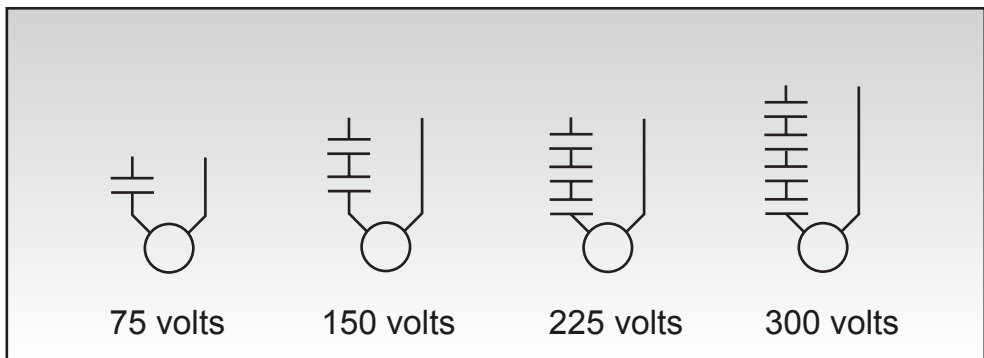


## Switching Of DC Loads

Sigma contactors are used for applications involving DC control circuits. It does not matter whether the power circuit is AC or DC. There are two considerations when using these contactors in applications involving a DC power circuit:

1. You can use the AC inductive/resistive rating as long as the voltage does not exceed 75 volts per pole., you can multiply the number of poles in series by the maximum voltage allowed per pole.



2.  $L/R \leq 15$  ms without derating. A time constant is defined as the length of time it takes the current to rise from 0 to 63.2% of its maximum value, or to decay to 36.8% of its maximum value. Time constants are measured in seconds. The inductance (L) is measured in henries and the resistance (R) is measured in ohms. In a pure resistive circuit, current reaches its maximum value when the circuit is energized. Because inductance opposes a change in current flow and tends to hold back current, the time constant will increase as the circuit inductance is increased. As the time constant exceeds 15 ms, the electrical life of the contactor is affected and a derating factor (normally one contactor size) is needed to compensate for this loss. In most applications this time constant will be under 15 ms. It is a good idea, however, to check with the motor manufacturer.

Type	Rate Current For DC-1 Utilization Category Resistive Loads (L/R=1 ms)				Series and parallel load Currents For DC-3 And DC-5 Utilization (L/R=15ms)			
	24 V	48 V	110 V	220 V	24 V	48 V	110 V	220 V
	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
SCM-9	10	10	8	8	8	6	4	2
SCM-12	12	12	12	12	12	10	8	4
SCM-18	18	18	18	18	12	10	8	4
SCM-22	20	20	20	20	20	20	15	8
SCM-32	25	25	25	22	25	25	20	10
SCM-40	35	35	35	30	35	30	20	10
SCM-50	50	50	50	40	50	35	30	12
SCM-65	65	65	65	50	50	35	30	12
SCM-75	75	75	75	55	80	60	50	20
SCM-85	80	80	80	60	80	60	50	20
SCM-100	100	100	100	80	100	90	80	50
SCM-125	120	120	100	100	120	90	80	50
SCM-150	150	150	150	150	150	130	120	80