

**NISKONAPONSKI STRUJNI TRANSFORMATORI**

**LOW VOLTAGE CURRENT TRANSFORMERS**

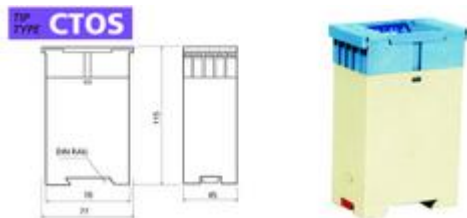
Niskonaponski strujni transformatori koriste se za transformiranje mjerene struje na iznos prilagođen mjernim i zaštitnim uređajima. Strujne transformatore izrađujemo u skladu sa IEC 60044-1/96 i drugim ugovorenim standardima, npr.: DIN/VDE 0414-1 i slično

The low voltage current transformers are used to transform primary current to a value requested by the metering and protection devices. These transformers are produced in compliance with the IEC 60044-1/96 or other requested standards for example DIN 0414-1.

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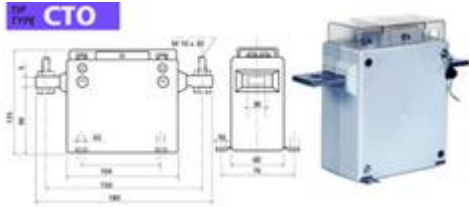
**STRUJNI TRANSFORMATORI SA PRIMARNIM I SEKUNDARNIM NAMOTOM  
CURRENT TRANSFORMERS WITH PRIMARY AND SECONDARY WINDINGS**

**TIP / TYPE CTOS**



<b>Strujni transformator za mjerenje / Measuring current transformers</b>			
Primarna struja / primary current (A)	1	5	10
Nazivni teret / rated burden (VA)	5/10	5/10	5/10
Klasa točnosti / Accuracy class	0,5/1,0	0,5/1,0	0,5/1,0
Faktor sigurnosti / Security factor	5	5	5

**TIP / TYPE CTO**



<b>Strujni transformator za mjerenje / Measuring current transformers</b>									
Primarna struja / primary current (A)	20	30	40	50	60	75	80	100	150
Nazivni teret / rated burden (VA)	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10
Klasa točnosti / Accuracy class	0,5/1,0	0,5/1,0	0,5/1,0	0,5/1,0	0,5/1,0	0,5/1,0	0,5/1,0	0,5/1,0	0,5/1,0
Faktor sigurnosti / Security factor	5	5	5	5	5	5	5	5	5
<b>Strujni transformator za zaštitu / Protection current transformers</b>									
Nazivni teret / rated burden (VA)	5	5	5	5	5	5	5	5	5
Klasa točnosti / Accuracy class	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5

**STRUJNI TRANSFORMATORI NATIČNOG TIPA BEZ PRIMARNOG NAPONA  
BUS TYPE CURRENT TRANSFORMERS WITHOUT PRIMARY WINDINGS**

**TIP / TYPE CTBO**



<b>Strujni transformator za mjerenje / Measuring current transformers</b>										
Primarna struja / primary current (A)	50	60	75	100	150	200	250	300	400	500
Nazivni teret / rated burden (VA)	1,25/2,5	1,25/2,5	1,25/2,5	3	5	5	5	5	5	5
Klasa točnosti / Accuracy class	1,0/3,0	1,0/3,0	1,0/3,0	1,0	0,5	0,5	0,5	0,5	0,5	0,5
Faktor sigurnosti / Security factor	5	5	5	5	5	5	5	5	5	5

**TIP / TYPE CTBO/O**



<b>Strujni transformator za mjerenje / Measuring current transformers</b>										
Primarna struja / primary current (A)	50	60	75	100	150	200	250	300	400	500
Nazivni teret / rated burden (VA)	2/3,75	2,5/3,75	3/3,75	3,75/5	5	5	5	5	5	5
Klasa točnosti / Accuracy class	1,0/3,0	1,0/3,0	1,0/3,0	0,5/1,0	0,5	0,5	0,5	0,5	0,5	0,5
Faktor sigurnosti / Security factor	5	5	5	5	5	5	5	5	5	5

**TIP / TYPE CTB1**

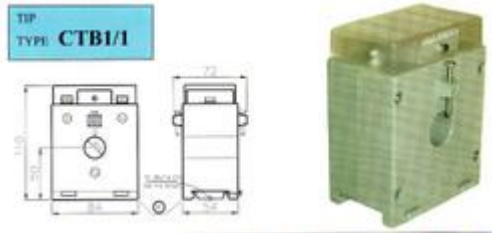


<b>Strujni transformator za mjerenje / Measuring current transformers</b>												
Primarna struja / primary current (A)	50	60	75	100	150	200	250	300	400	500	600	750
Nazivni teret / rated burden (VA)	1,25/2,5	1,25/2,5	3,75/5	3,75/5	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10
Klasa točnosti / Accuracy class	1,0/3,0	1,0/3,0	1,0/3,0	0,5/1	0,5/1	0,5/1	0,5/1	0,5/1	0,5	0,5	0,5	0,5
Faktor sigurnosti / Security factor	10	10	10	10/5	5	5	5	5	5	5	5	5
<b>Strujni transformator za zaštitu / Protection current transformers</b>												
Nazivni teret / rated burden (VA)				2,5	3	5	5	5	5	8	10	10



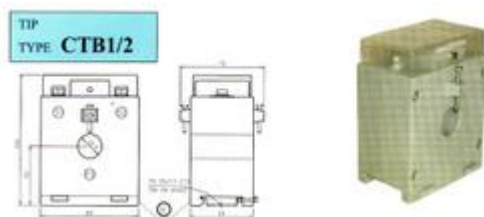
Klasa točnosti / Accuracy class				10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5
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**TIP / TYPE CTB1/1**



<b>Strujni transformator za mjerenje / Measuring current transformers</b>												
Primarna struja / primary current (A)	50	60	75	100	150	200	250	300	400	500	600	750
Nazivni teret / rated burden (VA)	2,5/5	2,5/5	3,75/7,5	5/10	5/10	5/10	5/10	5/10	5/10	5//10	5//10	5//10
Nazivni teret / rated burden (VA)	1,0/3,0	1,0/3,0	1,0/3,0	0,5/1	0,5/1	0,5/1	0,5/1	0,5/1	0,5	0,5	0,5	0,5
Faktor sigurnosti / Security factor	10	10	10	10/5	5	5	5	5	5	5	5	5
<b>Strujni transformator za zaštitu / Protection current transformers</b>												
Nazivni teret / rated burden (VA)				2,5	3	5	5	5	5	8	10	10
Klasa točnosti / Accuracy class				10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5

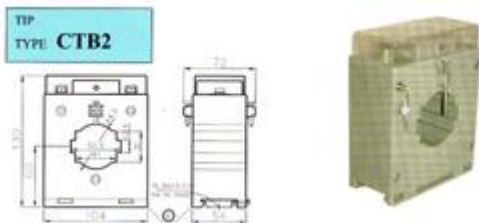
**TIP / TYPE CTB1/2**



<b>Strujni transformator za mjerenje / Measuring current transformers</b>												
Primarna struja / primary current (A)	50	60	75	100	150	200	250	300	400	500	600	750
Nazivni teret / rated burden (VA)	3,75	2,5/5	3,75/7,5	3,75/7,5	5/10	5/10	5/10	5/10	5/10	5//10	5//10	5//10

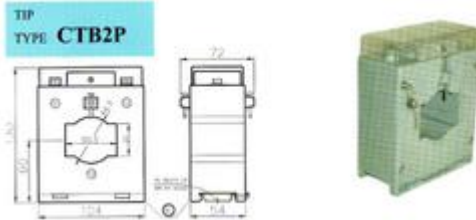
Nazivni teret / rated burden (VA)	3,0	1,0/3,0	1,0/3,0	0,5/1	0,5/1	0,5/1	0,5/1	0,5/1	0,5	0,5	0,5	0,5
Faktor sigurnosti / Security factor	10	10	10	10/5	5	5	5	5	5	5	5	5
<b>Strujni transformator za zaštitu / Protection current transformers</b>												
Nazivni teret / rated burden (VA)				2,5	3	5	5	5	5	8	10	10
Klasa tačnosti / Accuracy class				10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5

**TIP / TYPE CTB2**



<b>Strujni transformator za mjerenje / Measuring current transformers</b>											
Primarna struja / primary current (A)	200	250	300	400	500	600	750	1000	1250	1500	
Nazivni teret / rated burden (VA)	5/10	5/10	5//10	5//10	5//10	5//10	5//10	10//15	10//15	10//15	
Klasa tačnosti / Accuracy class	0,5/1,0	0,5/1,0	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Faktor sigurnosti / Security factor	5	5	5	5	5	5	5	5	5	5	5
<b>Strujni transformator za zaštitu / Protection current transformers</b>											
Nazivni teret / rated burden (VA)	2,5	2,5	5	5	5	10	10	10	10	10	10
Klasa tačnosti / Accuracy class	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5

**TIP / TYPE CTB2P**



Strujni transformator za mjerenje / Measuring current transformers										
Primarna struja / primary current (A)	300	400	500	600	750	1000	1250	1500	1600	1800
Nazivni teret / rated burden (VA)	5	5//10	5//10	5//10	5//10	5//10	5//10	10//15	10//15	10//15
Klasa točnosti / Accuracy class	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Faktor sigurnosti / Security factor	10	5	5	5	5	5	5	5	5	5
Strujni transformator za zaštitu / Protection current transformers										
Nazivni teret / rated burden (VA)		5	5	10	10	10	10	10	10	10
Klasa točnosti / Accuracy class		10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5

**TIP / TYPE CTB3**



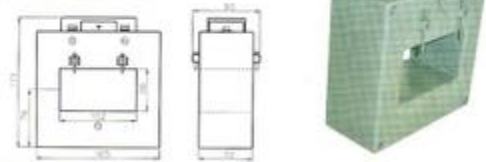
Strujni transformator za mjerenje / Measuring current transformers												
Primarna struja / primary current (A)	300	400	500	600	750	1000	1250	1500	1600	1800	2000	2500
Nazivni teret / rated burden (VA)	5	5//10	5//10	5//10	5//10	5//10	10//15	10//15	10//15	10//15	10//15	10//15
Klasa točnosti / Accuracy class	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Faktor sigurnosti / Security factor	10	10/5	10/5	10/5	5	5	5	5	5	5	5	5
Strujni transformator za zaštitu / Protection current transformers												
Nazivni teret / rated burden (VA)		5	5	5	7,5	10	10	10	10	10	10	10
Klasa točnosti / Accuracy class		10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5



Accuracy class													
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### TIP / TYPE CTB4

TIP  
TYPE CTB4



#### Strujni transformator za mjerenje / Measuring current transformers

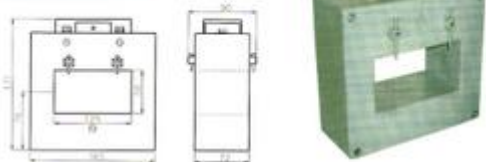
Primarna struja / primary current (A)	300	400	500	600	750	1000	1250	1500	1600	1800	2000	2500	3000
Nazivni teret / rated burden (VA)	5	5	5//10	5//10	5//10	5//10	10//20	10//20	10//20	10//20	10//20	10//20	10//20
Klasa točnosti / Accuracy class	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Faktor sigurnosti / Security factor	10	10	10	10	5	5	5	5	5	5	5	5	5

#### Strujni transformator za zaštitu / Protection current transformers

Nazivni teret / rated burden (VA)				7,5	10	10	10	10	10	10	10	10	10
Klasa točnosti / Accuracy class				10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5

### TIP / TYPE CTB5

TIP  
TYPE CTB5



#### Strujni transformator za mjerenje / Measuring current transformers

Primarna struja / primary current (A)		750	1000	1250	1500	1600	1800	2000	2500	3000	4000
Nazivni teret / rated burden (VA)		5//10	5//10	5//10	10//20	10//20	10//20	10//20	10//20	10//20	10//20
Klasa točnosti /		0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5



Accuracy class										
Faktor sigurnosti / Security factor	10	5	5	5	5	5	5	5	5	5
<b>Strujni transformator za zaštitu / Protection current transformers</b>										
Nazivni teret / rated burden (VA)	7,5	10	10	10	10	10	10	10	10	10
Klasa tačnosti / Accuracy class	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5	10P5

Za transformatore tehničkih karakteristika koje nisu navedene kontaktirajte nas  
 Any further information about transformers do not hesitate, please to contact us



## ZBIRNI STRUJNI TRANSFORMATORI

Namijenjeni su za zbrajanje više sinhronih struja iste faze, pri tome sekundarna struja glavnih transformatora mora biti jednaka nazivnoj struji pripadajućeg primarnog kruga zbirnih transformatora.

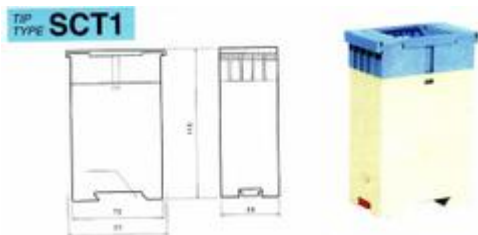
## SUMATION CURRENT TRANSFORMERS

The sumation current transformers are used to summatize synchronous alternating currents of the same phase.

The rated secondary current of the main transformers must be the same as the rated primary current of the summation transformer.

### ZBIRNI STRUJNI TRANSFORMATORI SUMATION CURRENT TRANSFORMERS

#### TIP / TYPE SCT1

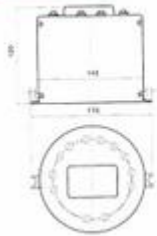


Strujni transformator za mjerenje / Measuring current transformers		
Broj primarnih krugova	3	No. of primary circuits
Nazivni teret (VA)	5/10	rated burden (VA)
Klasa točnosti	0,5/1,0	Accuracy class

#### TIP / TYPE SCT2

TIP  
TYPE

SCT2



<b>Strujni transformator za mjerenje / Measuring current transformers</b>		
Broj primarnih krugova	6	No. of primary circuits
Nazivni teret (VA)	10/15	rated burden (VA)
Klasa točnosti	0,5/1,0	Accuracy class

**Podaci za naručivanje**

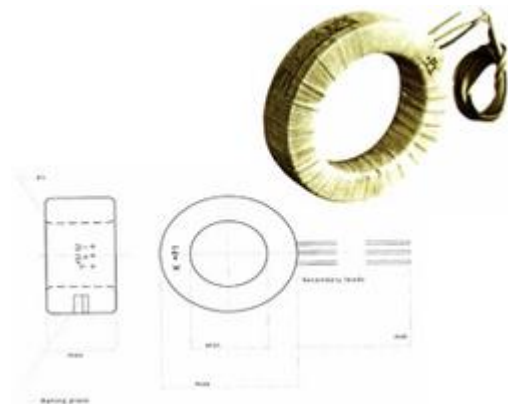
- prijenosni omjeri glavnih transformatora
- sekundarnu struju zbirnog transformatora
- snagu
- klasu točnosti

**To place an order state the following data**

- current ratio of main transformers
- rated secondary current of summation transformers
- rated burden
- accuracy class

**PRSTENASTI STRUJNI TRANSFORMATORI  
RING-CORE (BUSHING) TRANSFORMERS**

**TIP / TYPE BTM**



Ovi strujni transformatori prsteneaste izvedbe namijenjeni su za montažu na visokonaponske provodne izolatore.

Konstruiran je tako da je podesan za montažu u ulje max. temp. 95° C.

Sekundarni namoti namotani su jednoliko po obodu jezgre.

The transformers are used for mounting on the high-voltage bushings. Unprotected construction is suitable for installation in oil on maximum temp. of 95C.

The secondary winding is uniformly distributed on a jointless ring core.

**Podaci za naručivanje**

- nazivna primarna struja
- nazivna sekundarna struja
- nazivna snaga
- klasu točnosti
- max. dopušteni prostor za smještaj transformatora na uzemljeni dio visokonap. izolatora

Strujni transformatori biti će napravljeni i ispitani u skladu sa naznačenim standardima.

**To place an order state the following data**

- rated primary current
- rated secondary current
- rated burden
- accuracy class
- max. available space for the ring-core current transformer on the high-voltage bushing

The current transformers will be made and tested according to the requested standard



## **NAPONSKI MJERNI TRANSFORMATORI**

Koriste se za prilagodbu primarnog napona mjernim i zaštitnim uređajima kao i za galvansko odvajanje krugova.  
Izrađujemo ih u skladu sa IEC 60044-2 DIN/VDE 0414-2 i drugim ugovorenim standardima.

## **VOLTAGES MEASURING TRANSFORMERS**

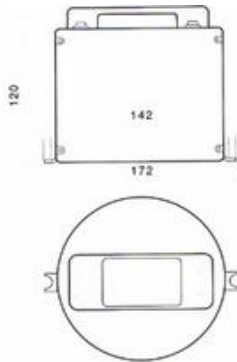
The voltage transformers are used to transform primary voltage to a lower value requested by the metering and protection devices.  
These transformers are produced in compliance with IEC 60044-2

### **NAPONSKI MJERNI TRANSFORMATORI VOLTAGES MEASURING TRANSFORMERS**

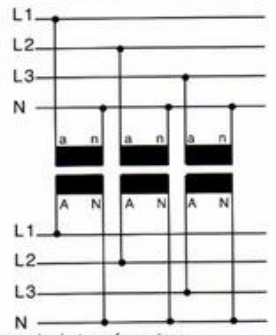
#### **TIP / TYPE VTM**

**Jednopolno izolirani transformatori**  
**Single-pole insulated transformers**

**Dvopolno izolirani transformatori**  
**Double-pole insulated transformers**



Jednopolno izolirani transformatori  
Single-pole insulated transformers



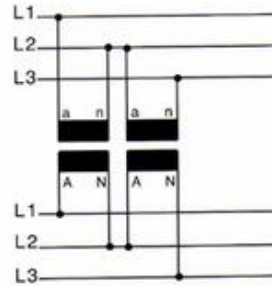
Shema spajanja transformatora  
za fazu-nulu i sekundarni napon  $100 \sqrt{3}$  V

Shema spajanja transformatora za fazu-nulu i sekundarni napon  $100 / \sqrt{3}$  V

This diagram refers to the transform. for phase-neutral insertion and secondary voltage  $100 / \sqrt{3}$  V



Dvopolno izolirani transformatori  
Double-pole insulated transformers



Shema spajanja transformatora  
za fazu-fazu i sekundarni napon 100 V

Shema spajanja transformatora za fazu-fazu i sekundarni napon 100 V

This diagram refers to the transform. for phase-phase insertion and secondary voltage 100 V

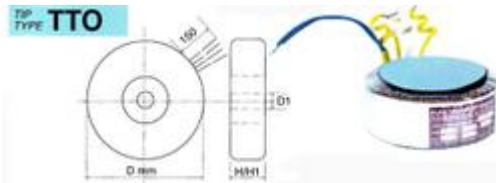
nazivni primarni napon rated primary voltage	nazivni sekundarni napon rated secondary voltage
110 / $100 / \sqrt{3}$ V	
230 / $\sqrt{3}$ V	100 / $\sqrt{3}$ V
400 / $440 / \sqrt{3}$ V	110 / $\sqrt{3}$ V
600 / $\sqrt{3}$ V	

nazivni primarni napon rated primary voltage	nazivni sekundarni napon rated secondary voltage
100 / 110 V	
230 V	100 V
400 / 440 V	110 V
600 V	

druge vrijednosti primarnog i sekundarnog napona prema vašem zahtjevu  
other value of primary and secondary voltage according to your request

**TOROIDNI TRANSFORMATORI  
TOROIDAL TRANSFORMERS**

**TIP / TYPE TTO**



Tipaska oznaka	Nazivna snaga $S_N(\text{VA})$	Gubici pr. hoda $P_0(\text{W}) \leq$	Faktor iskoristivosti $\eta \geq$	Napon kr. spoja $U_{k75}(\%) \leq$	Dimenzije (mm)					
					D	H	H1	D1	L(min)	G (kg)
TTO 20	20	0,64	0,76	18,0	60	45	40	6,2	150	0,4
TTO 40	40	0,96	0,80	18,0	70	45	40	6,2	150	0,6
TTO 50/60	50/60	1,4	0,83	13,0	82	49	44	6,2	150	0,8
TTO 100	100	1,7	0,88	10,5	105	45	40	6,2	150	1,3
TTO 150	150	1,8	0,89	10,0	105	63	58	6,2	150	1,7
TTO 200	200	2,6	0,89	9,5	115	63	58	6,2	150	2,3
TTO 250	250	2,7	0,91	7,3	127	53	48	6,2	150	2,5
TTO 300	300	3,1	0,92	7,0	127	65	60	6,2	150	2,9
TTO 350	350	3,2	0,93	6,5	127	65	60	6,2	150	3,0
TTO 400	400	3,3	0,94	5,7	128	73	68	6,2	150	3,4
TTO 500	500	3,4	0,94	5,3	130	78	73	6,2	150	4,2

Transformatori se isporučuju sa montažnim priborom.  
Termo prekidači (80°C) po zahtjevu.

The transformers are delivered with installing kit.  
Thermo switch are delivered by your request.

IZRAĐUJEMO PRSTENASTE TRANSFORMATORE U  
DIMENZIJAMA, SNAZI I TEMP. KLASI PO ZAHTJEVU

WE MANUFACTURE TOROIDAL TRANSFORMERS AT  
DIMENSIONS, POWER AND THERMICAL CLASS BY  
YOUR REQUEST



Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.

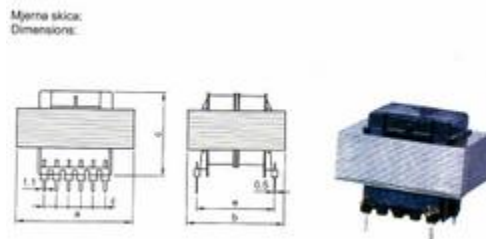
**EI TRANSFORMATORI  
EI TRANSFORMERS**

**Jednofazni EI transformatori, za tiskane pločice, prema IEC 61558-2-1, IEC 61558-2-4  
Single-phase EI transformers, for printed circuits, according IEC 61558-2-1, IEC 61558-2-4**

**TIP / TYPE TEO**

Nazivna snaga	1,5 - 10 VA	Power range	1,5 - 10 VA
Tip jezgre	EI	Core type	EI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	na tiskane pločice	Mounting	printed circuit board
Priključci	na pinove	Terminals	connection via solder pins
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 00	Type of protection	IP 00

Mjerna skica:  
Dimensions:



Tipaska oznaka	Nazivna snaga $S_N$ (VA)	Gubici pr. hoda $P_o(W) \leq$	Faktor iskoristivosti $\eta \geq$	Napon kr. spoja $U_{k75}(\%) \leq$	Dimenzije (mm)					
					a	b	c	d	e	g (kg)
TEO 1.5	1,5	0,16	0,35	65	38	32	30	4x5	25	0,12
TEO 2.5	2,5	0,20	0,36	60	38	32	30	4x5	25	0,15
TEO 5,0	5,0	0,35	0,55	45	48	40	34,5	5x5	30	0,24
TEO 10.0	10,0	0,46	0,65	35	54	45	38,6	6x5	32,5	0,35

Ostale snage na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.

**Jednofazni EI transformatori, otvorene konstrukcije, prema IEC 61558-1, IEC 61558-2-4, IEC 61558-2-6**

**Single-phase EI transformers, open construction, according IEC 61558-1, IEC 61558-2-4, IEC 61558-2-6**

**TIP / TYPE TEO**

Nazivna snaga	15 - 1200 VA	Power range	15 - 1200 VA
Tip jezgre	EI	Core type	EI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	vertikalna montaža	Mounting	vertical
Priključci	do 50 A redne stezaljke	Terminals	up to 50 A, terminal blocks
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 00	Type of protection	IP 00

Mjerna skica:  
Dimensions:



Tipaska oznaka	Nazivna snaga $S_N$ (kVA)	Gubici pr. hoda $P_o$ (W) $\leq$	Faktor iskoristivosti $i$ $\eta \geq$	Napon kr. spoja $U_{k75}$ (%) $\leq$	Dimenzije (mm)							
					a	b	c	$l_{max}$	d/d1	e	f	g (kg)
TEO 15	15,0	1,81	0,59	31,4	60	50	54	56	45	3,5	40	0,5
TEO 32	32,0	2,43	0,64	25,1	60	59	54	65	45	3,5	49	0,9
TEO 50	50,0	5,20	0,73	13,7	84	62	78	69	60	5,2	50,3	1,3
TEO 85	85,0	7,20	0,77	10,2	84	78	78	85	60	5,2	65,7	1,8
TEO 100	100,0	8,20	0,78	9,6	96	70	88	75	68	5,2	55,4	2,0
TEO 150	150,0	11,30	0,82	6,9	108	78	98	82	75	5,6	63,6	2,0
TEO 200	200,0	14,60	0,82	6,6	120	81	105	92	80	6,5	65	3,8
TEO 250	250,0	17,50	0,84	5,6	120	98	105	108	80	6,5	83	5,0
TEO 300	300,0	21,40	0,86	4,7	120	98	105	108	80	6,5	83	5,2
TEO 400	400,0	25,50	0,86	4,8	150	92	130	110	105	6,5	80	7,2
TEO 500	500,0	30,40	0,88	4,1	150	112	130	130	105	6,5	100	9,1
TEO 600	600,0	36,50	0,90	3,4	15	13	13	15	105	6,	120	11,8





					0	2	0	0		5		
TEO 800	800,0	48,50	0,91	3,3	19 2	12 5	16 6	14 0	128/16 2	6, 8	95	15,7
TEO 1000	1000,0	48,50	0,92	3,2	19 2	12 5	16 6	14 0	128/16 2	6, 8	95	15,8
TEO 1200	1200,0	54,90	0,92	3,2	19 2	15 2	16 6	16 6	128/16 2	6, 8	123	20.4

Ostale snage na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.

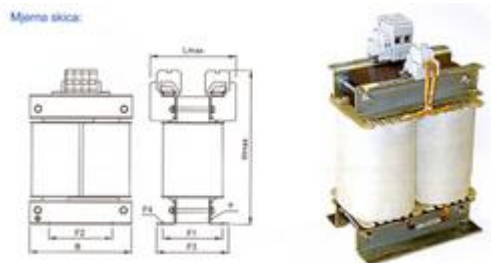
**JEDNOFAZNI TRANSFORMATORI OTVORENI / U KUČIŠTU**  
**SINGLE-PHASE TRANSFORMERS OPEN CONSTRUCTION / IN THE BOX**

**Jednofazni standardni transformatori prema IEC 61558-1, IEC 61558-2-4, IEC 61558-2-6**  
**Single-phase standard transformers, according IEC 61558-1, IEC 61558-2-4, IEC 61558-2-6**

**TIP / TYPE SPTO**

Nazivna snaga	2.0 - 10 kVA	Power range	2.0 - 10 kVA
Tip jezgre	UI	Core type	UI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	vertikalna montaža	Mounting	vertical
Priključci	do 50 A redne stezaljke	Terminals	up to 50 A, terminal blocks
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 00	Type of protection	IP 00

Mjerna skica:



Tipaska oznaka	Nazivna snaga $S_N$ (kVA)	Gubici pr. hoda $P_o(W) \leq$	Faktor iskoristivosti $\eta \geq$	Napon kr. spoja $U_{k75}(\%) \leq$	Dimenzije (mm)							
					B	$L_{max}$	$H_{max}$	F1	F2	F3	F4 ( $\Phi$ )	G (kg)
SPTO 2.0	2	77	0,95	2,7	200	190	315	119	125	149	9	27,0
SPTO 2.5	2.5	78	0,95	3,1	224	170	345	110	140	140	9	28,5
SPTO 3.0	3	93	0,96	2,8	240	185	365	125	150	155	11	34,5
SPTO 4.0	4	112	0,96	2,4	240	200	365	140	150	170	11	41,0
SPTO 5.0	5	144	0,96	2,1	280	200	415	143	175	175	13	55,0
SPTO 7.0	7	184	0,97	1,7	280	230	415	173	175	205	13	71,5
SPTO 10	10	243	0,97	1,4	360	240	470	184	195	222	13	101,5

Ostale snage na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.

**Jednofazni standardni transformatori prema IEC 60076-11**

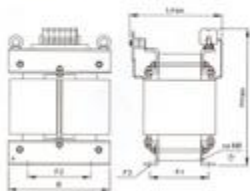
## Single-phase standard transformers, according IEC 60076-11

### TIP / TYPE SPTO

Nazivna snaga	12.5 - 50 kVA	Power range	12.5 - 50 kVA
Tip jezgre	UI	Core type	UI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	vertikalna montaža	Mounting	vertical
Priključci	do 50 A redne stezaljke do 100 A sab. stezaljke M10 do 300 A sab. Cu 5x30, M10	Terminals	up 50 A, terminal blocks up 100 A, bar terminal M10 up 300 A, Cu bar 5x30, M10
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 00	Type of protection	IP 00

Mjerna skica:

Mjerna skica:



Tipaska oznaka	Nazivna snaga $S_N$ (kVA)	Gubici pr. hoda $P_o(W) \leq$	Faktor iskoristivosti $\eta \geq$	Napon kr. spoja $u_{k75}(\%) \leq$	Dimenzije (mm)						
					B	$L_{max}$	$H_{max}$	F1	F2	F3( $\Phi$ )	G (kg)
SPTO 12.5	12,5	170	0,96	3,4	340	305	510	162	205	13	95
SPTO 16	16	220	0,96	2,8	340	335	510	192	205	13	112
SPTO 20	20	255	0,96	2,7	370	325	540	182	225	13	135
SPTO 25	25	300	0,97	2,4	370	355	540	212	225	13	158
SPTO 31.5	31,5	320	0,97	3,7	460	305	655	162	285	13	182
SPTO 40	40	380	0,97	3,4	460	335	655	192	285	13	206
SPTO 50	50	485	0,98	3,1	460	375	655	232	285	13	256

Ostale snage na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

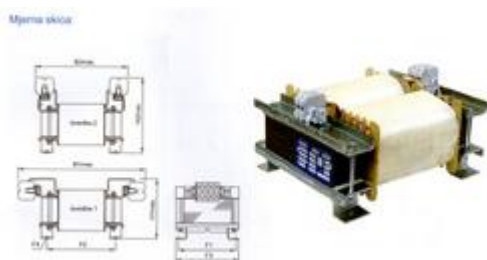
The above transformers dimensions are informative and can be changed.

## Jednofazni standardni transformatori prema IEC 61558-1, IEC 61558-2-4, IEC 61558-2-6 Single-phase standard transformers, according IEC 61558-1, IEC 61558-2-4, IEC 61558-2-6

**TIP / TYPE SPTU**

Nazivna snaga	2.0 - 10 kVA	Power range	2.0 - 10 kVA
Tip jezgre	UI	Core type	UI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	horizontalna montaža izvedba 1 i 2	Mounting	horizontal performance 1 and 2
Priključci	do 50 A redne stezaljke	Terminals	up 50 A, terminal blocks
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 00	Type of protection	IP 00

Mjerna skica:



Tipaska oznaka	Nazivna snaga $S_N$ (kVA)	Gubici pr. hoda $P_o(W) \leq$	Faktor iskorištvosti $\eta \geq$	Napon kr. spoja $U_{k75}(\%) \leq$	Dimenzije (mm)								
					$B1_{ma}$ x	$H1_{ma}$ x	$B2_{ma}$ x	$H2_{ma}$ x	F1	F2	F3	F4 (Φ)	G (kg)
SPTU 2.0	2	77	0,95	2,7	400	190	295	240	180	214	200	9	27,0
SPTU 2.5	2.5	78	0,95	3,1	430	175	325	225	205	239	224	9	28,5
SPTU 3.0	3	93	0,96	2,8	450	180	345	235	220	256	240	11	34,5
SPTU 4.0	4	112	0,96	2,4	450	195	345	250	220	256	240	11	41,0
SPTU 5.0	5	144	0,96	2,1	505	205	395	260	256	301	280	13	55,0
SPTU 7.0	7	184	0,97	1,7	505	235	395	290	256	301	280	13	71,5
SPTU 10	10	243	0,97	1,4	555	250	445	310	335	343	360	13	101,5

Ostale snage na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.

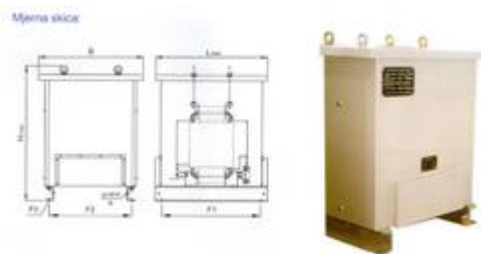
**Jednofazni standardni transformatori prema IEC 60076-11**

## Single-phase standard transformers, according IEC 60076-11

### TIP / TYPE SPTC

Nazivna snaga	12.5 - 50 kVA	Power range	12.5 - 50 kVA
Tip jezgre	3UI	Core type	3UI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	vertikalna montaža u kućištu	Mounting	Floor-Mounted Housing
Priključci	do 50 A redne stezaljke do 100 A sab. stezaljke M10 do 300 A sab. Cu 5x30, M10 do 500 A sab. Cu 5x50, M10	Terminals	up 50 A, terminal blocks up 100 A, bar terminal M10 up 300 A, Cu bar 5x30, M10 up 500 A, Cu bar 5x50, M10
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 23	Type of protection	IP 23

Mjerna skica:



Tipaska oznaka	Nazivna snaga $S_N$ (kVA)	Gubici pr. hoda $P_o(W) \leq$	Faktor iskoristivosti $\eta \geq$	Napon kr. spoja $u_{k75}(\%) \leq$	Dimenzije (mm)						
					B	$L_{max}$	$H_{max}$	F1	F2	F3 ( $\Phi$ )	G (kg)
SPTC 12.5	12,5	170	0,96	3,4	560	600	725	530	440	13	117
SPTO 16	16	220	0,96	2,8	560	600	725	530	440	13	134
SPTO 20	20	255	0,96	2,7	590	660	755	590	470	13	160
SPTO 25	25	300	0,97	2,4	590	660	755	590	470	13	183
SPTO 31.5	31,5	320	0,97	3,7	680	640	860	570	560	13	204
SPTO 40	40	380	0,97	3,4	680	640	860	570	560	13	232
SPTO 5 0	50	485	0,98	3,1	680	640	860	570	560	13	285

Ostale snage na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.

### Transformatorske grupe za brodska napajanja Transformers group for shipboard use

**TIP / TYPE SPTG**

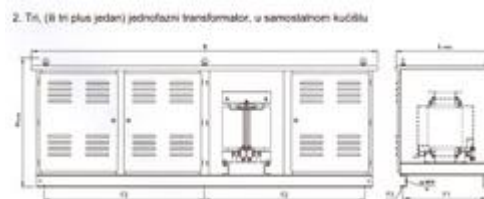
Nazivna snaga	3x(12.5 - 50) kVA	Power range	3x(12.5 - 50) kVA
Tip jezgre	2UI	Core type	2UI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	vertikalna montaža u kućištu	Mounting	Floor-Mounted Housing
Priključci	do 50 A redne stezaljke do 100 A sab. stezaljke M10 do 300 A sab. Cu 5x30, M10	Terminals	up 50 A, terminal blocks up 100 A, bar terminal M10 up 300 A, Cu bar 5x30, M10
Klasa izolacije	T45/B (T50/F)	Insulation class	T45/B (T50/F)
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 23	Type of protection	IP 23
Dekor kućišta	plastificirano, RAL 7032	Colour	RAL 7032

Mjerne skice:

Tri odvojena jednofazna transformatora u samostalnim kućištima



Tri, (ili tri plus jedan) jednofazni transformator, u samostalnom kućištu



Mjerne skice i ostale podatke dajemo na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.

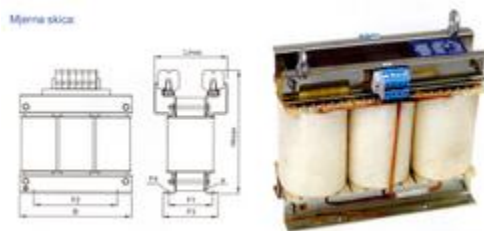
**TROFAZNI TRANSFORMATORI OTVORENA KONSUKCIJA / U KUĆIŠTU**  
**THREE-PHASE TRANSFORMERS OPEN CONSTRUCTION / IN THE BOX**

**Trofazni transformatori prema IEC 61558-1, IEC 61558-2-4, IEC 61558-2-6**  
**Three-phase standard transformers, according IEC 61558-1, IEC 61558-2-4, IEC 61558-2-6**

**TIP / TYPE TPTO**

Nazivna snaga	0,4 - 15 kVA	Power range	0,4 - 15 kVA
Tip jezgre	3UI	Core type	3UI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	vertikalna montaža	Mounting	vertical
Priključci	do 50 A redne stezaljke	Terminals	up to 50 A, terminal blocks
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 00	Type of protection	IP 00

Mjerna skica:



Tipaska oznaka	Nazivna snaga $S_N$ (kVA)	Gubici pr. hoda $P_o(W) \leq$	Faktor iskoristivosti $\eta \geq$	Napon kr. spoja $U_{k75}(\%) \leq$	Dimenzije (mm)							
					B	L <sub>max</sub>	H <sub>max</sub>	F1	F2	F3	F4 (Φ)	G (kg)
TPTO 0.4	0,4	15	0,89	8,5	180	132	230	57	136	76	8	7,0
TPTO 0.63	0,63	24	0,91	5,7	180	152	230	77	136	96	8	11,0
TPTO 1.0	1,0	31	0,92	5,2	228	145	270	71	176	91	11	15,0
TPTO 1.5	1,5	48	0,93	4,0	228	170	270	95	176	115	11	21,0
TPTO 2.5	2,5	72	0,94	3,0	265	188	305	106	200	134	11	32,0
TPTO 3.5	3,5	98	0,95	2,5	300	200	335	119	224	149	11	44,0
TPTO 4.0	4,0	98	0,95	2,5	336	185	365	110	248	140	11	46,0
TPTO 5.0	5,0	119	0,95	2,4	360	195	385	125	268	155	11	57,0
TPTO 6.0	6,0	144	0,96	2,0	360	210	385	140	268	170	11	68,0
TPTO 9.0	9,0	186	0,96	2,0	420	215	435	143	316	175	13	91,0
TPTO 10.0	10,0	234	0,96	1,5	420	245	435	173	316	205	13	115,0
TPTO 15.0	15,0	324	0,97	1,3	520	310	500	184	356	222	16	165,0

Ostale snage na zahtjev kupca  
 Dimenzije su informativne i podliježu promjeni.



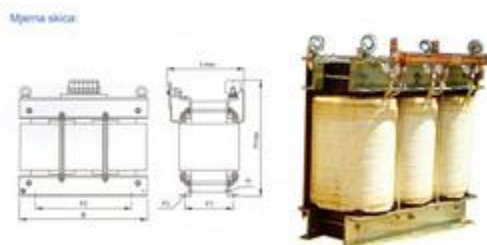
The above transformers dimensions are informative and can be changed.

**Trofazni transformatori prema IEC 60076-11**  
**Three-phase standard transformers, according IEC 60076-11**

**TIP / TYPE TPTO**

Nazivna snaga	16 - 200 kVA	Power range	16 - 200 kVA
Tip jezgre	3UI	Core type	3UI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	vertikalna montaža	Mounting	vertical
Priključci	do 50 A redne stezaljke do 100 A sab. stezaljke M10 do 300 A sab. Cu 5x30, M10 do 500 A sab. Cu 5x50, M10	Terminals	up 50 A, terminal blocks up 100 A, bar terminal M10 up 300 A, Cu bar 5x30, M10 up 500 A, Cu bar 5x50, M10
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 00	Type of protection	IP 00

Mjerna skica:



Tipska oznaka	Nazivna snaga $S_N$ (kVA)	Gubici pr. hoda $P_o$ (W) $\leq$	Faktor iskoristivosti $\eta \geq$	Napon kr. spoja $u_{k75}$ (%) $\leq$	Dimenzije (mm)						
					B	L <sub>max</sub>	H <sub>max</sub>	F1	F2	F3 (Φ)	G (kg)
TPTO 16	16	165	0,96	3,2	510	285	510	142	375	13	131
TPTO 20	20	200	0,96	3,2	510	305	510	162	375	13	152
TPTO 25	25	260	0,97	2,7	510	335	510	192	375	13	179
TPTO 31.5	31,5	305	0,97	2,7	555	325	540	182	410	13	253
TPTO 40	40	370	0,97	2,6	555	355	540	212	410	13	253
TPTO 50	50	356	0,97	3,6	690	330	655	162	515	13	290
TPTO 63	63	455	0,97	3,6	690	360	655	192	515	13	330
TPTO 80	80	585	0,97	3,2	690	375	655	232	515	13	410
TPTO 100	100	615	0,97	3,4	690	400	695	232	515	13	445
TPTO 125	125	638	0,98	3,7	690	400	725	232	515	13	495
TPTO 160	160	981	0,98	3,1	820	400	885	232	610	15	730
TPTO 200	200	1097	0,98	3,0	820	420	885	252	610	15	790

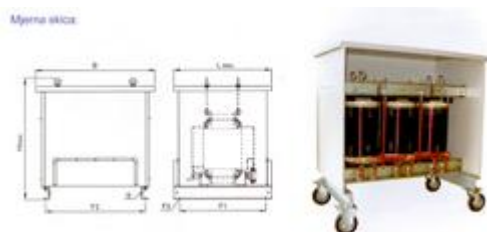


Ostale snage na zahtjev kupca  
 Dimenzije su informativne i podliježu promjeni.  
 The above transformers dimensions are informative and can be changed.

**TIP / TYPE TPTC**

Nazivna snaga	16 - 200 kVA	Power range	16 - 200 kVA
Tip jezgre	3UI	Core type	3UI
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	vertikalna montaža	Mounting	vertical
Priključci	do 50 A redne stezaljke do 100 A sab. stezaljke M10 do 300 A sab. Cu 5x30, M10 do 500 A sab. Cu 5x50, M10	Terminals	up 50 A, terminal blocks up 100 A, bar terminal M10 up 300 A, Cu bar 5x30, M10 up 500 A, Cu bar 5x50, M10
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 23	Type of protection	IP 23
Dekor kućišta	plastificirano, RAL 7032	Colour	

Mjerna skica:



Tipaska oznaka	Nazivna snaga $S_N$ (kVA)	Gubici pr. hoda $P_0(W) \leq$	Faktor iskoristivosti $\eta \geq$	Napon kr. spoja $U_{k75}(\%) \leq$	Dimenzije (mm)						
					B	L <sub>max</sub>	H <sub>max</sub>	F1	F2	F3 (Φ)	G (kg)
TPTC 16	16	165	0,96	3,2	730	600	725	530	610	13	166
TPTC 20	20	200	0,96	3,2	730	600	725	530	610	13	187
TPTC 25	25	260	0,97	2,7	730	600	725	530	610	13	214
TPTC 31.5	31,5	305	0,97	2,7	775	660	755	590	655	13	255
TPTC 40	40	370	0,97	2,6	775	660	755	590	655	13	293
TPTC 50	50	356	0,97	3,6	910	640	860	570	790	13	325
TPTC 63	63	455	0,97	3,6	910	640	860	570	790	13	370
TPTC 80	80	585	0,97	3,2	910	640	860	570	790	13	455
TPTC 100	100	615	0,97	3,4	960	700	990	630	840	13	500
TPTC 125	125	638	0,98	3,7	960	700	990	630	840	13	550
TPTC 160	160	981	0,98	3,1	1100	770	1150	700	960	15	790
TPTC 200	200	1097	0,98	3,0	1100	770	1150	700	960	15	855

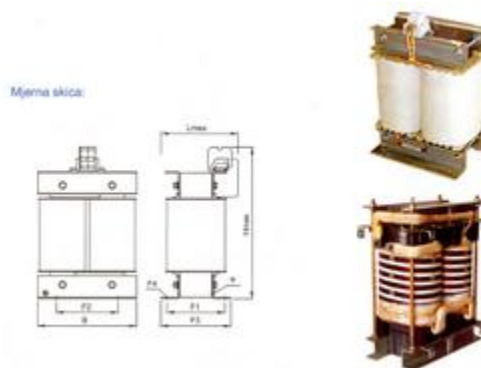
**JEDNOFAZNE I TROFAZNE PRIGUŠNICE  
SINGLE-PHASE AND THREE-PHASE REACTORS**

**Jednofazna prigušnica za gladeenje napona prema IEC 60076-6, IEC 61558-2-20  
Single-phase smoothing reactors, according IEC 60076-6, IEC 61558-2-20**

**TIP / TYPE SPRO**

Sadržaj energije	8.0 - 40 VAs	Energy content	8.0 - 40 VAs
Tip jezgre	UI	Core type	UI
Frekvencija	50-300 Hz	Frequency	50-300 Hz
Montaža	vertikalna montaža	Mounting	vertical
Priključci	do 50 A redne stezaljke	Terminals	up to 50 A, terminal blocks
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 00	Type of protection	IP 00

Mjerna skica:



Tipaska oznaka	Sadržaj energija ( $0.5 \times L \times I^2$ ) W(VAs)	Ukupni gubici $P_{Cu} + P_{Fe}$ (W) $\leq$	Dimenzije (mm)							G (kg)
			B	L <sub>max</sub>	H <sub>max</sub>	F1	F2	F3	F4 (Φ)	
SPRO 2.0	8	120	200	180	315	119	125	149	9	270
SPRO 3.0	10	145	240	175	365	125	150	155	11	34,5
SPRO 4.0	12,5	160	240	190	365	140	150	170	11	41,0
SPRO 5.0	16	180	280	190	415	143	175	175	13	55,0
SPRO 7.0	25	210	280	220	415	173	175	205	13	71,5
SPRO 10.0	40	350	360	230	470	184	195	222	13	101,5

Ostale snage na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.

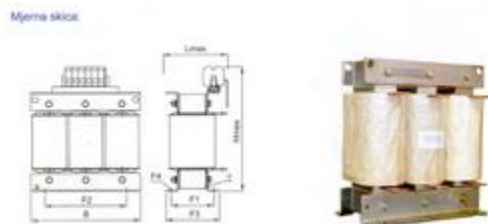
**Trofazna mrežna (komutaciona) prigušnica prema IEC 60076-6, IEC 61558-2-20**

**Three-phase commutation reactors, according IEC 60076-6, IEC 61558-2-20**

**TIP / TYPE TPRL**

Nazivna struja	16 - 315 A	Current range	16 - 315 A
Tip jezgre	3UI	Core type	3UI
Nazivni napon	400 V	Rated voltage	400 V
Impedancija	4 % (9,2 V/fazi)	Impedance	4 % (9,2 V/phase)
Frekvencija	50/60 Hz	Frequency	50/60 Hz
Montaža	vertikalna montaža	Mounting	vertical
Priključci	do 50 A redne stezaljke do 100 A sab. stezaljke M10 do 300 A sab. Cu 5x30, M10	Terminals	up 50 A, terminal blocks up 100 A, bar terminal M10 up 300 A, Cu bar 5x30, M10
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 23	Type of protection	IP 23

Mjerna skica:



Tipska oznaka	Nazivna snaga motora P <sub>M</sub> (kW)	Induktivitet L(mH)	Nazivna struja I <sub>N</sub> (A)	Dimenzije (mm)							
				B	L <sub>max</sub>	H <sub>max</sub>	F1	F2	F3	F4(Φ)	G (kg)
TPRL 0.5	7,5	1,84	16,00	180	110	235	57	136	76	8	7,0
TPRL 0.7	10,0	1,47	20,0	180	130	235	77	136	96	8	10,0
TPRL 0.8	11,0	1,18	25,0	180	130	235	77	136	96	8	11,0
TPRL 1.2	15,0	0,92	32,0	228	125	280	71	176	91	11	14,0
TPRL 1.3	19,0	0,74	40,0	228	125	280	71	176	91	11	15,0
TPRL 1.5	22,0	0,59	50,0	228	125	280	71	176	91	11	20,0
TPRL 2.0	30,0	0,47	63,0	228	145	280	95	176	115	11	21,0
TPRL 2.5	38,0	0,37	80,0	228	145	280	95	176	115	11	31,0
TPRL 3.0	45,0	0,29	100,0	265	165	315	106	200	134	11	31,0
TPRL 3.5	55,0	0,23	125,0	265	165	315	106	200	134	11	32,0
TPRL 5.0	75,0	0,18	160	300	180	345	119	224	149	11	44,0
TPRL 5.5	90,0	0,15	200	360	185	400	125	268	155	11	54,0
TPRL 6.5	115,0	0,12	250,0	360	185	400	125	268	155	11	56,0
TPRL 8.0	145,0	0,09	315,0	360	200	400	140	268	170	11	65,0

Ostale snage na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.

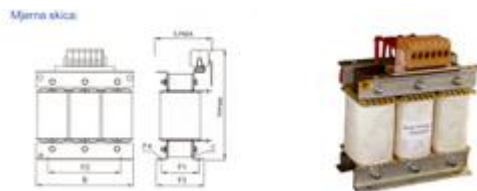


**Trofazna filterska prigušnica prema IEC 60076-6, IEC 61558-2-20**  
**Three-phase harmonic circuit filter reactors, according IEC 60076-6, IEC 61558-2-20**

**TIP / TYPE TPRF**

Nazivna snaga komp.	5.0 - 80 kVAr	Power range comp.	5.0 - 80 kVAr
Tip jezgre	3UI	Core type	3UI
Nazivni napon	400 V	Rated voltage	400 V
Faktor prigušenja	7 %	Choking factor	7 %
Frekvencija	50 Hz	Frequency	50 Hz
Rezonantna frekv.	189 Hz	Resonant. frequenc.	189 Hz
Montaža	vertikalna montaža	Mounting	vertical
Priključci	do 50 A redne stezaljke do 100 A sab. stezaljke M10 do 300 A sab. Cu 5x30, M10	Terminals	up 50 A, terminal blocks up 100 A, bar terminal M10 up 300 A, Cu bar 5x30, M10
Klasa izolacije	T40/B	Insulation class	T40/B
Klasa zaštite	I	Class of protection	I
Tip mehaničke zaštite	IP 00	Type of protection	IP 00

Mjerna skica:



Napomena:

\* U tablici su navedeni nazivni parametri prema nazivnoj snazi kompenzacije  $N_c$  (kVAr), kod  $U_N$  400 V i nazivnoj snazi kondenzatorske baterije  $Q_c$  (kVAr), kod  $U_c$  440 V.

\*\* Nazivna struja  $I_{1(50)}$  (A) uvećana je za 6 %.

Po želji, kupac može definirati snagu kondenzatorske baterije  $Q_c$ (kVAr) i napon  $U_c$ (V), a ostali parametri se onda definiraju prema tim podacima.

Tipaska oznaka	Nazivna snaga komp./kond. bat. $N_c/Q_c$ (kVAr)*	Induktivitet L(mH)	Nazivna struja $I_{1(50)}$ (A)**	Dimenzije (mm)							
				B	$L_{max}$	$H_{max}$	F1	F2	F3	F4 ( $\Phi$ )	G (kg)
TPRF 0.5	5,0/5,6	7,67	7,65	180	110	235	57	136	76	8	7,0
TPRF 0.7	6,7/7,5	5,72	10,25	180	130	235	77	136	96	8	9,0
TPRF 0.8	8,0/9,0	4,97	12,24	180	130	235	77	136	96	8	10,0
TPRF 1.0	10,0/11,2	3,83	15,30	180	130	235	77	136	96	8	11,0
TPRF 1.3	12,5/14,1	3,06	19,12	228	125	280	71	176	91	11	15,0
TPRF 1.5	15,0/16,9	2,55	22,95	228	125	280	71	176	91	11	15,0
TPRF 2.0	20,0/22,5	1,92	30,60	228	145	280	95	176	115	11	20,0
TPRF 2.5	25,0/28,1	1,53	38,24	228	145	280	95	176	115	11	21,0
TPRF 3.0	30,0/33,7	1,28	45,90	265	165	315	106	200	134	11	31,0
TPRF 3.5	35,0/39,4	1,09	53,55	265	165	315	106	200	134	11	32,0



TPRF 4.0	40,0/45,0	0,96	61,20	300	180	345	119	224	149	11	41,0
TPRF 4.5	45,0/50,6	0,85	68,85	300	180	345	119	224	149	11	42,0
TPRF 5.0	50,0/56,3	0,77	76,50	300	180	345	119	224	149	11	44,0
TPRF 6.0	60,0/67,5	0,64	91,80	360	200	400	140	268	170	11	60,0
TPRF 8.0	80,0/90,0	0,48	122,40	360	200	400	140	268	170	11	65,0

Ostale snage na zahtjev kupca

Dimenzije su informativne i podliježu promjeni.

The above transformers dimensions are informative and can be changed.