Technical details – Contactors from 4 kW to 18.5 kW/AC 3



Technical details			DL 4 K-	DL 5 K-	DL 7 K-	DL 11 K-	DL 15 K	DL 18 K
Rated insulation voltage U_i (V)	VDE 0110		750	750	750	750	750	750
	IEC, 947-1, BS 5424, NF C20-040		690	690	690	690	690	690
	CSA 22.2 - Nr. 14, UL 508		600	600	600	600	600	600
Minimum and maximum **rated operating voltage** (V)		min./max.	12/690	12/690	12/690	12/690	12/690	12/690
Permissible range of operating voltage	x U_C		0.8 – 1.1					
Rated operational current I_e on AC 1/AC 3	at ≦ 40 °C	A	22/9	25/12	39/16	39/23	54/30	54/37
Rated thermal current I_{th} (A)		open/enclosed	22/16	25/20	39/25	39/30	54/45	54/50
Permissible overcurrent (A) at overload time of (open type)		3 min/1 min	70/80	70/80	70/80	70/80	120/260	120/260
		10 secs/5 secs	110/120	110/120	220/280	220/280	300/450	300/450
		2 secs/1 sec.	160/180	160/180	350/400	350/400	550/700	550/700
Three-phase power when switching resistive load on AC 1 (kW) at 380 V		open/enclosed	13/10	16/13	21/16	26/20	36/36	36/36
Motor rating when switching slipring or squirrel-cage motors (kW) 50 Hz and 60 Hz on AC 2 and AC 3 duty		220 V/240 V	2.2	3	4	5.5	9	11
		380 V/415 V	4	5.5	7.5	11.0	15	18.5
		500 V	5.5	7.5	11	15.0	18.5	20
		690 V	4	5.5	7.5	11.0	15	18.5
Rated breaking capacity (A) at cos φ = 0.35		415 V	90	120	220	220	450	450
		500 V	90	120	220	220	350	350
		690 V	50	70	130	130	250	250
Rated making capacity (A) at cos φ = 0.35			300	300	600	600	700	700
Switching times (ms) (the values are applicable to 15 % undervoltage and 10 % overload)	AC operated	closing delay	12–30	12–30	12–30	12–30	11–20	11–20
		opening delay	10–20	10–20	10–20	10–20	5–20	5–20
		are duration	< 10	< 10	< 10	< 10	< 10	< 10
	DC operated (20 % undervoltge)	closing delay	20–30	20–30	20–30	20–30	15–30	15–30
		opening delay	10–16	10–16	10–16	10–16	10–18	10–18
Switching times (ms) for direct change-over of reversing and star-delta contactors (at 110 % U_c)			15–20	15–20	15–20	15–20	10–15	10–15
Power consumption of operating coil (VA/AC)		inrush/hold	95/10	95/10	95/10	95/10	95/10	95/10
Power consumption of operating coil (W/DC)		inrush/hold	105/1	105/1	105/1	105/1	105/1	105/1
Power consumption of operating coil (W/DC)		inrush/hold	6.5	6.5	8.5	8.5	8.5	8.5
Impedance per pole		mm Ω/W	1.5	1.5	1.5	1.5	1	1
Power dissipation per pole at I_{th}		W	2.5	2.5	2.5	2.5	2	2
Switching frequency – operating cycles/hour contactor without overload relay		no-load operation	3000					
	on AC 1		1000					
	on AC 2		1000		750			
	on AC 3		1000		750			
	on AC 4		250					
Mechanical life		no. of operations	10 million					
Electrical life of contacts			see diagram page 1.75					
Permissible ambient temperature range (°C)		operating:	-25° C +55° C					
		storage:	-30° C +80° C					
Size of connecting screws			M 3.5	M 3.5	M 3.5	M 3.5	caged terminals	
Maximum cable size (mm²)			6	6	6	6	25	25
Mounting position to DIN 40 046 IEC 68			vertical mounting plane ± 22.5°					
Shock resistance (g), normal mounting position, Shock duration 20 ms		N/O, N/C	6/4	6/4	6/4	6/4	6/–	6/–
Climatic proof			Humid warmth, constant, acc. to DIN IEC 68 Part 2–3, humid warmth, cyclic acc. to DIN IEC 68 Part 2–30					
Weight		kg	0.4	0.4	0.4	0.4	0.62	0.62
Rated operational current I_e for auxiliary contacts on AC 11 duty		230 ... 240 V	6/4	6/4	6/4	6/4	–	–
		690 V	2/1	2/1	2/1	2/1	–	–
Continuous current I_{th} (A) for auxiliary switch			16	16	16	16	–	–
Rated insulation voltage (V) for auxiliary switch		VDE 0110	690	690	690	690	–	–
Short-ciruit protection of contactor without thermal relay (A/HRC)[3]			20	25	35	35	63	63
Maximum control fuse rating, slow		A	16	16	16	16	–	–
Capacitor contactor on request			Safety isolation (up to 400 V AC) of coil and contact elements to DIN VDE 0106 Part 101 and A1 (draft 2/89)					