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## Capacitor Duty Contactors

10kVAR ~ 60kVAR

### Controls & Switchgear Contactors Ltd.

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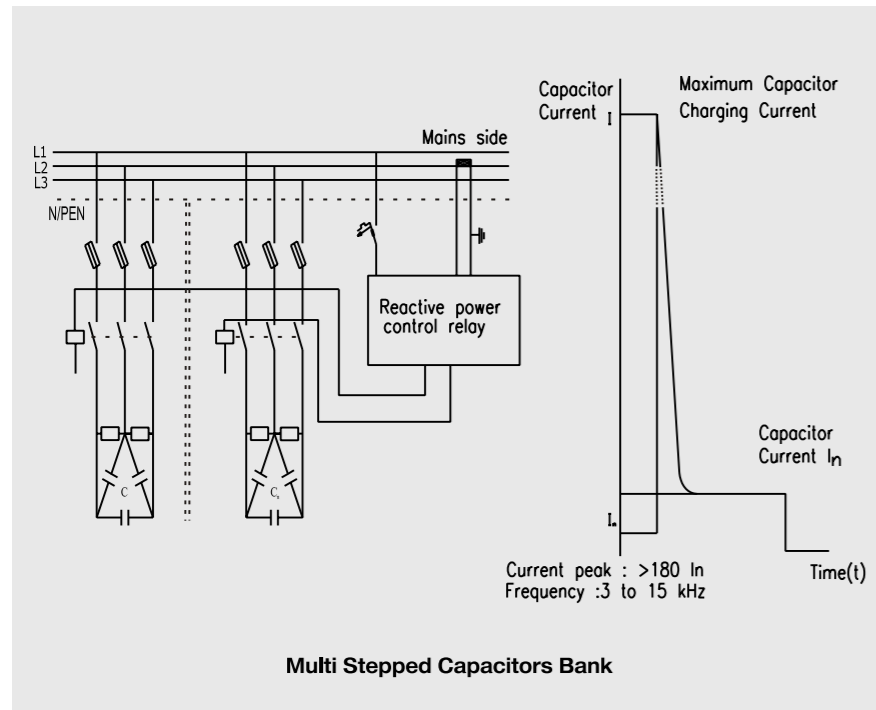
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## Why special Capacitor Duty Contactor ?

During exact moment of switching, a capacitor effectively appears as short circuit. The magnitude of capacitor in-rush 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 upto 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.



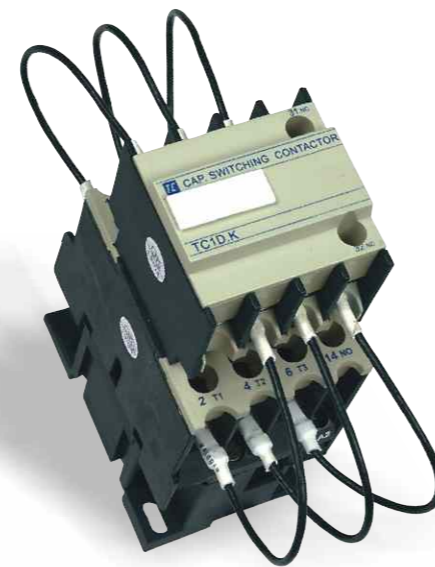
Such large-current can flow through contactor since initial in-rush current is taken from both mains-supply & capacitor already connected. As in-rush current of such high magnitude is undesirable & likely to weld main contacts of Standard Duty Contactors.

It is, therefore, advisable to

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

## Operating Principal

TC'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 carried by main contacts which, after closing, effectively short out the resistors.



## Product Range

Contactors 3P, 415V AC rating 10kVAR thru 60 kVAR, available in eight ratings, conforming to IEC-947, IS 13947-4-1

## Benefits

- Conforms to utilization category AC6B as per IS 13947-4-1
- Saves cost 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

## Specification

KVAR ratings at 50/60 Hz		Instantaneous Auxiliary Contacts		Maximum Operating Rate	Electrical life at rated load	Basic reference complete with code including control circuit voltage (4) fixing (2)
$\theta \leq 55^\circ \text{C} (3)$		NO	NC	Operations hour	Operations	
200V 240V	400V 440V	1 0	1 2	240	200000	TC1-D10K11 ■ TC1-D10K02 ■
5.5	10.0	1 0	1 2	240	200000	TC1-D12K11 ■ TC1-D12K02 ■
6.7	12.5	1 0	1 2	240	200000	TC1-D16K11 ■ TC1-D16K02 ■
8.5	16.7	1 0	1 2	240	100000	TC1-D20K11 ■ TC1-D20K02 ■
10.0	20.0	1 0	1 2	240	100000	TC1-D25K11 ■ TC1-D25K02 ■
15.0	25.0	1 0	2 2	240	100000	TC1-D33K12 ■ TC1-D40K12 ■
20.0	33.3	1 0	2 2	100	100000	TC1-D40K12 ■ TC1-D60K12 ■
25.0	40.0	1 0	2 2	100	100000	TC1-D40K12 ■ TC1-D60K12 ■
40.0	60.0	1 0	2 2	100	100000	TC1-D40K12 ■ TC1-D60K12 ■

## Notes

- (1) Additional Auxiliary Contact block (Side mounted) type TA8DN11 or TA8DN20 can be mounted, if required
- (2) Contactor Type TC1D12K - TC1D25K : Suitable type clip-on mounting into 35mm DIN rail  
Contactor Type TC1D33K-TC1D60K : 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) Standard Control Circuit Voltage / Frequency

## 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

