

**Utilization categories for fuse combination units in accordance with IEC/EN 60947-3:2010-02, VDE 0660 Part 107 AC**

Utilization category	Typical applications	Verification of electrical endurance							Verification of making and breaking capacities						
		Make				Break			Make				Break		
		$I_e$ A	I $I_e$	U $U_e$	cos $\Phi$	$I_c$ $I_e$	$U_r$ $U_e$	cos $\Phi$	$I_e$ A	I $I_e$	U $U_e$	cos $\Phi$	$I_c$ $I_e$	$U_r$ $U_e$	cos $\Phi$
AC-20A(B) <sup>1)</sup>	Connecting and disconnecting under no-load conditions	3)	2)	2)	2)	2)	2)	2)	3)	2)	1.05	2)	2)	1.05	2)
AC-21A(B) <sup>1)</sup>	Switching of resistive loads, including slight overloads	3)	1	1	0.95	1	1	0.95	3)	1.5	1.05	0.95	1.5	1.05	0.95
AC-22A(B) <sup>1)</sup>	Switching of mixed resistive and inductive loads, including slight overloads	3)	1	1	0.8	1	1	0.8	3)	3	1.05	0.65	3	1.05	0.65
AC-23A(B) <sup>1)</sup>	Switching of motor loads and other highly inductive loads	3)	1	1	0.65	1	1	0.65	4)	10	1.05	0.45	8	1.05	0.45
									5)	10	1.05	0.35	8	1.05	0.35

**DC**

Utilization category	Typical applications	Verification of electrical endurance							Verification of making and breaking capacities						
		Make				Break			Make				Break		
		$I_e$ A	I $I_e$	U $U_e$	L/R ms	$I_c$ $I_e$	$U_r$ $U_e$	L/R ms	$I_e$ A	I $I_e$	U $U_e$	L/R ms	$I_c$ $I_e$	$U_r$ $U_e$	L/R ms
DC-20A(B) <sup>1)</sup>	Connecting and disconnecting under no-load conditions	3)	2)	2)	2)	2)	2)	2)	3)	2)	1.05	2)	2)	1.05	2)
DC-21A(B) <sup>1)</sup>	Switching of resistive loads, including slight overloads	3)	1	1	1	1	1	1	3)	1.5	1.05	1	1.5	1.05	1
DC-22A(B) <sup>1)</sup>	Switching of mixed resistive and inductive loads, including overloads (e.g. shunt motors)	3)	1	1	2	1	1	2	3)	4	1.05	2.5	4	1.05	2.5
DC-23A(B) <sup>1)</sup>	Switching of highly inductive loads (e.g. series motors)	3)	1	1	0.75	1	1	0.75	3)	4	1.05	15	4	1.05	15

- I Making current
- $I_c$  Breaking current
- $I_e$  Rated operational current
- U Voltage
- $U_e$  Rated operational voltage

- 1) A: Frequent actuation, B: Occasional actuation
- 2) If the switching device has a making and/or breaking capacity, the values for the current and the power factor (time constants) must be stated by the manufacturer.
- 3) All values
- 4)  $I_e \leq 100A$
- 5)  $I_e > 100A$