

OTPORNICI RESISTORS



KONČAR

OTPORNICI

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RESISTORS

RESISTANCE ELEMENTS

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RESISTORS DESIGN

RESISTORS WITH SHEET-STEEL ELEMENTS M/V

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WIRE WOUND RESISTORS PC

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SPECIAL RESISTORS

OUN	Transformer neutral earthing resistors	see cat. OUN	page 14
OUG	Generator neutral earthing resistors	on request	page 14
OR	Resistors for battery discharge	on request	page 14
OV	Resistors with forced ventilation	on request	page 15
PU	Oil rotor starters	see cat. PU	page 15

IZVEDBE

Otpornici se izrađuju u dvije osnovne izvedbe:

1. Otpornik izrađen od otporne žice namotane na porculanske cilindre (str.8).
Namotani cilindri (PC) složeni na okvire smješteni su u standardna kućišta (OPC).
2. Otporni slogovi (str. 6 i 7) sastavljeni od otpornih elemenata (tab.1) izrađenih od antikoroziivnog istegnuto limu. Spajanjem elemenata točkastim zavarivanjem eliminirani su prelazni otpori između elemenata. Standardno, slogove se ugrađuje u kućišta OL, OLR i OLK.

NAZIVNI NAPON IZOLACIJE

Otpornici s limenim elementima 1000 V AC / 1200 V DC
Žičani otpornici 500 V AC / 600 V DC

Na zahtjev izrađujemo otpornike za više napone.

KUĆIŠTA

Stupanj mehaničke zaštite (sukladno normi IEC60529)

IP10 - Kućište za smještaj otpornika u zatvorenom prostoru. Zaštitni plašt od istegnuto limu osigurava dobro hlađenje prirodnom cirkulacijom zraka.

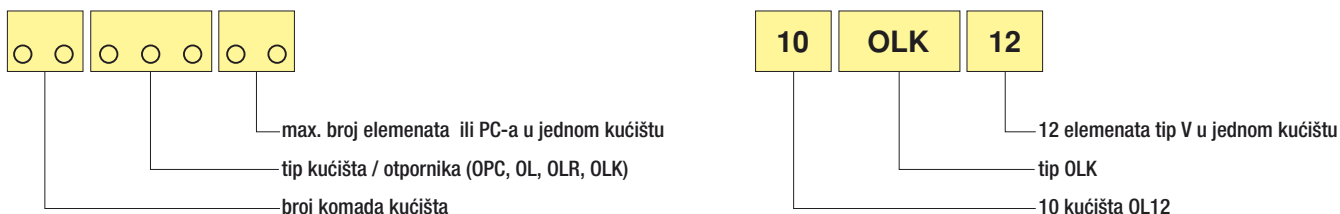
IP13 - Kućište za smještaj na otvorenom prostoru. Zaštitni limeni plašt i krov štite od prskajuće vode (60° prema vertikali).

OZNAČAVANJE OTPORNIKA

Dimenzije standardnih otpornika prikazane su mjernim skicama (str. 10 i 11).

Na zahtjev izrađujemo otpornike prema zadanim dimenzijama.

Otpornike možemo izraditi s odvojenim kućištima (vidi str. 12) što je potrebno navesti prilikom narudžbe.



DESIGN

Resistors are manufactured in two main designs:

1. Resistor is made of the resistant wire wound on the porcelain cylinders (page. 8).
Wounded cylinders (PC) arranged on the frames are placed in standard enclosures (OPC).
2. Resistor sets (page 6 and 7) consists of resistance elements (table 1) made of expanded corrosion-proof sheet-steel plates. The elements have been spot-weldeed in order to eliminate the transitive resistance between elements. The resistant sets are arranged in standard enclosures OL, OLR and OLK.

RATED INSULATION VOLTAGE

Resistors with sheet-steel elements 1000 V AC / 1200 V DC
Wire wound resistors 500 V AC / 600 V DC

On special request we can make resistors of higher voltages.

ENCLOSURE

Mechanical protection degree of standard enclosures (in compliance with standard IEC60529):

IP10 - Enclosure for indoor arrangement of resistor. Protective cover of expanded thin metal plate ensures proper cooling with natural air circulation.

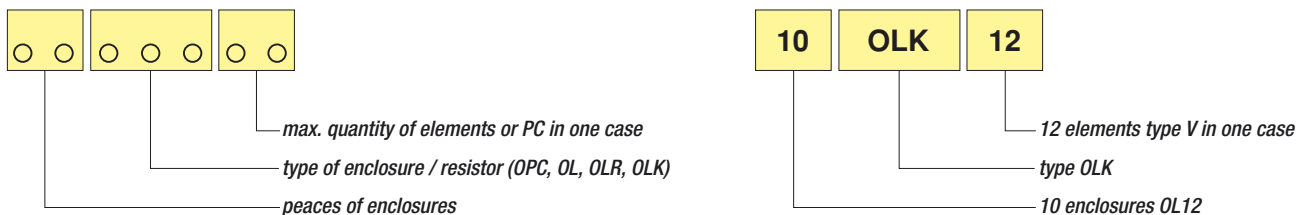
IP13 - Enclosure for outdoor installation. Protective metal cover and roof for protection against spraying water falling at an angle up to 60° from the vertical.

RESISTORS MARKING

For standard enclosures see outline drawings (page 10 & 11)

On request we can make resistors with special dimensions.

Resistors can be made in sections (see page 12) and that must be note in order.



OTPORNI LIMENI ELEMENTI - OSNOVNI PODACI
RESISTANCE ELEMENTS - BASIC DATA

V/M

OTPORNI ELEMENT **V**
RESISTOR ELEMENT

Otporni limeni elementi izrađeni su od antikorozivnog istegnutog čeličnog lima.

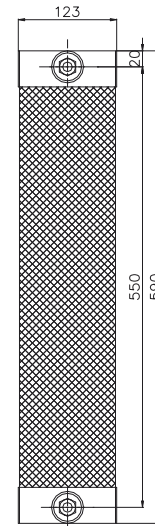
Resistance elements are made of non-corrodible sheet-steel.

Materijal: x 10 CrNiTi 18.9
Alloy:

Norma: DIN 17440
Standard:

Specifični otpor: 73 $\mu\Omega\text{cm}$
Resistivity:

Temperaturni koeficijent: 0,001
Temperature coefficient:



TABLICA 1 DOZVOLJENO STRUJNO OPTEREĆENJE (A)
TABLE 1 CURRENT RATINGS (A)

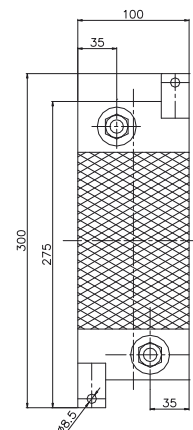
Strujno opterećenje elemenata koji se ugrađuju u kućišta OL / OLR / OLK
Current ratings for elements which are built in the enclosures OL / OLR / OLK

ELEMENT TIP	R (Ω) $\pm 10\%$	INTERMITENCIJA / INTERMITY (%)				
		trajno cont.	60	40	25	15
V - 1 mm						
V1	0,010	285	351	420	510	635
V1.6	0,016	225	292	345	420	525
V2.8	0,028	165	204	252	310	387
V3.7	0,037	142	177	213	262	335
V5.2	0,052	124	151	182	225	285
V7	0,070	112	126	150	185	238
V10	0,100	90	111	135	170	205
M - 1 mm						
M1	0,010	102	123	155	172	215
M1.6	0,016	86	110	123	148	190
M2.8	0,028	67	80	96	117	145
M3.7	0,037	52	62	73	90	115
M5.2	0,052	48	60	69	84	106
M7	0,070	40	48	57	69	85
M10	0,100	35	40	46	57	71

Elementi za kratkotrajna opterećenja!
Elements for short-time current ratings!

V - 1.5 mm		
V2.8	0,028	detalji na upit! details on request!
V5.2	0,052	
V19	0,190	
M - 1.5 mm		
M10	0,100	detalji na upit! details on request!
M14	0,140	
M19	0,190	

OTPORNI ELEMENT **M**
RESISTOR ELEMENT

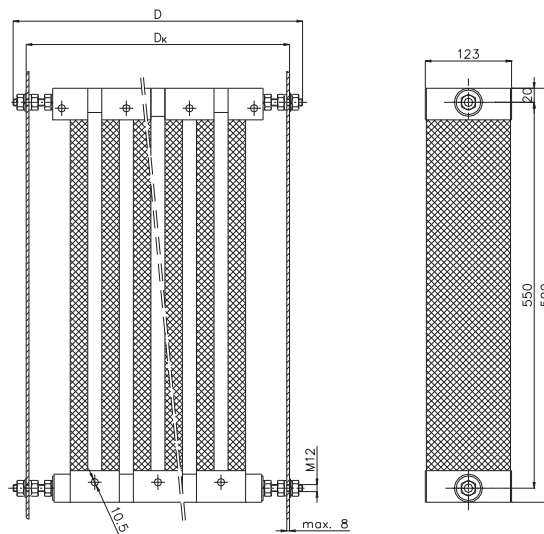


OSV/OSM



MJERNA SKICA
OUTLINE DRAWING

OSV



TABLICA 2 **OTPORNI SLOGOVI OSV - OSNOVNE DIMENZIJE**
TABLE 2 **RESISTOR SETS OSV - BASIC DIMENSIONS**

TIP TYPE	V V	ELEMENT	D _k	D	MASA MASS	TIP TYPE	V V	ELEMENT	D _k	D	MASA MASS
1 mm		kom. / pcs	mm	mm	kg	1.5 mm		kom. / pcs.	mm	mm	kg
OSV 01		1	-	-		OSV 01		1	-	-	
OSV 02		2	220	260	3,6	OSV 02		2	220	260	4,7
OSV 03		3	265	305	5,0	OSV 03		3	265	305	6,6
OSV 04		4	310	350	6,4	OSV 04		4	310	350	8,5
OSV 05		5	355	395	7,8	OSV 05		5	355	395	10,4
OSV 06		6	400	440	9,3	OSV 06		6	400	440	12,4
OSV 07		7	445	485	10,7	OSV 07		7	445	485	14,3
OSV 08		8	490	530	12,1	OSV 08		8	490	530	16,2
OSV 09		9	535	575	13,5	OSV 09		9	535	575	18,2
OSV 10		10	580	620	15,0	OSV 10		10	580	620	20,1
OSV 11		11	625	665	16,4	OSV 11		11	625	665	22,0
OSV 12		12	670	710	17,8	OSV 12		12	670	710	23,9
OSV 13		13	715	755	19,2	OSV 13		13	715	755	25,9
OSV 14		14	760	800	20,6	OSV 14		14	760	800	27,8
OSV 15		15	805	845	22,0	OSV 15		15	805	845	29,7
OSV 16		16	850	890	23,4	OSV 16		16	850	890	31,6
OSV 17		17	895	935	24,8	OSV 17		17	895	935	33,6
OSV 18		18	940	980	26,2	OSV 18		18	940	980	35,5
OSV 19		19	985	1025	27,7	OSV 19		19	985	1025	37,4
OSV 20		20	1030	1070	29,1	OSV 20		20	1030	1070	39,3
OSV 21		21	1075	1115	30,5	OSV 21		21	1075	1115	41,3
OSV 22		22	1120	1160	31,9	OSV 22		22	1120	1160	43,2
OSV 23		23	1165	1205	33,3	OSV 23		23	1165	1205	45,1
OSV 24		24	1210	1250	34,7	OSV 24		24	1210	1250	47,0
OSV 25		25	1255	1295	36,1	OSV 25		25	1255	1295	49,0

**NARUDŽBENI PODACI
ORDERING DATA**

OSX YY

- X** - OSV - Otporni slog sastavljen od elemenata tip V
- OSM - Otporni slog sastavljen od elemenata tip M
- YY** - Broj elemenata u slogu

Standardno:

- dimenzije sloga vidi u tablicama br. 2 i 3
- dvije priključne stezaljke (na početku i na kraju sloga)
- isti tip elemenata u jednom slogu

Na zahtjev - spec. izvedbe:

- duljina svornika
- shema sloga / tip elemenata
- priključne stezaljke (količina, mjesto, oznaka)

OSX YY

- X** - OSV - Resistor set with elements type V
- OSM - Resistor set with elements type M
- YY** - Quantity of elements in set

Standard:

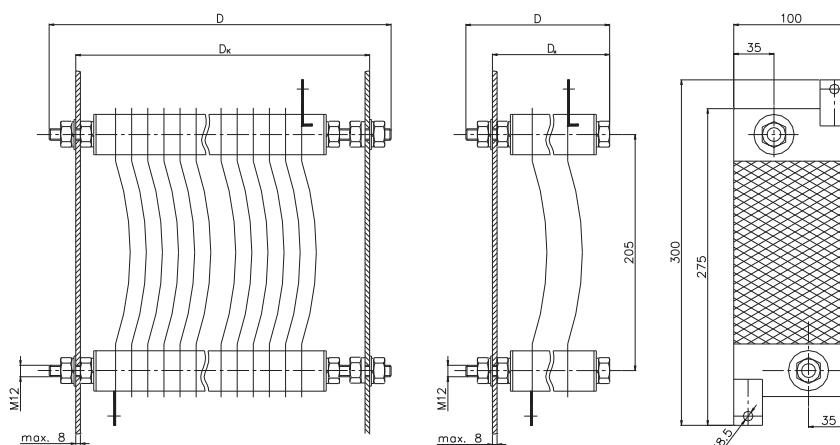
- dimension of set see in tables no. 2 & 3
- two terminals (in the beginning and in the end of set)
- same type of elements in one set

On request - spec. options:

- rod length
- scheme of set / type of elements
- terminals (quantity, position, marking)

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OUTLINE DRAWING**

OSM



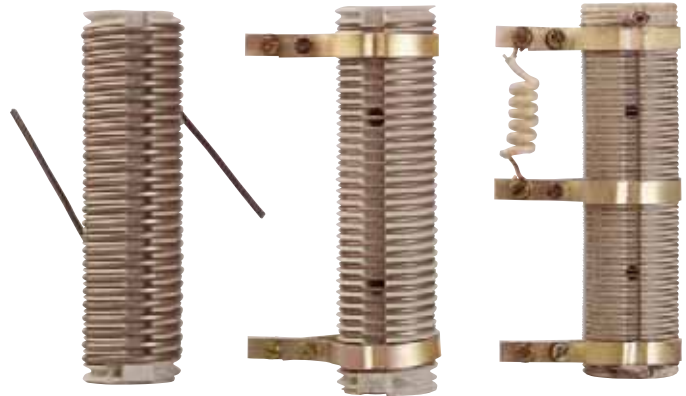
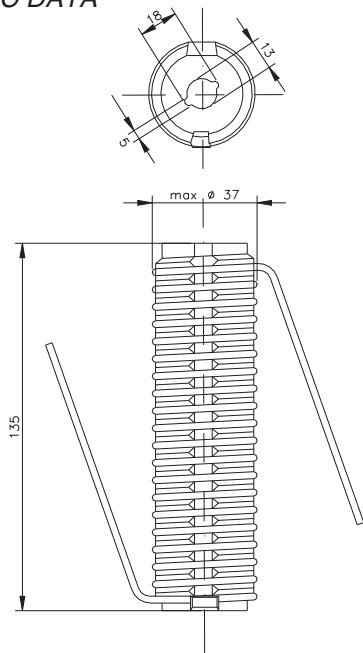
**TABLICA 3 OTPORNI SLOGOVI OSM - OSNOVNE DIMENZIJE
TABLE 3 RESISTOR SETS OSM - BASIC DIMENSIONS**

TIP M TYPE M	ELEMENT	D_k	D	MASA MASS
1 mm	kom. / pcs.	mm	mm	kg
OSM 01	1	75	95	0,70
OSM 02	2	90	110	0,95
OSM 03	3	105	125	1,20
OSM 04	4	160	200	1,60
OSM 05	5	175	215	1,80
OSM 06	6	190	230	2,05
OSM 07	7	205	245	2,30
OSM 08	8	220	260	2,55
OSM 09	9	235	275	2,80
OSM 10	10	250	290	3,00
OSM 11	11	265	305	3,25
OSM 12	12	280	320	3,50
OSM 13	13	295	335	3,70
OSM 14	14	310	350	3,95
OSM 15	15	325	365	4,20
OSM 16	16	340	380	4,40
OSM 17	17	355	395	4,65
OSM 18	18	370	410	4,90
OSM 19	19	385	425	5,15
OSM 20	20	400	440	5,35
OSM 21	21	415	455	5,60
OSM 22	22	430	470	5,80
OSM 23	23	445	485	6,05
OSM 24	24	460	500	6,30
OSM 25	25	475	515	6,50

TIP M TYPE M	ELEMENT	D_k	D	MASA MASS
1 mm	kom. / pcs.	mm	mm	kg
OSM 26	26	490	530	6,75
OSM 27	27	505	545	7,00
OSM 28	28	520	560	7,25
OSM 29	29	535	575	7,45
OSM 30	30	550	590	7,70
OSM 31	31	565	605	7,90
OSM 32	32	580	620	8,15
OSM 33	33	595	635	8,40
OSM 34	34	610	650	8,60
OSM 35	35	625	665	8,85
OSM 36	36	640	680	9,10
OSM 37	37	655	695	9,30
OSM 38	38	670	710	9,55
OSM 39	39	685	725	9,80
OSM 40	40	700	740	10,00
OSM 41	41	715	755	10,25
OSM 42	42	730	770	10,50
OSM 43	43	745	785	10,70
OSM 44	44	760	800	10,95
OSM 45	45	775	815	11,20
OSM 46	46	790	830	11,40
OSM 47	47	805	845	11,65
OSM 48	48	820	860	11,90
OSM 49	49	835	875	12,10
OSM 50	50	850	890	12,35

ŽIČANI OTPORNICI WIRE WOUND RESISTORS

OSNOVNI PODACI BASIC DATA



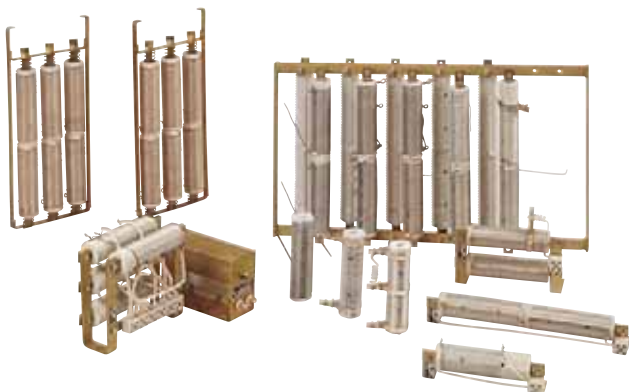
Žičani otpornici PC:
Otporna žica namotana na porculanske cilindre
*Wire wounded resistors PC:
Resistance wire wound on the porcelain cylinders*

Žica: CuNi 44 (konstantan)
Wire:

Norma: DIN 17471
Reference:

Specifični otpor: 48 $\mu\Omega\text{cm}$
Resistivity:

Temperaturni koeficijent: zanemariv
Temperature coefficient: negligible



TABLICA 4 DOZVOLJENO STRUJNO OPTEREĆENJE
TABLE 4 CURRENT RATINGS

PC TIP	ŽICA PROMJER	OTPOR	DOPUŠTENA TRAJNA STRUJA	OZNAKA ZA NARUĐŽBU
PC TYPE	WIRE DIAMETER	RESISTANCE	CURRENT CONTINUOUS RATING	ORDERING CODE
	mm	$\Omega (\pm 10\%)$	A	
24	2,80	0,20	26,50	A . 0 1
	2,50	0,24	23,50	A . 0 2
	2,20	0,31	20,00	A . 0 3
	2,00	0,37	18,50	A . 0 4
	1,80	0,46	16,50	A . 0 5
	1,60	0,57	15,00	A . 0 6
	1,40	0,74	13,00	A . 0 7
	1,20	0,99	11,50	A . 0 8
30	2,80	0,25	24,00	B . 0 1
	2,50	0,30	21,00	B . 0 2
	2,20	0,41	18,00	B . 0 3
	2,00	0,49	16,20	B . 0 4
	1,80	0,60	14,70	B . 0 5
	1,60	0,76	13,10	B . 0 6
	1,40	0,97	11,50	B . 0 7
	1,20	1,31	9,90	B . 0 8
	1,10	1,55	9,10	B . 0 9
	1,00	1,87	8,20	B . 1 0
41	1,40	1,41	9,50	C . 0 7
	1,20	1,90	8,20	C . 0 8
	1,10	2,24	7,50	C . 0 9
	1,00	2,69	6,90	C . 1 0
	0,90	3,31	6,20	C . 1 1
	0,80	4,17	5,50	C . 1 2
	0,70	5,42	4,80	C . 1 3
60	1,10	3,46	6,20	D . 0 9
	1,00	4,16	5,50	D . 1 0
	0,90	5,00	5,00	D . 1 1
	0,80	6,42	4,40	D . 1 2
	0,70	8,32	3,90	D . 1 3
	0,65	10,60	3,50	D . 1 4
	0,55	13,36	3,10	D . 1 5
	0,50	16,10	2,80	D . 1 6
82	0,80	9,00	3,80	E . 1 2
	0,70	11,30	3,30	E . 1 3
	0,65	13,20	3,10	E . 1 4
	0,55	18,90	2,60	E . 1 5
	0,50	22,90	2,30	E . 1 6
	0,40	35,40	1,90	E . 1 7
	0,35	45,20	1,60	E . 1 8
	0,30	62,70	1,40	E . 1 9
	0,25	90,50	1,20	E . 2 0
118	0,55	24,00	2,32	F . 1 5
	0,50	33,50	1,97	F . 1 6
	0,40	51,80	1,57	F . 1 7
	0,35	67,50	1,38	F . 1 8
	0,30	91,50	1,18	F . 1 9
	0,25	131,60	0,99	F . 2 0

ŽIČANI OTPORNICI NA NOSAČIMA WIRE-WOUND RESISTORS ON CONSOLES



L1.01PC



L2.02PC



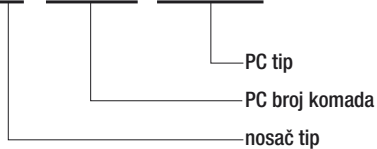
U3.04PC-SPEC.



M1.02PC

OZNAČAVANJE

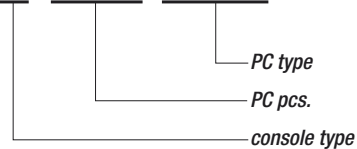
L1.01PC-■.■.■



- izabrati iz tab. 4
- izabrati iz tab. 5 - PC
- izabrati iz tab. 5

MARKING

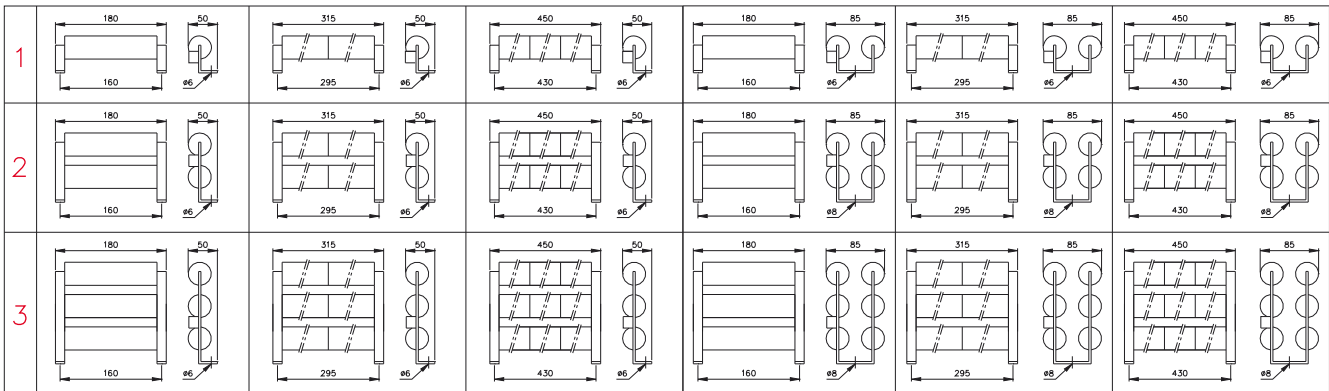
L1.01PC-■.■.■



- choose from tab. 4
- choose from tab. 5 - PC
- choose from tab. 5

TABLICA 5
TABLE 5

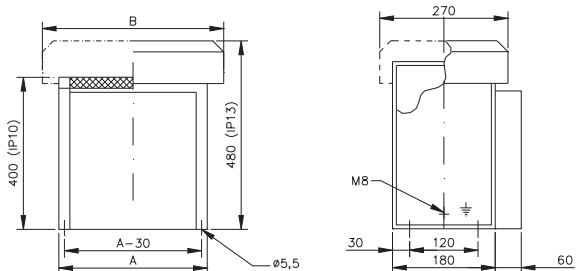
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PC	TIP / TYPE L	kg	TIP / TYPE M	kg	TIP / TYPE N	kg	TIP / TYPE U	kg	TIP / TYPE V	kg	TIP / TYPE Z	kg
01	L1.01PC-■.■.■	0,5										
02	L2.02PC-■.■.■	0,9	M1.02PC-■.■.■	0,8			U1.02PC-■.■.■	1,0				
03	L3.03PC-■.■.■	1,3	M2.03PC-■.■.■	1,2	N1.03PC-■.■.■	1,1	U2.03PC-■.■.■	1,5	V1.03PC-■.■.■	1,3		
04			M2.04PC-■.■.■	1,5	N2.04PC-■.■.■	1,5	U2.04PC-■.■.■	1,8	V1.04PC-■.■.■	1,6		
05			M3.05PC-■.■.■	1,9	N2.05PC-■.■.■	1,8	U3.05PC-■.■.■	2,4	V2.05PC-■.■.■	2,1	Z1.05PC-■.■.■	1,9
06			M3.06PC-■.■.■	2,2	N2.06PC-■.■.■	2,1	U3.06PC-■.■.■	2,7	V2.06PC-■.■.■	2,4	Z1.06PC-■.■.■	2,2
07					N3.07PC-■.■.■	2,5			V2.07PC-■.■.■	2,7	Z2.07PC-■.■.■	2,7
08					N3.08PC-■.■.■	2,8			V2.08PC-■.■.■	3,0	Z2.08PC-■.■.■	3,0
09					N3.09PC-■.■.■	3,1			V3.09PC-■.■.■	3,6	Z2.09PC-■.■.■	3,3
10									V3.10PC-■.■.■	3,9	Z2.10PC-■.■.■	3,5
11									V3.11PC-■.■.■	4,2	Z2.11PC-■.■.■	3,9
12									V3.12PC-■.■.■	4,5	Z2.12PC-■.■.■	4,2
13											Z3.13PC-■.■.■	4,8
14											Z3.14PC-■.■.■	5,1
15											Z3.15PC-■.■.■	5,4
16											Z3.16PC-■.■.■	5,7
17											Z3.17PC-■.■.■	6,0
18											Z3.18PC-■.■.■	6,3

OTPORNICI
RESISTORS

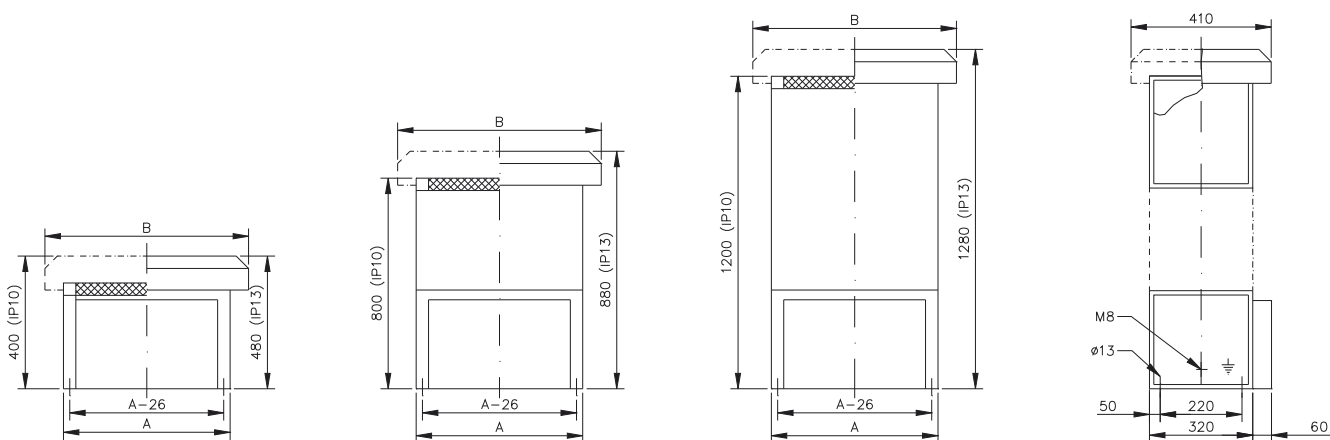
OPC 6 / OPC 12



TABLICA 6 TABLE 6			MASA MASS		STEZALJKE TERMINALS		
	A	B	IP10	IP13	6 mm ²	16 mm ²	M8
TIP TYPE	mm		max. kg		max. kom. / max. pcs.		
OPC 6	215	365	8	10	4		
OPC 12	350	500	11	13	10		
OPC 24			18	21		10	
OPC 36			22	25		16	
2 OPC 36	500	640	44	47		32	
3 OPC 36			66	71		32	
OL 46			25	28			10
2 OL 46			50	53			20
3 OL 46			75	80			20
OPC 48			623	765	26	30	
2 OPC 48	52	56				40	
3 OPC 48	78	84				40	
OL 62	30	34					13
2 OL 62	60	64					26
3 OL 62	90	96					26
OPC 60	721	875	30	35		23	
2 OPC 60			60	65		46	
3 OPC 60			90	97		46	
OL 74			34	39			15
2 OL 74			68	73			30
3 OL 74			102	109			30
OPC 72	848	990	35	43		28	
2 OPC 72			70	78		56	
3 OPC 72			105	115		56	
OL 92			40	48			18
2 OL 92			80	88			36
3 OL 92			120	130			36

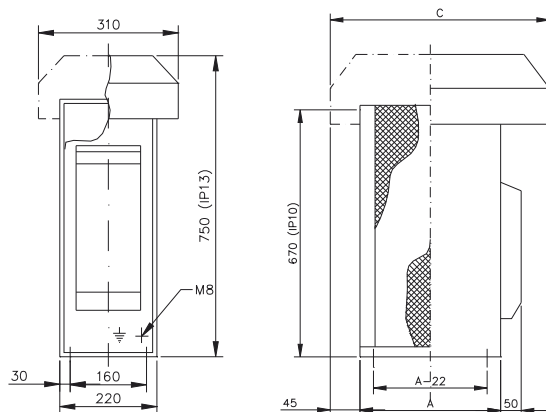
OTPORNICI
RESISTORS

OPC 24 - 3 OPC 72 / OL 46 - 3 OL 92



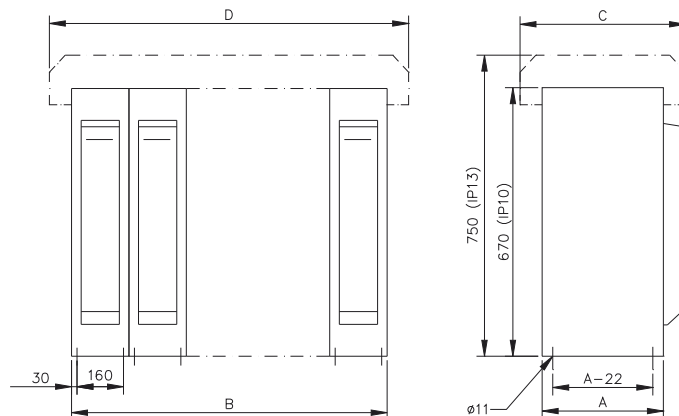
OTPORNICI
RESISTORS

OL 6 - OL 12



OTPORNICI
RESISTORS

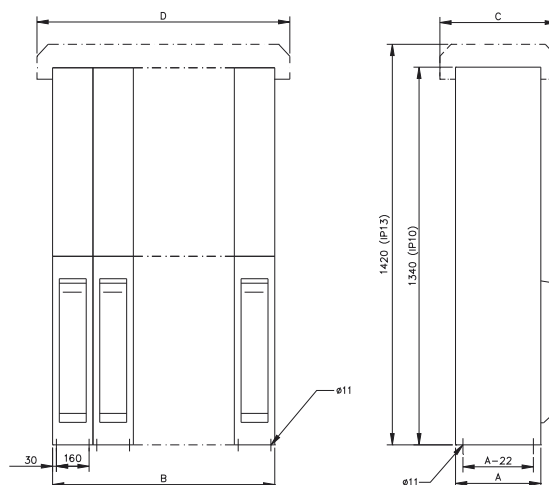
2 OLR 6 - 6 OLR 12



TABLICA 7 TABLE 7					MASA MASS		STEZALJKE TERMINALS
	A	B	C	D	IP10	IP13	M12
TP TYPE	mm				max. kg		max. kom. max. pcs.
OL 6	445		612		20	24	
OL 9	580	220	747	320	26	30	12
OL 12	715		882		32	36	
U REDU / IN LINE							
2 OLR 6	445		545		40	48	
2 OLR 9	580	440	680	540	52	60	24
2 OLR 12	715		815		64	72	
3 OLR 6	445		545		60	72	
3 OLR 9	580	660	680	760	78	88	24
3 OLR 12	715		815		94	106	
4 OLR 6	445		545		80	96	
4 OLR 9	580	880	680	980	104	115	24
4 OLR 12	715		815		128	140	
5 OLR 6	445		545		100	120	
5 OLR 9	580	1100	680	1200	130	154	24
5 OLR 12	715		815		160	186	
6 OLR 6	445		545		120	144	
6 OLR 9	580	1320	680	1420	156	188	36
6 OLR 12	715		815		192	216	
NA KAT / TWO STORIED							
4 OLK 6	445		545		80	88	
4 OLK 9	580	440	680	540	104	112	24
4 OLK 12	715		815		128	136	
6 OLK 6	445		545		120	132	
6 OLK 9	580	660	680	760	156	166	24
6 OLK 12	715		815		192	202	
8 OLK 6	445		545		160	192	
8 OLK 9	580	880	680	980	208	240	24
8 OLK 12	715		815		256	288	
10 OLK 6	445		545		200	240	
10 OLK 9	580	1100	680	1200	260	300	24
10 OLK12	715		815		320	360	
12 OLK 6	445		545		240	288	
12 OLK 9	580	1320	680	1420	312	360	36
12 OLK12	715		815		384	432	

OTPORNICI
RESISTORS

4 OLK 6 - 12 OLK 12



VAŽNO!
IMPORTANT!

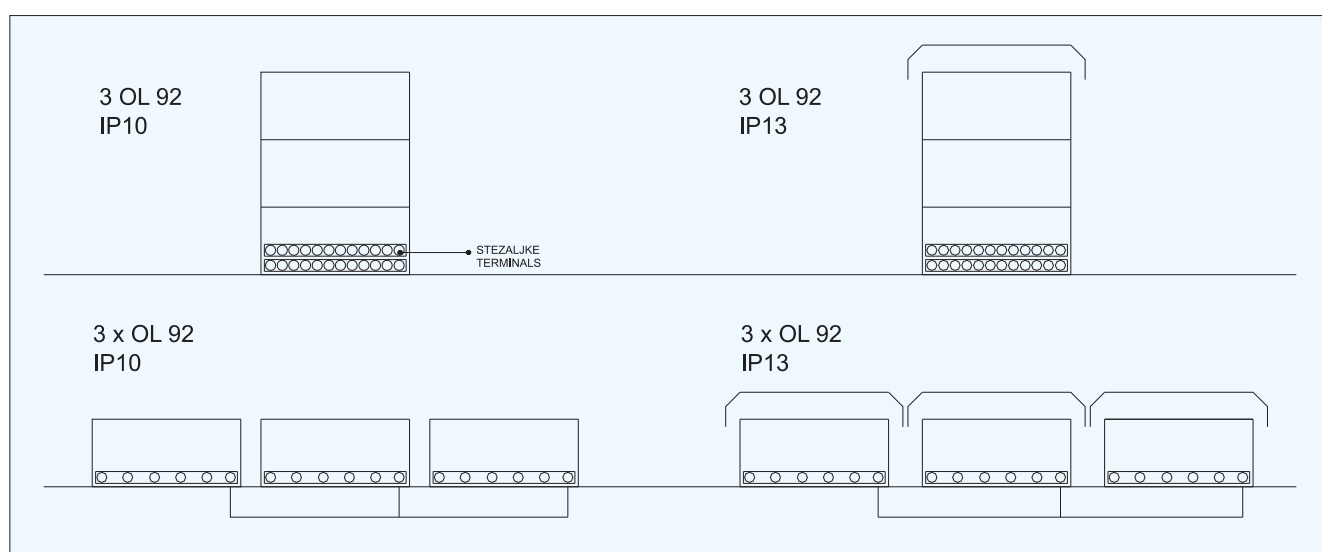


U SLUČAJU DA JE OTPORNIK SASTAVLJEN OD VIŠE KUĆIŠTA (OL ILI OPC) MOGUĆE SU DVIJE IZVEDBE:
 - ZAJEDNO SPOJENA KUĆIŠTA (npr. 3 OL 92)
 - ODVOJENA KUĆIŠTA (npr. 3 x OL 92)



IN THE CASE THAT ONE RESISTOR IS COMPLETED FROM FEW BOXES (OL OR OPC) TWO VERSIONS OF MOUNTING ARE POSSIBLE:

- BOXES MOUNTED TOGETHER (for example: 3 OL 92)
- SEPARATELY BOXES (for example: 3 x OL 92)



VAŽNO!

U SLUČAJU ZAMJENE STAROG OTPORNIKA PROIZVODNJE **KONČAR** NOVIM, DOVOLJNO JE PRILIKOM NARUĐBE NAVESTI PODATAK Rp. OTISNUT NA NATPISNOJ PLOČICI OTPORNIKA.

KONČAR			
Tip			
Rp		Br.	
u	V	i	A
P	kW	R	Ω
IP	ED	%	
Made in Croatia			



IMPORTANT!

IN THE CASE OF SUBSTITUTION THE OLD RESISTOR WITH NEW ONE PRODUCED BY **KONČAR** YOU CAN ONLY STATE THE NUMBER Rp. MARKED ON THE RESISTORS NAMEPLATE WHEN ORDERING.

KONČAR			
Type			
Rp		No.	
u	V	i	A
P	kW	R	Ω
IP	ED	%	
Made in Croatia			

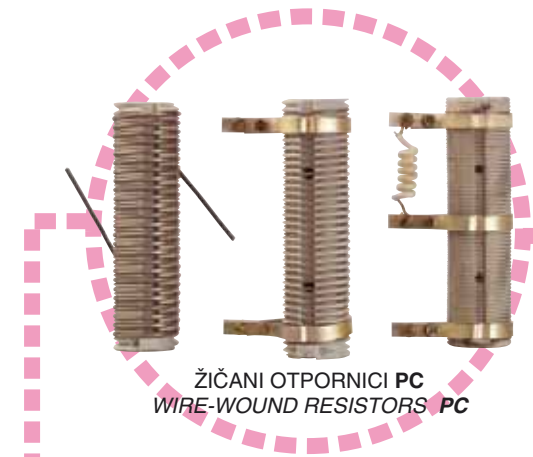


ZA SVE NEJASNOĆE U VEZI TEHNIČKIH PODATAKA SLOBODNO SE JAVITE NAŠEM TEHNIČKOM UREDU.

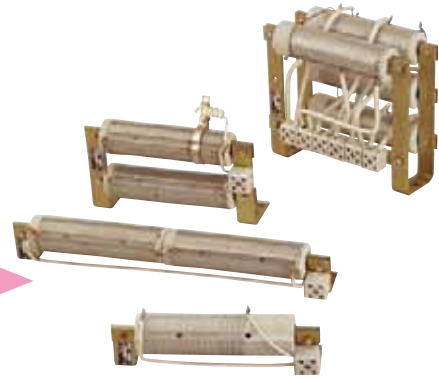


IN THE CASE OF ANY DOUBTS CONCERNING THE TECHNICAL DETAILS PLEASE DO NOT HESITATE TO CONTACT OUR TECHNICAL DEPARTMENT.

**OTPORNICI STANDARDNE IZVEDBE
RESISTORS STANDARD VERSIONS**



ŽIČANI OTPORNICI PC
WIRE-WOUND RESISTORS PC



ŽIČANI OTPORNICI NA NOSAČIMA
WIRE-WOUND RESISTORS ON CONSOLE L1.01PC - Z3.18PC
L1.01PC - Z3.18PC



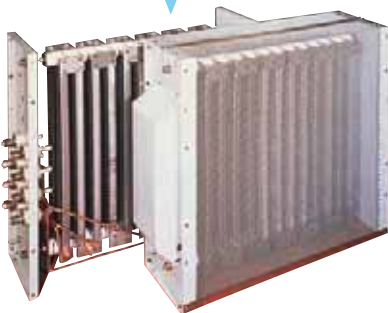
OTPORNIK OPC 72 - IP00 / OL 92 - IP10
RESISTOR OPC 72 - IP00 / OL 92 - IP10



OTPORNIK 3 OL 92 / 3 OPC 72 - IP13
RESISTOR 3 OL 92 / 3 OPC 72 - IP13



OTPORNI SLOGOVI OSV / OSM
RESISTOR SETS OSV / OSM



OTPORNIK OL 12 - IP00 / IP10
RESISTOR OL 12 - IP00 / IP10



OTPORNIK 12 OLK 12 - IP13
RESISTOR 12 OLK 12 - IP13

**PRIMJERI
EXAMPLES**

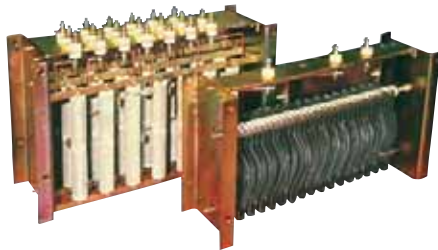
OTPORNICI **SPECIJALNE IZVEDBE**
RESISTORS **SPECIAL VERSIONS**



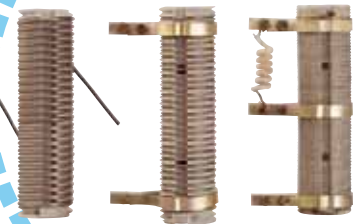
OTPORNICI ZA UZEMLJENJE ZVJEZDIŠTA GENERATORA OUG
GENERATORS NEUTRAL EARTHING RESISTORS OUG



OTPORNICI ZA UZEMLJENJE ZVJEZDIŠTA TRANSFORMATORA OUN
TRANSFORMERS NEUTRAL EARTHING RESISTORS OUN



OTPORNI ELEMENTI NA NOSAČIMA IP00
RESISTOR ELEMENTS ON CONSOLE IP00



ŽIČANI OTPORNICI PC
WIRE-WOUND RESISTORS PC



OTPORNICI ZA PRAŽNENJE AKU-BATERIJA OR
RESISTORS FOR BATTERY DISCHARGE OR



ŽIČANI OTPORNICI SPEC.
WIRE-WOUND RESISTORS SPEC.

**OTPORNICI SPECIJALNE IZVEDBE
RESISTORS SPECIAL VERSIONS**



ULJNI ROTORSKI POKRETAČI **SPEC.**
ROTOR OIL STARTERS **SPEC.**



ULJNI ROTORSKI POKRETAČI **PU110 - PU114**
ROTOR OIL STARTERS **PU110 - PU114**

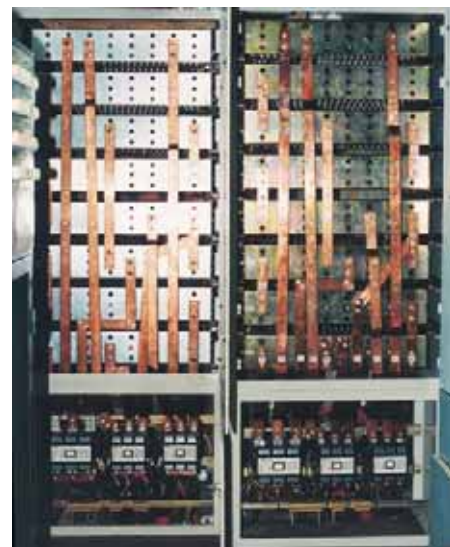
OTPORNIM SLOGOVIMA **OLV/OLM**
RESISTOR SETS **OLV/OLM**



ULJNI ROTORSKI POKRETAČI **PU115 - PU229**
ROTOR OIL STARTERS **PU115 - PU229**



OTPORNICI S PRISILNOM VENTILACIJOM **OV**
RESISTORS WITH FORCED VENTILATION **OV**



ZRAČNI ROTORSKI POKRETAČI S
OTPORNIM SLOGOVIMA I SKLOPNICIMA

ROTOR STARTERS WITH
RESISTOR SETS AND CONTACTORS

Pridržavamo pravo promjene podataka. Ostale podatke dajemo na upit.
We keep the right to change the data. Other data are given on request.

KONČAR

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