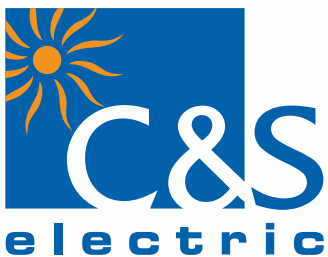


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UL CE RoHS  
Compliant



Capacitor Duty  
Contactor

# Capacitor Duty Contactor

## Product Application

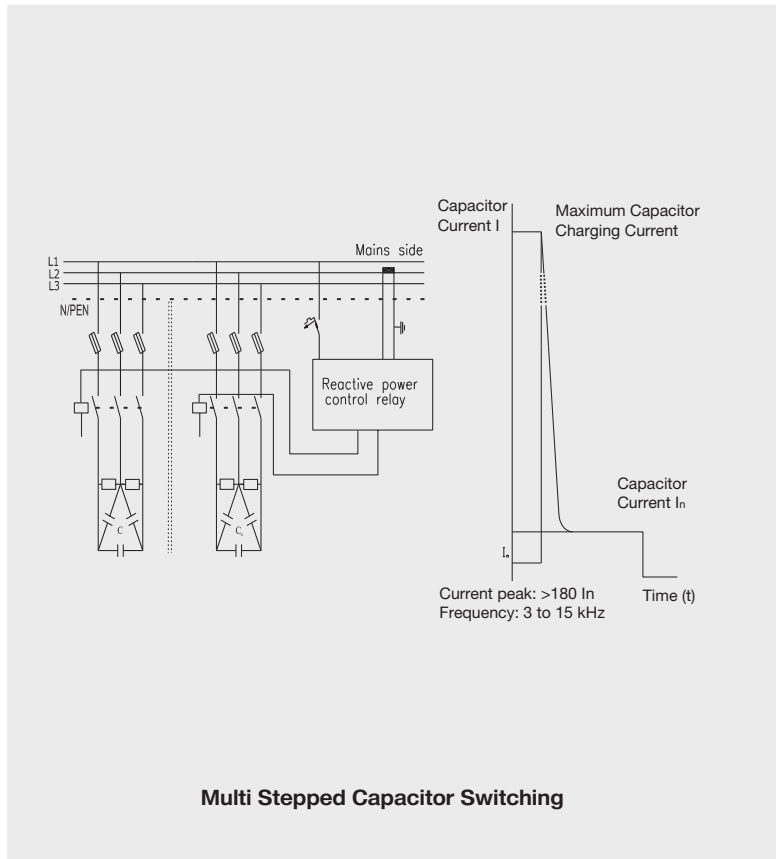
In Low Voltage installations, when a Capacitor is switched 'ON', it results in resonant circuit damped to a greater degree. In addition to the rated current, over current of high amplitude ( $>180 I_n$ ) and high frequencies (3~15 KHz) occur during transit period (1 to 2 ms). The resultant high in-rush current peaks, caused due to capacitor switching, depends upon following factors:

- Network inductances
- Transformer power and short circuit voltage
- Type of power factor correction: fixed or automatic
- Harmonics presence in the system

The in-rush current of such high magnitudes is undesirable and it is likely to weld main poles of any standard contactor. Therefore, contactor for capacitor bank switching must be designed to withstand :

- Permanent current that can reach 1.5 time the nominal current of capacitor bank
- Short but high peak current on pole closing

Hence, selection of capacitor duty switching device requires careful product selection. It is always recommended to use dedicated Capacitor Duty Switching Contactor for switching Capacitor bank, which optimizes the switchgear cost & enhances the equipment life.



## Operating Principal

Capacitor contactor are specially designed to meet stringent requirements of capacitor switching as deliberated above. These contactors are fitted with front- mounted block of 3 early make auxiliary contact 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

- Eight Ratings: 7kVAR ~ 100kVAR  
3 P, 415V AC, 50/60 Hz
- Conforms to IEC 60947-4-1 and IS/IEC 60947-4-1 AC -6b utilization category

## Features and Benefits

- Excellent damping of In-rush Current
- Reduced watt loss during 'ON' condition, saves energy
- Capacitor Bank Switching in parallel without de-rating
- Enhanced equipment life
- Low maintenance & down -time
- Power quality improvement
- Optimized solution cost



AC Coil Voltage - Capacitor Duty Contactors					
Contactor TC1-D**K	24V	110V	220V	240V	415V
50Hz	B5	F5	M5	U5	N5
50/60Hz	B7	F7	M7	U7	N7

## Specifications

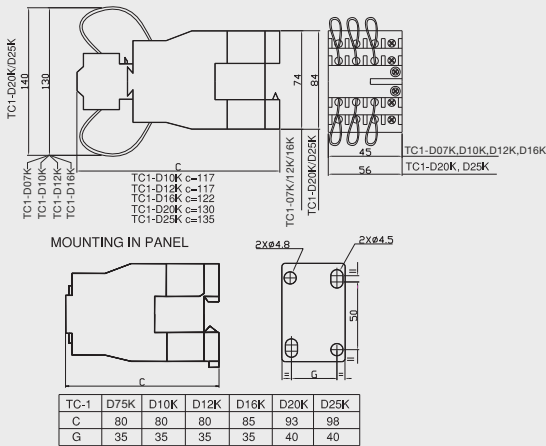
KVR* Rating 50/60Hz $\theta \leq 55^{\circ}\text{C}$ (3)			Instantaneous Auxiliary Contacts		Maximum Operating Rate	Electrical Life at Rated Load	Prospective Peak Current at Switch on (In)	Product Reference
200V/240V	400V/440V	660V/690V	NO	NC	Operations Hours	Operations		
1.4	2.5	3	1	0	240	200000	-	TC1-D02K10
			0	1				TC1-D02K01
2.8	5	6.5	1	0	240	200000	-	TC1-D05K10
			0	1				TC1-D05K01
4	7.5	3	1	1	240	200000	200In	TC1-D07K11
			0	2				TC1-D07K02
5.5	10	12.5	1	1	240	200000	200In	TC1-D10K11
			0	2				TC1-D10K02
6.7	12.5	18	1	1	240	200000	200In	TC1-D12K11
			0	2				TC1-D12K02
8.5	16.7	24	1	1	240	200000	200In	TC1-D16K11
			0	2				TC1-D16K02
10	20	30	1	1	240	100000	200In	TC1-D20K11
			0	2				TC1-D20K02
15	25	36	1	1	240	100000	200In	TC1-D25K11
			0	2				TC1-D25K02
20	33.3	48	1	2	240	100000	200In	TC1-D33K12
25	40	58	1	2	100	100000	200In	TC1-D40K12
30	50	72	1	2	100	100000	200In	TC1-D50K12
40	60	92	1	2	100	100000	200In	TC1-D60K12
45	75	120	1	2	100	100000	200In	TC1-D75K12
48	80	128	1	2	100	100000	200In	TC1-D80K12
60	100	143	1	2	100	100000	200In	TC1-D100K12

### NOTES:

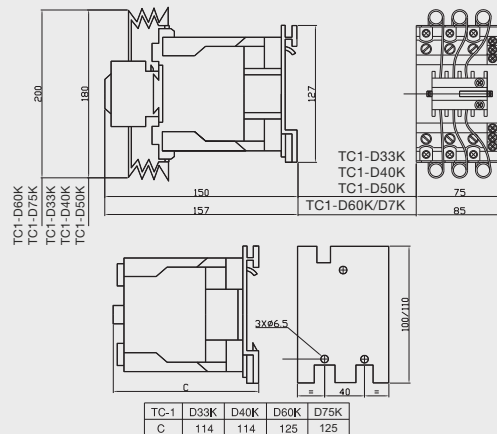
- (1) Additional Auxiliary Contact block (Side mounted) type TA8DN11 or TA8DN20 can be mounted, if required
- (2) Contactor Type TC1-D07K~TC1-D25K: Suitable type clip-on mounting into 35mm DIN rail  
Contactor Type TC1-D33K~TC1-D100K: Suitable type clip-on mounting into 75mm DIN rail
- (3) Average temperature over a 24-hour period, in accordance with IEC 70 and 831
- (4) Standard Control Circuit Voltage / Frequency

### Dimensional Drawing

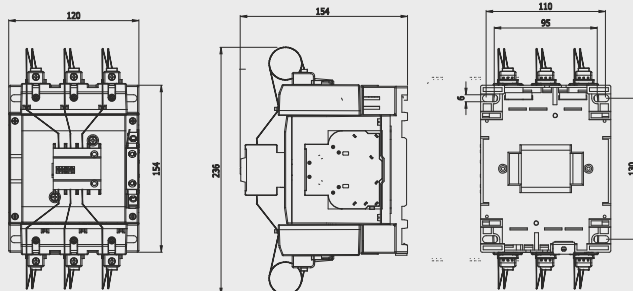
TC1-D07K, D10K, D16K, D20K, D25K



TC1-D33K, D40K, D60K, D75K



TC1-D80K, D100K



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