

DISTRIBUCIJSKI KOMPAKTNI SKLOPNI MODULI

PROŠIRIVA IZVEDBA
ZA UNUTARNJU UGRADNJU

Serije VDAP

1. OPĆENITO

Kompaktni sklopni blokovi serije VDAP grade se za nazivne napone 12, (17,5) i 24 kV. Koriste se za razvod električne energije u transformatorskim stanicama i rasklopištima elektrodistribucijskih mreža.

Predviđeni su za ugradnju u zatvorene prostore uz normalne pogonske uvjete, u skladu s normama IEC 62271-200 i IEC 60694.

Proširiva izvedba postrojenja omogućuje rješavanje svake varijante jednopolne sheme koju kupac traži.

DISTRIBUTIVE COMPACT SWITCHGEAR

EXTENSIBLE VERSION
FOR INDOOR INSTALLATION

Series VDAP

1. GENERAL INFORMATION

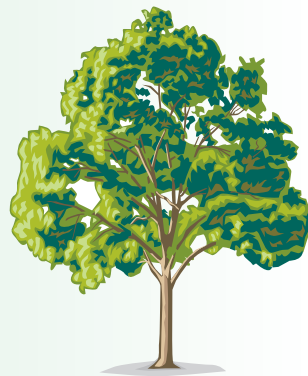
Vacuum compact cubicles series VDAP are manufactured for rated voltages 12, (17,5) and 24 kV. The main purpose of VDAP compact switchgear is energy distribution in transformer substations and nodal points of distributive networks.

Compact switchgear series VDAP is designed for indoor installation, at normal service conditions, in accordance with IEC 62271-200 and IEC 60694.

Extensible version enables various solutions for each required single line diagram.

EKOLOŠKI PROIZVOD!

ENVIRONMENT FRIENDLY PRODUCT!



- **Elastičnost u izvedbama jednopolnih shema**
- **Kompaktnost**
- **Sigurnost osoblja**
- **Jednostavnost**
- **Pouzdanost**
- **Ekološka podobnost**
- **Mogućnost daljinskog upravljanja svim aparatima**

- **Flexibility in single line diagrams creation**
- **Compactness**
- **Personnel safety**
- **Simplicity**
- **Reliability**
- **Environmental compatibility**
- **Possibility of remote control for each apparatus**

Vakuumski kompaktni sklopni moduli serije VDAP imaju visoku pouzdanost i raspoloživost pogona, potpunu neovisnost o vanjskim utjecajima, te višestruko smanjen volumen u odnosu na klasične sklopne blokove izolirane zrakom.

Svi sklopovi i elementi glavnog strujnog puta smješteni su u zajedničkom plinonepropusnom kućištu od čeličnog lima, te međusobno i prema kućištu izolirani plinom SF6. Gašenje električnog luka vrši se u vakuumskim komorama, kako u prekidaču, tako i u rastavnim sklopkama. Plin služi samo kao izolacija, što praktično isključuje potrebu održavanja primarnog dijela električkih sklopova unutar kućišta i osigurava njenu ekološku podobnost.

Zaštitu energetskog transformatora omogućuje vakuumski prekidač upravljani elektroničkim relejem.

Osim obvezatnog ručnog upravljanja ova aparatura ima mogućnost dogradnje opreme za daljinsko upravljanje prekidačima i rastavnim sklopkama, što omogućuje potpunu automatizaciju distribucijskih trafostanica u kojima se koristi. Zahvaljujući ovoj opciji, postoji mogućnost rješavanja niza specifičnih zahtjeva koji se mogu pojaviti u suvremenim razdjelnim mrežama.

Ova varijanta postrojenja naročito je pogodna za gradnju rasklopišta i čvornih točki mreže gdje je predviđeno daljinsko vođenje i nadzor.

Vacuum compact switchgear series VDAP are highly reliable and available, as well as completely independent on environmental conditions.

Overall dimensions of VDAP compact switchgear are considerably reduced in comparison with classic air insulated cubicles.

All live parts are placed into gas-insulated steel container. The container is filled with SF6 gas, which provides mutual insulation of current path elements, as well as insulation to the earth level potential. The arc quenching takes place in vacuum interrupters built both in circuit breaker and load break switches. SF6 gas is not used as arc-quenching medium, so the gas replacement has been eliminated. This feature provide complete environment acceptability of this product.

Power transformer protection is enabled by vacuum circuit breaker, which is controlled by protective electronic relay.

Besides the obligatory manual drive, compact modules series VDAP can be equipped with motor drive and set of releases for remote control of each device. There is possibility of complete automatization of distributive transformer substations, regarding various specific requirements for remote control and monitoring.

This series of compact switchgear is suitable for distributive network nodal points, where remote control and monitoring is required.

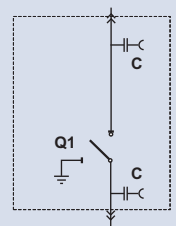
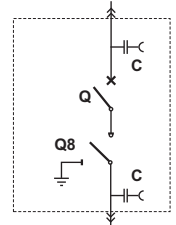
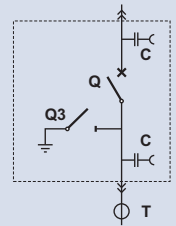
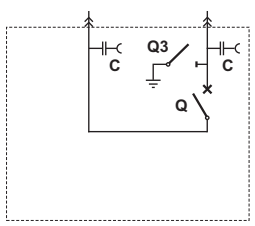
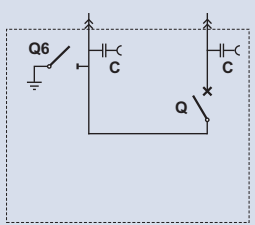
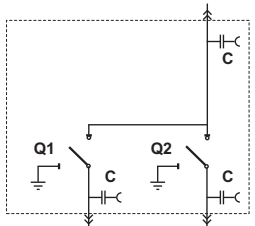
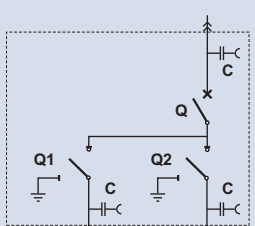
2. OSNOVNI TEHNIČKI PODACI

2. BASIC TECHNICAL DATA

Nazivni napon Rated voltage	kV	12	24
Podnosivi napon mrežne frekvencije 50Hz/1min. Rated power frequency withstand voltage 50Hz/1min.	kV	28	50
Podnosivi udarni napon 1,2/50 μ s Rated lightning impulse voltage 1,2/50 μ s	kV	75	125
Nazivna frekvencija Rated frequency	Hz	50	50
Nazivna struja sabirnica Rated busbar current	A	630	630
Nazivna struja prekidača Rated circuit breaker current	A	630	630
Nazivna struja tropoložajne rastavne sklopke Rated current of three-positional load break switch	A	630	630
Nazivna uklopna/prekidna moć, moduli s prekidačem Rated making/breaking capacity, modules with circuit breaker	kA	50/20	40/16
Isklopno vrijeme (za kratki spoj) Switch-off time (short circuit)	ms	45	45
Nazivna uklopna/prekidna moć tropoložajne sklopke Rated making/breaking capacity for three-positional lbs	kA	50/0,63	40/0,63
Nazivna kratkotrajna podnosiva struja, 1 s Rated short time withstand current, 1 s	kA	20	16

3. OSNOVNE KONFIGURACIJE

3. BASIC SINGLE LINE DIAGRAMS

Tipna oznaka: Type designation:	Opis: Description:	Description:	Jednopolna shema: Single line diagram:
V Vodno polje <ul style="list-style-type: none"> ▪ širina 450 mm ▪ tropoložajna rastavna sklopka 	Outgoing feeder <ul style="list-style-type: none"> ▪ width 450 mm ▪ three-positional load break switch 		
DV Vodno polje <ul style="list-style-type: none"> ▪ širina 450 mm ▪ prekidač ▪ tropoložajni rastavljač 	Outgoing feeder <ul style="list-style-type: none"> ▪ width 450 mm ▪ circuit breaker ▪ three-positional disconnecter 		
T Transformatorsko polje <ul style="list-style-type: none"> ▪ širina 450 mm ▪ prekidač ▪ zemljospojnik ▪ odvodni izolatori 250A ili 630 A ▪ elektronički relej DSO-1FE ili DSO-2A ▪ protective current transformers ST1 	Transformer feeder <ul style="list-style-type: none"> ▪ width 450 mm ▪ circuit breaker ▪ earthing device ▪ outgoing plug-in connectors 250A or 630 A ▪ protective relay type DSO-1FE or DSO-2A ▪ protective current transformers ST1 		
sZ Spojno polje <ul style="list-style-type: none"> ▪ širina 720 mm ▪ prekidač ▪ zemljospojnik ▪ dva reda izolatora 630 A 	Coupler <ul style="list-style-type: none"> ▪ width 720 mm ▪ circuit breaker ▪ earthing device ▪ incoming and outgoing plug-ins 630 A 		
zD Spojno polje <ul style="list-style-type: none"> ▪ širina 720 mm ▪ prekidač ▪ zemljospojnik ▪ dva reda izolatora 630 A 	Coupler <ul style="list-style-type: none"> ▪ width 720 mm ▪ circuit breaker ▪ earthing device ▪ incoming and outgoing plug-ins 630 A 		
s2V Dva vodna i jedno spojno polje <ul style="list-style-type: none"> ▪ širina 720 mm ▪ dvije tropoložajne rastavne sklopke 	Bus coupler and two incoming/outgoing feeders <ul style="list-style-type: none"> ▪ width 720 mm ▪ two three-positional lbs 		
D2V Dva vodna i jedno spojno polje <ul style="list-style-type: none"> ▪ širina 720 mm ▪ prekidač ▪ dvije tropoložajne rastavne sklopke 	Bus coupler and two outgoing feeders <ul style="list-style-type: none"> ▪ width 720 mm ▪ circuit breaker ▪ two three-positional lbs 		

Tipna oznaka:
Type designation:

Opis:

Description:

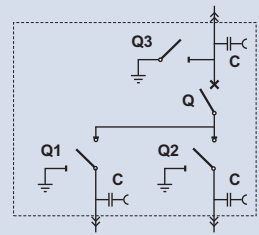
Jednopolna shema:
Single line diagram:

Z2V Dva vodna i jedno spojno polje

- širina 720 mm
- prekidač
- zemljospojnik
- dvije tropoložajne rastavne sklopke

Two outgoing feeders and one coupler

- width 720 mm
- circuit breaker
- earthing device
- two three-positional load break switches

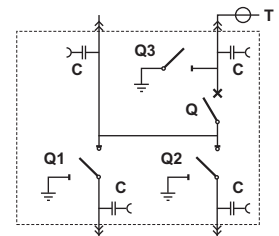


sT2V Dva vodna, jedno spojno i jedno transformatorsko polje

- širina 720 mm
- prekidač
- zemljospojnik
- dvije tropoložajne rastavne sklopke
- elektronički relej DSO-1BC ili DSO-2A
- strujni zaštitni transformatori ST1

Two outgoing feeders, one coupler and one transformer feeder

- width 720 mm
- circuit breaker
- earthing device
- two three-positional load break switches
- protective relay DSO-1BC or DSO-2A
- protective current transformers

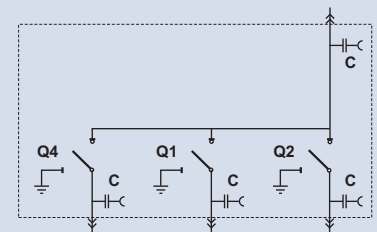


s3V Tri vodna i jedno spojno polje

- širina 1100 mm
- tri tropoložajne rastavne sklopke

Three incoming/outgoing feeders and one bus-coupler

- width 1100 mm
- three three-positional load break switches

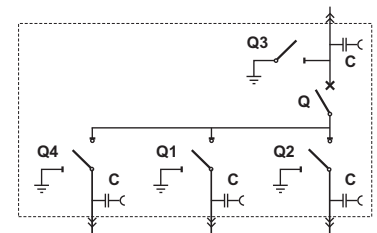


Z3V Tri vodna i jedno spojno polje

- širina 1100 mm
- prekidač
- zemljospojnik
- tri tropoložajne rastavne sklopke

Three incoming/outgoing feeders and one coupler

- width 1100 mm
- circuit breaker
- earthing device
- three three-positional load break switches

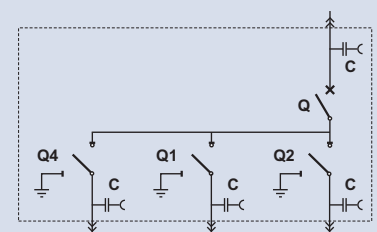


D3V Tri vodna i dva spojna polja

- širina 1100 mm
- prekidač
- zemljospojnik
- tri tropoložajne rastavne sklopke
- dva reda izolatora 630 A

Three incoming/outgoing feeders and two couplers

- width 1100 mm
- circuit breaker
- earthing device
- three three-positional load break switches
- plug-in connectors 630 A

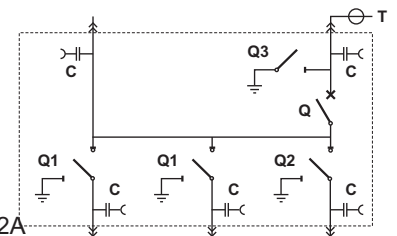


sT3V Tri vodna, jedno spojno i jedno transformatorsko polje

- širina 1100 mm
- prekidač
- zemljospojnik
- tri tropoložajne rastavne sklopke
- dva reda izolatora 630 A
- elektronički relej DSO-1BC ili DSO-2A
- strujni zaštitni transformatori

Three incoming/outgoing feeders, one transformer feeder and one coupler

- width 1100 mm
- circuit breaker
- earthing device
- three three-positional load break switches
- plug-in connectors 630 A
- protective relay DSO-1BC or DSO-2A
- protective current transformers

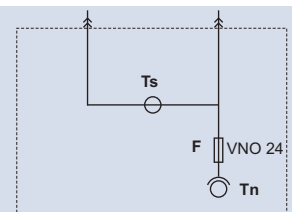


MPo Mjerno polje za mjerenje energije

- širina 750 mm
- strujni mjerni transformatori
- naponski mjerni transformatori
- visokonaponski visokoučinski osigurači

Metering panel (energy measuring)

- width 750 mm
- current transformers
- voltage transformers
- HRC fuses



Tipna oznaka:
Type designation:

Opis:

Description:

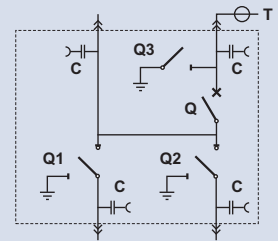
Jednopolna shema:
Single line diagram:

sT2V Dva vodna, jedno spojno i jedno transformatorsko polje

- širina 720 mm
- prekidač
- zemljospojnik
- dvije tropoložajne rastavne sklopke
- elektronički relej DSO-1BC ili DSO-2A
- strujni zaštitni transformatori ST1

Two outgoing feeders, one coupler and one transformer feeder

- width 720 mm
- circuit breaker
- earthing device
- two three-positional load break switches
- protective relay DSO-1BC or DSO-2A
- protective current transformers

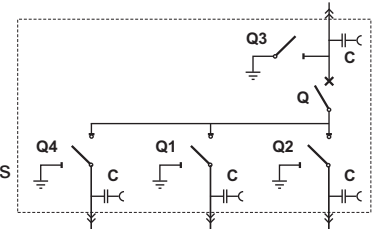


s3V Tri vodna i jedno spojno polje

- širina 1100 mm
- prekidač
- tri tropoložajne rastavne sklopke

Three incoming/outgoing feeders and one bus-coupler

- width 1100 mm
- circuit breaker
- three 3-positional load break switches

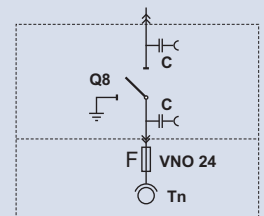


Mpn Mjerno polje za mjerenje napona

- širina 720 mm
- tropoložajni rastavljač
- naponski mjerni transformatori
- visokonaponski visokoučinski osigurači

Metering panel (voltage measuring)

- width 720 mm
- three-positional disconnector
- voltage transformers
- HRC fuses



VODIČ ZA OZNAKE POLJA:

- D - Prekidač (izolatori 630 A)
Z - Prekidač i zemljospojnik (izolatori 630 A)
T - Prekidač i zemljospojnik za spoj s energetskim transformatorom, strujni mjerni transformatori ST1
V - Tropoložajna rastavna sklopka ili rastavljač (izolatori 630 A)
- s - Sabirnice kao spojno polje (izolatori 630 A)
z - Zemljospojnik bez prekidača (izolatori 630 A)

GUIDELINES FOR TYPE DESIGNATIONS:

- D - Circuit breaker (bushings 630 A)
Z - Circuit breaker and earthing device (bushings 630 A)
T - Circuit breaker and earthing device for connection of power transformer, protective current transformers ST1
V - Three-positional load break switch or disconnector (bushings 630 A)
- s - Busbars as coupler (bushings 630 A)
z - Earthing device without circuit breaker (bushings 630 A)

Napomena:

VELIKA SLOVA označavaju aparate.
Mala slova dodatno opisuju modul.

Notice:

CAPITAL LETTERS describe apparatus in the module.
Small letters have been used for additional description of the module.

FOTO GALERIJA:

PHOTO GALLERY:



NAPOMENA:

Svi podaci navedeni u ovom katalogu informacijskog su karaktera.

Proizvođač pridržava pravo izmjene.

Obvezujuće podatke i mjerne skice dajemo na zahtjev.

NOTICE:

Technical characteristics, dimensional drawings and other relevant data are subject to change.

Obligatory data only on request.