

IEC Technical data

DC circuit switching

EK110 – EK1000

General



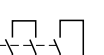





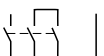
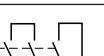
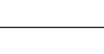

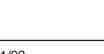
The arc switching on d.c. is more difficult than on a.c.

- For selecting a contactor it is essential to determine the current, the voltage and the L/R time constant of the controlled load.
- For information, typical time constant values are quoted hereafter: non inductive loads such as resistance furnaces ($L/R \approx 1$ ms), inductive loads such as shunt motors ($L/R \approx 2$ ms) or series motors ($L/R \approx 7.5$ ms).
- The addition of a resistor in parallel with an inductive winding helps in the elimination of the arcs.
- All the poles required for breaking must be connected in series between the load and the source polarity not linked to earth (or chassis).

Technical Data

- The tables indicate for the standard contactors the I_b max. operating currents depending on: the utilization category (i.e. L/R) DC-1, DC-3, DC-5 as defined in the IEC 60947-4-1 publication (see page 1.75 for more details), the operating voltage U_b and the pole coupling details. Ampere values quoted in the tables below are valid for a $-25 \dots +70$ °C temperature close to the contactors, as long as the AC-1 Ampere values (see page 1.61) for the corresponding ambient temperature are not exceeded.
- Max. switching frequency: 300 ops/h.
- For switching higher d.c. ratings, we recommend the use of bar mounted contactors, R series (63 ... 2000 A).

Selection Table

a.c. / d.c. operated contactors			EK110	EK150	EK175	EK210	EK370	EK550	EK1000
Utilization category DC-1, $L/R \leq 1$ ms									
	≤ 72 V	A	120	145	210	210	370	550	–
	110 V	A	120	145	210	210	370	550	–
	≤ 72 V	A	200	200	300	300	550	800	–
	110 V	A	200	200	300	300	550	800	–
	220 V	A	200	200	300	300	550	800	–
	≤ 72 V	A	200	200	300	300	550	800	–
	110 V	A	200	200	300	300	550	800	–
	220 V	A	200	200	300	300	550	800	–
	440 V	A	–	–	210	210	450	650	–
	600 V	A	–	–	–	–	450	650	–
	≤ 72 V	A	200	200	300	300	550	800	–
	110 V	A	200	200	300	300	550	800	–
	220 V	A	200	200	300	300	550	800	–
	440 V	A	200	200	260	300	450	650	–
	600 V	A	–	–	260	300	450	650	–
	600 V	A	–	–	–	–	450	650	–
Utilization category DC-3, $L/R \leq 2$ ms									
	≤ 72 V	A	120	145	210	210	370	550	–
	≤ 72 V	A	135	145	210	210	450	650	–
	110 V	A	135	135	210	210	450	650	–
	220 V	A	135	135	210	210	450	650	–
	≤ 72 V	A	135	145	210	210	450	650	–
	110 V	A	135	135	210	210	450	650	–
	220 V	A	135	135	210	210	450	650	–
	440 V	A	–	–	210	210	450	650	–
	600 V	A	–	–	–	–	450	650	–
	≤ 72 V	A	135	145	210	210	450	650	–
	110 V	A	135	135	210	210	450	650	–
	220 V	A	135	135	210	210	450	650	–
	440 V	A	135	135	210	210	450	650	–
	600 V	A	–	–	170	210	450	650	–
Utilization category DC-5, $L/R \leq 7.5$ ms									
	≤ 72 V	A	135	145	210	210	450	650	–
	110 V	A	135	135	210	210	450	650	–
	220 V	A	135	135	210	210	450	650	–
	≤ 72 V	A	135	145	210	210	450	650	–
	110 V	A	135	135	210	210	450	650	–
	220 V	A	135	135	210	210	450	650	–
	440 V	A	–	–	210	210	450	650	–
	600 V	A	–	–	–	–	450	650	–
	≤ 72 V	A	135	145	210	210	450	650	–
	110 V	A	135	135	210	210	450	650	–
	220 V	A	135	135	210	210	450	650	–
	440 V	A	135	135	210	210	450	650	–
	600 V	A	–	–	170	210	450	650	–
	600 V	A	–	–	–	–	450	650	–