

Table 7-5

Making and breaking capacity of contactors

Making and breaking conditions in accordance with the utilization categories²⁾ as per DIN EN 60947-4-1 (VDE 0660 Part 102)

Utilization category	Making and breaking conditions			
	I_c/I_e	U_r/U_e	$\cos \varphi$	Number of switching cycles
AC-1	1.5	1.05	0.8	50
AC-2	4.0	1.05	0.65	50
AC-3	8.0	1.05	1)	50
AC-4	10.0	1.05	1)	50
AC-5a	3.0	1.05	0.45	50
AC-5b	1.5	1.05		50
AC-6a				
AC-6b				
AC-7a	1.5	1.05	0.8	50
AC-7b	8.0	1.05	1)	50
AC-8a	6.0	1.05	1)	50
AC-8b	6.0	1.05	1)	50
			<u>L/R (ms)</u>	
DC-1	1.5	1.05	1.0	50
DC-3	4.0	1.05	2.5	50
DC-5	4.0	1.05	15.0	50
DC-6	1.5	1.05		50
Utilization category	Making conditions for additional operations			
	I_c/I_e	U_r/U_e	$\cos \varphi$	Number of switching cycles
AC-3	10	1.05	1)	50
AC-4	12	1.05	1)	50

I Making current. The making current is stated as direct current or symmetrical alternating current r.m.s. value, where with alternating current, the asymmetrical current may be higher.

I_c Making and breaking current, stated as direct current or symmetrical alternating current r.m.s. value.

I_e Rated normal current

U Applied voltage

U_r Power frequency recovery voltage or DC recovery voltage

U_e Rated voltage

$\cos \varphi$ Test-circuit power factor

L/R Test-circuit time constant

1) $\cos \varphi = 0.45$ for $I_e \leq 100$ a, $\cos \varphi = 0.35$ for $I_e \geq 100$ A

2) More information can be found in the standards listed in Table 7-1