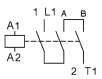
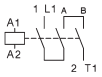
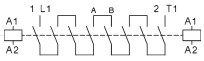
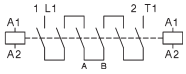
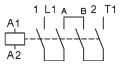
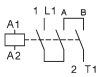
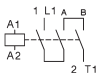
Contactors for DC-Switching

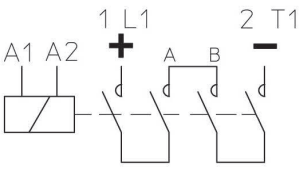
AC-operated

Rated Operational Current DC1 600V	1000V	1200V	Additional Aux. Contacts	Type	Coil voltage [1] 230 220-230V 50Hz, 240V 60Hz Pack pcs.	Weight kg/pc.	Wiring diagram
20A	-	-	2 HKA11	**K3DC-20A00 ...**	1	0,5	
50A	-	-	+1 HKT.	**K3DC-48A00 ...**	1	0,5	
60A	30A	-	2 HKA11	**K3DC-60A00...**	1	1,2	
80A	60A	-	+1 HKT.	**K3DC-80A00 ...**	1	1,2	
100A	-	-		**K3DC-100A00 ...**	1	1,8	
12A	12A	6A	2 HKA11 +2 HKT.	**K3PV-12A00 ...**	1	0,8	
30A	30A	-	2 HKA11	**K3PV-30A00 ...**	1	0,9	
60A	60A	-	+2 HKT.	**K3PV-60A00 ...**	1	0,9	
80A	80A	-	2 HKA11	**K3PV-80A00 ...**	1	1,5	
100A	100A	-	+1 HKT.	**K3PV-100A00 ...**[2) 3)]	1	2,3	
150A	150A	-	2 HKA11	**K3PV-150A00 ...**[2) 3)]	1	5	
200A	200A	-	+1 HKT.	**K3PV-200A00 ...**[2) 3)]	1	5	
240A	240A	-		**K3PV-240A00 ...**[2) 3)]	1	5	
300A	300A	-	2 HKA11	**K3PV-300A00 ...**[2) 3)]	1	7,5	
400A	400A	-	+1 HKT.	**K3PV-400A00 ...**[2) 3)]	1	7,5	
450A	450A	-		**K3PV-450A00 ...**[2) 3)]	1	7,5	

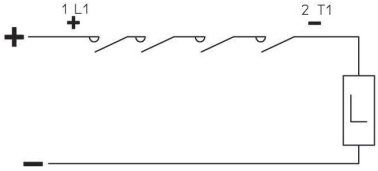
Contactors for DC-Switching for PV-installations, as remote controlled fire protection defeat device

In most Photovoltaic-installations, the switch disconnectors according to IEC 60364-7-712 are integrated in the DC/AC-inverter.
So the wires between solar-panels and inverter are continuosly under voltage.
According to ÖVE-R11-1: 2013, Photovoltaic-installations must have a fire protection defeat device.
For this purpose, BENEDICT contactors for DC-switching, used as a fire protection defeat device, can switch off the Photovoltaic-installation with a remote controlled fire brigade Emergency-Stop-button.

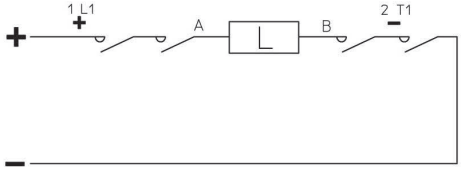
Switch diagram (4 contacts)



Connection diagram1-pole



For using as two-poles contactor remove connection A-B



1) Other coil voltages from 24 to 600V AC, on request
2) Type for AC- and DC-operating: e.g.: 230: 220-240V 50/60Hz and 220V=
3) With integrated coil suppressor

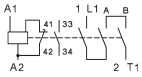
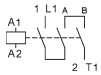
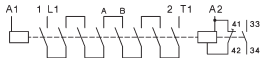
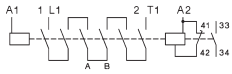
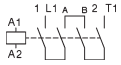
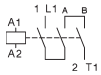
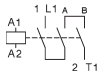
Contactors for DC-Switching

DC-operated





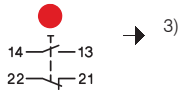


Type	Coil voltage [1] 24 = 24V DC	Aux.Contacts build in NO	NC	additional Type	Pack pcs.	Weight kg/pc.	Wiring diagram
K3DC-20A10= ... [5]		1	-	1 HKA11	1	0,5	
K3DC-48A10= ... [5]		1	-	+1 HKT.	1	0,5	
K3DC-60A00=... [5]		-	-	1 HKA11	1	1,2	
K3DC-80A00=... [5]		-	-	+1 HKT.	1	1,2	
K3DC-100A00= ...		-	-		1	1,8	
K3PV-12A10=		1	-	1 HKA11 +2 HKT.	1	0,85	
K3PV-30A10= ... [5]		1	-	1 HKA11	1	0,95	
K3PV-60A10= ... [5]		1	-	+2 HKT.	1	0,95	
K3PV-80A00= ... [5]		-	-	2 HKA11	1	1,5	
K3PV-100A00 ... [2) 5]		-	-	+1 HKT.	1	2,3	
K3PV-150A00 ... [2) 5]		-	-	2 HKA11	1	5	
K3PV-200A00 ... [2) 5]		-	-	+1 HKT.	1	5	
K3PV-240A00 ... [2) 5]		-	-		1	5	
K3PV-300A00 ... [2) 5]		-	-	2 HKA11	1	7,5	
K3PV-400A00 ... [2) 5]		-	-	+1 HKT.	1	7,5	
K3PV-450A00 ... [2) 5]		-	-		1	7,5	

Auxiliary Contact Blocks for contactors K3DC-.. and K3PV-.., for low level switching [4)]


Rated Operational Current AC15 230V A	AC15 400V A	AC1 690V A	For contactors	Type	Pack pcs.	Weight kg/pc.	Wiring diagram
3	2	10	K3DC, K3PV-.. top	**HKT11**	1	0,04	
3	2	10	K3DC, K3PV-.. top	**HKT22**	1	0,05	
3	2	10	K3DC, K3PV-.. outside	**HKA11**	1	0,05	

Accessories

Fire Brigade-EMERGENCY STOP key operated button Ø40mm, according to EN418, unlock by key				**BG10P44S3-11 +SK**	1	0,22	 3)

1) Other coil voltages from 24 to 250V DC, on request
2) Type for AC- and DC-operating: e.g.: 24: 24V 50/60Hz and 24V=
3) → opener positive opening acc. IEC/EN60947-5-1
4) Contacts suitable for electronic circuits, according to IEC60947-5-4 for rated voltage 24V DC (test ratings 17V DC, 5mA) Mirror contacts acc. IEC60947-4-1 Annex F. Technical data see page 78
5) With integrated coil suppressor

Technical Data

Data according to IEC 60947-4-1, VDE 0660

Type		K3DC-20..	K3DC-48..	K3DC-60..	K3DC-80..	K3DC-100..	K3PV-12..	K3PV-30..	K3PV-60..	K3PV-80..	K3PV-100..	K3PV-150..	K3PV-200..	K3PV-240..	K3PV-300..	K3PV-400..	K3PV-450..
Rated insulation voltage	V=	600	600	1000	1000	600	1200	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
U_{imp}	kV	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
poles in series		3	3	3	3	3	8	6	6	4	4	3	3	3	3	3	3
DC1 600V dc	I_e A	20	50	60	80	100	12	30	60	80	100	150	200	240	300	400	450
DC1 1000V dc	I_e A	-	-	30	60	-	12	30	60	80	100	150	200	240	300	400	450
DC1 1200V dc	I_e A	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
DC3/5 310V dc	I_e A	-	-	-	40	60	-	15	24	40	90	125	170	200	230	270	300
DC3/5 460V dc	I_e A	-	-	-	-	-	-	15	24	40	40	125	170	200	230	270	300
DC3/5 600V dc	I_e A	-	-	-	-	-	-	-	-	-	-	50	60	75	120	160	200
Main pole resistance	m0hm	1,8	1,8	1,4	1,2	1	2,2	1,8	1,8	1,2	1	0,5	0,5	0,35	0,15	0,15	0,15
poles in series resistance	m0hm	5,4	5,4	4,2	3,6	3	17,6	10,8	10,8	4,8	4	1,5	1,5	1,1	0,5	0,5	0,5
Mechanical life	10^6	10										10			8		
Protection degree		IP20										IP00 / IP20 [1]			IP00 / IP20 [1]		
Main poles																	
Cable cross sections	mm^2	2 x 1,5 - 10		2,5 - 35		4 - 35 +4-50	2x 1,5-2,5		2 x 1,5 - 10	2,5-35	4 - 35 +4 - 50	Busbar 18 x 4 Screw M8			Busbar 25 x 6 Screw M10		
Tightening torque	Nm	2,3 - 2,7		5 - 6		8 - 9,6	1,4 - 1,6	2,3 - 2,7		5 - 6	8 - 9,6	17 - 20			35 - 42		
Mounting		DIN-rail or screw				screws	DIN-rail or screws				Screws	Screws			Screws		
Operating range of coils	Uc	0,85 - 1,1															
Power consumption of coils																	
AC inrush	VA	90		250			180			250		350			360		
sealed	VA/W	9 / 3		18 / 4			18 / 6			18 / 4		5 / 5			6 / 6		
DC inrush	W	120		230			230			230		350			360		
sealed	W	2		4			5			4		5			6		
Switching time																	
AC make time	ms	10 - 25		12 - 30		12 - 30	10 - 25			12 - 30	15 - 50	30 - 60			40 - 60		
realease time	ms	6 - 18		6 - 15		6 - 15	6 - 18			6 - 15	30 - 80	30 - 80			40 - 60		
DC make time	ms	15 - 25		15 - 25		20 - 30	15 - 25			15 - 25	15 - 50	30 - 60			40 - 60		
realease time	ms	40 - 70		10 - 25		10 - 25	40 - 70			10 - 25	30 - 80	30 - 80			40 - 60		
Maximum ambient temperature																	
Operation	°C	-40 to+40 (+70) [2]															
Storage	°C	-40 to+70															
Short circuit protection for contactors																	
Coordination-type „1“ max. fuse size gPV																	
600VDC	A	63	80	-	-	160	-	-	-	-	-	160	200	250	-	-	-
1000VDC	A	-	-	-	-	-	12	63	100	-	160	160	200	250	315	400	500
Coordination-type „2“ max. fuse size gPV																	
600VDC	A	50	63	80	100	125	-	-	-	100	-	-	-	-	-	-	-
1000VDC	A	-	-	80	100	-	-	50	80	100	125	-	-	-	-	-	-
Short-circuit current	kA	3	3	3	3	5	3	3	3	5	5	10	10	10	10	10	10

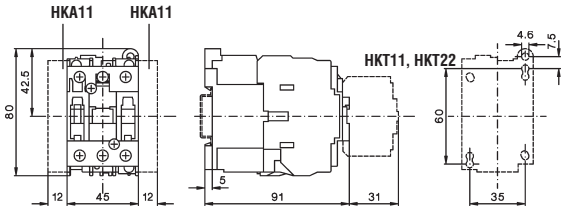
Data according to UL60947-4-1 UL LISTED

Type		K3DC-20..	K3DC-48..	K3DC-60..	K3DC-80..	K3PV-80..	K3PV-150..	K3PV-200..	K3PV-240..	K3PV-300..	K3PV-400..	K3PV-450..
General Use I_e [A]	600V DC	20	40	60	80	80	130	160	200	300	330	360
	1000V DC	-	-	30	60	80	130	160	200	300	330	360
Motor Control I_e [A]	220-240V DC	12	20	38	55	72	89	106	140	173	206	255
	500V DC	12	16	34	51	67	83	99	123	164	205	246
	550-600V DC	12	16	38	46	61	90	111	148	185	222	294

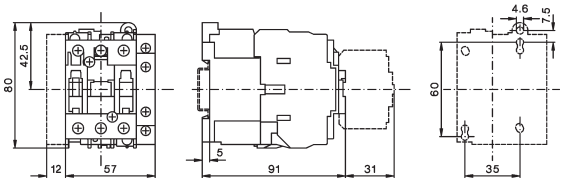
1) IP20 w. terminal lug.
2) > 40° ... 1% / C° de-rating (eg. at 60°C 20% de-rating)

Dimensions (mm)

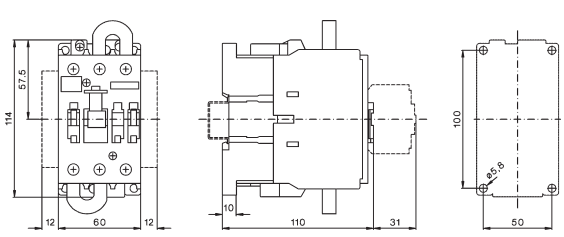
K3DC-20A00, K3DC-48A00

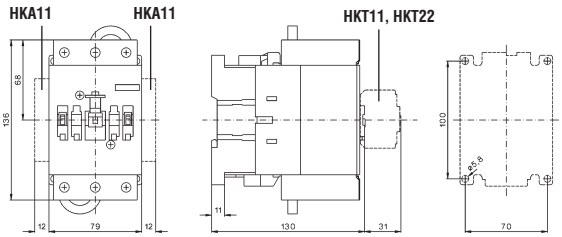


K3DC-20A10=, K3DC-48A10=

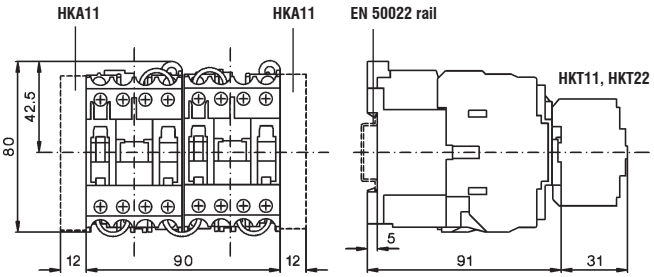


K3DC-60A00(=), K3DC-80A00(=), K3DC-100A00(=)

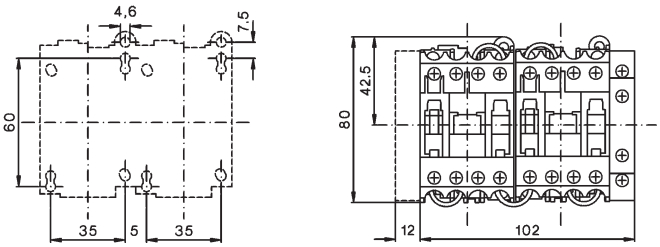




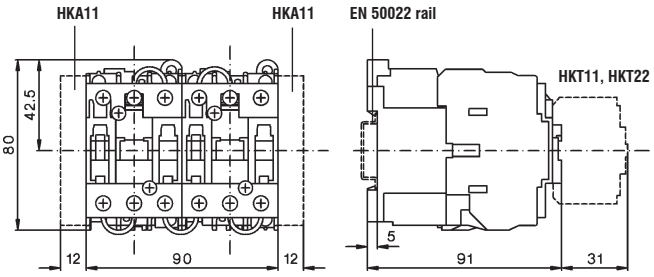
K3PV-12A00



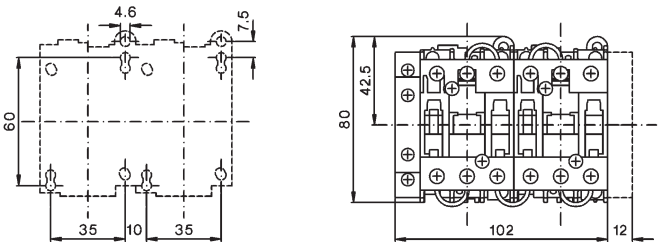
K3PV-12A10=



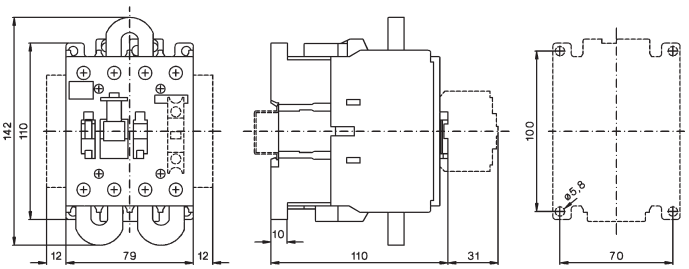
K3PV-30A00, K3PV-60A00



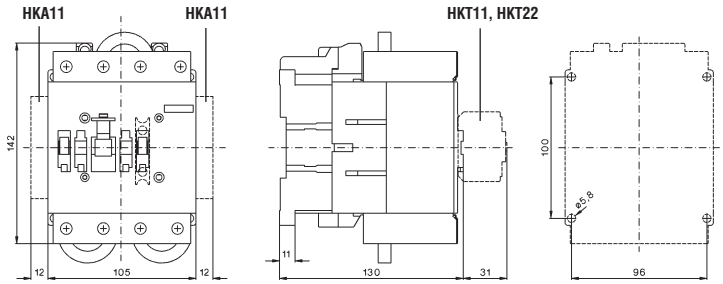
K3PV-30A10=, K3PV-60A10=



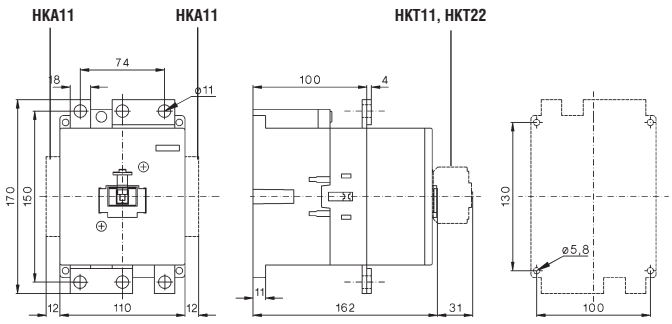
K3PV-80A00(=)



K3PV-100A00(=)



K3PV-150A00(=), K3PV-200A00(=), K3PV-240A00(=)



K3PV-300A00(=), K3PV-400A00(=), K3PV-450A00(=)