

Contactors Motor Protection Accessories

1SBC100122C0201



General Data

Ordering Details

When placing an order give either the **Order Code** or **Type**.

In most cases these are completed with other references, e.g. a contactor's coil voltage. This is why the order codes and types figuring in the "Ordering Details" tables have boxes and to be completed.

Packaging

● Individual standard packaging

Contactors, contactor relays, thermal overload relays and other basic products are supplied in **individual packaging**. Some small contactors (e.g. B6 and B7 - Section 6) or accessories are in **individual batches of "n" pieces** as indicated in the "Packaging" column of the "Ordering Details" table.

The weight and order code always correspond to a single part.

Other products are supplied as a "set" and are thus marked in the "Packaging" column of the "Ordering Details" table. In this case, the weight and order code correspond to a set.

● Collective packaging

To limit the amount of wasted packaging, simplify handling and checking of deliveries, we offer the **collective packaging** solution.

The weight and order code correspond to a single part.

Products chosen for this type of packaging are detailed below.

Type	Order code	Packing pieces	Weight kg	Product features
state coil voltage	state coil voltage code		1 piece	page
(see table below)	(see table below)			
3-pole - a.c. operated contactors				
A 9-30-10	1SBL 14 1001 T 10	10	0.34	2/7
A 9-30-01	1SBL 14 1001 T 01	10	0.34	2/7
A 9-30-22	1SBL 14 1001 T 22	10	0.40	2/7
A 9-30-32	1SBL 14 1001 T 32	10	0.40	2/7
A 12-30-10	1SBL 16 1001 T 10	10	0.34	2/7
A 12-30-01	1SBL 16 1001 T 01	10	0.34	2/7
A 12-30-22	1SBL 16 1001 T 22	10	0.40	2/7
A 12-30-32	1SBL 16 1001 T 32	10	0.40	2/7
A 16-30-10	1SBL 18 1001 T 10	10	0.34	2/7
A 16-30-01	1SBL 18 1001 T 01	10	0.34	2/7
A 16-30-22	1SBL 18 1001 T 22	10	0.40	2/7
A 16-30-32	1SBL 18 1001 T 32	10	0.40	2/7
A 26-30-10	1SBL 24 1001 T 10	10	0.60	2/7
A 26-30-01	1SBL 24 1001 T 01	10	0.60	2/7
4-pole - a.c. operated contactors				
A 9-40-00	1SBL 14 1201 T 00	10	0.34	2/26
A 16-40-00	1SBL 18 1201 T 00	10	0.34	2/26
A 26-40-00	1SBL 24 1201 T 00	10	0.61	2/26
4-pole - a.c. operated, 1 stack contactor relays				
N 22 E	1SBH 14 1001 T 22	10	0.34	3/3
N 31 E	1SBH 14 1001 T 31	10	0.34	3/3
N 40 E	1SBH 14 1001 T 40	10	0.34	3/3
8-pole - a.c. operated, 2 stack contactor relays				
N 44 E	1SBH 14 1001 T 44	10	0.40	3/3
N 53 E	1SBH 14 1001 T 53	10	0.40	3/3
N 62 E	1SBH 14 1001 T 62	10	0.40	3/3
N 71 E	1SBH 14 1001 T 71	10	0.40	3/3
N 80 E	1SBH 14 1001 T 80	10	0.40	3/3
Replacement coils for A 9..., A 12..., A 16... and N... contactors				
ZA 16	1SBN 15 1410 T 06	10	0.08	4/34

Type	Order code	Packing pieces	Weight kg	Product features
			1 piece	page
Auxiliary contact blocks				
CA 5-10	1SBN 01 0010 W1010	60	0.014	4/2
CA 5-01	1SBN 01 0010 W1001	60	0.014	4/2
CAL 5-11	1SBN 01 0020 W1011	100	0.050	4/4
Interface blocks				
RA 5	1SBN 06 0000 T1001	10	0.050	4/19
RA 30	FPTN 472 770 R0001	10	0.035	4/19
Electronic timers				
TE5S-24	1SBN 02 0010 T1001	10	0.080	4/6
TE5S-120	1SBN 02 0010 T1002	10	0.080	4/6
TE5S-240	1SBN 02 0010 T1003	10	0.080	4/6
TE5S-440	1SBN 02 0010 T1004	10	0.080	4/6

Additional code for a.c. coil voltages



Voltage V - 50Hz	Voltage V - 60Hz	Code
24	24	8 1
42	42	8 2
48	48	8 3
110	110 ... 120	8 4
110 ... 115	115 ... 127	8 9
220 ... 230	230 ... 240	8 0
230 ... 240	240 ... 260	8 8
380 ... 400	400 ... 415	8 5
400 ... 415	415 ... 440	8 6
415 ... 440	440 ... 460	8 7

Coil Voltage Code for Completing Order Codes

a.c. Coils

Contactors and contactor relays: A..., UA..., UA...-R, GA... and N...		
Voltage ... V - 50Hz	Voltage ... V - 60Hz	(1) Code □ □
24	24	8 1
26	28	1 6
28	32	1 7
42	42	8 2
42	48	2 0
48	48	8 3
60	60	7 3
100	100 ... 110	7 4
105	110 ... 127	2 6
110	110 ... 120	8 4
110 ... 115	115 ... 127 (2)	8 9
120	140	2 9
125 ... 127	150	3 0
175	208	3 4
190	220	3 6
200	200 ... 220	7 5
210	240	4 0
220 ... 230	230 ... 240	8 0
230 ... 240	240 ... 260	8 8
230 ... 240	277	4 2
380	380 ... 415	7 7
380 ... 400	400 ... 415	8 5
400 ... 415	415 ... 440	8 6
400	440	5 0
400 ... 415	480	5 1
415 ... 440	440 ... 460	8 7
440	500	5 3
500	600	5 5
550	—	5 6
660 ... 690	—	5 8
—	690	5 9

(1) Codes **8 0** to **8 8** : dual frequency coils.
(2) A 145 ... A 300 contactors at 60 Hz 115 V only.

Dual Voltage Coils

Contactors and contactor relays: A 9, A 12, A 16 and N...		
Voltage ... V - 50Hz	Voltage ... V - 60Hz	Code □ □
230/400	—	6 2
—	230/400	6 3

Contactors: EK 110 ... EK 210		
Voltage ... V - 50Hz	Voltage ... V - 60Hz	Code □ □
—	24	A A
24	—	A B
—	48	A C
48	—	A D
—	110	A E
110	120	A F
127	—	A G
—	208	A Z
190	220	A H
—	240	A K
220 ... 230	—	A L
230 ... 240	—	A M
—	380	A N
380 ... 400	440	A P
400 ... 415	—	A R
—	480	A S
440	—	A T
500	—	A U
—	600	A V

Multi-frequency Coils

Contactors: EK 110 ... EK 210		
Voltage ... V - 40 ... 400Hz		Code □ □
110 ... 120		E F
115 ... 127		E G
220 ... 230		E L
230 ... 240		E M
380 ... 400		E P
400 ... 415		E R

Contactors: EK 370 ... EK 1000		
Voltage ... V - 50Hz	Voltage ... V - 60Hz	Code □ □
48	—	A D
—	110	A E
110	120	A F
127	—	A G
—	208	A Z
190	220	A H
—	240	A K
220 ... 230	240	A L
230 ... 240	—	A M
—	380	A N
380 ... 400	440	A P
400 ... 415	—	A R
—	480	A S
440	—	A T
500	—	A U
—	600	A V

Dual frequency coils

2 auxiliary contact blocks maximum per contactor, ambient temperature ≤ 55 °C and mounting positions 2 and 6 excluded.

Contactors: EK 370 ... EK 1000		
Voltage ... V - 50Hz	Voltage ... V - 60Hz	Code □ □
110	110 ... 120	E F
110 ... 115	115 ... 127	E G
220	220 ... 240	E L
220 ... 230	230 ... 255	E M
380	380 ... 415	E P
380 ... 400	400 ... 440	E R

a.c. / d.c. Coils with Electronic Coil Interface

Contactors: AF 45 ... AF 300		
Voltage ... V - 50/60Hz	Voltage V - d.c.	Code □ □
—	20 ... 60	7 2
48 ... 130	48 ... 130	6 9
100 ... 250	100 ... 250	7 0

Contactors: AF 400 ... AF 750		
Voltage ... V - 50/60Hz	Voltage V - d.c.	Code □ □
—	24 ... 60	6 8
48 ... 130	48 ... 130	6 9
100 ... 250	100 ... 250	7 0

d.c. Coils

Standard Coils

Contactors and contactor relays: AE..., GAE..., AM..., NE...		
Voltage V - d.c.	Code □ □	
12	8 0	
24	8 1	
42	8 2	
48	8 3	
50	2 1	
60	8 4	
75	8 5	
110	8 6	
125	8 7	
220	8 8	
240	8 9	
250	3 8	

Contactors and contactor relays: BC..., KC...		
Voltage V - d.c.	Code □ .. □	
12	0 .. 7	
24	0 .. 1	
42	0 .. 2	
48	1 .. 6	
50	1 .. 7	
60	0 .. 3	
75	2 .. 2	
110	0 .. 4	
125	2 .. 7	
220	0 .. 5	
240	3 .. 3	
250	3 .. 4	

Contactors: EK 110 ... EK 1000		
Voltage V - d.c.	Code □ □	
12 *	D A	
24	D B	
36	D C	
48	D D	
60	D T	
75	D G	
110	D E	
125	D U	
220	D F	

* Not suitable for EK 370 ... EK 1000 contactors.

Large Voltage Range Coils

Contactors: TAE..., TBC... and TKC...		
U _c min. ... U _c max. V - d.c.	Code R □ □	
17 ... 32	5 1	
25 ... 45	5 2	
36 ... 65	5 4	
42 ... 78	5 8	
50 ... 90	5 5	
77 ... 143	6 2	
90 ... 150	6 6	
152 ... 264	6 8	

⚠ Voltage tolerances included in the U_c min. ... U_c max. voltage range.
Other voltages: please consult us.

Motor Nominal Powers and Currents

The currents given below concern standard, 1500 r.p.m. 50 Hz, three-phase cage motors.

These values are given for guidance and may vary according to the motor manufacturer and depending on the number of poles.

Motor power		Motor nominal current at:							
		220-230 V	240 V	380 V 380-400 V	415 V	440 V	500 V	600 V	660-690 V
kW	PS = hp	A	A	A	A	A	A	A	A
0.06	1/12	0.38	0.35	0.22	0.20	0.19	0.16	0.12	—
0.09	1/8	0.55	0.50	0.33	0.30	0.28	0.24	0.21	—
0.12	1/6	0.76	0.68	0.42	0.40	0.37	0.33	0.27	—
0.18	1/4	1.1	1	0.64	0.60	0.55	0.46	0.40	—
0.25	1/3	1.4	1.38	0.88	0.85	0.76	0.59	0.56	—
0.37	1/2	2.1	1.93	1.22	1.15	1.06	0.85	0.77	0.7
0.55	3/4	2.7	2.3	1.5	1.40	1.25	1.20	1.02	0.9
0.75	1	3.3	3.1	2	2	1.67	1.48	1.22	1.1
1.1	1.5	4.9	4.1	2.6	2.5	2.26	2.1	1.66	1.5
1.5	2	6.2	5.6	3.5	3.5	3.03	2.6	2.22	2
2.2	3	8.7	7.9	5	5	4.31	3.8	3.16	2.9
2.5	3.4	9.8	8.9	5.7	5.5	4.9	4.3	3.59	3.3
3	4	11.6	10.6	6.6	6.5	5.8	5.1	4.25	3.5
3.7	5	14.2	13	8.2	7.5	7.1	6.2	5.2	4.4
4	5.5	15.3	14	8.5	8.4	7.6	6.5	5.6	4.9
5	6.8	18.9	17.2	10.5	10	9.4	8.1	6.9	6
5.5	7.5	20.6	18.9	11.5	11	10.3	8.9	7.5	6.7
6.5	8.8	23.7	21.8	13.8	12.5	12	10.4	8.7	8.1
7.5	10	27.4	24.8	15.5	14	13.5	11.9	9.9	9
8	11	28.8	26.4	16.7	15.4	14.4	12.7	10.6	9.7
9	12.5	32	29.3	18.3	17	15.8	13.9	11.6	10.6
11	15	39.2	35.3	22	21	19.3	16.7	14.1	13
12.5	17	43.8	40.2	25	23	21.9	19	16.1	15
15	20	52.6	48.2	30	28	26.3	22.5	19.3	17.5
18.5	25	64.9	58.7	37	35	32	28.5	23.5	21
20	27	69.3	63.4	40	37	34.6	30.6	25.4	23
22	30	75.2	68	44	40	37.1	33	27.2	25
25	34	84.4	77.2	50	47	42.1	38	30.9	28
30	40	101	92.7	60	55	50.1	44	37.1	33
37	50	124	114	72	66	61.9	54	45.4	42
40	54	134	123	79	72	67	60	49.1	44
45	60	150	136	85	80	73.9	64.5	54.2	49
51	70	168	154	97	90	83.8	73.7	61.4	56
55	75	181	166	105	96	90.3	79	66.2	60
59	80	194	178	112	105	96.9	85.3	71.1	66
75	100	245	226	140	135	123	106	90.3	82
80	110	260	241	147	138	131	112	96.3	86
90	125	292	268	170	165	146	128	107	98
100	136	325	297	188	182	162	143	119	107
110	150	358	327	205	200	178	156	131	118
129	175	420	384	242	230	209	184	153	135
132	180	425	393	245	242	214	186	157	140
140	190	449	416	260	250	227	200	167	145
147	200	472	432	273	260	236	207	173	152
160	220	502	471	295	280	256	220	188	170
180	245	578	530	333	320	289	254	212	190
184	250	590	541	340	325	295	259	217	200
200	270	626	589	370	340	321	278	235	215
220	300	700	647	408	385	353	310	260	235
250	340	803	736	460	425	401	353	295	268
257	350	826	756	475	450	412	363	302	280
295	400	948	868	546	500	473	416	348	320
315	430	990	927	580	535	505	445	370	337
355	480	1080	1010	636	580	549	483	405	366
400	545	1250	1130	710	650	611	538	450	410
450	610	1410	1270	800	740	688	608	508	460
475	645	1490	1340	850	780	730	645	540	485
500	680	1570	1420	890	830	770	680	565	510
560	760	1750	1580	1000	920	860	760	630	570
600	810	—	—	1080	990	920	810	680	610
670	910	—	—	1200	1100	1030	910	760	680



Contactors Motor Protection Accessories

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Accessories for Contactors and Contactor Relays

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As part of its on-going product improvement, ABB reserves the right to modify the characteristics of the products described in this catalogue. The information given is not contractual. For further details please contact the ABB company marketing these products in your country.



Block Contactors **Overload Relays** **Specific Contactors** **Mini Contactors** **Contactor Relays**

3-pole a.c. Circuit Switching

Motor Protection

4-pole a.c. Circuit Switching

d.c. Circuit Switching

Specific Applications

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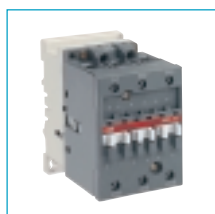
ABB Website

Low Voltage Products	1/9
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Overview

Block Contactors and Motor Protection

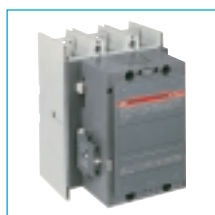
3-pole a.c. Circuit Switching



3-pole Contactors

Control circuit	Ratings (AC-3, 400 V)	Types	Pages
a.c. operated	9 ... 110 A	A...	2/6
a.c. operated	145 ... 305 A	A...	2/12
a.c. / d.c. operated	400 ... 750 A	AF...	2/12

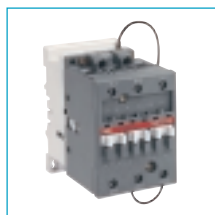
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3-pole Contactors

Control circuit	Ratings (AC-3, 400 V)	Types	Pages
a.c. / d.c. operated (electronic coil interface)	50 ... 110 A	AF...	2/18
	145 ... 750 A	AF...	2/20

2



3-pole Contactors

Control circuit	Ratings (AC-3, 400 V)	Types	Pages
with double-winding coil			
d.c. operated with standard voltage range	9 ... 110 A	AE...	2/22
d.c. operated with large voltage range	50 ... 110 A	TAE...	2/22

2



3-pole Contactors

Control circuit	Ratings (AC-3, 400 V)	Types	Pages
with solid magnetic circuit			
d.c. operated with standard voltage range	9 ... 30 A	BC...	2/24
d.c. operated with large voltage range	9 ... 30 A	TBC...	2/24

2

Motor Protection



3-pole Overload Relays

	Setting ranges	Types	Pages
Thermal O/L Relays	0.1 ... 310 A	TA... DU	5/6

5



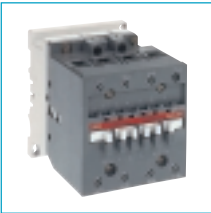
3-pole Overload Relays

	Setting ranges	Types	Pages
Electronic O/L Relays	0.1 ... 18.9 A	E 16 DU	5/11
	60 ... 800 A	E... DU	5/12

5

Block Contactors

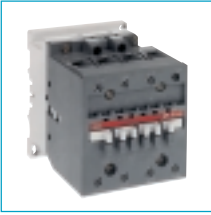
4-pole
a.c. Circuit
Switching



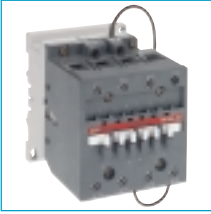
4-pole Contactors				
Control circuit		Ratings (AC-1, $\theta \leq 40^{\circ}\text{C}$)	Types	Pages
a.c. operated		25 ... 125 A	A...	2/26



4-pole Contactors				
Control circuit		Ratings (AC-1, $\theta \leq 40^{\circ}\text{C}$)	Types	Pages
a.c. operated		200 ... 1000 A	EK...	2/28



4-pole Contactors				
Control circuit		Ratings (AC-1, $\theta \leq 40^{\circ}\text{C}$)	Types	Pages
a.c. / d.c. operated (electronic coil interface)		70 ... 125 A	AF...	2/30



4-pole Contactors				
Control circuit		Ratings (AC-1, $\theta \leq 40^{\circ}\text{C}$)	Types	Pages
with double-winding coil				
d.c. operated with standard voltage range		70 ... 125 A	AE...	2/31
d.c. operated with large voltage range		70 ... 125 A	TAE...	2/31



4-pole Contactors				
Control circuit		Ratings (AC-1, $\theta \leq 40^{\circ}\text{C}$)	Types	Pages
d.c. operated		200 ... 1000 A	EK...	2/32



4-pole Contactors				
Control circuit		Ratings (AC-1, $\theta \leq 40^{\circ}\text{C}$)	Types	Pages
with solid magnetic circuit				
d.c. operated with standard voltage range		22 ... 45 A	BC...	2/33
d.c. operated with large voltage range		22 ... 45 A	TBC...	2/33

Overview

Contactors for Specific Applications

3-phase Capacitor Switching



Standard 3-pole Contactors

Control circuit		$\hat{I}$ peak current	Types	Pages
a.c. operated		$\leq 30 \times$ rms current	A...	2/37

2



3-pole Contactors for Capacitor Switching

Control circuit		$\hat{I}$ peak current	Types	Pages
a.c. operated		$\leq 100 \times$ rms current	UA...	2/39

2



3-pole Contactors for Capacitor Switching

Control circuit		$\hat{I}$ peak current	Types	Pages
a.c. operated		$\geq 100 \times$ rms current	UA..-R	2/41

2

d.c. Circuit Switching



Contactors for d.c. Switching

Control circuit	 	Main pole	Types	Pages
a.c. operated		1-pole	GA...	2/42
d.c. operated		1-pole	GAE...	2/42

2



Standard Contactors

Control circuit	  	Main poles	Types	Pages
a.c. operated		3 and 4-pole	A...	2/56
a.c. / d.c. operated (electronic coil interface)		3 and 4-pole	AF...	2/56
d.c. operated with double-winding coil		3 and 4-pole	AE...	2/56
d.c. operated with solid magnetic circuit		3 and 4-pole	BC...	2/58

2



Standard Contactors

Control circuit	 	Main poles	Types	Pages
a.c. operated		4-pole	EK...	2/59
d.c. operated		4-pole	EK...	2/59

2

Contactors for Specific Applications

Switching with Magnetical Latching



Magnetically Latched Contactors

Control circuit	Main poles	Types	Pages
d.c. operated	3xNO	AM...	2/44
	2xNO + 2xNC	AM...	2/44

Star-Delta Starting



Main, Star and Delta Contactors

Control circuit	Main poles	Types	Pages
a.c. operated	3-pole	A...	2/46
a.c. / d.c. operated (electronic coil interface)	3-pole	AF...	2/46

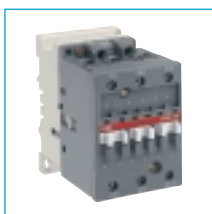
3-phase Slip-Ring Motor Control



Stator, Rotor Short-circuit and Acceleration Contactors

Control circuit	Main poles	Types	Pages
a.c. operated	3-pole	A...	2/48
a.c. / d.c. operated (electronic coil interface)	3-pole	AF...	2/48
d.c. operated	3-pole	AE...	2/48

Autotransformer Starting



Line, Autotransformer and Star Contactors

Control circuit	Main poles	Types	Pages
a.c. operated	3-pole	A...	2/50
a.c. / d.c. operated (electronic coil interface)	3-pole	AF...	2/50
d.c. operated	3-pole	AE...	2/50

3-phase Transformer Switching



Line Contactors

Control circuit	Main poles	Types	Pages
a.c. operated	3-pole	A...	2/51
a.c. / d.c. operated (electronic coil interface)	3-pole	AF...	2/51
d.c. operated	3-pole	AE...	2/51

Lighting Circuit Switching



Line Contactors

Control circuit	Main poles	Types	Pages
a.c. operated	3 and 4-pole	A...	2/52
a.c. / d.c. operated (electronic coil interface)	3 and 4-pole	AF...	2/52
d.c. operated	3 and 4-pole	AE...	2/52

Overview

Mini Contactors and Motor Protection

3-pole a.c. Circuit Switching



3-pole Mini Contactors

Control circuit	Ratings (AC-3, 400 V)	Types	Pages
a.c. operated	9 A 12 A	B 6 B 7	6/2 6/2
d.c. operated	9 A 12 A	BC 6 BC 7	6/2 6/2

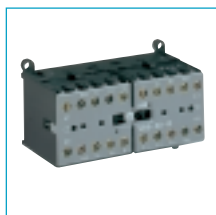
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3-pole Mini Contactors

Control circuit	Ratings (AC-3, 400 V)	Types	Pages
d.c. operated with large voltage range	12 A	TBC 7	6/7

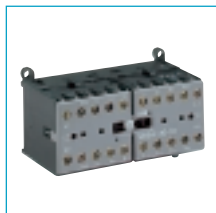
6



Compact Reversing Contactors with Interlocking

Control circuit	Ratings (AC-3, 400 V)	Types	Pages
a.c. operated	9 A 12 A	VB 6 VB 7	6/3 6/3
d.c. operated	9 A 12 A	VBC 6 VBC 7	6/3 6/3

6



Compact Reversing Contactors with Safety Interlocking

Control circuit	Ratings (AC-3, 400 V)	Types	Pages
a.c. operated	9 A 12 A	VB 6A VB 7A	6/4 6/4
d.c. operated	9 A 12 A	VBC 6A VBC 7A	6/4 6/4

6

Motor Protection



3-pole Overload Relays

	Setting ranges	Types	Pages
Thermal O/L Relay	0.1 ... 12 A	T7 DU	5/5
Electronic O/L Relay	0.1 ... 18.9 A	E 16 DU	5/11

6

4-pole a.c. Circuit Switching



4-pole Mini Contactors

Control circuit	Ratings (AC-1, $\theta \leq 40^\circ\text{C}$)	Types	Pages
a.c. operated	16 A 20 A	B 6 B 7	6/2 6/2

6

Mini Contactors for Specific Applications

d.c. Circuit Switching

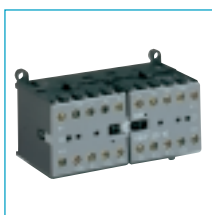


Mini Contactors

Control circuit	Main poles	Types	Pages
a.c. operated	3 and 4-pole	B 6	6/11
	3 and 4-pole	B 7	6/11
d.c. operated	3 and 4-pole	BC 6	6/11
	3 and 4-pole	BC 7	6/11

6

1



Compact Reversing Contactors

Control circuit	Main poles	Types	Pages
a.c. operated	3-pole	VB 6	6/11
	3-pole	VB 7	6/11
d.c. operated	3-pole	VBC 6	6/11
	3-pole	VBC 7	6/11

6

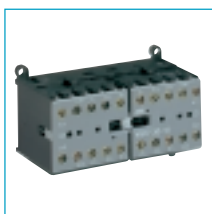
Lighting Circuit Switching



Mini Contactors

Control circuit	Main poles	Types	Pages
a.c. operated	3 and 4-pole	B 6	6/13
	3 and 4-pole	B 7	6/13
d.c. operated	3 and 4-pole	BC 6	6/13
	3 and 4-pole	BC 7	6/13

6



Compact Reversing Contactors

Control circuit	Main poles	Types	Pages
a.c. operated	3-pole	VB 6	6/13
	3-pole	VB 7	6/13
d.c. operated	3-pole	VBC 6	6/13
	3-pole	VBC 7	6/13

6

Interface



Interface Mini Contactors

Control circuit	Main poles	Types	Pages
d.c. operated	3-pole	BC 6	6/5
	3-pole	BC 7	6/5

6

PLC's Output



Mini Contactors for PLC's output

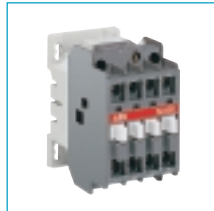
Control circuit	Main poles	Types	Pages
d.c. operated	3-pole	B6 S	6/5
	3-pole	B7 S	6/5

6

Overview

Contactor Relays and Mini Contactor Relays

Control
Circuit
Switching



Contactor Relays

Control circuit	Poles	Types	Pages
a.c. operated	4 and 8-pole	N...	3/2

3



Contactor Relays

Control circuit	Poles	Types	Pages
with double-winding coil			
d.c. operated	4-pole	NE...	3/6

3



Contactor Relays

Control circuit	Poles	Types	Pages
with solid magnet circuit			
d.c. operated with standard voltage range	4 and 8-pole	KC...	3/8
d.c. operated with large voltage range	4 and 8-pole	TKC...	3/8

3

Control
Circuit
Switching



Mini Contactor Relays

Control circuit	Poles	Types	Pages
a.c. operated	4-pole	K 6...	6/6
d.c. operated	4-pole	KC 6...	6/6

6



Interface Mini Contactor Relays

Control circuit	Poles	Types	Pages
d.c. operated with standard voltage range	4-pole	KC 6...	6/6
d.c. operated with large voltage range	4-pole	TKC 6...	6/7

6



Mini Contactor Relays for PLC's Output

Control circuit	Poles	Types	Pages
d.c. operated	4-pole	K6 S...	6/6

6

Low Voltage Products

A complete range of products
to fit all your needs in many applications:



Industrial Control & Automation

Control Products

Connecting Devices

Switches & Fusegear

Third Harmonic Filters

LV Drives

LV Motors



Installation & Distribution

Modular DIN Rail Devices

Intelligent Installation Systems

Wiring Accessories

Industrial Plugs & Sockets

Enclosure & Cable Systems

LV Network Quality

Circuit Breakers

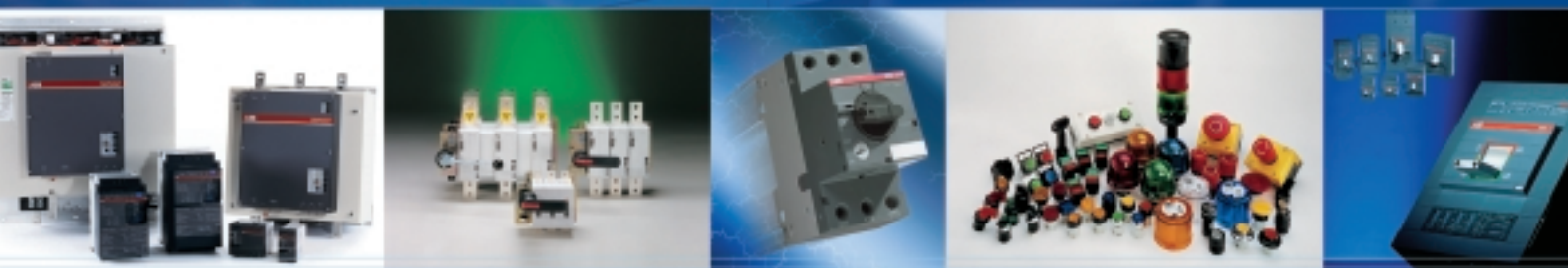


abb.com/lowvoltage

Selection of ABB contactor for AC-3 or AC-4 utilization categories

Please select the contactor and read the technical data or find a contactor according to the following data:

- Voltage and current.
- Expected electrical durability and current. In AC-4, the durability takes into account the breaking current ($I_b = 6 \times I_e$). The rated power is calculated for 4-pole squirrel-cage motor.

Contactor type: A 9/AE 9	
	AC-3 240 V 9 I_e [A] $T_a \leq 55^\circ\text{C}$ 400 V 9 440 V 9 500 V 7 690 V 2,2 U_e 240 V 4 P_e [kW] 400 V 4 440 V 5,5
	
	25 T_{AXXX}DU 2,2 P_d [W] 16 0,1 E_{XXX}DU 7 d [W] 9 I_b [A] AC-3 n=3 $\times 10^6$ n=2 $\times 10^6$ n=1 $\times 10^6$ n=0,5 $\times 10^6$
	30 44 I_{ec} ≤ 440 V

Selection of ABB contactor for AC-1 utilization category

Please select the contactor and read the technical data or you can find a contactor according to the following data:

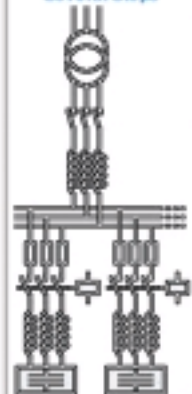
- Maximum temperature and current.
- Expected electrical durability and current.

Contactor type: A9	
	3-4 25 I_n [A] 690 4 U_e max V 25 S mm^2

Selection of ABB contactor for AC-6b utilization category

In Low Voltage industrial installations, capacitors are mainly used for reactive energy correction (raising the power factor). When these capacitors are energized, "inrush current peaks" occur through the installation devices. This program allows the calculation of these peaks and gives the references of the ABB contactors according to the installation specifications.

The calculation is valid for one or several banks.

Single Step 	or	Several Steps 	For several capacitor banks, the control can be:
			Step by Step The closing of the contactors is always in the same order. Only the last contactor has to withstand the highest current peak.
			Circular The succession of the contactor closing is done by the control system. Each contactor could have to withstand the highest peak.

ABB

Selection of ABB contactor for AC-5b utilization category

Please select the contactor and read the number of lamp per phase the contactor can control (lamps wired in star).

Contactor type: **A 9/AE 9**

AC-5b

60 W	57
100 W	34
200 W	17
300 W	11
500 W	6
1000 W	3

$T_a \leq 55^\circ\text{C}$
 $U_o = 230\text{ V}$

P_e

Selection of ABB contactor for AC-6a utilization category

The peak of current due to the magnetization phenomena is roughly 20 to 30 times the transformer nominal current. Please select the contactor and read technical data or find a contactor according to rated power of transformer. Then verify if the possible peak of current is in line with the current peak from the transformer. The selection is valid for a maximum switching frequency of 60 operating cycles per hour.

Contactor type: **A 9/AE 9**

AC-6a

240 V	4	P_e [kVA]
400 V	7	
440 V	8	
500 V	9,5	
690 V	330	

U_e

I_p [A]

P_e

ABB Questionnaire for Product Specifications: Block Contactors

Customer: _____
Contact person: _____
Tel: _____
Project: _____
Report: _____
E-mail: _____

ABB correspondent: _____
Contact person: _____
Tel: _____
Date: _____
E-mail: _____

APPLICATION

Type of load: _____
Utilization category (AC/DC): _____
Voltage (V): _____
L/R: _____
No. of phases: _____
L/R: _____
Cos ϕ : _____
Frequency: _____
Switching current (A): _____
Duty: continuous - temporary - intermittent
Load factor (% of I_{th}): _____

CONTROL CIRCUIT

Control voltage: _____
Minimum / maximum: _____
Surge suppressor: _____
Accessories: _____
Number of auxiliary contacts: _____
Low level contacts: _____

PROTECTION

Short-circuit protection: _____
Type: fuse - circuit breaker - MBS
Max. short-circuit current: _____
Overload protection: thermal relay - MBS

ENVIRONMENT AND RADIATION

Operating temperature: _____
Ambient environment: _____
Humidity (%): _____
Chemical pollution: _____
Other: _____
Mounting position (free-standing): _____

DELIVERY AND PACKAGING

Quantity by batch: _____
Delivery order: _____

APPROVALS AND OTHER REQUIREMENTS

Reference standards: _____
Required approvals: _____
Customer specifications: _____
Shock and vibrations: _____
Interface with PLC: _____
Expected quantity: _____
Quantity on first 6 months: _____
Quantity on first year: _____
Specific quality assurance clauses: _____
Other comments: _____

ABB Control - Fuses

003-1026 rev 8

Above tools are available on the ABB Website for selection of the contactors, for the usual utilization categories according to IEC 60947-4-1.

For other utilization categories, or specific applications, a questionnaire for product specifications is also available on the ABB Website, and in this catalogue (pages 2/94, 2/95).

Conformity with Standards

The standards and specifications cited for different types of devices, e.g. IEC, BS, VDE, NFC, EN Publications, should be considered as statements of conformity in the sense of article 10 of the E.E.C. Low Voltage Directive of 19 February 1973.

There is no label on ABB Low Voltage Control Apparatus identifying a national certification organization. The ABB logo figuring on devices, labels and documents certifies the conformity of devices with respect to the applicable standards.

CE marking is proof of conformity with the European Directives concerning the product. It must not be confused with a mark of quality.

CE marking is part of an administrative procedure designed to guarantee the free movement of the product inside the European Community.

However, for some countries and some ship certification and classification organizations, certification is compulsory. In this case, the mark (or logo) of the given organization figures on the devices if so required (see pages 7/6 and 7/7).

Files pertaining to certifications and approvals obtained are available on request.

Liability

The devices in this catalogue do not endanger safety when they are installed, mounted and used according to their application and in compliance with the installation rules and standards which apply to them.

Quality

ABB has set up a quality assurance organisation in compliance with the requirements of ISO 9001 standard.

ABB factories are ISO 9001 approved.

ABB Low Voltage Control Apparatus meet with a high quality standard. It is developed, manufactured and tested under the sole responsibility of ABB. **Our test platforms benefit from a quality assurance organisation accredited as per standard ISO/IEC 17025.**

In compliance with the regulations set out by the ISO 9000 series standard, ABB sets up and manages the procedures and files relating to product quality and actions having an effect on quality.

Guarantee

The information contained in this catalogue reflects the current state of our knowledge and aims to present our products and their possible applications. Thus, the information does not guarantee certain specific characteristics of products or their aptitude for a specific utilization. All filed legal patents or industrial property rights must be respected.

Sustainable Development

In 1999, ABB extended its Environment Management Programme to all the principles of the Corporate Charter for Sustainable Development. **All concerned factories are ISO 14001 certified.**

Eco-design

Some environmental information is accessible on ABB Website.

☞ www.abb.com/sustainability ☞ select in left menu: "ABB's environmental policy".

Environmental product declarations can be issued upon customer's request.



Packing

Generally speaking, the diversification of reusable packing satisfies ecological requirements and the specific needs of our customers.

Packing is designed and produced with a continuous concern for respect of the environment.

For instance, polystyrene packing materials are replaced by recyclable wrapping materials with an efficient protection of our products during their transportation.

Contents

Industrial^{IT}

Industrial^{IT} Enabled Products

Control^{IT} Low Voltage Products



Industrial^{IT}

As a key element of its business strategy, ABB has committed to a broad program of product development and positioning under the Industrial^{IT} umbrella.

The **Industrial^{IT} Enabled Products** will provide all the relevant information like product identification, documentation, certificates and product data in electronic form in the engineering and work environment.

The **Industrial^{IT} Enabled Products** provide for this purpose all the data you need to do the right selection. Standardized product identification by type designator, identity number and international article number (EAN-code) insure that the right product is handled and delivered. Documentation on-line is available.

Most of the Low Voltage Products have already been Industrial^{IT} enabled among **Control^{IT}** Block Contactors, Mini Contactors and **Control^{IT}** Overload Relays and Electronic Overload Relays.

For further information, please consult the ABB Website

 www.abb.com/industrialit

Industrial^{IT}