



PARTO KHAZEN Co.

PKC



Capacitor Duty Harmonic Contactors

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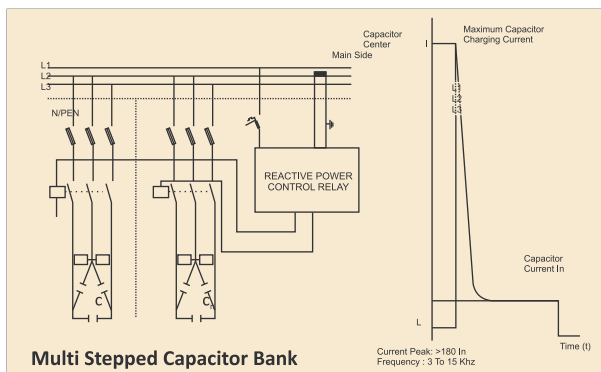


Capacitor Duty Contactors

Why using Capacitor Duty Contactors?

During exact moment of switching, a capacitor effectively appears as short circuit. The magnitude of capacitor inrush or charging current will depend upon value of AC Voltage level at instant of switching, together with impedance of feeders cable & supply transformers. In case of individual capacitors loads, charging current peaks of up to 30 times the rated capacitor current can occur. Whereas, for multi-stage capacitor, the in-rush current greater than 180 times the rated capacitor current can occur.

Such large-current can flow through contactor since initial in-rush current is taken from both mains-supply & capacitor already connected. As in-rush current of such high magnitude is undesirable & likely to weld main contacts of Standard Duty Contactors.



Operation:

PK's Capacitor Duty Contactors are specially designed to meet Capacitor Duty application. Contactors are fitted with block of three early make auxiliary contacts in series with quick discharge damping six – resistors – 2 per phase to limit peak current to value within Contactor making capacity such that normal rated capacitor current is carries by main contacts which, after closing, effectively short out the resistors.

Product Range:

PK contactors are produced in 3 phase form with 415V from 10 to 60Kvar in eight ratings, according to the IS-13947-4-1 and IEC-947 standard.

Advantages:

- Conforms to utilization category AC 6B as per IS 13947-4-1
- Saves costs of expensive replacements
- High electrical life
- Reduced watt loss during 'ON' condition, saves energy
- High Safety
- No risk of dangerous voltage
- Switching of Capacitor bank in parallel without de-rating
- Less maintenance & down - time

Recommendation:

- ☒ Limit the Current Surge by inserting quick discharge series damping resistance.
- Use Special Capacitor Duty Contactors.

Specification:

KVAR ratings at 50/60 Hz		Instantaneous Auxiliary Contacts (1)		Maximum Operating Rate	Electrical life at rated load	Basic reference complete with code including control circuit voltage (4) fixing (2)
t <- 55 °C (3)		NO	NC	Operations/hour	Operations	
200 V 240 V	400 V 440 V					
5.5	10.0	1 0	1 2	240	200000	PK1-D10K11 PK1-D10K02
6.7	12.5	1 0	1 2	240	200000	PK1-D12K11 PK1-D12K02
8.5	16.7	1 0	1 2	240	200000	PK1-D16K11 PK1-D16K02
10.0	20.0	1 0	1 2	240	100000	PK1-D20K11 PK1-D20K02
15.0	25.0	1 0	1 2	240	100000	PK1-D25K11 PK1-D25K02
20.0	33.3	1	2	240	100000	PK1-D33K12
25.0	40.0	1	2	100	100000	PK1-D40K12
40.0	60.0	1	2	100	100000	PK1-D60K12

Notes:

- (1) Additional Auxiliary Contact block (Side mounted) type TA8DN11 or TA8DN20 can be mounted, if required
- (2) Contactor Type PK1D12K-PK1D25K: Suitable type clip-on mounting into 35mm DIN rail
 Contactor Type PK1D33K-PK1D60K: Suitable type clip-on mounting into 75mm DIN rail
- (3) Average temperature over a 24-hour period, in accordance with IEC 70 and 831

(4) Coil Reference (Standard)

Volts AC	24	48	110	120	208	220	230	240	277	380	400	415	440	480	575	600
50 Hz	B5	E5	F5			M5	P5	U5		Q5	V5	N5	R5			
60 Hz	B6	E6	F6	G6	L6	M6		U6	W6	Q6			R6	T6	S6	X6
50/60 Hz	B7	E7	F7	G7		M7	P7	U7		Q7	V7	N7	R7			

Dimensional Drawing

PK1-D10K, D12k, D16K, D20K, D25K

PK	10 KVAR	12.5 KVAR	16.7 KVAR	20 KVAR	25 KVAR
C	80	80	85	93	98
G	35	35	35	40	40

PK1-D33K, D40K, D60K

PK	33.3 KVAR	40 KVAR	60 KVAR
C	114	114	125



Specification Harmonic Contactors:



Application

In The Capacitor Banks Which are equipped with Detune Filters, there is no high inrush current because of series self connected to the Capacitors. Therefore no need to use AC6b Cap. Duty Contactors.

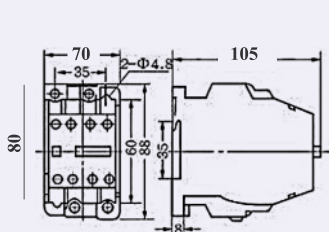
This type of Cotactors are used to apply in the range of 5.67%, 7% & 14% Detune Filters as indicated in following table.

Model and meaning

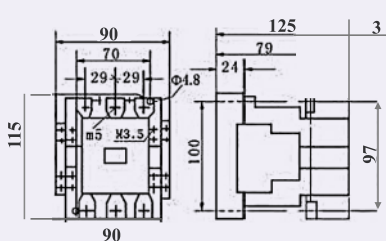
PKC Code	Power Kvar@ 50/60 Hz			Rated operation al current In (A)	Rated Thermal current In (A)	Maximum switching per hour	Electrical life operations
	220V/230V	400V/440V	660V				
PK2D016A22E	2 kvar	5 kvar	12.5 kvar	16 A	30 A	120	20000
PK2D032A22E	5 kvar	12.5 kvar	30 kvar	32 A	40 A	120	20000
PK2D063A22E	9 kvar	25 kvar	60 kvar	63 A	80 A	120	150000
PK2D110A22E	17 kvar	50 kvar	120 kvar	110 A	80 A	80	100000
PK2D205A22E	33 kvar	100 kvar	200 kvar	205 A	225 A	80	100000

- Coil voltage: 230V ac
- Rated insulation voltage: Ui 690V / Uimp: 8kV
- Auxiliary contact: 2NO - 2NC

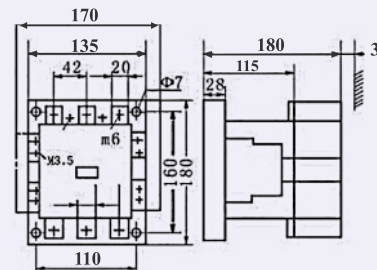
Contour and Installation Dimension



PK2D016A22E | D: 110
H: 80
W: 70



PK2D063A22E | D: 125
H: 115
W: 90



PK2D205A22E | D: 155
H: 150
W: 120

PK2D032A22E | D: 105
H: 80
W: 70

PK2D110A22E | D: 170
H: 180
W: 135