

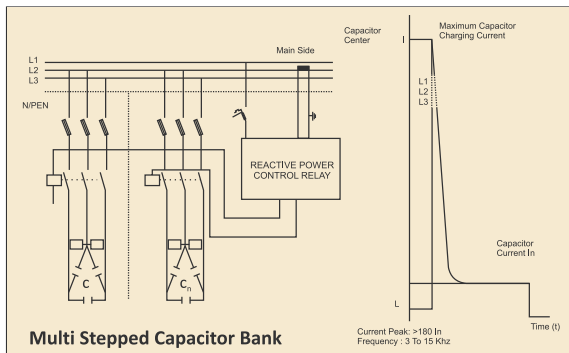
Capacitor Duty Contactors

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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.



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

Operation:

PK's Capacitor Duty Contactors are specially designed to meet Capacitor Duty application. Contactor 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

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

