

SWITCH-DISCONNECTORS FOR PHOTOVOLTAIC LOADS PV/CSP SERIES



 **Lovato**
electric

ENERGY AND AUTOMATION

Razvoj obnovljivih izvora energije na osnovi fotonaponskih panela ima za posljedicu razvoj rastavnih sklopki koje služe za sklanjanje istosmjernih krugova.

Prema normi IEC 60364-7-712 za fotonaponske instalacije, mora se osigurati izoliranje što rastavne sklopke serija PV i CSP, u potpunosti zadovoljavaju.

Sa nazivnim pogonskim strujama do 80A u kategoriji upotrebe DC21B, te nazivnim pogonskim naponom do 1500V DC (1200V DC), ove rastavne sklopke mogu ispuniti sve zahtjeve izolacija.

Rastavne sklopke serija PV i CSP konstruirane su tako da se mogu postaviti između fotonaponskih ćelija i DC/AC pretvarača.

Osim kao standardne izvedbe, mogu se isporučiti s čitavim nizom posebnih izvedbi (na upit).

The development of renewable energy sources on the basis of photovoltaic panels has resulted with the development of switch-disconnectors which are used for switching off DC circuit. Switch-disconnectors series PV and CSP completely fulfil requirements for isolation according to IEC 60364-7-712 for photovoltaic installations.

PV and CSP series of switch-disconnectors can meet all requirements of installation with rated operational voltage up to 1500V DC (1200V DC) and operational currents up to 80A in utilization category DC21B. Switch-disconnectors are designed to be placed between photovoltaic cells and DC/AC inverter.

Besides the standard mounting forms, they are available with a large number of optional extras (on request).

TEHNIČKE KARAKTERISTIKE TECHNICAL DATA				PV25	PV32	PV40	CSP80
Nazivni izolacijski napon Rated insulation voltage	U_i	IEC/EN 60947 UL 508i	V	1000 (1500*)	1000 (1500*)	1000 (1500*)	1200
Nazivni udarni podnosivi napon Rated impulse withstand voltage	U_{imp}	IEC/EN 60947	kV	8	8	8	8
Nazivna termička struja Rated thermal current	I_{th}	IEC/EN 60947 UL 508i	A	25	32	40	80
Nazivna kratkotrajno podnosiva struja Rated short-time withstand current	I_{cw}	IEC/EN 60947	1 sec	500	500	500	—
Nazivna pogonska struja Rated operational current	I_e	IEC/EN 60947 DC21B	300 V 400 V 600 V 800 V 1000 V 1200 V 1500 V	A A A A A A A	25/2p 32/2p 32/2p 32/3p 32/3p 32/3p 32/3p	40/2p 40/2p 40/3p 40/3p 40/4p 40/4p 40/4p	50/3p; 80/4p** 63/4p; 80/6p 45/6p; 65/8p 45/6p; 50/8p*** — — —
Mehanička trajnost Mechanical durability	Broj uklopa Switching cycles			$1,5 \times 10^4$	$1,5 \times 10^4$	$1,5 \times 10^4$	$1,5 \times 10^4$
Stupanj mehaničke zaštite IP Rating	S prednje strane / Front protection Sa stražnje strane / Rear protection			IP65 IP20	IP65 IP20	IP65 IP20	IP65 IP00
Priključni vijak Terminal screw			M	4	4	4	4
Moment pritezanja priključnog vijka (IEC/EN) Terminal tightening torque			Nm	1,2	1,2	1,2	1,2
Presjek vodiča Conductor size	max. r/f		$2 \times \frac{mm^2}{AWG}$	10/6 8/10	10/6 8/10	10/6 8/10	25/16 4/6
r = kruti, višezilni / rigid f = finožičani / flexible	min. r/f		$2 \times \frac{mm^2}{AWG}$	1,5/1,5 16/16	1,5/1,5 16/16	1,5/1,5 16/16	1,5/1,5 16/16

*stupanj zagađenja 2 / pollution degree 2

**pri 220 V DC / at 220 V DC

***pri 750 V DC / at 750 V DC

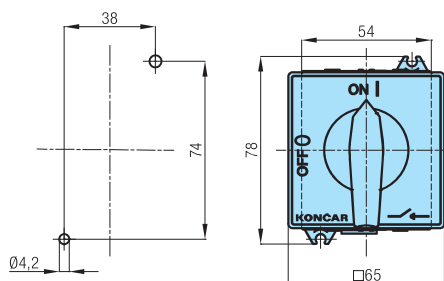
Broj polova Number of poles	2P	3P	4P		2 x 2P
Shema Schema	11	21	31	22	2 x 11
Shema spoja Connecting diagram					
Broj polova Number of poles	6P		8P		
Shema Schema	33		44		53
Shema spoja Connecting diagram					

MJERNE SKICE *DIMENSIONAL DRAWINGS (mm)*

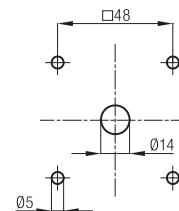
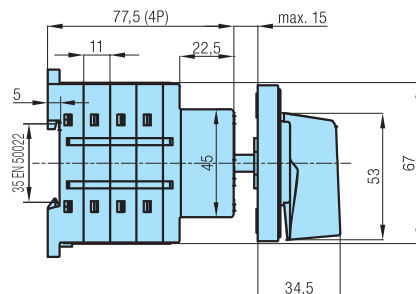
O - Rastavna sklopka za odvojenu ugradnju *Rear mounting*

Seriya PV *Series PV*

Plan bušenja / *Drilling plan*
Stražnji lim / *Rear plate*

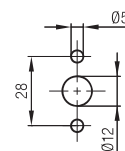
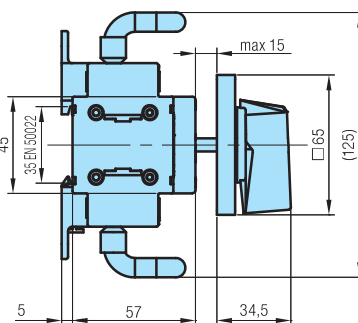
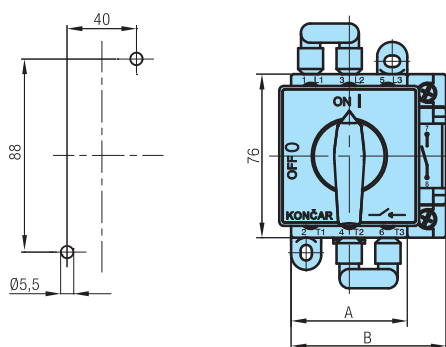


Plan bušenja / *Drilling plan*
Prednji lim / *Front plate*



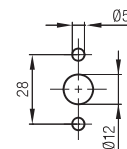
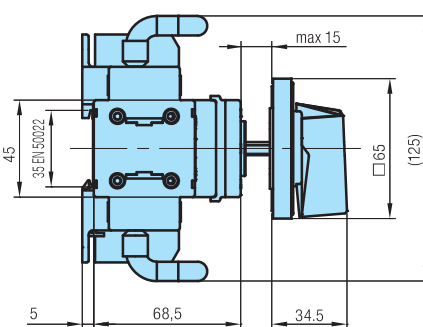
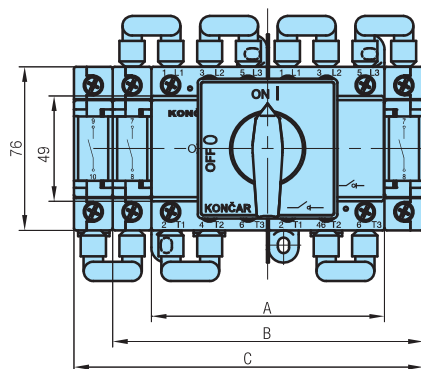
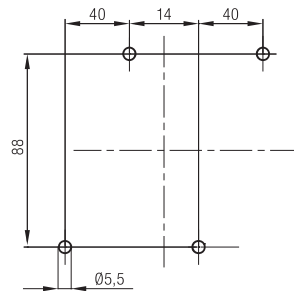
Seriya CSP *Series CSP*

Sheme spajanja 21, 22, 31 / *Connection diagrams 21, 22, 31*



Shema Conn. diag.	A	B	C
21	54	-	-
22	-	72	-
31	-	72	-
33	108,5	-	-
44	-	144,5	-
53	-	-	162,5

Sheme spajanja 33, 44, 53 / *Connection diagrams 33, 44, 53*



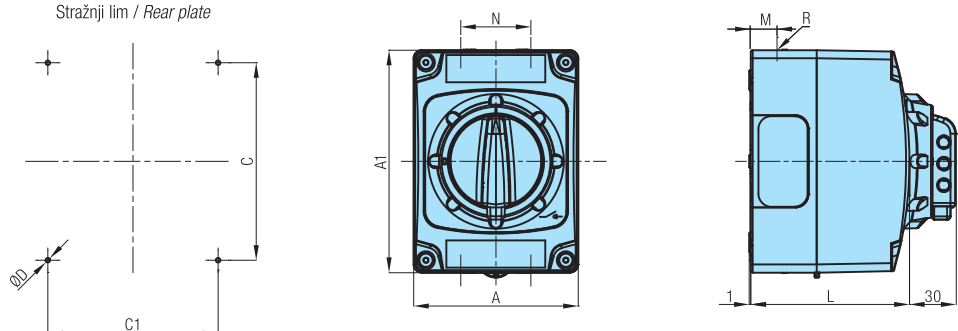
PV40-21-0



CSP80-53-153

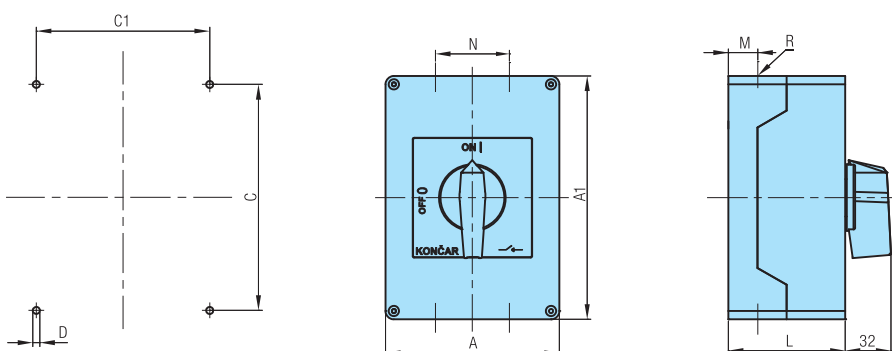
P - Rastavna sklopka u plastičnom kućištu Switch-disconnector in plastic enclosure

Seriya PV Series PV

Plan bušenja / Drilling plan
Stražnji lim / Rear plate


Veličina kućišta Enclosure size	Broj polova Number of poles	A	A1	C	C1	D	L	M	N	Zaštita Protection	Uvodnice Conduit entries
135x100	2 - 3	100	135	98,5	85	5,5	95	20,5	32	IP65	4 x M20
175x130	4	130	175	135,5	115	5,5	115	23	40	IP65	4 x M20/M25

Seriya CSP Series CSP

Plan bušenja / Drilling plan
Stražnji lim / Rear plate


Tip Type	Tip Kućišta Enclosure size	A	A1	C	C1	D	L	M	N	Zaštita Protection	R(Pg)	Uvodnice Conduit entries	R(M...x 1,5)
CSP80-21 CSP80-22 CSP80-31	125 x 175	125	175	146	112	5,5	84	21	68	IP65	4 x Pg21 + 2 x Pg11	ili / or	4 x M25 + 2 x M16
CSP80-33	140 x 210	149	218	111,5	200,5	5,5	146,5	31,5	69	IP65	8 x Pg(16-29) + 4 x Pg11	ili / or	8 x M(20-32) + 4 x M16
CSP80-44 CSP80-53	210 x 210	218	218	200	180	5,5	146,5	31,5	109	IP65	12 x Pg(16 - 29)	ili / or	12 x M(20 - 32)

POTVRDE APPROVALS

	KEMA EUR	RU	UL C US
PV25	■	■	■
PV32	■	■	■
PV40	■	■	■
CSP80			



PV40-21-0102

NARUDŽBENI KOD ORDERING CODE

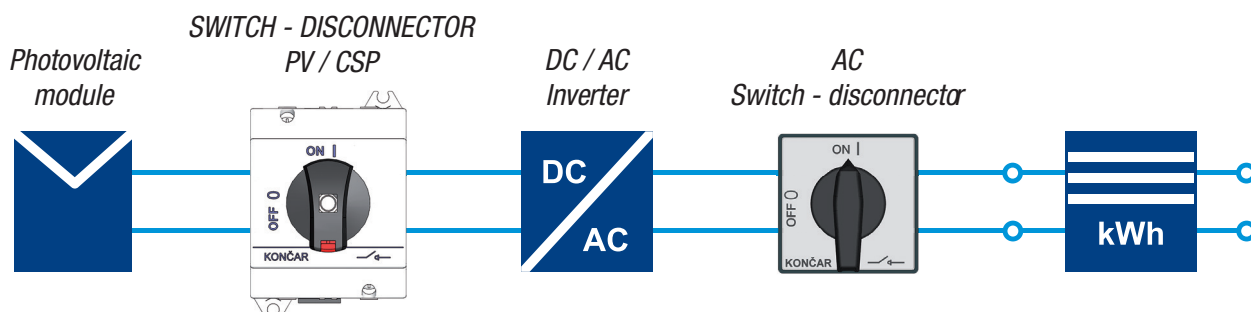
Primjer narudžbenog koda za rastavnu sklopku PV40, odvojena ugradnja, shema 21, specijalna izvedba 102:

PV40-21-0102

Ordering code example for switch-disconnector PV40, rear mounting, scheme 21, optional extra 102:

PV40-21-0102

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ENERGY AND AUTOMATION

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