

Contactors 3-pole

AC Operated

Ratings		Rated Current strom	Aux. Contacts		Type	Coil voltage ¹⁾		Pack pcs.	Weight kg/pc.
AC2, AC3			Built-in	Additional		24	48		
380V						24V 50/60Hz	0		
400V	660V	AC1				48V 50/60Hz	1		
415V	690V	690V				110V 50/60Hz	2		
kW	kW	A				220-240V 50Hz	3		
						230V 50/60Hz	H	220V DC	
						380-415V 50Hz	4		
						▼ Order No ▼			
4	5,5	25	1 -	max. 4	K3-10ND10	...	LA 301 01.N	1	0,23
4	5,5	25	- 1	HN.. or HA..	K3-10ND01	...	LA 301 02.N	1	0,23
5,5	7,5	25	1 -		K3-14ND10	...	LA 301 41.N	1	0,23
5,5	7,5	25	- 1		K3-14ND01	...	LA 301 42.N	1	0,23
7,5	10	32	1 -		K3-18ND10	...	LA 301 81.N	1	0,23
7,5	10	32	- 1		K3-18ND01	...	LA 301 82.N	1	0,23
11	10	32	1 -		K3-22ND10	...	LA 302 21.N	1	0,23
11	10	32	- 1		K3-22ND01	...	LA 302 22.N	1	0,23
11	15	50	- -	max. 4	K3-24A00	...	LA 302 43.	1	0,48
15	18,5	65	- -	HN.. or HA..	K3-32A00	...	LA 303 23.	1	0,48
18,5	18,5	80	- -	and 2 HB..	K3-40A00	...	LA 304 03.	1	0,48
22	30	110	- -	max. 4 (3) ⁴⁾	K3-50A00	...	LA 305 03.	1	0,85
30	37	120	- -	HN.. or HA..	K3-62A00	...	LA 306 23.	1	0,85
37	45	130	- -	and 2 HB..	K3-74A00	...	LA 307 43.	1	0,85
45	55	160	- -	max. 7	K3-90A00	... ²⁾ / VS ³	LA 309 03.	1	2,2
55	55	200	- -	HN.. or HA.. and 2HB..	K3-115A00	... ²⁾ / VS ³⁾	LA 311 53.	1	2,2
75	110	230	- -	1 HKT..	K3-151A00	... ²⁾	LA 315 00H	1	4
90	132	250	- -	and 2 HKA11	K3-176A00	... ²⁾	LA 317 50H	1	4
110	160	350	- -		K3-210A00	... ²⁾	LA 321 03H	1	7,2
132	210	450	- -		K3-260A00	... ²⁾	LA 326 03H	1	7,2
160	250	500	- -		K3-316A00	... ²⁾	LA 331 63H	1	7,2
250	375	600	2 2	1 HKF22	K3-450A22	... ²⁾	LA 304 50H	1	13
300	475	760	2 2		K3-550A22	... ²⁾	LA 305 50H	1	13,5
400	630	1000	2 2		K3-700A22	... ²⁾		1	26,5
500	700	1100	2 2		K3-860A22	... ²⁾		1	27,6
580	850	1200	1 2	2 HKB11	K3-1000A12	...		1	49
680	1000	1350	1 2		K3-1200A12	...		1	53

1) Coil voltage range and other coil voltages see page 39
 2) Type 230 for AC- and DC-operating 220-240V 50/60Hz and 220V DC (with integrated coil suppressor)
 3) Type 230VS for AC-operating 220-240V 50Hz (with integrated coil suppressor)
 4) max. 3 HN.. or HA.. for DC-operated Contactors



Contactors

Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Main Contacts	Type	K(G)3-10	K(G)3-14	K(G)3-18	K(G)3-22	K(G)3-24	K(G)3-32	K(G)3-40	K3-50	K3-62	K3-74
Rated insulation voltage U_i ¹⁾	V AC	690	690	690	690	690	690	690	690	690	690
Making capacity I_{eff} at $U_e = 690V$ AC	A	200	200	200	200	400	500	500	700	900	900
Breaking capacity I_{eff}											
400V AC	A	180	180	200	200	380	400	400	600	800	800
K2-09 to K3-22 $\cos\phi = 0,65$	A	150	150	180	180	300	370	370	500	700	700
K3-24 to K3-1200 $\cos\phi = 0,35$	A	100	100	150	150	260	340	340	400	500	500
1000V AC	A	-	-	-	-	-	-	-	-	-	-
Utilization category AC1											
Switching of resistive load											
Rated operational current $I_e (=I_{th})$ at 40°C, open	690V A	25	25	32	32	50	65	80	110	120	130
Rated operational power of three-phase resistive loads 50-60Hz, $\cos\phi = 1$											
220V	kW	9,5	9,5	12,2	12,2	19,0	24,7	30,4	41,9	45,7	49,5
230V	kW	9,9	9,9	12,7	12,7	19,9	25,9	31,8	43,8	47,7	51,7
240V	kW	10,4	10,4	13,3	13,3	20,8	27,0	33,2	45,7	49,8	54,0
380V	kW	16,4	16,4	21,0	21,0	32,9	42,7	52,6	72,3	78,9	85,5
400V	kW	17,3	17,3	22,1	22,1	34,6	45,0	55,4	76,1	83,0	90,0
415V	kW	17,9	17,9	23,0	23,0	35,9	46,7	57,4	79,0	86,2	93,3
440V	kW	19,0	19,0	24,4	24,4	38,1	49,5	60,9	83,7	91,3	99,0
500V	kW	21,6	21,6	27,7	27,7	43,3	56,2	69,2	95,2	103,8	112,5
660V	kW	28,5	28,5	36,5	36,5	57,1	74,2	91,3	125,6	137,0	148,4
690V	kW	29,8	29,8	38,2	38,2	59,7	77,6	95,5	131,3	143,2	155,2
1000V	kW	-	-	-	-	-	-	-	-	-	-
Rated operational current $I_e (=I_{th})$ at 60°C, enclosed	690V A	25	25	32	32	40	55	65	90	100	110
Rated operational power of three-phase resistive loads 50-60Hz, $\cos\phi = 1$											
220V	kW	9,5	9,5	12,2	12,2	15,2	20,9	24,7	34,3	38,1	41,9
230V	kW	9,9	9,9	12,7	12,7	15,9	21,9	25,9	35,8	39,8	43,8
240V	kW	10,4	10,4	13,3	13,3	16,6	22,8	27,0	37,4	41,5	45,7
380V	kW	16,4	16,4	21,0	21,0	26,3	36,2	42,7	59,2	65,7	72,3
400V	kW	17,3	17,3	22,1	22,1	27,7	38,1	45,0	62,3	69,2	76,1
415V	kW	17,9	17,9	23,0	23,0	28,7	39,5	46,7	64,6	71,8	79,0
440V	kW	19,0	19,0	24,4	24,4	30,4	41,9	49,5	68,5	76,1	83,7
500V	kW	21,6	21,6	27,7	27,7	34,6	47,6	56,2	77,9	86,5	95,2
660V	kW	28,5	28,5	36,5	36,5	45,7	62,8	74,2	102,8	114,2	125,6
690V	kW	29,8	29,8	38,2	38,2	47,7	65,7	77,6	107,4	119,4	131,3
1000V	kW	-	-	-	-	-	-	-	-	-	-
Minimum cross-section of conductor at load with $I_e (=I_{th})$	mm ²	4	4	6	6	10	16	25	35	50	50
Utilization category AC2 and AC3											
Switching of three-phase motors											
Rated operational current I_e open and enclosed											
220V	A	12	15	18	22	24	30	40	50	63	74
230V	A	11,5	14,5	18	22	24	30	40	50	62	74
240V	A	11	14	18	22	24	32	40	50	62	74
380-400V	A	10	14	18	22	24	32	40	50	62	74
415V	A	9	14	18	22	23	30	40	50	62	74
440V	A	9	14	18	22	23	30	40	50	62	74
500V	A	7	9	9	9	17,5	21	21	33	42	42
660-690V	A	6,5	8,5	8,5	8,5	17	20	20	31	40	40
1000V	A	-	-	-	-	-	-	-	-	-	-
Rated operational power of three-phase motors 50-60Hz											
220-230V	kW	3	4	5	6	6	8,5	11	12,5	18,5	22
240V	kW	3	4	5	7	7	9	11,5	13,5	19	23
380-400V	kW	4	5,5	7,5	11	11	15	18,5	22	30	37
415V	kW	4,5	6	8,5	12	12	16	20	24	33	40
440V	kW	4,5	6	8,5	12	12	16	20	24	33	40
500V	kW	5,5	7,5	10	10	15	18,5	18,5	30	37	45
660-690V	kW	5,5	7,5	10	10	15	18,5	18,5	30	37	45
1000V	kW	-	-	-	-	-	-	-	-	-	-

1) Suitable at 690V for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry): $U_{imp} = 8kV$.
Data for other conditions on request.

Contactors

Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Typ	K3-90	K3-115	K3-116	K3-151	K3-176	K3-210	K3-260	K3-316	K3-450	K3-550	K3-700	K3-860	K3-1000	K3-1200
V~	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	690	690	690	690
A	1100	1200	1200	1500	2000	2100	2600	3200	4500	5500	7000	8600	10000	12000
A	950	1100	1000	1200	1500	1600	2100	2600	4500	5500	7000	8000	8000	10000
A	850	1000	1000	1200	1500	1600	2100	2600	4500	5500	7000	8000	8000	10000
A	600	600	800	1000	800	1200	1900	2300	3200	4400	5600	6900	7000	8000
A	-	-	400	500	600	700	850	1000	-	-	-	-	-	-
A	160	200	200	230	250	350	450	500	700	760	1000	1100	1200	1350
kW	60	76	76	87	95	133	171	190	266	289	381	419	457	514
kW	63	79	79	91	99	139	179	199	279	302	398	438	478	537
kW	66	83	83	95	103	145	187	207	291	315	415	457	498	561
kW	105	131	131	151	164	230	296	329	460	500	658	724	789	888
kW	110	138	138	159	173	242	311	346	485	526	692	762	831	935
kW	115	143	143	165	179	251	323	359	503	546	718	790	862	970
kW	121	152	152	175	190	266	342	381	533	579	762	838	914	1028
kW	138	173	173	199	216	303	389	453	606	658	866	952	1039	1169
kW	182	228	228	262	285	400	514	571	800	868	1143	1257	1371	1543
kW	191	239	239	274	298	418	537	597	836	908	1195	1314	1434	1613
kW	221	277	216	318	346	433	546	606	692	866	-	-	-	-
A	145	170	170	180	200	280	360	400	550	600	800	875	960	1080
kW	55	64	64	68	76	106	137	152	209	228	304	333	365	411
kW	57	67	67	71	79	111	143	159	219	239	318	348	382	430
kW	59	70	70	74	83	116	150	166	228	249	332	363	399	448
kW	95	111	111	118	131	184	237	263	362	395	526	575	631	710
kW	100	117	117	124	138	193	249	277	381	415	554	606	665	748
kW	104	122	122	129	143	201	259	287	395	431	575	628	690	776
kW	110	129	129	137	152	213	274	304	419	457	609	666	731	823
kW	125	147	147	155	173	242	312	346	476	519	692	757	831	935
kW	165	194	194	205	228	320	412	457	628	685	914	1000	1097	1234
kW	173	202	202	215	239	334	430	478	657	717	956	1045	1147	1290
kW	166	187	216	277	346	388	499	554	692	866	-	-	-	-
mm ²	95	120	95	95	120	240	2x150	2x(30x6)	2x(40x5)	2x(50x5)	2x(60x5)	2x(60x6)	2x(60x6)	2x(60x8)
A	90	115	115	150	175	210	260	315	450	550	700	860	1000	1200
A	90	115	115	150	175	210	260	315	450	550	700	860	1000	1200
A	90	115	115	150	175	210	260	315	450	550	700	860	1000	1200
A	90	115	115	150	175	210	260	315	450	550	700	860	1000	1200
A	90	115	115	150	175	210	260	315	450	550	700	860	1000	1200
A	90	115	115	150	175	210	260	315	450	550	700	860	1000	1200
A	60	60	115	150	175	210	260	315	450	550	700	860	1000	1200
A	58	58	100	120	140	150	180	240	400	500	630	700	860	1000
A	58	58	45	60	70	85	100	125	200	250	-	-	-	-
kW	25	33	30	40	50	60	75	90	132	175	225	280	325	390
kW	27	35	35	45	55	65	80	100	140	185	235	290	335	400
kW	45	55	55	75	90	110	132	160	250	300	400	500	580	680
kW	49	63	59	80	95	115	140	180	257	315	415	515	600	710
kW	49	63	63	85	100	125	150	190	270	335	450	530	630	750
kW	55	55	75	90	100	132	160	210	300	375	500	600	720	850
kW	55	55	90	110	132	132	160	210	375	500	630	700	850	1000
kW	55	55	55	75	90	110	132	160	280	355	-	-	-	-

Contactors

Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Main Contacts		Type	K(G)3-10	K(G)3-14	K(G)3-18	K(G)3-22	K(G)3-24	K(G)3-32	K(G)3-40	K3-50	K3-62	K3-74
Utilization category AC4												
Switching of squirrel cage motors, inching												
Rated operational current I_e	220V	A	12	15	18	18	24	30	40	50	63	63
open and enclosed	230V	A	11,5	14,5	18	18	24	30	40	50	62	62
	240V	A	11	14	18	18	24	32	40	50	62	62
	380-400V	A	10	14	18	18	24	32	40	50	62	62
	415V	A	9	14	18	18	23	30	37	45	60	60
	440V	A	9	14	18	18	23	30	37	45	55	55
	500V	A	9	12	16	16	17,5	21	21	33	42	42
	660V	A	7	9	9	9	17	20	20	31	40	40
	690V	A	6,5	8,5	8,5	8,5	17	20	20	31	40	40
	1000V	A	-	-	-	-	-	-	-	-	-	-
Rated operational power of three-phase motors 50-60Hz	220-230V	kW	3	4	5	5	6	8,5	11	12,5	18,5	18,5
	240V	kW	3	4	5	5	7	9	11,5	13,5	19	19
	380-400V	kW	4	5,5	7,5	7,5	11	15	18,5	22	30	30
	415V	kW	4,5	6	8,5	8,5	12	16	20	24	33	33
	440V	kW	4,5	6	8,5	8,5	12	16	20	24	33	33
	500V	kW	5,5	7,5	10	10	15	18,5	18,5	30	37	37
	660-690V	kW	5,5	7,5	10	10	15	18,5	18,5	30	37	37
	1000V	kW	-	-	-	-	-	-	-	-	-	-
Utilization category AC5a												
Switching of gas discharge lamps												
Rated operational current I_e per pole at 220/230V												
Fluorescent lamps, uncompensated and serial compensated	A	20	20	25	25	40	52	64	88	96	104	104
parallel compensated	A	7	9	9	9	18	22	22	30	40	45	45
dual-connection	A	22,5	22,5	28	28	45	58	72	98	108	117	117
Metal halide lamps ¹⁾ , uncompensated	A	12	15	19	19	30	39	48	66	72	78	78
parallel compensated	A	7	9	9	9	18	22	22	30	40	45	45
Mercury-vapour lamps ²⁾ , uncompensated	A	22,5	25	28	28	45	58	72	99	108	117	117
parallel compensated	A	7	9	9	9	18	22	22	30	40	45	45
Mixed light lamps ³⁾	A	20	20	25	25	40	52	64	88	96	104	104
Utilization category AC5b												
Switching of incandescent lamps⁴⁾												
Rated operational current I_e per pole at 220/230V												
	A	12,5	12,5	12,5	12,5	25	31	31	43	56	56	56

1) Metal halide lamps and sodium-vapour lamps (high- and low-pressure lamps)

2) High-pressure lamps

3) Blended lamps, containing a mercury high-pressure unit and a tungsten helix in a fluorescent glass bulb (daylight lamps)

4) Current inrush approx. 16 x I_e

Contactors

Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Type	K3-90	K3-115	K3-151	K3-176	K3-210	K3-260	K3-316	K3-450	K3-550	K3-700	K3-860	K3-1000	K3-1200
A	85	98	55	63	85	100	120	150	180	230	280	340	400
A	85	98	55	63	85	100	120	150	180	230	280	340	400
A	85	98	55	63	85	100	120	150	180	230	280	340	400
A	85	85	55	63	85	100	120	150	180	230	280	340	400
A	85	85	55	63	85	100	120	150	180	230	280	340	400
A	85	85	55	63	85	100	120	150	180	230	280	340	400
A	85	85	-	-	-	-	-	-	-	-	-	-	-
A	60	60	-	-	-	-	-	-	-	-	-	-	-
A	57,5	57,5	-	-	-	-	-	-	-	-	-	-	-
A	-	-	-	-	-	-	-	-	-	-	-	-	-
kW	25	30	15	18,5	25	30	37	45	51	68	80	110	132
kW	27	32	15,5	19	26	31	38	47	53	71	83	115	137
kW	45	45	25	30	45	55	63	75	90	120	150	185	220
kW	49	49	25	33	45	55	65	80	100	132	160	200	230
kW	49	49	30	34	48	55	67	85	100	132	160	200	230
kW	55	55	25	30	55	65	75	100	110	150	185	220	257
kW	55	55	25	30	55	65	75	100	110	150	185	220	257
kW	-	-	-	-	-	-	-	-	-	-	-	-	-
A	100	120	120	140	180	220	280	360	450	570	700	850	1000
A	55	70	85	100	130	160	200	300	360	460	550	660	800
A	112	144	120	140	180	220	280	360	450	570	700	850	1000
A	85	90	95	110	140	180	230	300	380	490	610	750	890
A	55	70	75	85	110	140	170	260	300	400	480	580	700
A	112	144	120	140	180	220	280	360	450	570	700	850	1000
A	55	70	75	85	110	140	170	260	300	400	480	580	700
A	100	120	100	120	160	200	250	320	400	500	600	700	800
A	69	75	100	120	160	190	220	260	315	440	500	560	630

Contactors

Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Main Contacts			Type	K(G)3-10	K(G)3-14	K(G)3-18	K(G)3-22	K(G)3-24	K(G)3-32	K(G)3-40	K3-50	K3-62	K3-74
Utilization category AC6a													
Transformer primary switching													
at inrush		n		30	30	30	30	30	30	30	30	30	30
Rated operational current I_e	400V	A		4,5	5,5	7,5	7,5	10,5	13,5	13,5	20	27	33
Rated operational power	220-230V	kVA		1,8	2,2	3	3	4,2	5,4	5,4	8	10,7	13
dependent on inrush n	240V	kVA		1,9	2,3	3,1	3,1	4,3	5,6	5,6	8,3	11,2	13,5
	380-400V	kVA		3,1	3,8	5,2	5,2	7,3	9,3	9,3	13,5	18,5	22,5
For different inrush-factors x	415-440V	kVA		3,4	4,2	5,7	5,7	8	10,2	10,2	15	20,5	25
use the following formula:	500V	kVA		3,9	4,8	6,5	6,5	9	11,5	11,5	17	23	28
$P_x = P_n \cdot (n/x)$	660-690V	kVA		5,4	6,5	9	9	12,5	16	16	24	32	39
Utilization category AC6b													
Switching of three-phase capacitors													
Maximum inrush current (peak value)													
as multiple k of the capacitor rated current													
Rated operational current I_e	500V	A	k	35	25	20	20	25	25	25	25	25	20
Rated operational power	220-230V	kVAr		3	4,5	6	6	8,5	12	12	17	24	28
($\sin\phi \rightarrow 1$)	240V	kVAr		3,5	5	6,5	6,5	9,5	13	13	18,5	25	29
	380-400V	kVAr		5	7,5	10	10	15	20	20	29	39	46
For different multiples x	415-440V	kVAr		5,5	8	11	11	16	22	22	32	43	50
use the following formula:	500V	kVAr		7	10	13	13	20	26	26	39	50	58
$P_x = P_k \cdot (k/x)$	660-690V	kVAr		7	10	13	13	20	26	26	40	50	58
Switching of reactive capacitor banks													
Rated operational current I_e	690V	A		8	13	18	20	28	36	42	48	72	108 ¹⁾
Rated operational power	220-230V	kVAr		2,9	5	7	7,5	11	14	16	20	28	33
	240V	kVAr		3,1	5,4	7	8	11	14	17	20	28	36
	380-400V	kVAr		5	9	12,5	13	20	25	27,5	33,3	50	75 ¹⁾
	415-440V	kVAr		5,5	9,5	13	14	22	27	30	36	53	75 ¹⁾
	500V	kVAr		6	11	15	17	25	30	36	40	60	75
	660-690V	kVAr		8	15	20	22	33	41	48	55	82	100
	1000V	kVAr		-	-	-	-	-	-	-	-	-	-
Utilization category DC1													
Switching of resistive load													
Time constant $L/R \leq 1ms$													
Rated operational current I_e	1 pole	24V	A	20	25	32	32	50	65	80	110	120	130
		60V	A	20	25	32	32	50	65	80	110	120	130
		110V	A	6	6	6	6	10	10	10	12	12	12
		220V	A	0,8	0,8	0,8	0,8	1,4	1,4	1,4	1,4	1,4	1,4
	3 poles in series	24V	A	20	25	32	32	50	65	80	110	120	130
		60V	A	20	25	32	32	50	65	80	110	120	130
		110V	A	20	25	32	32	50	65	80	110	120	130
		220V	A	16	20	20	20	30	35	35	63	80	80
Utilization category DC3 and DC5													
Switching of shunt motors and series motors													
Time constant $L/R \leq 15ms$													
Rated operational current I_e	1 pole	24V	A	20	25	32	32	50	65	80	110	120	130
		60V	A	6	6	6	6	30	30	30	60	60	60
		110V	A	1,2	1,2	1,2	1,2	1,8	1,8	1,8	1,8	1,8	1,8
		220V	A	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,25	0,25	0,25
	3 poles in series	24V	A	20	25	32	32	50	65	80	110	120	130
		60V	A	20	25	32	32	40	40	40	80	80	80
		110V	A	20	20	20	20	40	40	40	80	80	80
		220V	A	2,5	2,5	2,5	2,5	4	4	4	5	5	5

1) Consider resistive load (I_{th}). see page 44




Contactors

Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Type	K3-90	K3-115	K3-151	K3-176	K3-210	K3-260	K3-316	K3-450	K3-550	K3-700	K3-860	K3-1000	K3-1200
n	30	30	30	30	30	30	30	30	30	30	30	30	30
A	38	50	65	80	90	120	142	203	248	315	390	450	540
kVA	15	20	25	30	34	45	54	77	95	120	148	170	200
kVA	15,5	20,5	27	33	37	50	59	80	100	130	160	185	220
kVA	26	34	45	55	60	80	95	140	170	210	270	310	370
kVA	29	38	46	57	63	85	100	145	175	220	280	320	380
kVA	33	43	55	69	75	100	120	170	210	270	330	380	460
kVA	45	60	56	69	100	135	160	200	250	320	350	500	600
k	20	20	20	20	25	20	20	20	20	20	20	20	20
A	87	100	120	155	195	225	255	300	370	440	520	680	760
kVAr	33	38	45	60	75	90	100	115	145	170	200	260	290
kVAr	36	42	52	62	78	94	104	120	150	175	205	270	300
kVAr	57	65	80	100	130	155	170	200	250	300	350	450	500
kVAr	60	70	95	110	135	165	175	210	260	310	360	465	520
kVAr	70	80	100	130	170	194	220	260	320	380	450	590	660
kVAr	70	80	100	130	170	194	220	260	320	380	450	590	660
A	115	144	115	140	200	225	250	330	420	550	600	680	760
kVAr	45	55	43	53	76	85	95	125	160	209	228	260	290
kVAr	45	55	45	55	80	90	100	130	170	220	240	280	310
kVAr	80	100	75	90	130	145	160	210	270	350	390	440	480
kVAr	100	120	80	100	140	160	170	230	290	380	420	470	530
kVAr	105	125	95	120	170	190	210	280	350	450	500	570	640
kVAr	120	148	125	150	200	230	260	350	450	600	650	700	800
kVAr	160	200	155	200	300	340	400	500	650	-	-	-	-
A	160	200	-	-	-	-	-	-	-	-	-	-	-
A	160	200	-	-	-	-	-	-	-	-	-	-	-
A	20	25	-	-	-	-	-	-	-	-	-	-	-
A	2	2,5	-	-	-	-	-	-	-	-	-	-	-
A	160	200	200	250	350	400	450	600	760	1000	1100	1200	1350
A	160	200	200	250	350	400	450	600	760	1000	1100	1200	1350
A	160	200	150	170	250	280	315	400	480	560	630	800	900
A	100	160	80	100	150	180	200	250	315	400	450	500	600
A	160	200	-	-	-	-	-	-	-	-	-	-	-
A	85	110	-	-	-	-	-	-	-	-	-	-	-
A	2	2,5	-	-	-	-	-	-	-	-	-	-	-
A	0,5	0,5	-	-	-	-	-	-	-	-	-	-	-
A	160	200	-	-	-	-	-	-	-	-	-	-	-
A	100	110	-	-	-	-	-	-	-	-	-	-	-
A	100	110	-	-	-	-	-	-	-	-	-	-	-
A	7	8	-	-	-	-	-	-	-	-	-	-	-

Contactors

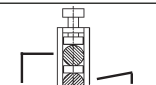






Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Main Contacts			Type	K(G)3-10	K(G)3-14	K(G)3-18	K(G)3-22	K(G)3-24	K(G)3-32	K(G)3-40	K3-50	K3-62	K3-74
Maximum ambient temperature													
Operation	open	°C						-40 to +60 (+90) ¹⁾					
	enclosed	°C						-40 to +40					
with thermal overload relay	open	°C						-25 to +60					
	enclosed	°C						-25 to +40					
Storage		°C						-50 to +90					
Short circuit protection for contactors without thermal overload relay													
Coordination-type "1" according to IEC 947-4-1													
Contact welding without hazard of persons													
max. fuse size	gL (gG)	A	63	63	63	63	80	80	80	160	160	160	
Coordination-type "2" according to IEC 947-4-1													
Light contact welding accepted													
max. fuse size	gL (gG)	A	25	35	35	35	50	50	50	100	125	125	
Contact welding not accepted													
max. fuse size	gL (gG)	A	16	16	16	16	25	35	35	50	63	63	
For contactors with thermal overload relay the device with the smaller admissible backup fuse (contactor or thermal overload relay) determines the fuse size.													
Cable cross-sections for contactors without thermal overload relay													
1 cable per clamp													
main connector	solid or stranded	mm ²		0,75 - 6				1,5 - 25			4 - 50		
	flexible	mm ²		1 - 4				2,5 - 16			10 - 35		
	flexible with multicore cable end	mm ²		0,75 - 4				1,5 - 16			6 - 35		
2 cables per clamp													
	solid or stranded	mm ²		6+(1-6) / 4+(0,75-4) 2,5+(0,75-2,5) / 1,5+(0,75-1,5)				16+(2,5-16) / 10+(4-16) 6+(4-16) / 4+(2,5-16)			50+4 / 35+6 / 25+(6-16) 16+(6-16) / 10+(6-16)		
	flexible	mm ²		6+(1,5-4) / 4+(1-4) 2,5+(0,75-2,5) / 1,5+(0,75-1,5)				16+(2,5-6) / 10+(4-10) 6+(4-16) / 4+(2,5-16)			50+(4-10) / 35+(4-16) 25+(4-25) / 16+(4-16)		
1 cable per clamp													
main connector	solid	AWG		18 - 10				16 - 10			12 - 10		
	flexible	AWG		18 - 10				14 - 4			10 - 0		
2 cables per clamp													
	solid	AWG		10+(16-10) / 12+(18-12) 14+(18-14) / 16+(18-16)				10+(16-10) / 12+(18-12) 14+(18-14) / 16+(18-16)			10+(12-10) / 12+12		
	flexible	AWG		10+(14-10) / 12+(18-12) 14+(18-14) / 16+(18-16)				4+(18-12) / 6+(18-8) 8+(18-8) / 10+(18-12)			1+(12-10) / 2+(8-12) 3+(12-8) / 4+(10-6)		
Frequency of operations z Contactors without thermal overload relay													
	without load	1/h		10000				7000			7000		
	AC3, I _e	1/h		600				600			400		
	AC4, I _e	1/h		120				120			120		
	DC3, I _e	1/h		600				600			400		
Mechanical life													
AC operated	S x 10 ⁶			10				10			10		
DC operated	S x 10 ⁶			10				10			10		
DC-solenoid operated (KG3)	S x 10 ⁶			50				50			-		
Short time current													
	10s-current	A	96	120	144	176	184	240	296	450	504	592	
	120s-current	A	42	52	58	66	80	97	110	195	203	222	
Power loss per pole													
	at I _e /AC3 400V	W	0,21	0,35	0,5	0,75	0,7	1,3	2	2,2	3,9	5,5	
	contact resistance	mOhm	2,1	1,8	1,5	1,5	1,2	1,2	1,2	1	1	1	
Resistance to shock acc. to IEC 68-2-27													
Shock time 20ms sine-wave	NO	g	10	10	10	10	8	8	8	8	8	8	
	NC	g	6	6	6	6	-	-	-	-	-	-	

1) With reduced control voltage range 0,9 up to 1,0 x U_e and with reduced rated current I_e/AC1 according to I_e/AC3

Contactors

Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Type	K3-90	K3-115	K3-116	K3-151	K3-176	K3-210	K3-260	K3-316	K3-450	K3-550	K3-700	K3-860	K3-1000	K3-1200	
°C	-40 to +60 (+90) ¹⁾														
°C	-40 to +40														
°C	-25 to +60														
°C	-25 to +40														
°C	-50 to +90														
													-25 to +55 (+70) ²⁾		
													-25 to +40		
													-25 to +55		
													-25 to +40		
													-55 to +80		
A	250	250	200	250	315	400	450	500	630	630	800	1000	1000	1250	
A	160	200	160	200	250	315	400	400	500	560	-	-	-	-	
A	100	125	125	160	200	250	315	-	-	-	-	-	-	-	
mm ²	 0,5 - 95 10 - 120		 busbar 18 x 4		 busbar 25 x 6			 busbar 30 x 5		 busbar 40 x 6		 busbar 50 x 8		 busbar 50 x 8	
mm ²	0,5 - 70 25 - 95		screw M8		screw M10			screw M12		screw M12		screw M12		screw M14	
mm ²	0,5 - 70 10 - 95													screw 2 x M12	
mm ²	0,5 - 95 + 10 - 120														
mm ²	0,5 - 70 + 25 - 95														
AWG	18 - 10	-													
AWG	18 - 3/0	8 - 4/0													
AWG	-	-													
AWG	18 - 3/0 + 8 - 4/0														
1/h	3000		1200		1200			1200		1200		300			
1/h	300		-		-			-		-		-			
1/h	120		-		-			-		-		-			
1/h	300		-		-			-		-		-			
S x 10 ⁶	5		10		5			5		5		5 ³⁾			
S x 10 ⁶	5		10		5			5		5		5 ³⁾			
S x 10 ⁶	-		-		-			-		-		-			
A	680	880	920	1200	1400	1800	2200	2600	3600	4400	5600	6900	8000	9600	
A	275	330	410	500	575	800	900	1000	1400	1750	2200	2600	3000	3600	
W	4,8	7,9	7,9	9	11	8	11	14,9	26,3	33,3	49	59,2	60	72	
mOhm	0,6	0,5	0,5	0,4	0,35	0,18	0,16	0,15							
g	7	7	-	-	-	-	-	-	-	-	-	-	-	-	
g	5	5	-	-	-	-	-	-	-	-	-	-	-	-	

1) With reduced control voltage range 0,9 up to 1,0 x U_s and with reduced rated current I_e/AC1 according to I_e/AC3

2) With reduced control voltage range 1,0 x U_s and with reduced rated current I_e/AC1 according to I_e/AC3

3) After each 1x10⁶ operations magnetic core and built-in auxiliary contact block must be changed

Contactors

Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Auxiliary Contacts			Type	K(G)3-10	K(G)3-14	K(G)3-18	K(G)3-22	K(G)3-24	K(G)3-32	K(G)3-40	K3-50	K3-62	K3-74
Rated insulation voltage U_i ¹⁾			V~		690				-			-	
Thermal rated current I_{th} to 690V					16				-			-	
Ambient temperature			40°C A		12				-			-	
			60°C A						-			-	
Utilization category AC15													
Rated operational current I _e			220-240V A		12				-			-	
			380-415V A		4				-			-	
			440V A		4				-			-	
			500V A		3				-			-	
			660-690V A		1				-			-	
Utilization category DC13													
Rated operational current I _e			60V A		8				-			-	
			110V A		1				-			-	
			220V A		0,1				-			-	
Short circuit protection short-circuit current 1kA, contact welding not accepted max. fuse size			gL (gG) A		25				-			-	
For contactors with thermal overload relay the device with the smaller admissible control fuse (contactor or thermal overload relay) determines the fuse.													
Control Circuit Power consumption of coils													
AC operated			inrush VA		33-45				90-115			140-165	
			sealed VA		7-10				9-13			13-18	
			W		2,6-3				2,7-4			5,4-7	
DC operated			inrush W		75				140			200	
double winding coil			sealed W		2				2			6	
DC solenoid operated (KG3)			inrush W		3				4			-	
			sealed W		3				4			-	
Operation range of coils in multiples of control voltage U _s													
			AC operated		0,85-1,1				0,85-1,1			0,85-1,1	
			DC operated		0,8-1,1				0,8-1,1			0,8-1,1	
Switching time at control voltage U _s ± 10% ^{2), 3)}													
AC operated			make time ms		8-16				10-25			12-28	
			release time ms		5-13				8-15			8-15	
			arc duration ms		10-15				10-15			10-15	
DC operated			make time ms		8-12				10-20			12-23	
double winding coil			release time ms		8-13				10-15			10-18	
			arc duration ms		10-15				10-15			10-15	
DC solenoid operated (KG3)			make time ms		65 - 85				65 - 85			-	
			release time ms		20 - 30 ⁴⁾				20 - 30 ⁴⁾			-	
			arc duration ms		10-15				10-15			-	
Cable cross-section													
Auxiliary connector			solid mm ²		0,75-6				-			-	
			flexible mm ²		1-4				-			-	
			flexible with multicore cable end mm ²		0,75-4				-			-	
Magnet coil			solid mm ²		0,75-2,5				0,75-2,5			0,75-2,5	
			flexible mm ²		0,5-2,5				0,5-2,5			0,5-2,5	
			flexible with multicore cable end mm ²		0,5-1,5				0,5-1,5			0,5-1,5	
Clamps per pole					2				2			2	
Auxiliary connector			solid AWG		18 - 10				-			-	
			flexible AWG		18 - 10				-			-	
Magnet coil			solid AWG		14 - 12				14 - 12			14 - 12	
			flexible AWG		18 - 12				18 - 12			18 - 12	
Clamps per pole					2				2			2	

1) Suitable for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry): U_{imp} = 8kV. Data for other conditions on request

2) Total breaking time = release time + arc duration

3) Values for delay of the release time of the make contact and the make time of the break contact will be increased, if magnet coils are protected against voltage peaks (varistor, RC-unit, diode-unit)

4) with built-in coil suppressor

Contactors

Data according to IEC 947-4-1, EN 60947-4-1, VDE 0660

Type	K3-90	K3-115	K3-116	K3-151	K3-176	K3-210	K3-260	K3-316	K3-450	K3-550	K3-700	K3-860	K3-1000	K3-1200
V~	-	-	-	-	-	-	-	-	690	690	690	690	690	690
A	-	-	-	-	-	-	-	-	10	10	10	10	10	10
A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	-	-	-	-	-	-	-	-	3	3	3	3	3	3
A	-	-	-	-	-	-	-	-	2	2	2	2	2	2
A	-	-	-	-	-	-	-	-	1,5	1,5	1,5	1,5	1,5	1,5
A	-	-	-	-	-	-	-	-	1,5	1,5	1,5	1,5	1,5	1,5
A	-	-	-	-	-	-	-	-	1	1	1	1	1	1
A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	-	-	-	-	-	-	-	-	1	1	1	1	1	1
A	-	-	-	-	-	-	-	-	0,5	0,5	0,5	0,5	0,5	0,5
A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	-	-	-	-	-	-	-	-	10	10	10	10	10	10
VA	165-220	-	350	-	-	360	-	-	800-950	-	1350-1600	-	2400	-
VA	2,5-5	-	5	-	-	5	-	-	9-11	-	21-25	-	70	-
W	2,5-5	-	5	-	-	5	-	-	9-11	-	21-25	-	70	-
W	250	-	350	-	-	360	-	-	700-850	-	1300-1550	-	2100	-
W	5	-	5	-	-	5	-	-	8-10	-	18-22	-	60	-
W	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ms	0,85-1,1 0,8-1,1	-	0,85-1,1 0,85-1,1	-	-	0,85-1,1 0,85-1,1	-	-	0,85-1,1 0,85-1,1	-	0,85-1,1 0,85-1,1	-	0,85-1,1 0,85-1,1	-
ms	20-35	-	30-60	-	-	40-60	-	-	50-100	-	50-100	-	50-100	-
ms	35-50	-	30-80	-	-	15-45	-	-	150-200 / 500-1000 ¹⁾	-	25-50	-	25-50	-
ms	10-15	-	-	-	-	-	-	-	-	-	-	-	-	-
ms	20-35	-	30-60	-	-	40-60	-	-	-	-	-	-	-	-
ms	35-50	-	30-80	-	-	15-45	-	-	-	-	-	-	-	-
ms	10-15	-	-	-	-	-	-	-	-	-	-	-	-	-
ms	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ms	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ms	-	-	-	-	-	-	-	-	-	-	-	-	-	-
mm ²	-	-	-	-	-	-	-	-	0,75-2,5	-	0,75-2,5	-	0,75-2,5	-
mm ²	-	-	-	-	-	-	-	-	0,75-2,5	-	0,75-2,5	-	0,75-2,5	-
mm ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-
mm ²	0,75-2,5	-	1-2,5	-	-	1-2,5	-	-	1-2,5	-	1-2,5	-	1-2,5	-
mm ²	0,5-2,5	-	1-2,5	-	-	1-2,5	-	-	1-2,5	-	1-2,5	-	1-2,5	-
mm ²	0,5-1,5 2	-	- 2	-	-	- 2	-	-	- 2	-	- 2	-	- 2	-
AWG	-	-	-	-	-	-	-	-	16 - 12	-	16 - 12	-	16 - 12	-
AWG	-	-	-	-	-	-	-	-	16 - 12	-	16 - 12	-	16 - 12	-
AWG	14 - 12	-	16 - 12	-	-	16 - 12	-	-	16 - 12	-	16 - 12	-	16 - 12	-
AWG	18 - 12 2	-	16 - 12 2	-	-	16 - 12 2	-	-	16 - 12 2	-	16 - 12 2	-	16 - 12 2	-

1) Normal or delayed drop is adjustable