



*For the warmth of your home  
Za toplinu vašeg doma*

**MIKOTERM**  
electronic

**KATALOG PROIZVODA  
PRODUCT CATALOG**



*Mikoterm doo je osnovan 1994. godine, kao privatno preduzeće za proizvodnju opreme za grejanje. 2000. godine je napravljen prvi blok kotao. Od 2000. godine kreće izvoz Mikoterm proizvoda van granica Srbije i u nekim zemljama Evropske unije. Danas je Mikoterm jedan od najvećih izvoznika električnih kotlova u Srbiji. 2012. godine, na poziv velike Nemačke kompanije ROBERT BOSCH GmbH, Mikoterm je konkurisao za idejno rešenje novog elektro kotla za potrebe Bosch-a. Rešenje koje je tada predstavljeno Bosch-u bilo je daleko naprednije i od pojedinih evropskih kompanija koje proizvode elektro kotlove. 2014. godine je potpisan ugovor o poslovno-tehničkoj saradnji između Mikoterm-a i Bosch-a. U međuvremenu su uspostavljenje saradnje sa još nekoliko ozbiljnih evropskih kompanija o poslovno-tehničkoj saradnji. Mikoterm je do dan danas ostao dosledan viziji i temeljima koji su postavljeni od osnivanja. Korektni prema poslovnim partnerima i krajnjim kupcima, prvenstveno ljudskim odnosom, a onda i kvalitetom.*

*Mikoterm doo was established in 1994 as a private company for the production of heating equipment. In 2000, the first block boilers was made. Since 2000, the export of Mikoterm products has moved beyond the borders of Serbia and in some countries of the European Union. Today, Mikoterm is one of the largest exporters of electric boilers in Serbia. In 2012, at the invitation of the German company ROBERT BOSCH GmbH, Mikoterm applied for the design of a new electric boiler for the needs of Bosch. The solution that was then presented to Bosch was far more advanced than some European companies that produce electric boilers. In 2014, a contract on business and technical cooperation between Mikoterm and Bosch was signed. In the meantime, they are establishing cooperation with several more serious European companies. Mikoterm still works with a vision based on the foundations that were set up when it was established. Correct to business partners and customers, primarily human relations, and then quality.*





**Mikoterm novi proizvodni pogon/  
Mikoterm new production plant**



**SOLARNA ELEKTRANA KAPACITETA 58kW /  
SOLAR POWER PLANT CAPACITY 58kW**

**GREEN  
ENERGY**





# Mikoterm novi proizvodni pogon/ Mikoterm new production plant



## Sertifikati koji potvrđuju naš kvalitet / Certificates - confirm our quality

**TÜV NORD**

### CERTIFICATE

Management system as per  
ISO 9001 : 2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

"Mikoterm" DOO  
Industrijska zona Aleksandrovo, Niška bb  
18252 Merošina  
Serbia

**MIKOTERM**

operates a management system in accordance with the requirements of ISO 9001 : 2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope

Production and sale of heating equipment

Certificate Registration No. 44 100 22430253  
Audit Report No. 10022735

Valid from 2022-10-21  
Valid until 2024-10-14  
Initial certification 2018

  
Certification Body  
at TÜV NORD CERT GmbH

Essen, 2022-10-21

TÜV NORD CERT GmbH Am TÜV 1 45307 Essen www.tuev-nord-cert.com



**TÜV NORD**

### CERTIFICATE

Management system as per  
ISO 14001 : 2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

"Mikoterm" DOO  
Industrijska zona Aleksandrovo, Niška bb  
18252 Merošina  
Serbia

**MIKOTERM**

operates a management system in accordance with the requirements of ISO 14001 : 2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope

Production and sale of heating equipment

Certificate Registration No. 44 104 22430253  
Audit Report No. 10422308

Valid from 2022-10-21  
Valid until 2024-10-14  
Initial certification 2018

  
Certification Body  
at TÜV NORD CERT GmbH

Essen, 2022-10-21

TÜV NORD CERT GmbH Am TÜV 1 45307 Essen www.tuev-nord-cert.com



**TÜV NORD**

### CERTIFICATE

Management system as per  
ISO 45001 : 2018

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

"Mikoterm" DOO  
Industrijska zona Aleksandrovo, Niška bb  
18252 Merošina  
Serbia

**MIKOTERM**

operates a management system in accordance with the requirements of ISO 45001 : 2018 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope

Production and sale of heating equipment

Certificate Registration No. 44 126 22430253  
Audit Report No. 12622169

Valid from 2022-10-21  
Valid until 2024-10-14  
Initial certification 2018

  
Certification Body  
at TÜV NORD CERT GmbH

Essen, 2022-10-21

TÜV NORD CERT GmbH Am TÜV 1 45307 Essen www.tuev-nord-cert.com



**Električni blok kotlovi model: mTronic 7000 6kW÷24kW**  
**Electric block boilers model: mTronic 7000 6kW÷24kW**

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**Električni blok kotlovi model: eCompact Plus 6kW÷27kW**  
**Electric block boilers model: eCompact Plus 6kW÷27kW**

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**Električni blok kotlovi model: eCompact Uz 6kW÷16kW**  
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**Electric boilers eTK 6kW÷40kW**

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**Podrška toplotne pumpe LG Therma V Monobloc: TK eLG 6kW**  
**Support the heat pump LG Therma V Monobloc: TK eLG 6kW**

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**Mobilni električni kotao eMobile 10,8÷36kW**  
**Mobile electric boiler eMobile 10,8÷36kW**

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**Električni kotlovi velike snage TK-Profesional 50kW÷60kW**  
**Electric high power boilers TK-Profesional 50kW÷60kW**

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**Električni kotlovi velike snage TK-Profesional 70kW÷100kW**  
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**Električni kotlovi velike snage TK-Profesional 120kW÷240kW**  
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**Sobni i Diferencijalni termostati**  
**Room and Differential thermostats**

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Kotao **mTronic7000** je unapređena verzija kotla **eTronic 7000** koji je razvijen za potrebe Nemačke kompanije **ROBERT BOSCH**. Uređaj spada u red najmodernijih na tržištu. Upravljanje kotlom je izvedeno preko procesorske jedinice i velikog LCD displeja. Procesorska jedinica obezbeđuje praćenje svih bitnih karakteristika kotla i samog sistema grejanja. Time obezbeđuje siguran i 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 podesiti na normalan i režim protiv zamrzavanja. Preciznim projektovanjem obezbeđen je i veoma lak rad serviserima i instalaterima. Maksimalno je uprošćeno utvrđivanje eventualne greške i njeno otklanjanje. Što se sigurnosnog dela kotla tiče izveden 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 po sigurnosti.

The **mTronic 7000** boiler is an improved version of the **eTronic 7000** boiler developed for the needs of the German company **ROBERT BOSCH**. Boiler control is performed via a processor unit and a large LCD display. The processor unit provides monitoring of all important characteristics of the boiler and the heating system. This ensures safe and long-lasting 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

**m<sup>2</sup>** ≤240 floor heating  
≤180 radiator heating

**%** 99

**IP** 40

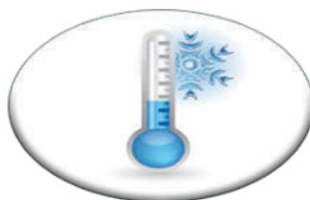
**KG** 23÷25

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

## Pregled prednosti / overview of advantage:

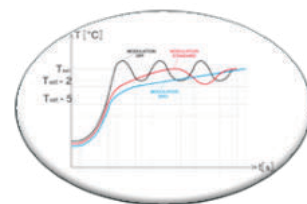
- > **Električni kotao za grejanje i pripremu sanitarne vode pomoću akumulacionog bojlera / Electric boiler for heating and domestic hot water preparation by means of an storage boiler.**
- > **Uključivanje/isključivanje grejača sa praćenjem njihovog vremena rada (ravnomerno angažovanje grejača) - obezbeđuje 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 service 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 / Remot control via room thermostat.**
- > **Zaštita od smrzavanja pomoću zasebnog programa / Frost protection using a separate program.**



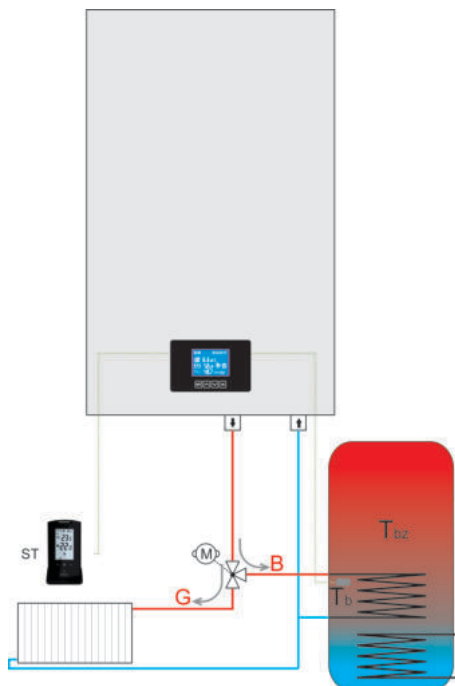


**Zaštita od smrzavanja /  
Frost protection**

**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 <sup>2</sup>	5 × 2,5 mm <sup>2</sup>	5 × 4 mm <sup>2</sup>	5 × 4 mm <sup>2</sup>	5 × 6 mm <sup>2</sup>
potreban mrežni kabl za monofazno napajanje	power cable for single-phase power supply	3 × 4 mm <sup>2</sup>	3 × 6 mm <sup>2</sup>	/	/	/
preporučena grejna * površina-podno/radijat. grejanje	recommended heating * surface-floor/radiator heating	≤60m <sup>2</sup> f.h. ≤40m <sup>2</sup> r.h.	≤90m <sup>2</sup> f.h. ≤60m <sup>2</sup> r.h.	≤120m <sup>2</sup> f.h. ≤80m <sup>2</sup> r.h.	≤180m <sup>2</sup> f.h. ≤120m <sup>2</sup> r.h.	≤240m <sup>2</sup> f.h. ≤160m <sup>2</sup> r.h.
priključak na elektro mrežu	inlet for power cable	3 strane/ways - gornje/top, donje/bottom, između zida/from wall				
priključak 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				
dimenzije VxŠxD	dimensions HxWxD	710×430×230				
težina kotla bez vode	weight of boiler without water	25 kg				
stepen zaštite	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 sanitarne vode	domestic hot water	da/yes				
tajmer za pripremu sanitarne 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



Serija **eCompact Plus** su blok kotlovi koji su istih dimenzija kao i mTronic, identičnim hidrauličnim delom kotla, ali za manje zahtevne korisnike. Namenjen 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. Takođe podešavanje je maksimalno uprošćeno sa 3 soft touch tastera ispod displeja.

Ovaj kotao se svojom funkcionalnošću i kvalitetom pozicionirao u kategoriji premijum 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 7 segments of display and led diodes that signal which parameter is displayed. Also the setting is maximally simplified with 3 soft touch buttons below the display.

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

**m<sup>2</sup>** ≤270 floor heating  
≤200 radiator heating

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

**%** 99

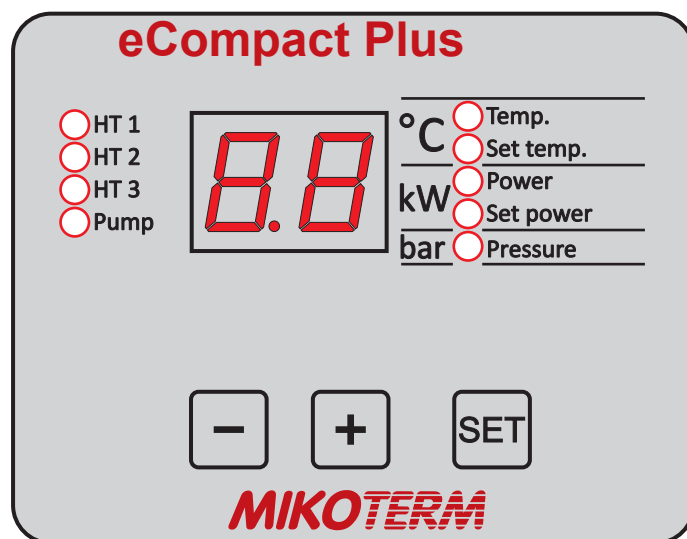
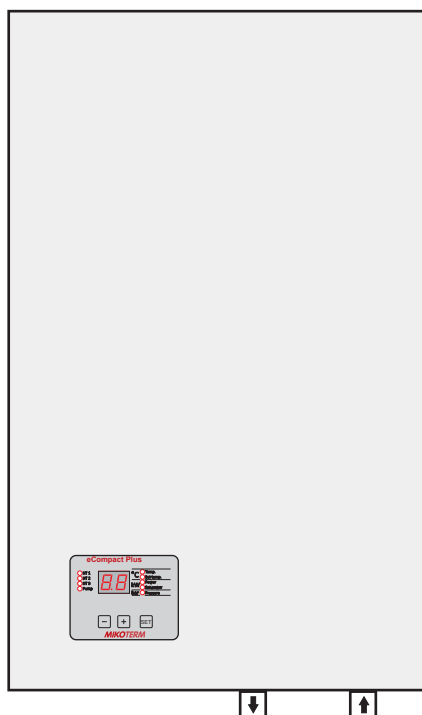
**IP** 40

**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 service 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	3 × 9 kW
minimalna snaga	minimum power	2 kW	3 kW	4 kW	6 kW	8 kW	9 kW
maksimalna snaga	maximum power	6 kW	9 kW	12 kW	18 kW	24 kW	27 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	3 × 50A
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 <sup>2</sup>	5 × 2,5 mm <sup>2</sup>	5 × 4 mm <sup>2</sup>	5 × 4 mm <sup>2</sup>	5 × 6 mm <sup>2</sup>	5 × 6 mm <sup>2</sup>
potreban mrežni kabl za monofazno napajanje	power cable for single-phase power supply	3 × 4 mm <sup>2</sup>	3 × 6 mm <sup>2</sup>	/	/	/	/
preporučena grejna * površina-podno/radijat.	recommended heating * surface-floor/radiator	≤60m <sup>2</sup> f.h. ≤40m <sup>2</sup> r.h.	≤90m <sup>2</sup> f.h. ≤60m <sup>2</sup> r.h.	≤120m <sup>2</sup> f.h. ≤80m <sup>2</sup> r.h.	≤180m <sup>2</sup> f.h. ≤120m <sup>2</sup> r.h.	≤240m <sup>2</sup> f.h. ≤160m <sup>2</sup> r.h.	≤270m <sup>2</sup> f.h. ≤180m <sup>2</sup> r.h.
priključak na elektro mrežu	inlet for power cable	3 strane/ways - gornje/top, donje/bottom, između zida/from wall					
priključak 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	integrisan unutra/integrated inside					
ventil	valve	da/yes					
dimenzije VxŠxD	dimensions HxWxD	710x430x230					
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 zaštite	Ingress Protection rating	IP 40					
procesorska jedinica	procesor unit	da/yes					
monofazna konekcija	single phase connection	da/yes	da/yes	ne/no	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

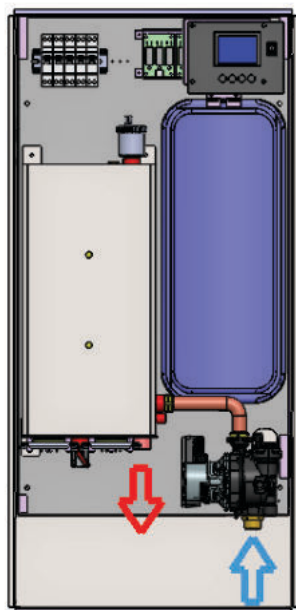


Električni kotao eCompact Uz je unapređena verzija prethodnog uzidnog kotla. Kao i kod pomenutog modela i u ovom se nalazi procesorska jedinica koja kontroliše i upravlja radom kotla. Podešavanje i praćenje svih bitnih parametara je olakšano preko plavog LCD displeja. Na njemu možete pratiti trenutnu temperaturu, snagu i pritisak. Takođe na displeju se ispisuju i zadate vrednosti pomenutih parametara. Unutar kotla se nalazi unapređena pumpa koja sebi sadrži sigurnosni ventil, dodatno odzračno lonče, transmiser 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 140 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 dozvoljne 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 varjante, 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 an advanced pump, which contains a safety valve, an additional vent pot, a pressure transmitter as well as a tap for filling and emptying. 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 140 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.



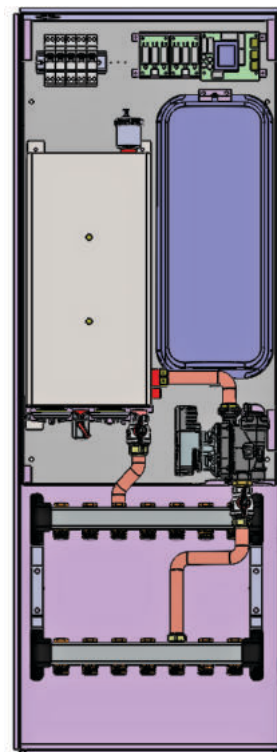
957x452x132



**eCompact Uz**  
**bez razdelnika /**  
**without manifold**



1260x452x132



**eCompact Uz**  
**sa razdelnikom /**  
**with manifold**

**kW** 6÷16

**m<sup>2</sup>** ≤160 floor heating  
≤140 radiator heating

**%** 99

**IP** 20

**KG** 28÷35

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



## 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 (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 service 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 kompletnog 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

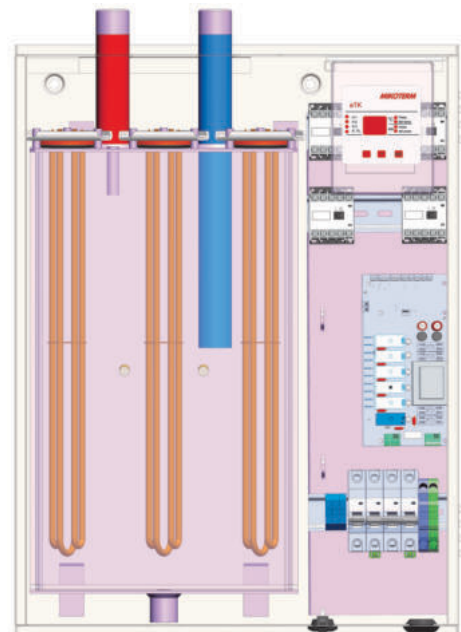
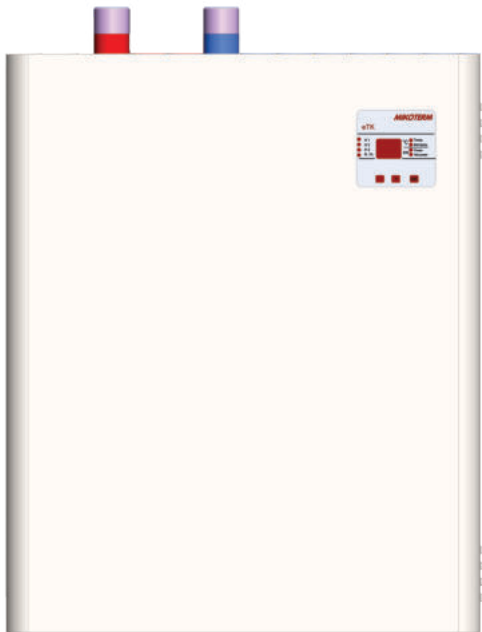
Model		eC UZ-6kW	eC UZ-9kW	eC UZ-12kW	eC UZ-16kW
grejne grupe	heating groups	3 × 2 kW	6 × 1,5 kW	6 × 2 kW	6 × 2,7 kW
minimalna snaga	minimum power	2 kW	1,5 kW	2 kW	2,7 kW
maksimalna snaga	maximum power	6 kW	9 kW	12 kW	16 kW
potrebni glavni osigurači za trofazno napajanje	main circuit breakers for three phase power supply	3 × 16A	3 × 20A	3 × 25A	3 × 32A
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 <sup>2</sup>	5 × 2,5 mm <sup>2</sup>	5 × 4 mm <sup>2</sup>	5 × 4 mm <sup>2</sup>
potreban mrežni kabl za monofazno napajanje	power cable for single-phase power supply	3 × 4 mm <sup>2</sup>	3 × 6 mm <sup>2</sup>	/	/
preporučena grejna * površina-podno/radijat.	recommended heating * surface-floor/radiator	≤60m <sup>2</sup> f.h. ≤40m <sup>2</sup> r.h.	≤90m <sup>2</sup> f.h. ≤60m <sup>2</sup> r.h.	≤120m <sup>2</sup> f.h. ≤80m <sup>2</sup> r.h.	≤160m <sup>2</sup> f.h. ≤110m <sup>2</sup> r.h.
priključak na elektro mrežu	inlet for power cable	2 strane/ways - gornje/top, leve strane/left side			
priključak 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 10L			
sigurnosni ventil	safety valve	integrisan unutra/integrated inside			
slavina za pražnjenje kotla	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			
stepen zaštite	Ingress Protection rating	IP 20			
procesorska jedinica	procesor 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



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 pumpe. Kotlom upravlja mikroprocesorski termoregulator koji optimalno koristi svaki grejač. Korisnik u svakom trenutku na displeju ima prikaz trenutne 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 an external 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÷40

**m<sup>2</sup>** ≤400 floor heating  
≤270 radiator heating  
za objekte u skladu sa/for buildings in accordance with  
EN ISO 52016-1:2017

**%** 99

**IP** 20

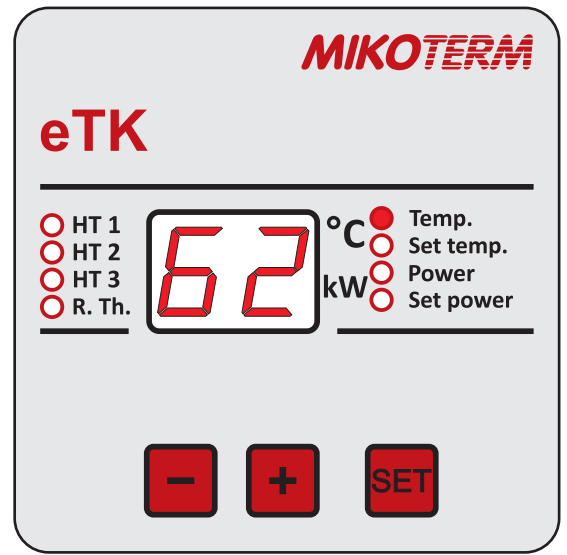
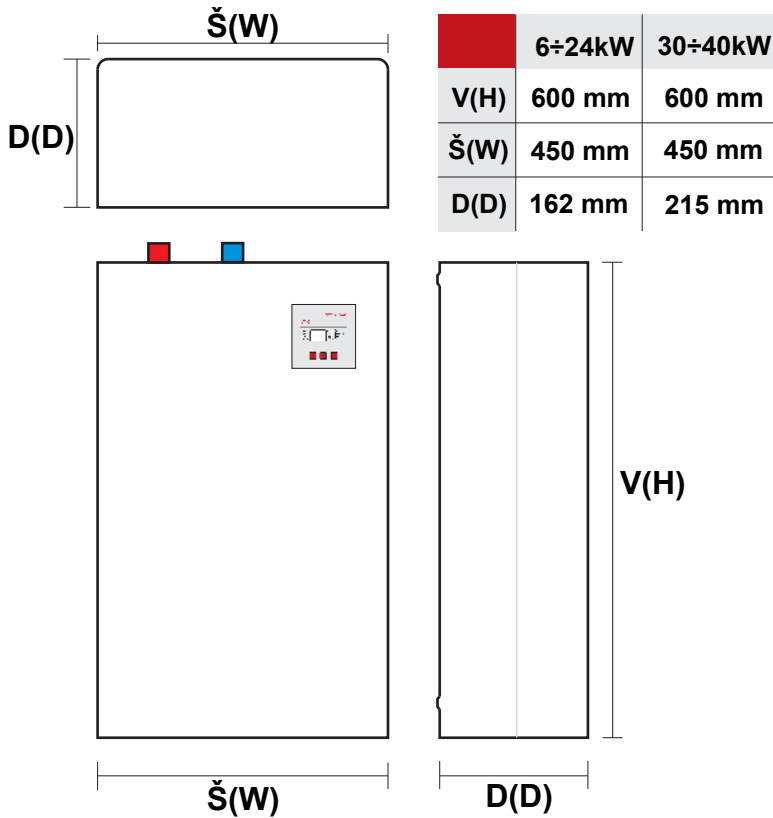
**KG** 20÷27,5

### Pregled prednosti / overview of advantage:

- > **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 service 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 pumpom / Possibility to control an external pump.**

## **7 Električni kotlovi / Electric boilers: eTK 6kW÷40kW**





Izgled komandne table / Control panel view

## Tehničke karakteristike/Technical characteristics eTK 6kW÷40kW

Model		eTK-6kW	eTK-9kW	eTK-12kW	eTK-18kW	eTK-24 kW	eTK-30 kW	eTK-36kW	eTK-40kW	
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	3×10kW	3×12kW	3×13,3kW	
broj stepena snage	number of power degrees	3	3	3	3	3	3	3	3	
potrebni glavni osigurači za trofazno napajanje	main circuit breakers for three phase power supply	3×16A	3×20A	3×25A	3×32A	3×40A	3×50A	3×63A	3×63A	
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	5×2,5mm <sup>2</sup>	5×2,5mm <sup>2</sup>	5×4mm <sup>2</sup>	5×4mm <sup>2</sup>	5×6mm <sup>2</sup>	5×10mm <sup>2</sup>	5×10mm <sup>2</sup>	5×16mm <sup>2</sup>	
potreban mrežni kabl za monofazno napajanje	power cable for single-phase power supply	3×4mm <sup>2</sup>	3×6mm <sup>2</sup>	/	/	/	/	/	/	
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						600×450×215		
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 zaštite	Ingress Protection rating	IP 20								
preporučena grejna površina-podno/radijat.	recommended heating surface-floor/radiator	≤60m <sup>2</sup> f.h. ≤40m <sup>2</sup> r.h.	≤90m <sup>2</sup> f.h. ≤60m <sup>2</sup> r.h.	≤120m <sup>2</sup> f.h. ≤80m <sup>2</sup> r.h.	≤180m <sup>2</sup> f.h. ≤120m <sup>2</sup> r.h.	≤240m <sup>2</sup> f.h. ≤160m <sup>2</sup> r.h.	≤300m <sup>2</sup> f.h. ≤200m <sup>2</sup> r.h.	≤360m <sup>2</sup> f.h. ≤240m <sup>2</sup> r.h.	≤400m <sup>2</sup> f.h. ≤270m <sup>2</sup> 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

# TK eLG 6kW

model IP20 / IP54

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



Kotao **TK-eLG** namenjen je podršci toplotne pumpe i može raditi samo u paru sa toplotnom pumpom vazduh/voda **LG Therma V Monobloc**. 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  $\approx 20$  °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 – dok pumpa ne bude u funkciji. Kotao Mikoterm TK-eLG predviđen je za montažu na zid. Kotao se učvršćuje na zid pomoću isporučenog montažnog seta. Konstrukcija kotla je takva da omogućava montažu na zid tako da hidraulični priključci budu na levoj ili desnoj strani kotla uz jednostavno i brzo prebacivanje INFO panela sa jedne na drugu stranu oplate.

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**. 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  $\approx 20$  °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 - until the pump is in operation. The Mikoterm TK-eLG boiler is intended for wall mounting. The boiler is fixed to the wall using the supplied mounting kit. The construction of the boiler is such that it allows mounting on the wall so that the hydraulic connections are on the left or right side of the boiler with easy and fast switching of the INFO panel from one side of the formwork to another.



**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 advantage:

- > **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**
- > **Hidraulični priključci mogu da budu na levoj ili na desnoj strani kotla / Hydraulic connections can be on the left or right side of the boiler**
- > **Lako i jednostavno prebacivanje INFO panela sa jedne na drugu stranu oplate / Easy switching of INFO panel from one side of the formwork to another**
- > **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 premošćavanje 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 zameniti toplotnu pumpu i preuzeti zagrevanje objekta / It can temporarily replace the heat pump and take over the heating of the building**

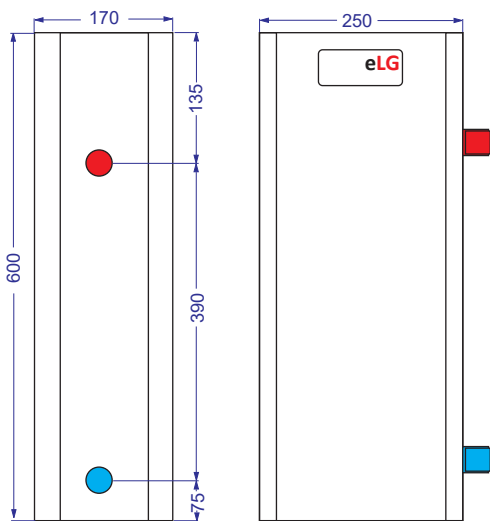
## **9 Električni kotlovi za podršku toplotne pumpe / Electric boilers to support the heat pump**



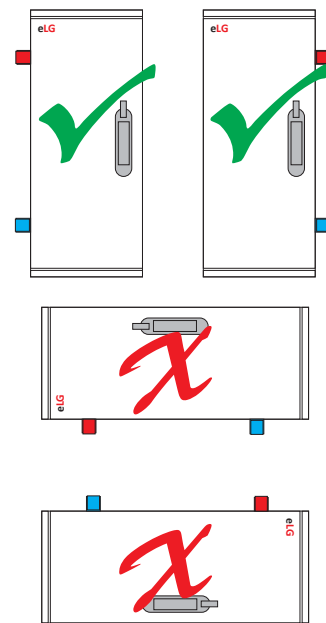
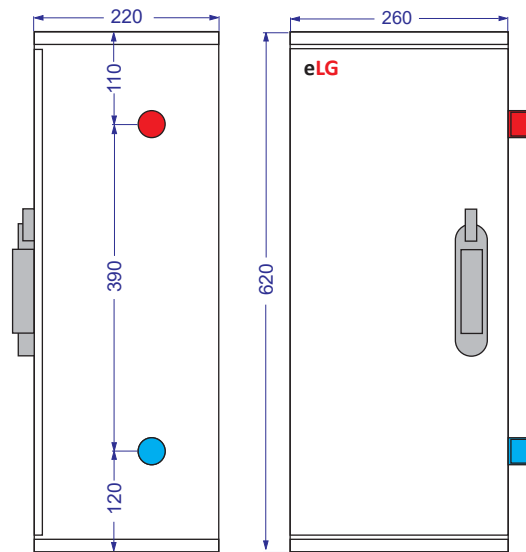
# TK eLG 6kW

model IP20 / IP54

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



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



## ! važno/important !

- Model eLG IP20 je univerzalan za levu i desnu montažu/  
The eLG IP20 is universal for left and right mounting.
- 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
stepen 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 <sup>2</sup>	3 × 4 mm <sup>2</sup>	5 × 2,5 mm <sup>2</sup>
priključni napon	connection voltage	1N ~ 230V 50Hz		3N ~ 400/230V 50Hz
stepen 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		
priključak potisnog voda	discharge line connection	DN25 (1") SN		
priključak 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.



Mobilna električna grejna jedinica eMobile je generator toplote 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 - 36kW**

**kW** 10,8; 21,6; 36

**m<sup>2</sup>** ≤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

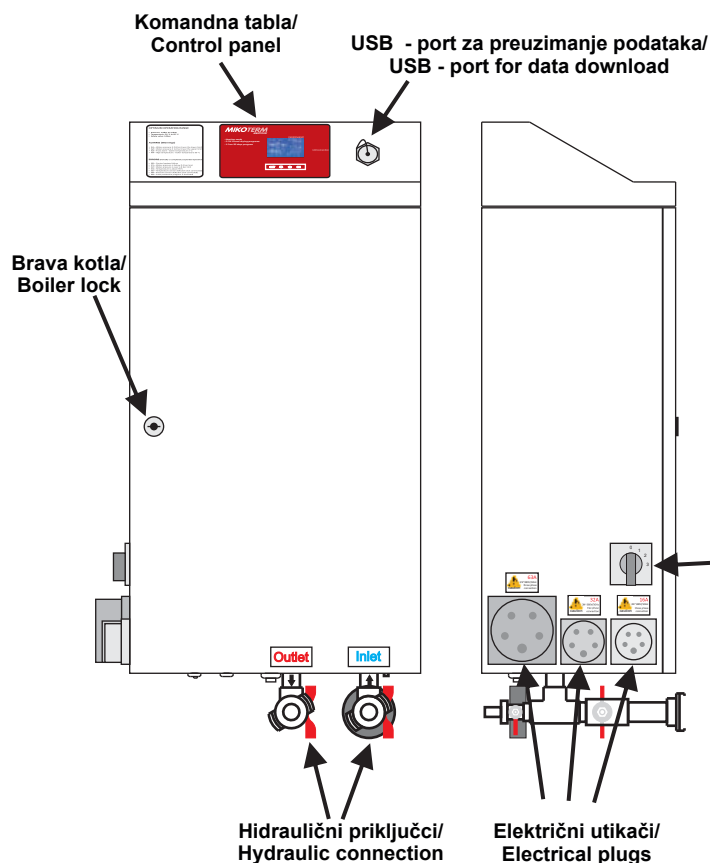
**IP** 44

**KG** 25÷60

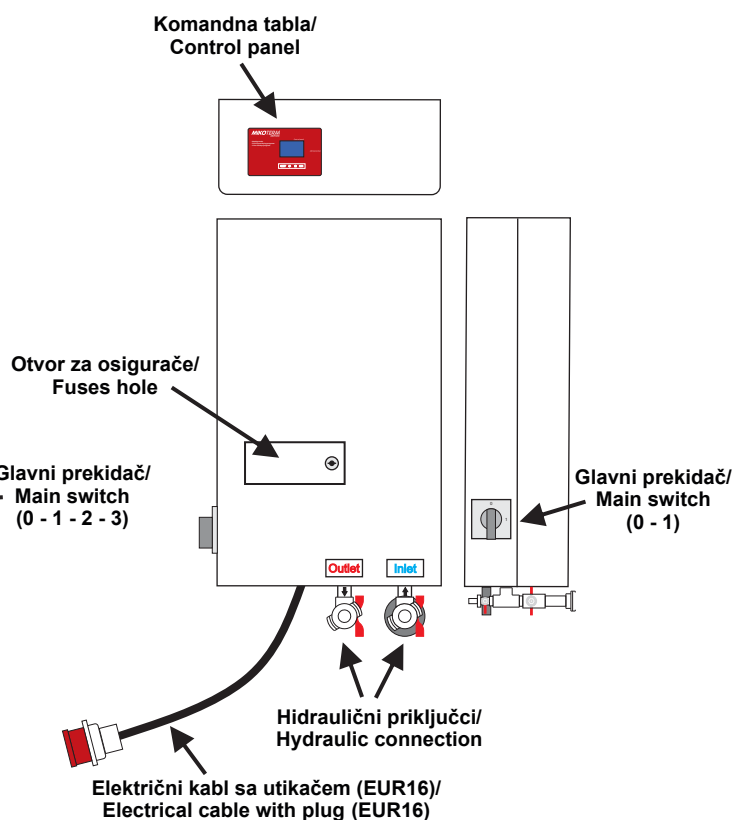
### Pregled prednosti / overview of advantage:

- > **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): function heating, funct. & proof heating, individual heating.**
- > **Izbor jezika (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 Italy 10L	Zilio Italy 10L
napajanje	power supply	3N~230/400V 50Hz; 16A	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
dimenzije	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
sigurnosni termostats	safety thermostat		95 °C	
sigurnosni ventil	safety valve		3 bar	
pumpa	pump	visoko efikasna pumpa/highly efficient pump		
stepen zaštite	ingress protection rating	IP 44		
dolazni hiraulični priključak	inlet hydraulic connection	IG 3/4 MS		
odlazni hiraulični priključak	output hydraulic connection	IG 3/4 MS		

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



# TK - Profesional

## 50÷60kW

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



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 eksploatacije. Tehnička rešenja su ono što naše proizvode izdvaja ispred konkurencije. Kotlovi snage 50kW 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. Električna veza omogućava daljinsko upravljanje kotlom dodavanjem sobnog termostata i vremenskog prekidača.

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 50 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. The electrical connection allows remote control of the boiler by adding a room thermostat and a timer.



**kW** 50÷60

**m<sup>2</sup>** ≤600 floor heating  
≤400 radiator heating

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

**%** 99

**IP** 20

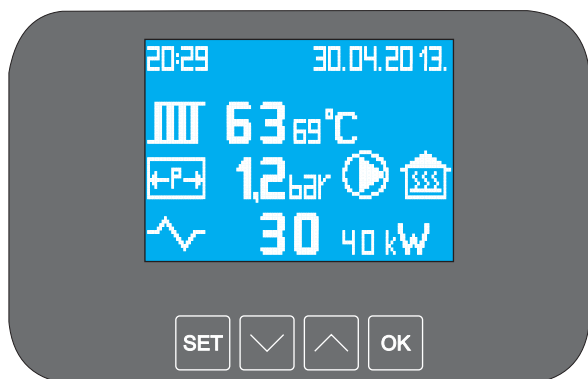
**KG** 72÷75

### Pregled prednosti / overview of advantage:

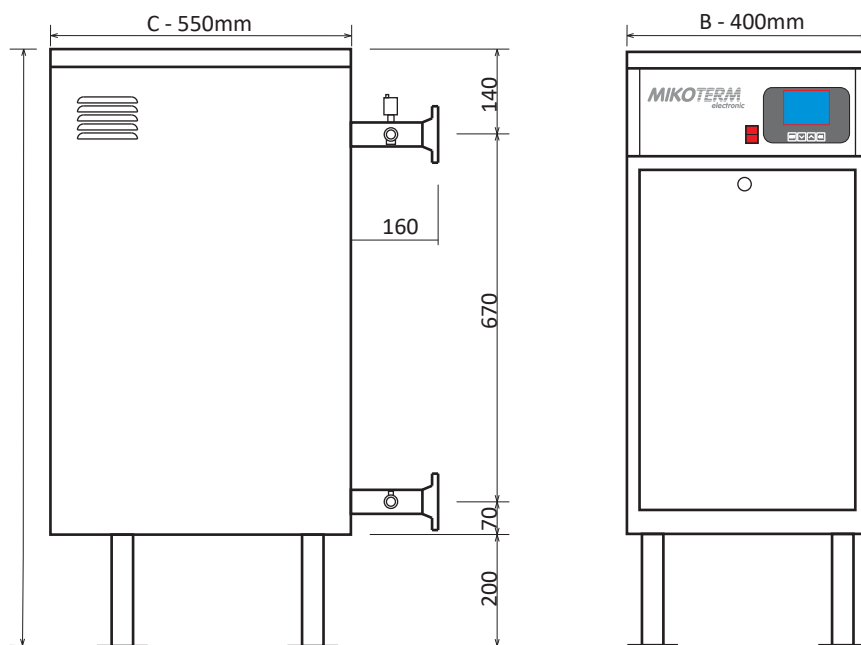
- > Električni kotao za zagrevanje većih prostora, kuća, zgrada, proizvodnih hala / Electric boiler for heating larger spaces, houses, buildings, production halls.
- > Dugi vek eksploatacije, jednostavna montaža / Long service life, easy installation.
- > Svi parametri sistema prikazani na korisničkom 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 / Remot control via room thermostat.
- > Vođenje temperature kotla prema spoljnoj temperaturi - O.T.C. režim rada (opciono) / 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.

# TK - Profesional

## 50÷60kW



Izgled komandne table /  
Control panel view



### Tehničke karakteristike/Technical characteristics

Model		TK-Profesional 50kW	TK-Profesional 60kW
grejne grupe	heating groups	5 × 10 kW	6 × 10 kW
osigurači grejača	heater fuses	5 × 3P C25A	6 × 3P C25A
maksimalna nazivna struja	maximum required current	3 × 72,5A	3 × 87A
potrebni glavni osigurači	main circuit breakers	3 × 80 A	3 × 100 A
potreban mrežni kabl	power cable	Cu 3 × 25 mm <sup>2</sup>	Cu 3 × 35 mm <sup>2</sup>
potreban zaštitni vod	protective platoon required	Cu 1 × 25 mm <sup>2</sup>	Cu 1 × 35 mm <sup>2</sup>
težina	weight	72kg	75kg
preporučena grejna * površina-podno/radijat.	recommended heating * surface-floor/radiator	≤500m <sup>2</sup> f.h. ≤400m <sup>2</sup> r.h.	≤600m <sup>2</sup> f.h. ≤480m <sup>2</sup> r.h.
dimenzija A	dimension A	1080mm	
dimenzija B	dimension B	400mm	
dimenzija C	dimension C	550mm	
zapremina vode u kotlu	volume of water in the boiler	56 l	
prikjučni napon	power supply	3N ~ 400/230V 50Hz	
priključak na hidrauličnu mrežu	hydraulic connection	DN 40 (6/4"); PN 16	
min i max radni pritisak	min and max pressure	0,4 bar ÷ 3 bar	
ventil sigurnosti	safety valve	1 × ½col 3 bar	
stepen zaštite	Ingress Protection rating	IP 20	
opseg regulacije temperature kotla	temperature range	10 ÷ 80 (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. Temperatura ambijenta automatike se kontroliše i po potrebi prinudnom ventilacijom održava na optimalnom nivou za bezbedan rad. Kotlovi TK-Profesional 70-100kW opciono se mogu povezati na centralizovani sistem nadzora i upravljanja (BMS, SCADA,...), preko RS485 RTU modula, pomoću ModBus protokola. Mogućnost povezivanja do 10 kotlova u kaskadnom režimu uz dodatni kaskadni regulator.

**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. The ambient temperature of the automation is controlled and, if necessary, by forced ventilation maintained at an optimal level for safe operation. TK-Profesional 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. The possibility of connecting up to 10 boilers in cascade mode with an additional cascade regulator.



**kW** 70÷100

**m<sup>2</sup>** ≤1000 floor heating  
≤700 radiator heating

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

**%** 99

**IP** 20

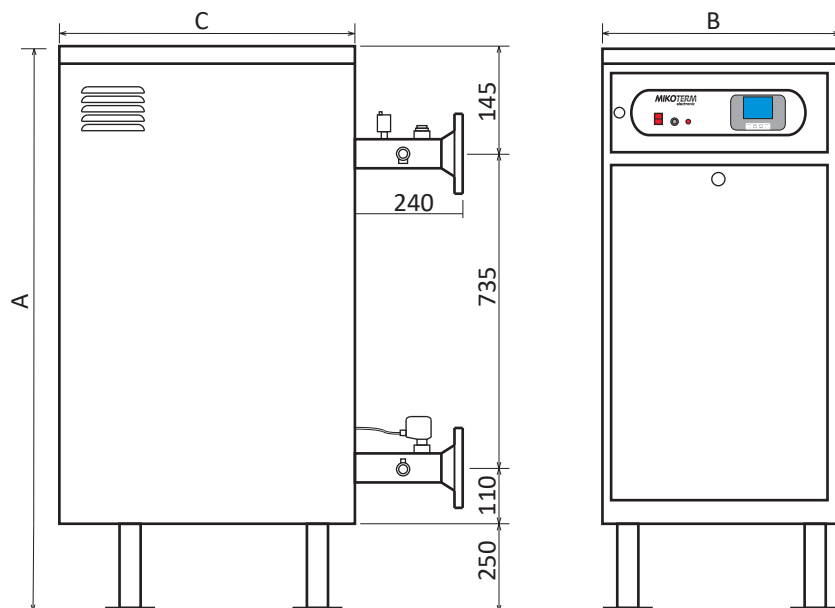
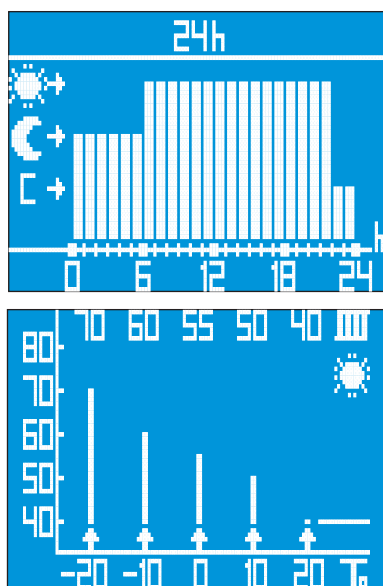
**KG** 92÷120

### 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 eksploatacije, 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.**
- > **Vođenje temperature kotla prema spoljnoj temperaturi - O.T.C. režim rada (opciono) / 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. 70W	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
potrebni glavni osigurači	main circuit breakers	3 × 125 A	3 × 125 A	3 × 160 A	3 × 160 A
potreban mrežni kabl	power cable	Cu 3 × 50 mm <sup>2</sup>	Cu 3 × 70 mm <sup>2</sup>	Cu 3 × 70 mm <sup>2</sup>	Cu 3 × 70 mm <sup>2</sup>
potreban zaštitni vod	protective platoon required	Cu 1 × 25 mm <sup>2</sup>	Cu 1 × 25 mm <sup>2</sup>	Cu 1 × 35 mm <sup>2</sup>	Cu 1 × 35 mm <sup>2</sup>
težina	weight	92kg	106kg	110kg	120kg
preporučena grejna * površina-podno/radijat.	recommended heating * surface-floor/radiator	≤700m <sup>2</sup> f.h. ≤560m <sup>2</sup> r.h.	≤800m <sup>2</sup> f.h. ≤640m <sup>2</sup> r.h.	≤900m <sup>2</sup> f.h. ≤720m <sup>2</sup> r.h.	≤1000m <sup>2</sup> f.h. ≤800m <sup>2</sup> r.h.
dimenzija A	dimension A	1240mm			
dimenzija B	dimension B	500mm			
dimenzija C	dimension C	650mm			
zapremina vode u kotlu	volume of water in the boiler	95 l			
prikjučni napon	power supply	3N ~ 400V 50Hz			
priključak 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 <sup>3</sup> /h ÷ 9m <sup>3</sup> /h			
min i max radni pritisak	min and max pressure	0,4 bar ÷ 4 bar			
ventil sigurnosti	safety valve	3/4" 4 bar			
stepen 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, ispitan na pritisak od 6 bara, dok je maksimalni radni pritisak 4 bara. Prirubnice pomoću kojih se kotao povezuje na grejnu 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 lonče. Donja vrata pokrivaju razvodnu tablu sa kompletnom automatikom kotla i rednim stezaljkama za priključenje napojnog kablova, 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. 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 70-100kW opciono se mogu povezati na centralizovani sistem nadzora i upravljanja (BMS, SCADA,...), preko RS485 RTU modula, pomoću ModBus protokola. Mogućnost povezivanja do 10 kotlova u kaskadnom režimu uz dodatni kaskadni regulator.

Boilers **TK-Profesional 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. 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-Profesional 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. The possibility of connecting up to 10 boilers in cascade mode with an additional cascade regulator.



kW 120÷240

m<sup>2</sup> ≤2400 floor heating  
≤1600 radiator heating

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

% 99

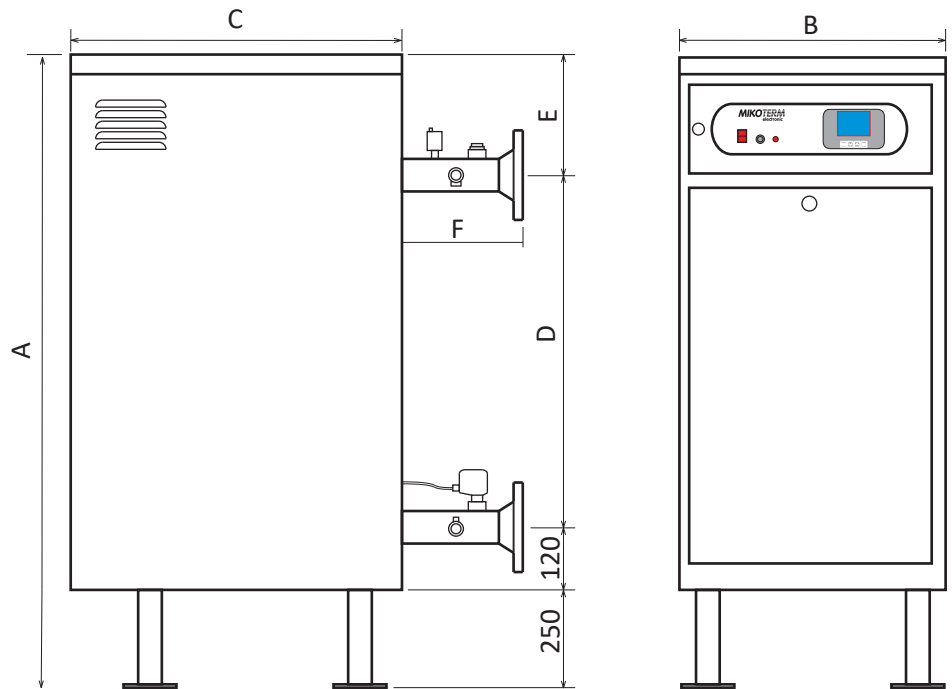
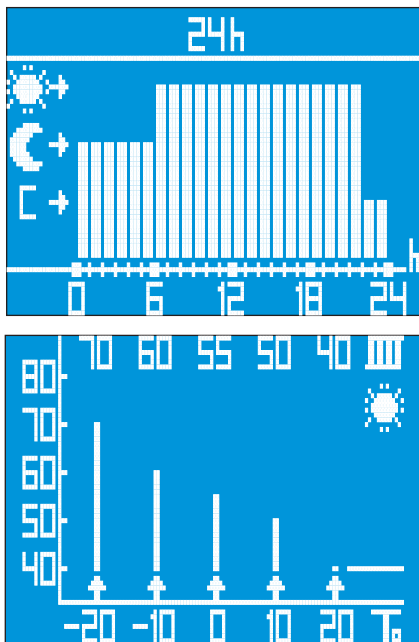
IP 20

KG 150÷270

### Pregled prednosti / overview of advantage:

- > Dugi vek eksploatacije, 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 (opciono) / 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, remot control via room thermostat.
- > Zaštitni elementi: Sigurnosni temostat, 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.120W	TK-Pro.140W	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
potrebni 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 kabela Cu 3 × 50 mm <sup>2</sup>	2 kabela Cu 3 × 70 mm <sup>2</sup>	2 kabela Cu 3 × 70 mm <sup>2</sup>	3 kabela Cu 3 × 50 mm <sup>2</sup>	3 kabela Cu 3 × 70 mm <sup>2</sup>	3 kabela Cu 3 × 70 mm <sup>2</sup>
potreban zaštitni vod	protective platoon required	Cu 1 × 50 mm <sup>2</sup>	Cu 1 × 50 mm <sup>2</sup>	Cu 1 × 50 mm <sup>2</sup>	Cu 1 × 70 mm <sup>2</sup>	Cu 1 × 70 mm <sup>2</sup>	Cu 1 × 70 mm <sup>2</sup>
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
priključak na hidrauličnu mrežu	hydraulic connection	DN65(2½");PN16	DN80(3");PN16	DN80(3");PN16	DN80(3");PN16	DN80(3");PN16	DN80(3");PN16
ventil sigurnosti	safety valve	2 × ½" 4 bar	2 × ½" 4 bar	2 × ¾" 4 bar	2 × ¾" 4 bar	2 × ¾" 4 bar	2 × ¾" 4 bar
dimenzija DxExF	dimension DxExF	810×330×210mm	765×365×270mm	765×365×270mm	765×365×270mm	765×365×270mm	765×365×270mm
preporučena grejna * površina-podno/radijat.	recommended heating* surface-floor/radiator	≤1200m <sup>2</sup> f.h. ≤1000m <sup>2</sup> r.h.	≤1400m <sup>2</sup> f.h. ≤1150m <sup>2</sup> r.h.	≤1600m <sup>2</sup> f.h. ≤1300m <sup>2</sup> r.h.	≤1800m <sup>2</sup> f.h. ≤1450m <sup>2</sup> r.h.	≤2000m <sup>2</sup> f.h. ≤1600m <sup>2</sup> r.h.	≤2400m <sup>2</sup> f.h. ≤2000m <sup>2</sup> r.h.
dimenzija AxBxC	dimension AxBxC	1500×600×750mm					
priključni napon	power supply	3N ~ 400V 50Hz					
indikator protoka min/max protok za rad grejača	flow switch min/max flow for enabled heating	3m <sup>3</sup> /h ÷ 9m <sup>3</sup> /h					
min i max radni pritisak	min and max pressure	0,4 bar ÷ 4 bar					
stepen zaštite	Ingress Protection rating	IP 20					
radna temperatura	working temperature	10 ÷ 90 °C					
sigurnosni termostat	security thermostat	95 °C					

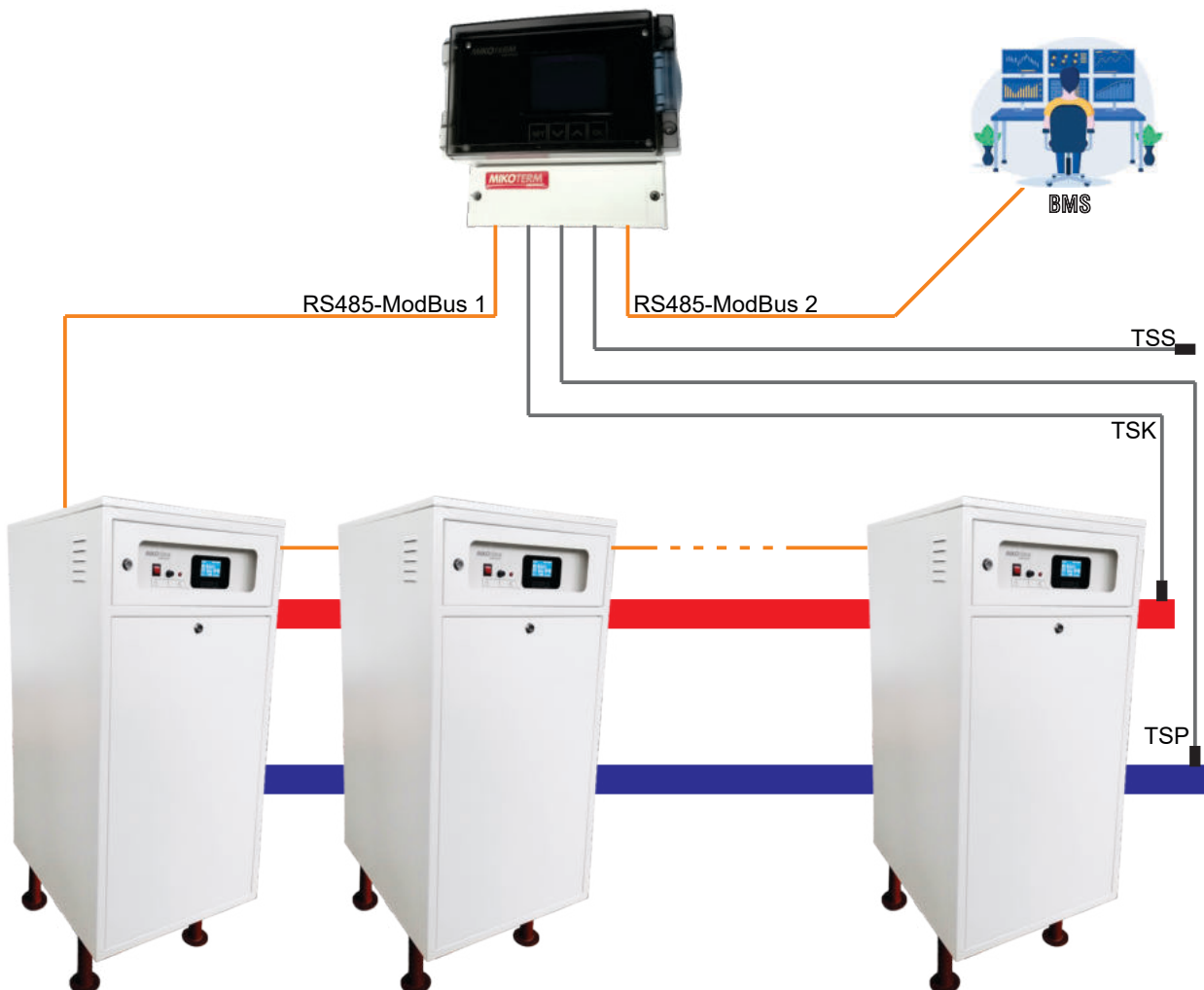
\*za objekte u skladu sa / for buildings in accordance with EN ISO 52016-1:2017, f.h.-podno grejanje/floor heating, r.h.-radijatorsko grejanje/radiator heating





Kaskadni regulator **CPK09-M** je uređaj namenjen kontroli i upravljanju sistema više paralelno povezanih kotlova serije **TK-Profesional** iste nominalne snage, kojima korisnik upravlja kao jednim kotlom. 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 paralelno 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 toku rada dođe do prekida komunikacije između kaskadnog regulatora i nekog od kotlova, maksimalna raspoloživa snaga se smanjuje za snagu kotla sa koga kaskadni regulator ne dobija informacije. Kotao koji nema komunikaciju sa kaskadnim regulatorom će isključiti sve grejače a njihovo uključenje će biti moguće tek kada se uspostavi komunikacija kotla i kaskadnog regulatora, ili ako se na upravljačkoj jedinici tog kotla odabere samostalni režim rada umesto rada u kaskadi. Opciono, kaskadni regulator može voditi temperaturu razdelnika prema spoljnim 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. A boiler that does not communicate with the cascade regulator will turn off all heaters, and their activation will be possible only when communication between the boiler and the cascade regulator is established, or if the independent mode of operation is selected on the control unit of that boiler instead of cascade operation. Optionally, the cascade regulator can control the temperature of the distributor according to the external conditions (Outdoor Temperature Compensation).



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## Sobni termostat EST / Room thermostat EST

**EST** sa elektronskom regulacijom sobne temperature. Regulacija izvedena putem elektronskog sklopa sa senzorom temperature koji ima preciznost 0,2 C. **EST\_113** je namenjen Mikoterm seriji kotlova TK, a može se koristiti i za kotlove drugih proizvođača kod kojih je upravljački signal koji se dovodi na termostat 230VAC. Za povezivanje se koristi 3-žilni provodnik (faza, nula i faza koja se vraća u kotao). **EST\_113\_R5** je namenjen Mikoterm kotlovima sa mikroprocesorskim termoregulatorima kod kojih je upravljački napon koji se dovodi na termostat 5VDC. Za povezivanje se koristi 3-žilni provodnik (+5VDC, GND i signal koji se vraća u kotao). Za kotlove drugih proizvođača se ne može koristiti.

**EST** with electronic room temperature control. Regulation performed via an electronic circuit with a temperature sensor having an accuracy of 0.2C. **EST\_113** is intended for the Mikoterm series of TK boilers, and can also be used for boilers of other manufacturers with a control signal that is fed to a 230VAC thermostat. A 3-wire conductor (phase, zero and phase returning to the boiler) is used for connection. **EST\_113\_R5** is intended for Micoterm boilers with microprocessor thermoregulators where the control voltage supplied to the thermostat is 5VDC. A 3-wire conductor is used for connection (5VDC, GND and signal that returns to the boiler). It cannot be used for boilers of other manufacturers.



## 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 kompletnim radom termostata i veoma preciznim senzorima obezbeđuje najbolje iskorišćenje 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











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