

# IEC Technical data

## DC circuit switching

### AL9 — AL40



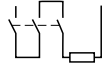



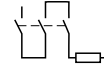


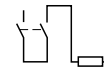

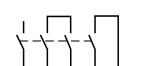
Across the line  
contactors

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#### 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).

A.C. operated contactors		AL9	AL12	AL16	AL26	AL30	AL40	
<b>Utilization category DC-1, <math>L/R \leq 1</math> ms</b>								
	$\leq 72$ V	A	25	27	30	45	55	60
	110 V	A	10	15	20	–	–	–
	220 V	A	–	–	–	–	–	–
	440 V	A	–	–	–	–	–	–
	600 V	A	–	–	–	–	–	–
	$\leq 72$ V	A	25	27	30	45	55	60
	110 V	A	25	27	30	45	55	60
	220 V	A	10	15	20	–	–	–
	$\leq 72$ V	A	25	27	30	45	55	60
	110 V	A	25	27	30	45	55	60
	220 V	A	25	27	30	45	55	60
	$\leq 72$ V	A	25	27	30	45	–	–
	110 V	A	25	27	30	45	–	–
	220 V	A	25	27	30	45	–	–
	440 V	A	10	15	20	–	–	–
<b>Utilization category DC-3, <math>L/R \leq 2</math> ms</b>								
	$\leq 72$ V	A	25	27	30	45	55	60
	110 V	A	6	7	8	–	–	–
	220 V	A	–	–	–	–	–	–
	440 V	A	–	–	–	–	–	–
	$\leq 72$ V	A	25	27	30	45	55	60
	110 V	A	25	27	30	45	55	60
	220 V	A	6	7	8	–	–	–
	$\leq 72$ V	A	25	27	30	45	55	60
	110 V	A	25	27	30	45	55	60
	220 V	A	25	27	30	45	55	60
	$\leq 72$ V	A	25	27	30	45	–	–
	110 V	A	25	27	30	45	–	–
	220 V	A	25	27	30	45	–	–
	440 V	A	6	7	8	–	–	–
<b>Utilization category DC-5, <math>L/R \leq 7.5</math> ms</b>								
	$\leq 72$ V	A	9	12	16	25	30	40
	110 V	A	4	4	4	–	–	–
	220 V	A	–	–	–	–	–	–
	440 V	A	–	–	–	–	–	–
	$\leq 72$ V	A	25	27	30	45	55	60
	110 V	A	10	15	20	30	45	50
	220 V	A	4	4	4	–	–	–
	$\leq 72$ V	A	25	27	30	45	55	60
	110 V	A	25	27	30	45	55	60
	220 V	A	9	12	16	25	30	40
	$\leq 72$ V	A	25	27	30	45	–	–
	110 V	A	25	27	30	45	–	–
	220 V	A	10	15	20	30	–	–
	440 V	A	4	4	4	–	–	–