

STUPNE TRANSFORMATORSKE STANICE
TOWER - MOUNTED TRANSFORMER SUBSTATIONS



TIPSKA STUPNA TRANSFORMATORSKA STANICA

10(20)/0,42 kV, 50 - 250 kVA
TIP TS - ČRS 250 - DV 95.1
and TS - ČSR 250 - DV 95

- Tipaska TS izvedena i ispitana u skladu s normama IEC i HEP
- Sigurnost pogona i pouzdanost vrlo je visoka
- Potpuna sigurnost osoblja
- Brza i jednostavna montaža
- Jednostavno održavanje
- Stup čelično- rešetkasti, vruće pocinčan, vijčani spojevi
- Kategorije stupa - srednja
- Razne mogućnosti SN i NN priključaka i dispozicijskih rješenja

Stupna transformatorska stanica 10(20)/0.42 kV s uključivo pripadnim čelično-rešetkastim stupom namijenjena je za opskrbu električnom energijom naselja, manjih industrijskih objekata, bolnica, poljoprivrednih dobara, gradilišta, benzinskih crpki itd.

Pogodna je za interpolaciju prilikom izgradnje novih ili kod rekonstrukcije postojećih mreža do 20 kV, jer zauzima vrlo mali prostor, pa se lako uklapa u trase zračnih i kabelaških vodova. Predviđena je kao krajnje ili prolazno stupno mjesto nekog voda. Postavljanje rastavnog linijskog rastavljača predviđeno je na susjednom stupu SN zračnog voda.



STANDARD TOWER TRANSFORMER SUBSTATION

10(20)/0,42 kV, 50 - 250 kVA
TIP TS - ČRS 250 - DV 95.1
and TS - ČSR 250 - DV 95

- Standard S/S installed and tested in compliance with IEC end HEP standards
- Very high work safety and reliability
- Total personnel safety
- Quick and simple installation
- Simple maintenance
- Steel -lattice, hot-dip galvanized tower bolted-type connections
- Tower category-medium
- various possibilities of MV and LV connections and disposition solutions

10(20)/0,42 kV tower transformer substation with accompanying steel-lattice tower inclusive is intended for supply of electric power to housing estates, smaller industrial facilities, hospitals, big farms, building sites, petrol stations etc.

It is suitable for interpolation at constructions of new and rehabilitation of the existing networks up to 20 kV as it occupies limited space and thus easily fits in the overhead and cable line routes.

It is anticipated as the end or temporary tower location of a particular line. Installation of the line disconnector is anticipated on the neighboring MV overhead line tower.

TEHNIČKI PODACI

nazivni napon	SN	12 ili 24 kV
	NN	420/231 V
nazivna frekvencija	50 Hz	
nazivna snaga transformatora	do 250 kVA	
nazivna struja	SN	30A
	NN	400 A
vodiči	SN	Al/Č 3x50/8 mm ²
	NN	SKS X00/0 - A 3x70+71.5+2x25 mm ²
horizontalna sila reducirana		
na vrhu stupa	RH =	19.2 kN

TECHNICAL DATA

nominal voltage	MV	12 Or 24 kV
	LV	420/231 V
nominal frequency	50 Hz	
nominal transformer power	up to 250 kVA	
nominal current	MV	30A
	LV	400 A
conductors	MV	Al/St 3x50/8mm ²
	LV	SKS X00/0-A 3x70+71.5+2x25mm ²
horizontal force reduced		
to the tower top		RH = 19.2 kN

TIP TRANSFORMATORSKE STANICE

TRANSFORMER SUBSTATION TYPE

- TS - ČRS 250 - DV 95.1 (elektro oprema konzumne mreže i javne rasvjete ugrađena u isti NN razvodni ormarić)
- TS - ČRS 250 - DV 95 (elektro oprema javne rasvjete ugrađena u zaseban NN razvodni ormarić)

STUP

- pocinčan čelično rešetkasti, oblik piramide, rastavljen u tri dijela,
- u temelj se sidri betoniranjem pojasnika
- dimenzioniran za sve uobičajene položaje u mreži i kombinacije opterećenja
- plato i ograda oko transformatora (na zahtjev)
- visina stupa 9.0 m iznad razine tla
- visina NN priključka 7.40 m iznad razine tla

PRIKLJUČAK SN i NN

- kabelski ili zračni

POLOŽAJ U MREŽI

- krajnja i prolazna TS

TRANSFORMATOR

- snaga do 250 kVA
- prijenosni omjer 10/0,42, 20/0,42 ili 10-20/0.42 kV
- masa maksimalno do 1300 kg
- zaštita - termoprotektor (samo za 160 i 250 kVA)

SN OPREMA

- potporni izolatori s nosačima, 24 kV, tip SER - b/20 (zatezni na zahtjev)
- odvodnici prenapona, 15(26)kV, 10 kA, tip HDA - 12R-NFF (HDA - 21R-NFF)
- podnožje SN osigurača 12(24) kV, 200 A, tip VNO 12/24 - 1
- SN osigurač, 10(20) kV, nazivna struja prema snazi transformatora



- S/S-ČRS 250-DV 95.1 (electrical equipment of consumer network and public lighting in the same LV cubicle)
- S/S-ČRS 250 -DV 95 (electrical equipment of public lighting installed in a separate LV cubicle)

TOWER

- galvanized steel-lattice, pyramid form, that can be divided into three parts
- anchoring in the foundation is carried out by tower leg concreting
- dimensioned for all standard positions in the network and load combinations
- plateau and rail around the transformer (on request)
- tower height of 9.0 m above the ground level
- height of LV connections of 7.40 above the ground level

MV and LV CONNECTION

- cable and overhead

POSITION IN THE NETWORK

- end or temporary S/S

TRANSFORMER

- power up to 250 kVA
- transmitting ratio 10/0.42, 20/0.42 or 10-20/0.42 kV
- max mass up to 1 300 kg
- protection - thermoprotector (for 160 and 250 kVA only)

MV EQUIPMENT

- pin-type insulators with pins, 24 kV, SER- b/20 type (tension on request)
- surge arrestors, 15(26) kV, 10 kA, type HDA - 12R-NFF (HDA - 21R - NFF)
- pedestal of MV fuses 12 (24) kV, 200 A, VNO 12 /24 - 1 type
- MV fuses, 10(20) kV, nominal current according to transformer power.

NN OPREMA

- NN razvodni ormarić iz Al lima, 4 mm, stupanj mehaničke zaštite IP 54 s vratima na prednjoj i stražnjoj strani, oličeni lak bojom iznutra i izvana, smješten u stup
- četiri (tri za 50 i 100 kVA) trofazna NN odvoda s izoliranim prugama i osiguračima velike prekidne moći
- četiri (tri za 50 i 100 kVA) jednofazna odvoda za javnu rasvjetu
- upravljanje javnom rasvjetom:
 - ručno - grebenasta sklopka
 - automatski - fotorelej
 - uklopni sat (na zahtjev)
 - MTU uređaj (na zahtjev)
- kondenzator za kompenzaciju jalove snage (prema snazi transformatora)
- NN prekidač, normalna isporuka (rastavna sklopka - na zahtjev)
- mjerenje
 - struje pomoću ampermetra
 - tri linijska i jednog faznog napona pomoću voltm. i v. prekl.
 - potrošnje električne energije javne rasvjete
 - obračunsko mjerenje ukupne potrošnje električne energije (na zahtjev)
- NN odvodnici prenapona cink-oksidni
- rasvjeta unutrašnjosti NN ormarića, pali se automatski kod otvaranja vrata
- dovodni i odvodni kablovi mehanički zaštićeni.

LV EQUIPMENT

- LV cubicle made of 4 mm Al sheet, mechanical protection grade IP 54 with doors on the front and back side, covered with varnish paint from inside and outside, located in the tower
- four (three for 50 and 100 kVA) three-phase LV outgoing feeders with insulated streaks and fuses of maximum cutoff power
- four (three for 50 and 100 kVA) one-phase outgoing feeders for public lighting
- public lighting control:
 - manual - cam switch
 - automatic - photo-relay
 - reclosing clock (on request)
 - MTU device (on request)
- capacitor for reactive power compensation (according to transformer power)
- LV switch - standard delivery (load - break switch on request)
- measurement: of current by ampermeter
 - three-line and one-phase voltage by voltmeter
 - consumption of public lighting electric power
 - accounting measurement of total consumption of electric power (on request)
- LV zinc- oxide surge arrestors
- lighting of the interior of the LV cubicle; automatic switch
 - on at opening of doors
- mechanically protected incoming and outgoing feeder cables

TIPSKA CIJEVNA STUPNA TRANSFORMATORSKA STANICA

10(20)/0.42 kV, 50 - 250 kVA
Tip TS - KORS 250 - DV 99

- Tip skupa TS izvedena i ispitana u skladu s normama IEC i HEP
- Sigurnost pogona i pouzdanost vrlo je visoka
- Potpuna sigurnost osoblja
- Brza i jednostavna montaža
- Jednostavno održavanje
- Stup, osmerokutni, čelični, vruće pocinčan, tip KORS, jednodijelni
- Kategorija stupa - srednja
- razne mogućnosti SN i NN priključaka i dispozicijskih rješenja.

Stupna transformatorska stanica 10(20)/0.42 kV s uključivo pripadnim čeličnim KORS stupom namijenjena je za opskrbu električnom energijom naselja, manjih industrijskih objekata, bolnica, poljoprivrednih dobara, gradilišta, benzinskih crpki itd.

Pogodna je za interpolaciju prilikom izgradnje novih ili kod rekonstrukcije postojećih mreža do 20 kV, jer zauzima vrlo mali prostor, pa se lako uklapa u trase zračnih i kablinskih vodova. Predviđena je kao krajnje ili prolazno stupno mjesto nekog voda. Postavljanje rastavnog linijskog rastavljača predviđeno je na susjednom stupu SN zračnog voda.



SATANDARD TUBULAR TOWER TRANSFORMER SUBSTATION

10(20)/0.42 Kv, 50 - 250 kVA
KORS 250 -DV 99 S/S TYPE

- Standard S/S installed and tested in compliance with IEC i HEP standards
- Very high work safety and reliability
- Total personnel safety
- Quick and simple installation
- Simple maintenance
- octagonal steel, hot-dip galvanized tower, KORS type, one-piece
- Tower category-medium
- Various possibilities of MV and LV connections and disposition solutions

10(20)/0.42 kV tower transformer substation with accompanying steel KORS tower inclusive is intended for supply of electric power to housing estates, smaller industrial facilities, hospitals, big farms, building sites, petrol stations etc. It is suitable for interpolation at construction of new and rehabilitation of the existing networks up to 20 kV as it occupies limited space and thus easily fits in the overhead and cable line routes.

It is anticipated as the end or temporary tower location of a particular line.

Installation of the line disconnector is anticipated on the neighbouring MV overhead line tower.

TEHNIČKI PODACI

nazivni napon	SN	12 ili 24 kV
	NN	420/231 HV
nazivna frekvencija	50 Hz	
nazivna snaga transformatora	do 250 kVA	
nazivna struja	SN	30 A
	NN	400
vodiči	SN	Al/Č 3x50/8mm ²
	NN	SKS X00/0-A
		3x70+71.5+2x25mm ²
horizontalna sila	reducirana na vrh stupa RH = 10.0 kN	

TIP TRANSFORMATORSKE STANICE

- TS-KORS 250-DV 99

STUP

- osmerokutni, pocinčani čelični, tip KORS, jednodijelni
- u temelj se učvršćuje sidrenim vijcima
- na stup su ugrađene demontažne penjalice za montera
- dimenzioniran za sve uobičajene položaje u mreži i kombinacije opterećenja
- visina stupa 7.5 m iznad razine tla
- visina NN priključka 6.20 m iznad razine tla

TECHNICAL DATA

nominal voltage	MV	12 or 24 kV
	LV	420/231 V
nominal frequency	50 Hz	
nominal transformer power	up to 250 kVA	
nominal current	MV	30A
	LV	400 A
conductors	MV	Al/St 3x50/8mm ²
	LV	SKS X00/0-A
		3x70+71.5+2x25mm ²
horizontal force reduced	to the tower top RH = 10.0 kN	

TRANSFORMER SUBSTATION TYPE

- KORS 250 - DV 99 S/S

TOWER

- octagonal, galvanized steel, KORS type, one-piece
- anchoring in the foundation by anchor bolts
- demounting climbing foot rests for line men are installed on the tower
- dimensioned for all standard positions in the network and load combinations
- tower height of 7,5 m above the ground level
- height of LV connections of 6,20 above the ground level

PRIKLJUČAK SN I NN

- kabelski ili zračni

POLOŽAJ U MREŽI

- krajnja i prolazna TS

TRANSFORMATOR

- snaga do 250 kVA
- prijenosni omjer 10/0.42, 20/0.42 ili 10-20/0.42 kV
- masa maksimalno do 1300 kg
- zaštita - termoprotektor (samo za 160 i 250 kVA)

SN OPREMA

- potporni izolatori s nosačima, 24 kV, tip SER - b/20 (zatezni na zahtjev)
- odvodnici prenapona 15(26) kV, 10 kA, tip HDA - 12R- NFF (HDA- 21R-NFF)
- podnožje SN osigurača 12(24) kV, 200A, tip VNO 12/24 - I
- SN osigurači, 10 (20) kV, nazivna struja prema snazi transformatora

NN OPREMA

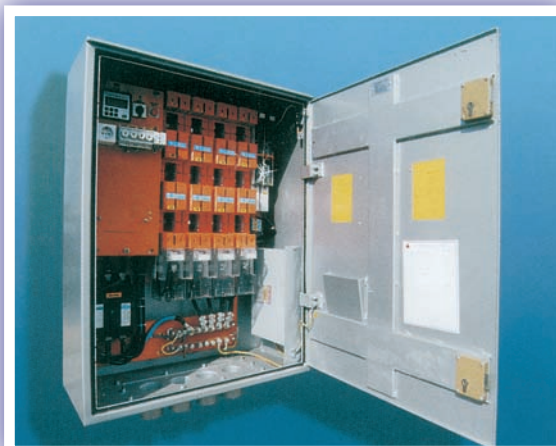
- NN razvodni ormarić s ugrađenom kompletnom elektro opremom za potrebe konzumne mreže, iz Al lima 4 mm, stupanj mehaničke zaštite IP 54, s vratima na prednjoj strani, oličen lak bojom iznutra i izvana, smješten na stup dispozicijski ispod transformatora
- NN razvodni ormarić s ugrađenom kompletnom elektro opremom za potrebe javne rasvjete, iz Al lima 4 mm, stupanj mehaničke zaštite IP 54 s vratima na prednjoj strani, oličen lak bojom iznutra i izvana, smješten na stup dispozicijski ispod transformatora
- četiri (tri za 50 i 100 kVA trofazna NN odvoda s izoliranim prugama i osiguračima velike prekidne moći
- četiri (tri za 50 i 100 kVA) jednofazna odvoda za javnu rasvjetu
- upravljanje javnom rasvjetom: ručno - grebenasta sklopka
automatski - fotorelej
- uklopni sat (na zahtjev)
- MTU uređaj (na zahtjev)
- kondenzator za kompenzaciju jalove snage (prema snazi transformatora)
- NN prekidač - normalna isporuka (rastavna sklopka na zahtjev)
- mjerenje :
- struje i napona u sve tri faze pomoću mjernog terminala tip MT - 10 priključenog na strujne mjerne transformatore
- potrošnje el. energije javne rasvjete
- obračunsko mjerenje ukupne potrošnje el. energije (na zahtjev)
- NN odvodnici prenapona cink-oksidni
- rasvjeta unutrašnjosti NN ormarića, pali se automatski kod otvaranja vrata
- dovodni i odvodni kabeli mehanički zaštićeni.

MV and LV CONNECTION

- cable and overhead
- POSITION IN THE NETWORK
- end or temporary S/S

TRANSFORMER

- power up to 250 kVA
- transmitting ratio 10/0.42, 20/0.42 or 10-20/0.42 kV
- max mass up to 1 300 kg
- protection - thermoprotction(for 160 and 250 kVA only)



MV EQUIPMENT

- pin-type insulators with pins, 24 kV, SER- b/20 type (tension on request)
- surge arrestors, 15(26) kV, 10 kA, type HDA - 12R-NFF (HDA - 21R - NFF) type
- pedestal of MV fuses 12 (24) kV, 200 A, VNO 12 /24 - I type
- MV fuses, 10(20) kV, nominal current according to transformer power.

LV EQUIPMENT

- LV cubicle with installed complete electrical equipment for the needs of the consumer network, made of 4 mm Al sheet, mechanical protection grade IP 54 with doors on the front side, covered with varnish paint from inside and outside, located on the tower vis-a-vis the transformer
- LV cubicle with installed complete electrical equipment for the needs of public lighting made of 4 mm Al sheet, mechanical protection grade IP 54 with doors on the front side, covered with varnish paint from inside and outside, located on the tower below the transformer
- four (three for 50 and 100 kVA) three-phase LV outgoing feeders with insulated streaks and fuses of maximum cutoff power
- four (three for 50 and 100 kVA) single phase outgoing feeders for public lighting
- public lighting control: manual - cam switch
automatic - photo-relay
- reclosing clock (on request)
- MTU device (on request)
- capacitor for reactive power compensation (according to transformer power)
- LV switch - standard delivery (load - break switch on request)
- measurement : of current and voltage in all three phases by means of MT - 10 measuring terminal - connected to current measuring transformers
- consumption of public lighting electric power
- accounting measurement of total consumption of electric power (on request)
- LV zinc- oxide surge arrestors
- lighting of the interior of the LV cubicle; automatic switch - on at opening of doors
- mechanically protected incoming and outgoing feeder cables

TIPSKA CIJEVNA STUPNA TRANSFORMATORSKA STANICA

10(20)/0,42 kV, DO 100 kVA
Tip TS - KORS 100 - DV 96

- Tipaska TS izvedena i ispitana u skladu s normama IEC i HEP
- Sigurnost pogona i pouzdanost vrlo je visoka
- Potpuna sigurnost osoblja
- Brza i jednostavna montaža
- Jednostavno održavanje
- Stup, osmerokutni, čelični, vruće pocinčan, tip KORS, jednodijelni
- Kategorija stupa - srednja
- razne mogućnosti SN i NN priključaka i dispozicijskih rješenja.

Stupna transformatorska stanica 10(20)/0.42 kV s uključivo pripadnim čeličnim KORS stupom namijenjena je za opskrbu električnom energijom naselja, manjih industrijskih objekata, bolnica, poljoprivrednih dobara, gradilišta, benzinskih crpki itd.

Pogodna je za interpolaciju prilikom izgradnje novih ili kod rekonstrukcije postojećih mreža do 20 kV, jer zauzima vrlo mali prostor, pa se lako uklapa u trase zračnih i kablinskih vodova. Predviđena je kao krajnje ili prolazno stupno mjesto nekog voda. Postavljanje rastavnog linijskog rastavljača predviđeno je na susjednom stupu SN zračnog voda.

STANDARD TUBULAR TOWER TRANSFORMER SUBSTATION

10(20)/0,42 Kv, UP TO 100 Kva
KORS 100- DV 96 S/S TYPE

- Standard S/S installed and tested in compliance with IEC i HEP standards
- Very high work safety and reliability
- Total personnel safety
- Quick and simple installation
- Simple maintenance
- Octagonal steel, hot-dip galvanized tower, KORS type, one-piece
- Tower category-medium
- Various possibilities of MV and LV connections and disposition solutions

10(20)/0.42 kV tower transformer substation with accompanying steel KORS tower inclusive is intended for supply of electric power to housing estates, smaller industrial facilities, hospitals, big farms, building sites, petrol stations etc.

It is suitable for interpolation at construction of new and rehabilitation of the existing networks up to 20 kV as it occupies limited space and thus easily fits in the overhead and cable line routes.

It is anticipated as the end or temporary tower location of a particular line. Installation of the line disconnector is anticipated on the neighbouring MV overhead line tower.



TEHNIČKI PODACI

nazivni napon	SN	12 ili 24 kV
	NN	420/231 HV
nazivna frekvencija		50 Hz
nazivna snaga transformatora		do 100 kVA
nazivna struja	SN	16 A
	NN	400 A
vodiči	SN	Al/Č 3x50/8mm ²
	NN	SKS X00/0-A 3x70+71.5+2x25mm ²
horizontalna sila reducirana		
na vrh stupa		RH = 5.0 kN

TECHNICAL DATA

nominal voltage	MV	12 or 24 kV
	LV	420/231 V
nominal frequency		50 Hz
nominal transformer power		up to 100 kVA
nominal current	MV	30A
	LV	400 A
conductors	MV	Al/St 3x50/8mm ²
	LV	SKS X00/0-A 3x70+71.5+2x25mm ²
horizontal force reduced		
to the tower top		RH = 5.0 kN

TIP TRANSFORMATORSKE STANICE

- TS-KORS 100-DV 96

STUP

- osmerokutni, pocinčani čelični, tip KORS, jednodijelni
- u temelj se učvršćuje sidrenim vijcima
- na stup su ugrađene demontažne penjalice za montera
- dimenzioniran za sve uobičajene položaje u mreži i kombinacije opterećenja
- visina stupa 7.5 m iznad razine tla
- visina NN priključka 6.20 m iznad razine tla

PRIKLJUČAK SN I NN

- kabelski ili zračni

POLOŽAJ U MREŽI

- krajnja i prolazna TS

TRANSFORMER SUBSTATION TYPE

- KORS 100- DV 96 S/S

TOWER

- octagonal, galvanized steel, KORS type, one-piece
- anchoring in the foundation by anchor bolts
- demounting climbing foot rests for line men are installed on the tower
- dimensioned for all standard positions in the network and load combinations
- tower height of 7,5 m above the ground level
- height of LV connections of 6,20 above the ground level

MV and LV CONNECTION

- cable and overhead

POSITION IN THE NETWORK

- end or temporary S/S

TRANSFORMATOR

- snaga do 100 kVA
- prijenosni omjer 10/0.42, 20/0.42 ili 10-20/0.42 kV
- masa maksimalno do 700 kg

SN OPREMA

- potporni izolatori s nosačima, 24 kV, tip SER - b/20 (zatezni na zahtjev)
- odvodnici prenapona 15(26) kV, 10 kA, tip HDA - 12R- NFF (HDA- 21R-NFF)
- podnožje SN osigurača 12(24) kV, 200A, tip VNO 12/24 - 1
- SN osigurači, 10 (20) kV, nazivna struja prema snazi transformatora

NN OPREMA

- NN razvodni ormarić s ugrađenom kompletnom elektro opremom za potrebe konzumne mreže, iz Al lima 4 mm, stupanj mehaničke zaštite IP 54, s vratima na prednjoj strani, oličen lak bojom iznutra i izvana, smješten na stup dispozicijski nasuprot transformatora
- NN razvodni ormarić s ugrađenom kompletnom elektro opremom za potrebe javne rasvjete, iz Al lima 4 mm, stupanj mehaničke zaštite IP 54 s vratima na prednjoj strani, oličen lak bojom iznutra i izvana, smješten na stup dispozicijski ispod transformatora
- tri trofazna NN odvoda s izoliranim prugama i osiguračima velike prekidne moći
- tri jednofazna odvoda za javnu rasvjetu
- upravljanje javnom rasvjetom:
 - ručno - grebenasta sklopka
 - automatski - fotorelej
 - uklopni sat (na zahtjev)
 - MTU uređaj (na zahtjev)
- kondenzator za kompenzaciju jalove snage (prema snazi transformatora)
- NN prekidač - normalna isporuka (rastavna sklopka na zahtjev)
- mjerenje :
 - struje i napona u sve tri faze pomoću mjernog terminala tip MT - 10 priključenog na strujne mjerne transformatore
 - potrošnje el. energije javne rasvjete
 - obračunsko mjerenje ukupne potrošnje el. energije (na zahtjev)
- NN odvodnici prenapona cink-oksidni
- rasvjeta unutrašnjosti NN ormarića, pali se automatski kod otvaranja vrata
- dovodni i odvodni kabeli mehanički zaštićeni.

TRANSFORMER

- power up to 250 kVA
- transmitting ratio 10/0.42, 20/0.42 or 10-20/0.42 kV
- max mass up to 1 300 kg

MV EQUIPMENT

- pin-type insulators with pins, 24 kV, SER- b/20 type (tension on request)
- surge arrestors, 15(26) kV, 10 kA, type HDA - 12R-NFF (HDA - 21R - NFF) type
- pedestal of MV fuses 12 (24) kV, 200 A, VNO 12 /24 - 1 type
- MV fuses, 10(20) kV, nominal current according to transformer power.

LV EQUIPMENT

- LV cubicle with installed complete electrical equipment for the needs of the consumer network, made of 4 mm Al sheet, mechanical protection grade IP 54 with doors on the front side, covered with varnish paint from inside and outside, located on the tower vis-a-vis the transformer
- LV cubicle with installed complete electrical equipment for the needs of public lighting made of 4 mm Al sheet, mechanical protection grade IP 54 with doors on the front side, covered with varnish paint from inside and outside, located on the tower below the transformer
- three three-phase LV outgoing feeders with insulated streaks and fuses of maximum cutoff power
- three single phase outgoing feeders for public lighting
- public lighting control:
 - manual - cam switch
 - automatic - photo-relay
 - reclosing clock (on request)
 - MTU device (on request)
- capacitor for reactive power compensation (according to transformer power)
- LV switch - standard delivery (load - break switch on request)
- measurement : of current and voltage in all three phases by means of MT - 10 measuring terminal - connected to current measuring transformers
- consumption of public lighting electric power
- accounting measurement of total consumption of electric power (on request)
- LV zinc- oxide surge arrestors
- lighting of the interior of the LV cubicle; automatic switch
 - on at opening of doors
- mechanically protected incoming and outgoing feeder cables

TIPSKA CIJEVNA STUPNA TRANSFORMATORSKA STANICA

10(20)/0,42 kV, DO 100 kVA JEDNOSTAVNE IZVEDBE
Tip TS -KORS 50-DV 99

- Tipaska TS izvedena i ispitana u skladu s normama IEC i HEP
- Sigurnost pogona i pouzdanost vrlo je visoka
- Potpuna sigurnost osoblja
- Brza i jednostavna montaža
- Jednostavno održavanje
- Stup, osmerokutni, čelični, vruće pocinčan, tip KORS, jednodijelni
- Kategorija stupa - srednja
- Razne mogućnosti SN i NN priključaka i dispozicijskih rješenja.

Stupna transformatorska stanica 10(20)/0.42 kV s uključivo pripadnim čeličnim KORS stupom namijenjena je za opskrbu električnom energijom naselja, manjih industrijskih objekata, bolnica, poljoprivrednih dobara, gradilišta, benzinskih crpki itd. Pogodna je za interpolaciju prilikom izgradnje novih ili kod rekonstrukcije postojećih mreža do 20 kV, jer zauzima vrlo mali prostor, pa se lako uklapa u trase zračnih i kabelaških vodova. Predviđena je kao krajnje ili prolazno stupno mjesto nekog voda. Postavljanje rastavnog linijskog rastavljača predviđeno je na susjednom stupu SN zračnog voda.

TEHNIČKI PODACI

nazivni napon	SN	12 ili 24 kV
	NN	420/231 HV
nazivna frekvencija	50 Hz	
nazivna snaga transformatora	do 50 kVA	
nazivna struja	SN	16 A
	NN	165A
vodiči	SN	Al/Č 3x50/mm ²
	NN	SKS X00/0-A
		3x70+71.5+2x25mm ²
horizontalna sila reducirana na vrh stupa	RH = 5.0 kN	

STANDARD TUBULAR TOWER TRANSFORMER SUBSTATION

10(20)/0,42 Kv, UP TO 100 kVA OF SIMPLE CONSTRUCTION
KORS 50 -DV 99 S/S TYPE

- Standard S/S installed and tested in compliance with IEC i HEP standards
- Very high work safety and reliability
- Total personnel safety
- Quick and simple installation
- Simple maintenance
- Octagonal steel, hot-dip galvanized tower, KORS type, one -piece
- Tower category-medium
- Various possibilities of MV and LV connections and disposition solutions

10(20)/0.42 kV tower transformer substation with accompanying steel KORS tower inclusive is intended for supply of electric power to housing estates, smaller industrial facilities, hospitals, big farms, building sites, petrol stations etc.

It is suitable for interpolation at construction of new and rehabilitation of the existing networks up to 20 kV as it occupies limited space and thus easily fits in the overhead and cable line routes. It is anticipated as the end or temporary tower location of a particular line. Installation of the line disconnector is anticipated on the neighbouring MV overhead line tower.

TECHNICAL DATA

nominal voltage	MV	12 or 24 kV
	LV	420/231 V
nominal frequency	50 Hz	
nominal transformer power	up to 100 kVA	
nominal current	MV	30A
	LV	400 A
conductors	MV	Al/St 3x50/8mm ²
	LV	SKS X00/0-A
		3x70+71.5+2x25mm ²
horizontal force reduced to the tower top	RH = 5.0 kN	

TIP TRANSFORMATORSKE STANICE

- TS-KORS 50-DV 99

STUP

- osmerokutni, pocinčani čelični, tip KORS, jednodijelni
- u temelj se učvršćuje sidrenim vijcima
- na stup su ugrađene demontažne penjalice za montera
- dimenzioniran za sve uobičajene položaje u mreži i kombinacije opterećenja
- visina stupa 7.5 m iznad razine tla
- visina NN priključka 6.20 m iznad razine tla

PRIKLJUČAK SN I NN

- * zračni

POLOŽAJ U MREŽI

- krajnja TS

TRANSFORMATOR

- snaga do 100 kVA
- prijenosni omjer 10/0.42, 20/0.42 ili 10-20/0.42 kV
- masa maksimalno do 700 kg

SN OPREMA

- * štapni, zatezni izolatori , 24 kV, tip SI 24/460 - LG, DALLAGO
- * odvodnici prenapona, 15 (26) kV, 10 kA, tip HDA - 12 R - NFF (HDA 21 R - NFF)

NN OPREMA

- * trofazni automatski zaštitni prekidač čvrste izvedbe, za vanjsku montažu, 400V, 50 Hz , 165 A, prekidna moć 4000 A, uklopna moć 6800 A, pokazivač preopterećenja transformatora za periodod 24 sata, s pogonskom ručicom i polužnim pogonom, tip D 165
- * jedan trofazni NN odvod



TRANSFORMER SUBSTATION TYPE

- KORS 100- DV 96 S/S

TOWER

- octagonal, galvanized steel, KORS type, one-piece
- anchoring in the foundation by anchor bolts
- demounting climbing foot rests for line men are installed on the tower
- dimensioned for all standard positions in the network and load combinations
- tower height of 7,5 m above the ground level
- height of LV connections of 6,20 above the ground level

MV and LV CONNECTION

- cable and overhead

POSITION IN THE NETWORK

- end or temporary S/S

TRANSFORMER

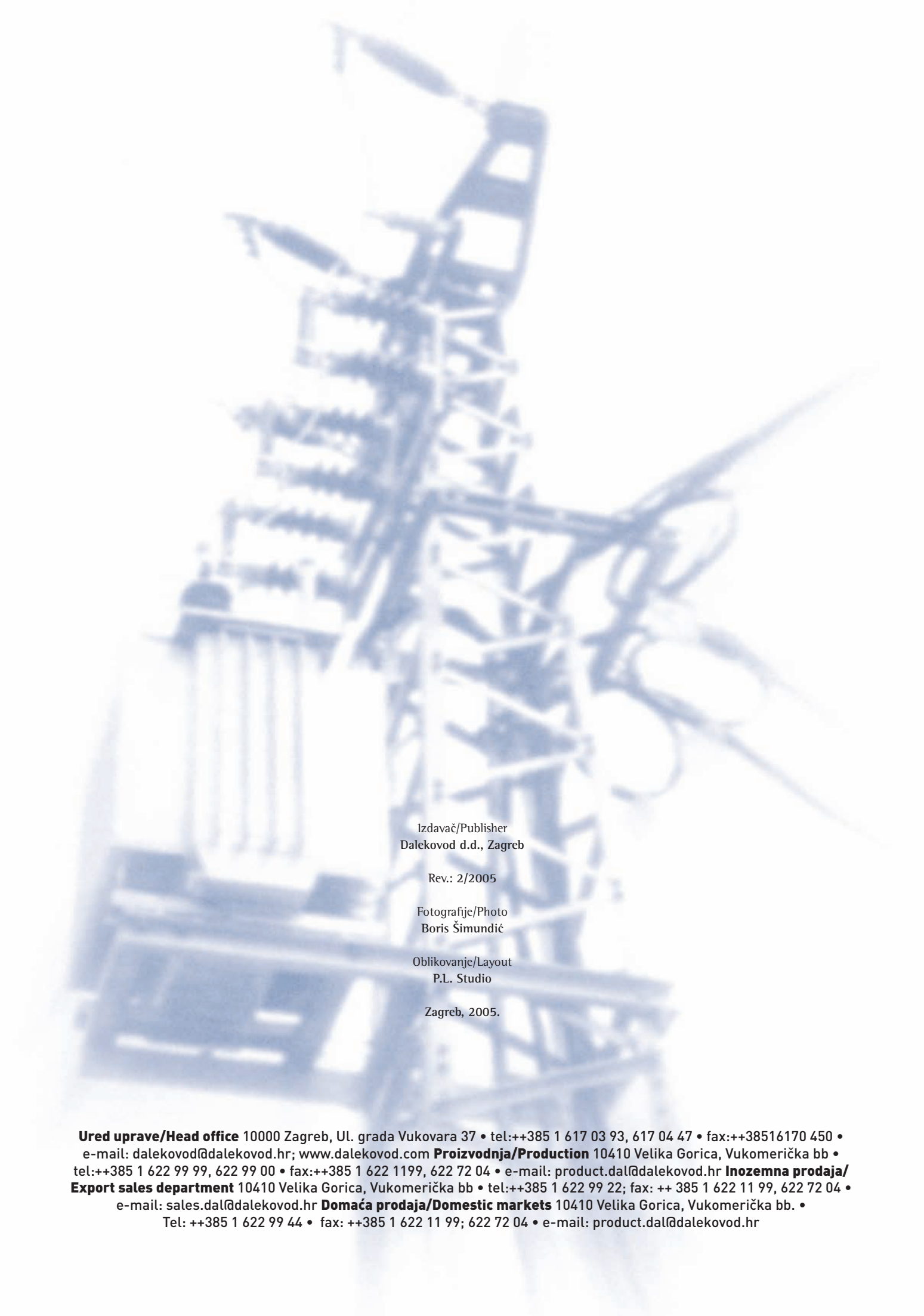
- power up to 250 kVA
- transmitting ratio 10/0.42, 20/0.42 or 10-20/0.42 kV
- max mass up to 700 kg

MV EQUIPMENT

- * long-rod, tension insulators, 24 kV, SI 24/460 - LG type DALLAGO
- * surge arrestors, 15(26) kV, 10 kA, HDA - 12 R - NFF type (HDA - 21 R - NFF)

LV EQUIPMENT

- * three- pole automatic protective switch of solid structure, for outdoor installation , 400 V, 50 Hz, 165 A, cutoff power 4000 A, reclosing force 6800 A, 24-hour transformer overload indicator, with operating lever and gear drive, D1 65 type
- * one three-phase LV outgoing feeder.



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