the electric heater will be switched on. Electric boiler TK-eLG plays an important role in the proper operation of a heat pump that uses environmentally friendly gas R32 for which the standard does not allow the installation of electric heaters in the heat pump housing. The heat pump control unit will activate the TK-eLG boiler in the following situations: 1. If the water temperature is less than $\approx 20^{\circ}\text{C}$, the heat pump will not be able to start without preparation (heating) using an electric heater. 2. Defrosting when the air temperature is low can be long-lasting or impossible without the help of an electric heater. 3. On extremely cold days when the COP of the heat pump has the lowest value, electric boiler is switched on as a backup to keep the heating of the building at a comfortable level. 4. In case of failure (servicing) of the heat pump, the electric boiler takes over the heating of the building - with an additional regulating thermostat to control the operation of the boiler. The Mikoterm TK-eLG boiler is intended for wall mounting. The boiler is fixed to the wall using the supplied mounting kit.



*TK-eLG IP20 za unutrašnju montažu /
TK-eLG IP20 for indoor installation*

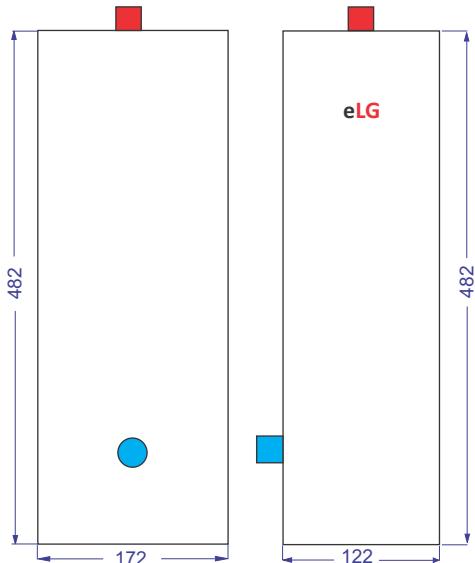


*TK-eLG IP54 za spoljašnju montažu /
TK-eLG IP54 for outdoor installation*

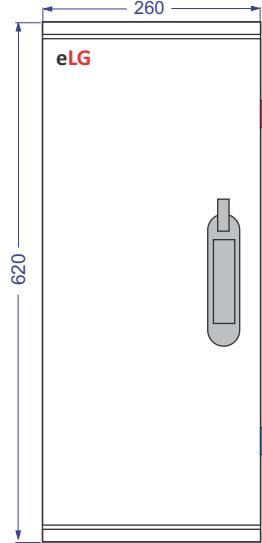
Pregled prednosti / overview of advantages:

- > Podrška toplotne pumpe **LG Therma V Monoblock**.
LG Therma V Monoblock heat pump support.
- > Male dimenzije kotla omogućuju laku montažu na zid uz pomoć isporučenog montažnog seta.
The small dimensions of the boiler allow easy wall mounting with the help of the supplied mounting kit.
- > Lako i brzo električno povezivanje sa toplotnom pumpom, montiran senzor temperature.
Easy and fast electrical connection to the heat pump, mounted temperature sensor.
- > Mogućnost povezivanja na trofazno i na monofazno napajanje.
Possibility of connection to three-phase and single-phase power supply.
- > Nije potrebno hidraulično premoščavanje kotla (bypass) kada pumpa radi na hlađenju, zbog paro-nepropusne izolacije.
Hydraulic bypass of the boiler is not required when the pump is running on cooling, due to vapor-tight insulation.
- > Sigurnosni sklop - potpuno isključivanje napajanja u slučaju pregrevanja.
Safety circuit - completely shuts off the power in case of overheating
- > Privremeno može zamjeniti toplotnu pumpu i preuzeti zagrevanje objekta.
It can temporarily replace the heat pump and take over the heating of the building

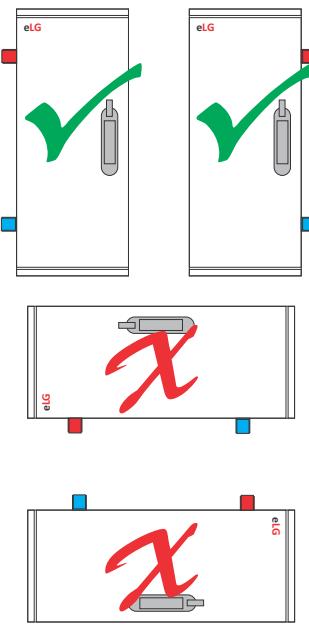
Dimenziije TK-eLG IP20 za unutrašnju montažu/Dimensions TK-eLG IP20 for indoor installation



Dimenziije TK-eLG IP54 za spoljašnju montažu/Dimensions TK-eLG IP54 for outdoor installation



Položaj za ugradnju/ Installation position



! važno/important !

- Model eLG IP20 proizvodi se samo sa hidrauličnim izvodima levo i gore/
The eLG IP20 model is produced only with left and top hydraulic outlets.
- Model eLG IP54 se proizvodi posebno sa hidrauličnim izvodima levo ili desno/
The eLG IP54 is produced separately with left or right hydraulic outlets.

IP 20/54

KG 10,5

kW 6

% 99

Tehničke karakteristike / Technical characteristics

Model TK eLG 6kW		monofazno napajanje/ single-phase power supply	trofazno napajanje/ three-phase power supply
stopen korisnog dejstva	utility level	99%	99%
broj stepeni snage	number of degrees of power	1 2	2
podela stepeni snage	power division	1 × 2kW 2 × 2kW	2kW + 4kW
potrebni glavni osigurači	main circuit breakers	1 × 16A 1 × 25A	3 × 16A
minimalni presek napojnog kabla	minimum cross-section of the power cable	3 × 2,5 mm ² 3 × 4 mm ²	5 × 2,5 mm ²
priklučni napon	connection voltage	1N ~ 230V 50Hz	3N ~ 400/230V 50Hz
stopen zaštite	Ingress Protection rating	IP 20 / IP54	
maksimalni pritisak	maximum pressure	3 bar	
minimalni pritisak	minimum pressure	0,5 bar*	
opseg regulacije temperature kotla	temperature range	Regulacija preko toplotne pumpe / Regulation via heat pump	
sigurnosni termostat	safety thermostat	95 °C	
zapremina vode u kotlu	volume of water in the boiler	4,5 l	
priklučak potisnog voda	discharge line connection	DN25 (1") SN	
priklučak povratnog voda	return line connection	DN25 (1") SN	
težina kotla bez vode	weight of boiler without water	10,5 Kg	

* - Napomena: kotao nema ugrađen granični presostat, navedeni min pritisak je zbog pravilnog rada cirkulacione pumpe sistema.

- Note: the boiler does not have a built-in pressure limiter, the specified min. pressure is because to the correct operation of the system circulation pump.

zidni / wall mounting



Dimenzije / Dimensions: 300x200x400 mm

samostojeći / freestanding



Dimenzije / Dimensions: 300x200x1063 mm

Tehničke karakteristike / Technical characteristics

Model		EVCS 11kW	EVCS 22kW
Maksimalna struja punjenja	Maximum charging current	6/10/13/16 A	6/10/13/16/20/25/32 A
Preporučeni poprečni presek ulaznog kabla	Recommended cross-section of inlet cable	2.5 / 2.5 / 2.5 / 2.5 mm ²	2.5 / 2.5 / 2.5 / 2.5 / 4 / 4 / 6 mm ²
Maksimalna snaga punjenja jednofazno napajanje	Maximum charging power single-phase power supply	1.4 / 2.3 / 3.0 / 3.7 kW	1.4 / 2.3 / 3.0 / 3.7 / 4.6 / 5.8 / 7.4kW
Maksimalna snaga punjenja dvofazno napajanje	Maximum charging power two-phase power supply	2.8 / 4.6 / 6.0 / 7.4 kW	2.8 / 4.6 / 6.0 / 7.4 / 9.2 / 11.5 / 14.7 kW
Maksimalna snaga punjenja trofazno napajanje	Maximum charging power three-phase power supply	4.1 / 6.9 / 9.0 / 11 kW	4.1 / 6.9 / 9.0 / 11 / 13.8 / 17.4 / 22 kW
Stepen IP zaštite	Degree of IP protection	IP66	
Standardi	Standards	IEC 62752; IEC/EN 61851	
Temperatura ambijenta	Ambient temperature	-25 °C ÷ +70 °C	
Standardi	Standards	IEC 62752; IEC/EN 61851	
Odgovarajuća električna mreža	A suitable electrical network	TT; TN-S; TN-C; TN-C-S	
Nominalni radni napon	Nominal operating voltage	230 VAC; 3N~400/230VAC; ± 10%	
Nominalna frekvencija	Nominal frequency	50/60 Hz	
Sigurnost	Safety	RFID identification	
Domet	Altitude	≤ 2000 m	
Relativna vlažnost	Relative humidity	≤ 90 %	



AAA

Platinasta izvrsnost



Mikoterm primenjuje medjunarodni sistem upravljanja kvalitetom ISO 9001 kao i ISO 14001 i ISO 45001, sertifikovane od strane renomiranog sertifikacionog tela TUV NORD. Svi kotlovi poseduju odgovarajuće izjave o usaglašenosti (ateste).

Mikoterm applies the international management system quality ISO 9001 as well as ISO 14001 and ISO 45001, certified by a renowned certification body elia TUV NORD. All boilers have appropriate declarations of conformity (certificates).

www.mikoterm.com



MIKOTERM DOO, RS, 18252 Merošina,
Industrijska zona Aleksandrovo, Niška 211
00381 18 45 42 002 / 41 56 900 / 41 56 901
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



Pratite nas na društvenim mrežama / Follow us on social media

