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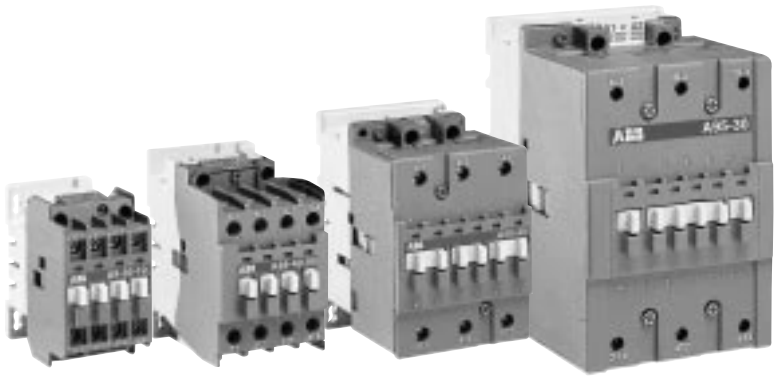
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A Line contactors

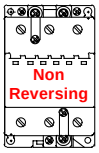


A9 – A110

- Maximum UL/CSA horsepower ratings
- Includes NEMA sizes 00 – 3
- CE mark
- Compact space saving design
- Standard auxiliary contact configurations:
  A9 – A40 1 N.O. or 1 N.C.
  A50 – A110 1 N.O. and 1 N.C.
  Can be supplied without auxiliaries
- Additional auxiliary contact blocks are available
- D.C. ratings & D.C. control operation available
- Fast, snap-on DIN rail mounting
- Double break contact design
- Snap-on front mounted accessories include mechanical latch, pneumatic timer, and 1 & 4 pole auxiliary contact blocks
- Common accessories for A9 – A110 contactors
- Complete range of 4 pole contactors 21A – 105A
- Easy coil change
- Captive terminal screws
- NEMA, UL, IEC, CSA, VDE and most other international standards
- UL File No: E39231 (A9 – A75)
- UL File No: E79416 (A95 – A110)
- CSA File No: LR56745 (A9 – A75)
- CSA File No: LR19700 (A95 – A110)
- Touch safe design: All connection terminals are protected against accidental touch
- Terminals supplied open for ease of wiring
- Operates over an extended voltage range of 85% to 110% of rated control voltage
- Screwdriver guide holes

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Non-reversing contactors
3 pole, AC & DC operated


A9-30-10


A26-30-10


A50-30-00


A95-30-00

General purpose current		Motor switching current	Maximum motor horsepower ratings				Standard Aux. contacts		AC operated		DC operated	
AC oper.	DC oper.		208V	240V	480V	575/600V	N.O.	N.C.	Catalog number	List price	Catalog number	List price
AC1	AC1	AC3	**UL rated**									
21	—	9	2	2	5	7.5	1 0	0 1	A9-30-10-84 A9-30-01-84	**$ 78**	BC9-30-10-04 BC9-30-01-04	**$ 123**
25	—	11	3	3	7.5	10	1 0	0 1	A12-30-10-84 A12-30-01-84	**84**	— —	— —
30	21	17	5	5	10	15	1 0	0 1	A16-30-10-84 A16-30-01-84	**102**	BC16-30-10-04 BC16-30-01-04	**147**
40	33	28	7.5	10	20	25	1 0	0 1	A26-30-10-84 A26-30-01-84	**183**	BC25-30-10-04 BC25-30-01-04	**228**
50	45	32	10	10	25	30	1 0 0 2	0 1 0 2	A30-30-10-84 A30-30-01-84 — —	**252** — —	— — BC30-30-00-04 BC30-30-22-04	— — **267** **297**
60	—	41	10	15	30	40	1 0	0 1	A40-30-10-84 A40-30-01-84	**297**	— —	—
80	—	54	15	20	40	50	0 1	0 1	A50-30-00-84 A50-30-11-84	**300** **330**	AE50-30-00-04 AE50-30-11-04	**345** **375**
90	—	65	20	25	50	60	0 1	0 1	A63-30-00-84 A63-30-11-84	**342** **372**	AE63-30-00-04 AE63-30-11-04	**447** **477**
105	—	80	25	30	60	75	0 1	0 1	A75-30-00-84 A75-30-11-84	**383** **413**	AE75-30-00-04 AE75-30-11-04	**488** **518**
125	—	95	30	30	60	75	0 1	0 1	A95-30-00-84 A95-30-11-84	**420** **450**	AE95-30-00-04 AE95-30-11-04	**525** **555**
140	—	110	30	40	75	100	0 1	0 1	A110-30-00-84 A110-30-11-84	**450** **480**	AE110-30-00-04 AE110-30-11-04	**660** **690**
			NEMA rated									
NEMA size	Continuous current											
00	9		1.5	1.5	2	2	1	0	A9N00-30-10-84	**$ 78**	BC9N00-30-10-04	**$ 123**
0	18		3	3	5	5	1	0	A16N0-30-10-84	**102**	BC16N0-30-10-04	**147**
1	27		7.5	7.5	10	10	1	0	A26N1-30-10-84	**183**	BC25N1-30-10-04	**228**
2	45		10	15	25	25	1	1	A50N2-30-11-84	**330**	AE50N2-30-11-04	**375**
3	90		25	30	50	50	1	1	A75N3-30-11-84	**413**	AE75N3-30-11-04	**518**

Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. All DC operated catalog numbers include a 110VDC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the two digits after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 contactor: A75-30-00-**80**

Auxiliary contact blocks

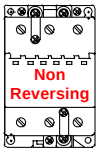
For additional auxiliary contact blocks, see catalog number explanation on page 1.2. Add $ 20 to list price for each additional auxiliary, and see page 1.18 for available combinations.

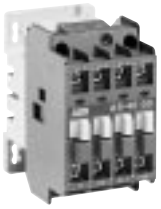
Coil voltage selection chart

Hz	Cntr type	Volts															
		12	24	48	110	120	125	208	220	240	277	380	415	440	480	500	600
60	A		81	83	84	84		34	75	80	42	48	86	86	51	53	55
50	A		81	83	84				80			85	86			55	
DC	BC	07	01	16	04		27		05	33							
DC	AE	80	81	83	86		87		88	89							

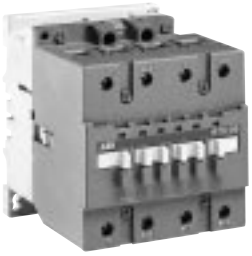
For other voltages, see page 1.13

Non-reversing contactors
4 pole, AC & DC operated




A9-40-00


A26-40-00


A75-40-00

4 Pole

UL general purpose current		Standard		AC operated		DC operated	
AC operated	DC operated	Auxiliary contacts		Catalog number	List price	Catalog number	List price
21	—	0	0	A9-40-00-84	**$ 120**	BC9-40-00-04	**$ 165**
30	21	0	0	A16-40-00-84	**165**	BC16-40-00-04	**210**
40	30	0	0	A26-40-00-84	**228**	BC25-40-00-04	**273**
65	—	0	0	A45-40-00-84	**360**	AE45-40-00-04	**420**
80	—	0	0	A50-40-00-84	**413**	AE50-40-00-04	**473**
105	—	0	0	A75-40-00-84	**525**	AE75-40-00-04	**570**

4 Pole – 2 N.O. & 2 N.C. power poles

UL general purpose current		Standard		AC operated		DC operated	
AC operated	DC operated	Auxiliary contacts		Catalog number	List price	Catalog number	List price
21	—	0	0	A9-22-00-84	**$ 120**	BC9-22-00-04	**$ 165**
30	21	0	0	A16-22-00-84	**165**	BC16-22-00-04	**210**
40	30	0	0	A26-22-00-84	**228**	BC25-22-00-04	**273**
65	—	0	0	A45-22-00-84	**360**	AE45-22-00-04	**420**
105	—	0	0	A75-22-00-84	**525**	AE75-22-00-04	**570**

Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. All DC operated catalog numbers include a 110VDC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the two digits after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75 contactor:

A75-22-00-**80**

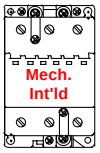
Auxiliary contact blocks

For additional auxiliary contact blocks, see catalog number explanation on page 1.2. Add $20 to list price for each additional auxiliary, and see page 1.18 for available combinations.

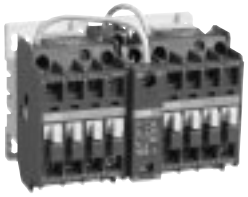
Coil voltage selection chart

Hz	Cntr type	Volts																
		12	24	48	110	120	125	208	220	240	277	380	415	440	480	500	600
60	A		81	83	84	84		34	75	80	42	48	86	86	51	53	55
50	A		81	83	84				80			85	86			55	
DC	BC	07	01	16	04		27		05	33							
DC	AE	80	81	83	86		87		88	89							

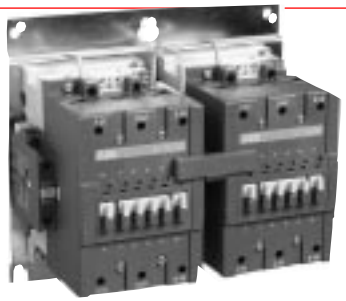
For other voltages, see page 1.13



Mechanically interlocked contactors
3 pole, AC & DC operated


A12M-30-10-84


A75M-30-11-84


AE110M-30-11-84

General purpose current		Motor switching current	Maximum motor horsepower ratings (UL) (CSA)				Standard		AC operated		DC operated	
AC oper.	DC oper.		208V	240V	480V	575/600V	Auxiliary contacts each contactor		Catalog number	List price	Catalog number	List price
AC1	AC1	AC3	**UL rated**									
21	—	9	2	2	5	7.5	1 0	0 1	A9M-30-10-84 A9M-30-01-84	**$ 255**	BC9M-30-10-04 BC9M-30-01-04	**$ 345**
25	—	11	3	3	7.5	10	1 0	0 1	A12M-30-10-84 A12M-30-01-84	**315**	— —	— —
30	21	17	5	5	10	15	1 0	0 1	A16M-30-10-84 A16M-30-01-84	**345**	BC16M-30-10-04 BC16M-30-01-04	**435**
40	33	28	7.5	10	20	25	1 0	0 1	A26M-30-10-84 A26M-30-01-84	**405**	BC25M-30-10-04 BC25M-30-01-04	**495**
50	45	32	10	10	25	30	1 0	0 1	A30M-30-10-84 A30M-30-01-84	**548**	BC30M-30-10-04 BC30M-30-01-04	**668**
60	—	41	10	15	30	40	1 1	0 1	A40M-30-10-84 A40M-30-11-84	**639**	— —	— —
80	—	54	15	20	40	50	1	1	A50M-30-11-84	**713**	AE50M-30-11-04	**803**
90	—	65	20	25	50	60	1	1	A63M-30-11-84	**870**	AE63M-30-11-04	**1080**
105	—	80	25	30	60	75	1	1	A75M-30-11-84	**1155**	AE75M-30-11-04	**1365**
125	—	95	30	30	60	75	1	1	A95M-30-11-84	**1230**	AE95M-30-11-04	**1440**
145	—	110	30	40	75	100	1	1	A110M-30-11-84	**1365**	AE110M-30-11-04	**1785**
NEMA rated												
NEMA size	Continuous current											
00	9	1.5	1.5	2	2		1 0	0 1	A9N00M-10-84 A9N00M-01-84	**$ 255**	BC9N00M-10-04 BC9N00M-01-04	**$ 345**
0	18	3	3	5	5		1 0	0 1	A16N0M-10-84 A16N0M-01-84	**345**	BC16N0M-10-04 BC16N0M-01-04	**435**
1	27	7.5	7.5	10	10		1 0	0 1	A26N1M-10-84 A26N1M-01-84	**405**	BC25N1M-10-04 BC25N1M-01-04	**495**
2	45	10	15	25	25		1	1	A50N2M-11-84	**713**	AE50N2M-11-04	**803**
3	90	25	30	50	50		1	1	A75N3M-11-84	**1155**	AE75N3M-11-04	**1365**

Description

Mechanically interlocked contactors are designed for reversing, 2 speed, reduced voltage, etc. type starter applications. The complete assembly consists of two mechanically and electrically interlocked contactors mounted as follows with line and load terminals:

- A9 – A16 – mounted on 35mm DIN rail
- A26 – A110 – mounted on common baseplate

Power wiring is not included.

The N.C. electrical interlock is provided with the mechanical interlock.

A95 & A110 contactors have the N.C. electrical interlocks provided in the mechanical interlock.

Auxiliary contact blocks

For additional auxiliary contact blocks, see catalog number explanation on page 1.2. Add $20 to list price for each additional auxiliary, and see page 1.18 for available combinations.

Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. All DC operated catalog numbers include a 110VDC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection chart for the two digits after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75N3M-11 contactor: A75N3M-11-**80**

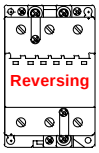
Coil voltage selection chart

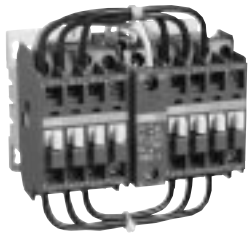
Hz	Cntr type	Volts 12	24	48	110	120	125	208	220	240	277	380	415	440	480	500	600
60	A		81	83	84	84		34	75	80	42	48	86	86	51	53	55
50	A		81	83	84				80			85	86			55	
DC	BC	07	01	16	04		27		05	33							
DC	AE	80	81	83	86		87		88	89							

For other voltages, see page 1.13

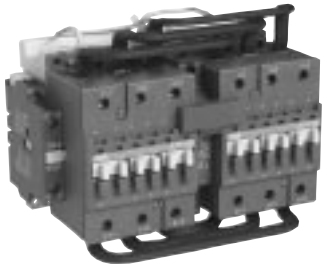
AC 1030 – 6/98

Reversing contactors
3 pole, AC & DC operated

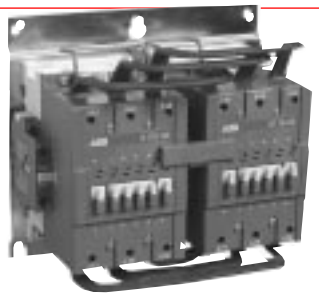




A16R-30-01-83



A75R-30-00-83



AE110R-30-11-83

General purpose current		Motor switching current	Maximum motor horsepower ratings				Standard		AC operated		DC operated	
AC oper.	DC oper.		208V	240V	480V	575V	Auxiliary contacts each contactor		Catalog number	List price	Catalog number	List price
AC1	AC1	AC3	**UL rated**									
21	—	9	2	2	5	7.5	1 0	0 1	A9R-30-10-84 A9R-30-01-84	**$ 315**	BC9R-30-10-04 BC9R-30-01-04	**$ 405**
25	—	11	3	3	7.5	10	1 0	0 1	A12R-30-10-84 A12R-30-01-84	**375**	— —	— —
30	21	17	5	5	10	15	1 0	0 1	A16R-30-10-84 A16R-30-01-84	**413**	BC16R-30-10-04 BC16R-30-01-04	**503**
40	33	28	7.5	10	20	25	1 0	0 1	A26R-30-10-84 A26R-30-01-84	**480**	BC25R-30-10-04 BC25R-30-01-04	**570**
50	45	32	10	10	25	30	1 0	0 1	A30R-30-10-84 A30R-30-01-84	**623**	BC30R-30-10-04 BC30R-30-01-04	**743**
60	—	41	10	15	30	40	1 1	0 1	A40R-30-10-84 A40R-30-11-84	**750**	— —	— —
80	—	54	15	20	40	50	1	1	A50R-30-11-84	**810**	AE50R-30-11-04	**930**
90	—	65	20	25	50	60	1	1	A63R-30-11-84	**1013**	AE63R-30-11-04	**1208**
105	—	80	25	30	60	75	1	1	A75R-30-11-84	**1298**	AE75R-30-11-04	**1493**
125	—	95	30	30	60	75	1	1	A95R-30-11-84	**1425**	AE95R-30-11-04	**1635**
140	—	110	30	40	75	100	1	1	A110R-30-11-84	**1628**	AE110R-30-11-04	**2048**
NEMA rated												
NEMA size	Continuous current											
00	9		1.5	1.5	2	2	1 0	0 1	A9N00R-10-84 A9N00R-01-84	**$ 315**	BC9N00R-10-04 BC9N00R-01-04	**$ 405**
0	18		3	3	5	5	1 0	0 1	A16N0R-10-84 A16N0R-01-84	**413**	BC16N0R-10-04 BC16N0R-01-04	**503**
1	27		7.5	7.5	10	10	1 0	0 1	A26N1R-10-84 A26N1R-01-84	**480**	BC25N1R-10-04 BC25N1R-01-04	**570**
2	45		10	15	25	25	1	1	A50N2R-11-84	**810**	AE50N2R-11-04	**930**
3	90		25	30	50	50	1	1	A75N3R-11-84	**1298**	AE75N3R-11-04	**1493**

Description

Reversing contactors are designed for reversing type starter applications. The complete assembly consists of two mechanically and electrically interlocked contactors mounted as follows with line and load terminals:

- A9 – A16 — mounted on 35mm DIN rail
- A26 – A110 — mounted on common baseplate

The N.C. electrical interlock is provided with the mechanical interlock.

A95 & A110 contactors have the N.C. electrical interlocks provided in the mechanical interlock.

Auxiliary contact blocks

For additional auxiliary contact blocks, see catalog number explanation on page 1.2. Add $20 to list price for each additional auxiliary, and see page 1.18 for available combinations.

Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. All DC operated catalog numbers include a 110VDC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection chart for the first digit after the last dash in the catalog number.

Ex.: A 240V coil is required for an A75N3R-11 contactor: A75N3R-11-**80**

Coil voltage selection chart

Hz	Cntr type	Volts																
		12	24	48	110	120	125	208	220	240	277	380	415	440	480	500	600
60	A		81	83	84	84		34	75	80	42	48	86	86	51	53	55
50	A		81	83	84				80			85	86			55	
DC	BC	07	01	16	04		27		05	33							
DC	AE	80	81	83	86		87		88	89							

For other voltages, see page 1.13

Contactors
for 3 phase capacitor switching
3 pole, AC operated



UA75-30-00-84



UA95-30-00-84

Max kvar switching capacity			Standard auxiliary contacts		Catalog number	List price
240V	480V	575/600V	N.O.	N.C.		
12.5	25	30	1	0	UA26-30-10-84	**$ 225**
16	32	40	1	0	UA30-30-10-84	**338**
20	40	50	0 1	0 1	UA50-30-00-84 UA50-30-11-84	**345** **375**
27.5	55	70	0 1	0 1	UA75-30-00-84 UA75-30-11-84	**450** **480**
35	70	75	0 1	0 1	UA95-30-00-84 UA95-30-11-84	**465** **495**
40	80	85	0 1	0 1	UA110-30-00-84 UA110-30-11-84	**525** **570**

For 3 phase capacitors carrying out single bank or stepped bank compensation.
Max. peak current **Î**: 100 times the capacitor nominal r.m.s. current at $\mathbf{U}_e$ ≤500V or 90 times for $\mathbf{U}_e$>500V
Electrical durability: 100,000 operating cycles.

Contactor type	Power in kvar 50/60 Hz															Max. permissible peak current Î (kA)	
	220/240V			380/400/415V			440V			500/550V			660/690V				
	40° C	55° C	70° C	40° C	55° C	70° C	40° C	55° C	70° C	40° C	55° C	70° C	40° C	55° C	70° C	$\mathbf{U}_e$≤500V	$\mathbf{U}_e$>50C
UA26	12	11	9	20	16.5	14.5	22	22	17	22	22	19.5	30	30	26	3	2.7
UA30	16	16	11	27.5	27.5	19	30	30	20	32	32	23.5	40	40	35	3.5	3.1
UA50	20	20	20	33	32	32	36	35	35	37.5	37.5	37.5	51	51	51	5	4.5
UA75	30	30	25	50	50	40	55	54.5	44	62.5	58.5	47.5	86	80	65	7.5	6.75
UA95	35	35	30	60/65*	60/65*	50/55*	65	65	55	70	70	60	75	75	65	9.3	8
UA110	40	40	35	75	65	60/65*	75	75	70	80	80	75	90	90	85	10.5	9

* Use these values for U_e = 415V

Coil voltage selection

All AC operated catalog numbers include a 120VAC coil. All DC operated catalog numbers include a 110VDC coil. To select other coil voltages, substitute the code from the Coil Voltage Selection Chart for the two digits after the last dash in the catalog number.

Ex.: A 240V coil is required for a UA110 contactor: UA110-30-00-**80**

Auxiliary contact blocks

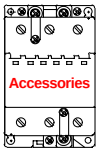
For additional auxiliary contact blocks, see catalog number explanation on page 1.2. Add $20 to list price for each additional auxiliary, and see page 1.18 for available combinations.

Coil voltage selection chart

Hz	Cntr type	Volts															
		12	24	48	110	120	125	208	220	240	277	380	415	440	480	500	600
60	A		81	83	84	84		34	75	80	42	48	86	86	51	53	55
50	A		81	83	84				80			85	86			55	

For other voltages, see page 1.13

Accessories
for A, AE & BC contactors





CAL5-11 CA5-10



TP40DA



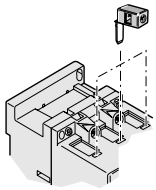
VE5-1



RV5/50 RC5-1/50



LK75-A LK75-A1 LK110



Auxiliary contact blocks

Positioning	Maximum number of contact blocks	Contact Description	Catalog number	List price
Front mounting (single pole)	4 blocks: A9 – A26 BC9 – BC30 5 blocks: A30, A40 6 blocks: A45 – A110 AE45 – AE110	1 N.O. 1 N.C. 1 N.O. Early make 1 N.C. Late break	CA5-10 CA5-01 CC5-10 CC5-01	$ 15
Front mounting (4 pole)	1 block: A9 – A26-40-00 A30 – A110 AE45 – AE110 BC9 – BC25-40-00 BC30-30-00	4 N.O. 3 N.O. & 1 N.C. 2 N.O. & 2 N.C. 4 N.C. 2 N.O./2 N.C.①	CA5-40E CA5-31E CA5-22E CA5-04E CA5-11/11E	30
	1 block: A9 – A40-30-10 BC9 – BC25-30-10	3 N.O. & 1 N.C. 2 N.O. & 2 N.C. 4 N.C. 2 N.O./2 N.C.①	CA5-31M CA5-22M CA5-04M CA5-11/11M	
Side mounting (2 pole)	2 blocks: A9 – A110, N 1 block: AE45 – AE110	1 N.O. & 1 N.C.	CAL5-11	

Pneumatic timers

Mounting on	Timing range	Contacts N.O.	Contacts N.C.	Catalog number	List price
A9 – A75	On delay 0.1 – 40 s	1	1	TP40DA	$ 108
	On delay 10 – 180 s	1	1	TP180DA	
	Off delay 0.1 – 40 s	1	1	TP40IA	
	Off delay 10 – 180 s	1	1	TP180IA	

Interlocks

Feature	Mounting on	Contacts N.O.	Contacts N.C.	Catalog number	List price
Mechanical/electrical	A9 – A40	—	2	VE5-1	$ 45
Mechanical	A50 – A110	—	2	VE5-2	45
	A9 – A40	—	—	VM5-1	21

Note: Use type VE 5-2 for mechanical and electrical interlocking between contactors A40 and A50.

Surge suppression device

Feature	Mounting on	Voltage range	Catalog number	List price
Varistor	A9 – A110	24 – 50 VAC	RV5/50	$ 30
		50 – 133 VAC	RV5/133	
		110 – 250 VAC	RV5/250	
		250 – 440 VAC	RV5/440	
RC	A9 – A40	24 – 50 VAC/DC	RC5-1/50	
		50 – 133 VAC/DC	RC5-1/133	
		110 – 250 VAC/DC	RC5-1/250	
		250 – 440 VAC/DC	RC5-1/440	
RC	A45 – A110	24 – 50 VAC/DC	RC5-2/50	
		50 – 133 VAC/DC	RC5-2/133	
		110 – 250 VAC/DC	RC5-2/250	
		250 – 440 VAC/DC	RC5-2/440	

Auxiliary lead terminals

Connections	Mounting on	Catalog number	List price
Connects from side	A50 – A75	LK75-A	$ 15
Connects from top	A50 – A75	LK75-A1	15
Connects from side	A95 – A110	LK110	23

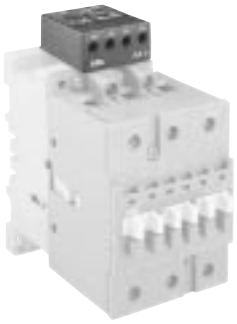
① Includes 1 N.O. & 1 N.C. overlapping

AC 1030 – 6/98

Accessories
for A, AE & BC, BE contactors



RA5



RA5 mounted on A75 contactor



RA30 mounted on BC16 contactor



BA5-50



WB75A-04

Interface relay

Mounting on	Coil voltage	Catalog number	List price
A9 – A110	24 VDC	RA5	**$ 75**
BC9 – BC30	24 VDC	RA30	

Identification marker

Mounting on	Coil voltage	Catalog number	List price
A9 – A110	Pack of 50	BA5-50	**$ 15**

Mechanical latches

For contactors	Catalog number	List price
A, AE & BC, BE①	WB75A-★	**$ 84**

★ - Coil voltage suffix. Refer to Coil Voltage Selection chart and substitute the desired coil voltage suffix for the ★.

Coil voltage selection chart — mechanical latches for B, BC, BE & A, AE contactors

50 Hz	60 Hz	Voltage code
24	24 - 28	**01**
42	42 - 48	**02**
48	48 - 55	**03**
110	110 - 127	**04**
220 - 230	220 - 255	**06**
230 - 240	230 - 277	**05**
380 - 415	380 - 440	**07**
415 - 440	440 - 480	**08**

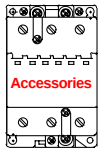
Range: WB75A for contactors A9 – A75, BC9 – BC30, AE45 – AE75 and control relays N and KC.

Description: WB75A block: contains a mechanical latching device with electromagnetic impulse unlatching (AC or DC) or manual unlatching.
Captive screw type connecting terminals, built-in cable clamps, M 3.5 (=, -) posidrive 1 screw with screwdriver guidance, delivered untightened and protected against accidental direct contact.

Operation: After closing, the contactor continues to be held in the closed position by the latching mechanism should the supply voltage fail at the contact coil terminals. Contactor opening can be controlled:
- electrically by an impulse* (AC or DC) on the WB75A block coil. The coil is not designed to permanently energized.
- manually by pressing the pushbutton on the front face of the WB75A block.

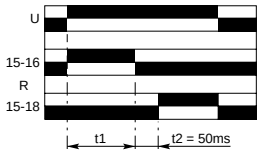
Mounting: WB75A is clipped onto the front face of the contactor.

① Excludes A(E)95 & A(E)110.

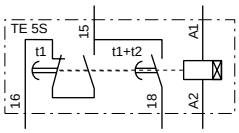




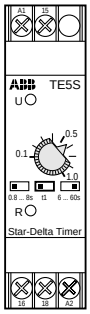
TE5S-*



Chart



Equivalent diagram



Front face

Electronic timer

For contactors	Rated control voltage U_c V	Packing piece	Unit weight kg	Catalog number	List price
A9 – A110	24 AC/DC 110 – 115 AC 220 – 230 AC	1 1 1	0.080 0.080 0.080	TE5S-24 TE5S-115 TE5S-230	**$ 120**

Application

Utilization

When used in wye-delta starters, the **TE5S** lags the wye connection and provides a lapse of 50 ms before the switchover to the delta connection.

Description

According to the type of device chosen, the electronic circuit has a 24 VAC/VDC, 110 – 120 VAC or 220 – 230 VAC supply. An output relay with reversing contact ensures high current switching. A two-position switch allows selection of one of the two time delay ranges: 0.8 to 8 s or 6 to 60 s. The 0.1 to 1.0 adjustable knob allows an initial setting without steps within the previously selected range which can then be adjusted using a stopwatch.

Note: We recommend that you allow for temperature drift for the final adjustment of the time delay setting. Drift: – 0.2% per °C. For example, a setting made at 20 °C will yield a time delay shorter by 7% at 55 °C in an enclosure. (– 0.2% per °C i.e. – 0.2 x 35 = – 7%).

The **TE5S**, which is not affected by these settings, establishes a fixed “lapse” of 50 ms between the opening of contact 15 – 16 and the closing of contact 15 – 18. It is this time delay that prevents from arc short-circuit during wye to delta switching.

Operation

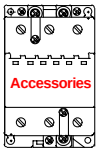
On energization, the green U indicator light (voltage applied) comes on. Contact 15 – 16 then immediately moves to the closed position.

Count-down of the programmed time immediately commences.

When the time delay has elapsed, contact 15 – 16 opens and at the same time the 50 ms lapse, t2, begins after which contact 15 – 18 moves to the closed position. The yellow R indicator light comes on.
On de-energization, the U and R indicator lights go out and, after the 250 ms resetting time, the device is ready for a new cycle.

Mounting

Mounts on 35mm DIN rail.

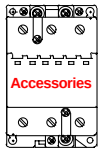


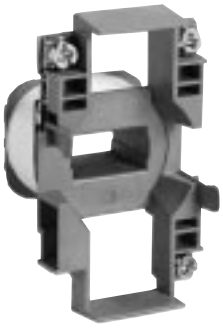
Accessories
for A contactors
TE5S Electronic Timer for Wye-Delta starters

Technical data

Type				TE5S-24	TE5S-115	TE5S-230
Compliance with standards				IEC 947-5-1, EN 60947-5-1 and VDE 0435		
Rated insulation voltage U_i according to IEC 947-5-1			**V**	250		
Rated supply voltage U_c			**VDC** **VAC**	24 24	— 110 – 115	— 220 – 230
Rated frequency limits			**Hz**	48 – 63		
Supply voltage range				0.85 – 1.1 U_c		
Overvoltage protection				Built-in varistor		
Load factor			**%**	100		
Average consumption		in DC in AC	**W** **VA**	0.7 1.5	— 3.5	— 6.5
Time delay range (t_1) selected by switch			**S**	0.8 – 8 and 6 – 60		
Temperature drift			**% per °C**	- 0.2		
Mechanical setting accuracy				± 15% of the setting range		
On-load reiteration accuracy under constant conditions				± 2% after 1 million operations		
Minimum time lapse (t_2)			**ms**	50		
Min. time lapse after 1 million operations			**ms**	40		
Resetting time (maximum)			**ms**	250		
Front panel display:		green indicator light yellow indicator light		Energization Output relay activated		
Rated operational voltage U_e acc. to IEC 947-5-1			**VDC** **VAC**	24 24 – 230		
Conventional free air thermal current I_{th}			**A**	10		
Rated operational current I_e acc. to IEC 947-5-1						
DC-13	24 VDC		**A**	4		
AC-15	24 – 115 VAC		**A**	5		
	220 – 230 VAC		**A**	4		
Permissible air temperature						
for operation			**°C**	-25 ... +60		
for storage			**°C**	-40 ... +85		
Mechanical durability in millions of operations				5		
Electrical durability in millions of operations				1		
On-load maximum switching frequency			**ops./h**	720		
Shock and vibration withstand				on request		
Fixing on mounting rail according to EN 50022				35 x 7.5 or 35 x 15		
Connecting terminals				(+,-) pozidriv 1 screw		
Tightening torque			**N.m**	0.6 – 0.8 max.		
Connecting capacity						
Rigid solid			**1 or 2 x mm²**	1 – 2.5		
Flexible without cable end			**1 or 2 x mm²**	0.75 – 2.5		
Degree of protection acc. to IEC 529, IEC 947-1 and EN 60 529						
Housing				IP 50		
Terminals				IP 20		

Accessories
for A, AE, BC contactors & KC control relays
Coils & coil voltage codes





ZA16-81

Coils — AC operated

For contactors	Catalog number	List price
A9 – A16	ZA16-★	$ 24
A26 – A40	ZA40-★	30
A45 – A75	ZA75-★	57
A95 – A110	ZA110-★	60

Coils — DC operated

KC and BC9 – BC30	KBC30G-★	36
AE45 – AE75	ZAE75-★	57
AE95 – AE110	ZAE110-★	90
Auxiliary including an insertion contact and a varistor for DC operated contactors		
AE45 – AE75	CDL5-01	45
AE95 – AE110	CCL5-01	

★ – Coil voltage suffix. Refer to Coil Voltage Selection charts below and substitute the desired coil voltage code for the ★.

Coil voltage selection — AC Operated
for A9 – A110; UA26 – UA95

VAC (50Hz)	VAC (60Hz)	Voltage Code
24	24	**81**
26	28	**16**
28	32	**17**
42	42	**82**
48	48	**83**
60	60	**73**
100	100 – 110	**74**
110	110 – 120	**84**
110 – 115	115 – 127	**89**
120	140	**29**
125 – 127	150	**30**
175	208	**34**
190	220	**36**

VAC (50Hz)	VAC (60Hz)	Voltage Code
200	200 – 220	**75**
220 – 230	230 – 240	**80**
230 – 240	240 – 260	**88**
230 – 240	277	**42**
230/400①	—	**62**
—	230/400①	**63**
—	380	**48**
380 – 400	400 – 415	**85**
400 – 415	415 – 440	**86**
—	480	**51**
440	500	**53**
500	600	**55**
550	—	**56**
660 – 690	—	**58**

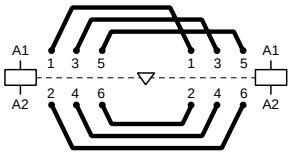
Coil voltage selection — DC Operated
for AE & BC contactors; KC control relays

VDC	Voltage code	
	KC Control relays BC Contactors	AE Contactors
12	07	**80**
24	01	**81**
42	02	**82**
48	16	**83**
50	17	**21**
60	03	**84**

VDC	Voltage code	
	KC Control relays BC Contactors	AE Contactors
75	22	**85**
110	04	**86**
125	27	**87**
220	05	**88**
240	33	**89**
250	34	**38**

① Dual voltage coil for N, A9 - A16 only.

Accessories
for A & BC contactors



BEM circuit diagram

Connection kits for reversing

Mounting on 3 pole contactors	Catalog number	List price
A9 – A16	BEM16-30	**$ 23**
A26	BEM26-30	**30**
A30, A40	BEM40-30	**45**
A50 – A75	BEM75-30	**165**
A95, A110	BEM110-30	**180**
BC9, BC16	BSM16-30	**23**
BC25	BSM25-30BC	**30**
BC30	BSM30-30BC	**45**

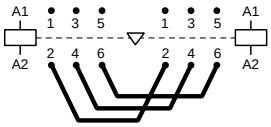
Application

Connections between the main poles of **two 3 pole contactors** mounted side by side so that they operate as reversing contactors.

Description

The sets are made up of three reversing connections and three phase to phase connections.

BEM16-30 — Insulated, solid, rigid copper wires
BEM26 and 40-30 — Insulated, stranded, rigid copper wires
BEM75 and 110-30 — Insulated, solid copper bars
BSM16-30, **BSM25 and 30-30BC** — Insulated, solid, rigid copper wires



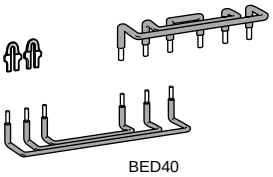
BES110 connection diagram

Connection kits for phase to phase

Mounting on 3 pole contactors	Catalog number	List price
A(E)50, A(E)75	BES75-30	**$ 75**
A(E)95, A(E)110	BES110-30	**90**

Description

This set is made up of three phase to phase bus bars.



BED40

Connection kits for wye-delta starters

Mounting on contactors		Catalog number	List price
Line and delta contactor	Wye contactor		
A30 A40	A26 A26	BED40	**$ 53**
A50 A63	A30 A40	BED50	**165**
A75	A50	BED75	**180**
A95	A75	BED95	**195**
A110	A95	BED110	**225**

Application

Connections between the main poles of a wye-delta starter.

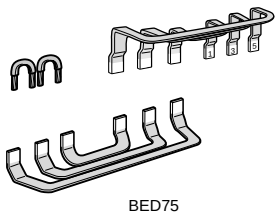
Description

These sets are made up of:

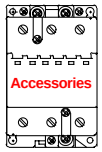
- Three line contactor/wye contactor connections — line side.
- Three wye contactor/delta contactor connections — load side.
- The shorting connection for the "S" contactor.

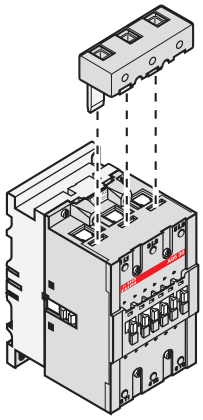
BED40 — Insulated, stranded, rigid copper wires.
BED50 – BED110 — Insulated, solid copper bars.

The above connection sets allow a mechanical interlock unit to be mounted between the wye and delta contactors if required.



BED75

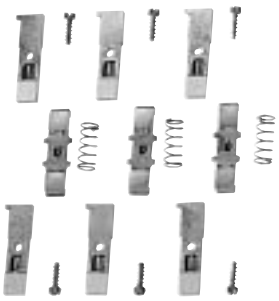




LD110



BEXT-75



ZL75

Additional terminal block

Mounting on 3 pole contactors	Catalog number	List price
A(E)95 and A(E)110	LD-110	**$ 30**

Application

The **LD110** terminal block is designed to increase the connection capacity of the contactor on which it is mounted: **A(E)95** or **A(E)110**.

Description

Block housing three connectors: 1 per phase. Each connector is equipped with an HC, M8 socket head screw and has the following connection details:

- Stranded conductor (1) 6–2/0 OR (2) 4–1/0
- Busbar max. width 12 mm

Mounting

The **LD110** terminal block can be mounted in the terminal slots located on line or load side of contactor.

Terminal extensions

Mounting on contactors	Dimensions		Catalog number	List price
	Hole Ø mm	Bar mm		
A50 – A75	6.5	12X3	BEXT-75	**$ 15**
A(E)95, A(E)110	6	15x3	LW-110	

Application

They are designed to increase the width of the contactor terminal pads to allow larger connectors to be mounted.

Description

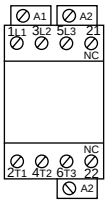
Terminal extension sets contain 3 bars.

Contact kits

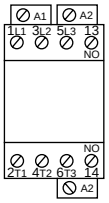
For contactors		Catalog number	List price
3 Pole			
	A/AE	ZL50	**$ 113**
	A/AE	ZL63	**135**
	A/AE	ZL75	**158**
	A/AE95-30	ZL95	**225**
	A/AE110-30	ZL110	**255**
4 Pole			
	A/AE45-40	ZLT45	**150**
	A/AE50-40	ZLT50	**150**
	A/AE75-40	ZLT75	**210**

Terminal marking & positioning
for A & UA contactors

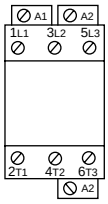
Standard devices without addition of auxiliary contacts



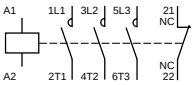
A9 – A40-30-01



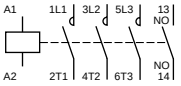
A9 – A40-30-10



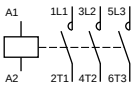
A50 – A110-30-00
UA50 – UA110-30-00



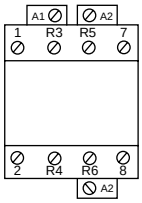
A9 – A40-30-01



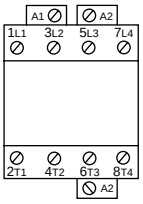
A9 – A40-30-10



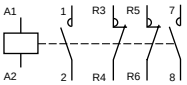
A50 – A110-30-00
UA50 – UA110-30-00



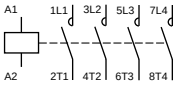
A9 – A26-22-00
A45 – A75-22-00



A9 ... A26-40-00
A45 ... A75-40-00

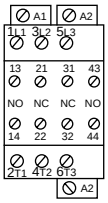


A9 – A26-22-00
A45 – A75-22-00

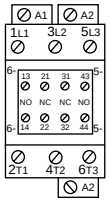


A9 – A26-40-00
A45 – A75-40-00

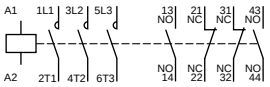
Standard 3 pole devices with factory mounted auxiliary contacts



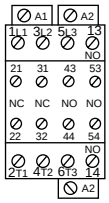
A9 – A16-30-22



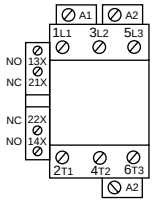
A50 – A110-30-22



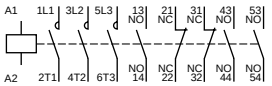
A9 – A16-30-22
A50 – A110-30-22



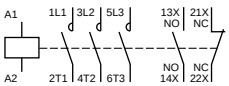
A9 – A40-30-32



A50 ... A110-30-11
UA50 ... UA110-30-11

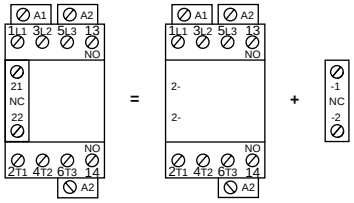


A9 – A40-30-32

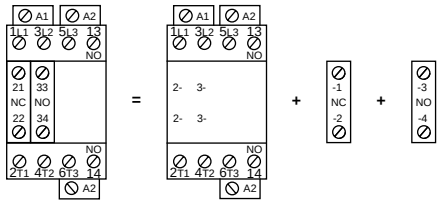


A50 – A110-30-11
UA50 – UA110-30-11

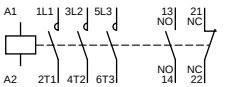
Other possible contact combinations with auxiliary contacts added by the user



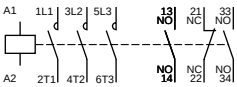
Combination 11 = **A9 – A40-30-10 + CA5-01**



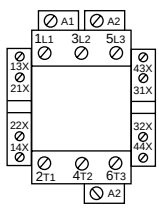
Combination 21 = **A9 – A40-30-10 + CA5-01 + CA5-10**



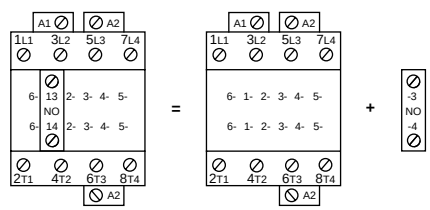
Combination 11



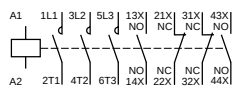
Combination 21



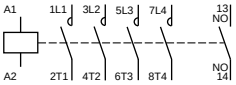
Combination 22 = **A50 – A75-30-11 + CAL5-11**



Combination 10 = **A45 – A75-40-00 + CA5-10**



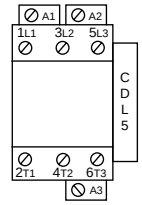
Combination 22



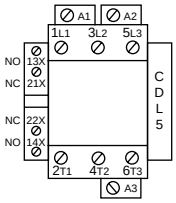
Combination 10

Terminal marking & positioning
for AE & BC contactors

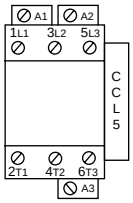
AE Contactors — D.C. Operated



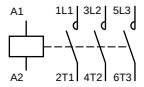
AE50 – AE75-30-00



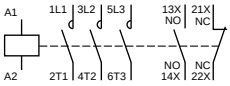
AE50 – AE75-30-11



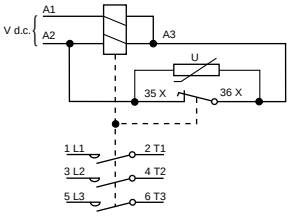
AE95 – AE110-30-00



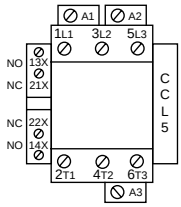
AE50 – AE110-30-00



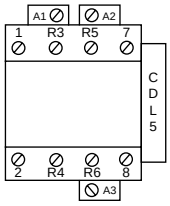
AE50 – AE110-30-11



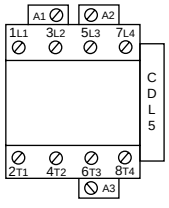
Coil wiring



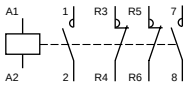
AE95 – AE110-30-11



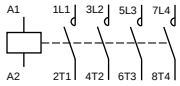
AE45 – AE75-22-00



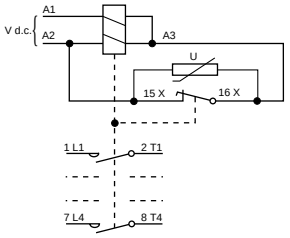
AE45 – AE75-40-00



AE45 – AE75-22-00



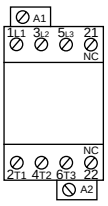
AE45 – AE75-40-00



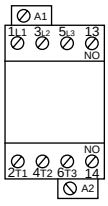
Coil wiring

BC Contactors — D.C. Operated

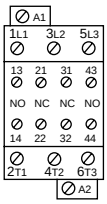
Standard devices without addition of auxiliary contacts



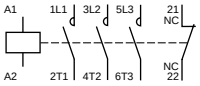
BC9 – BC25-30-01



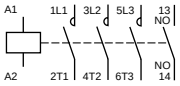
BC9 – BC25-30-10



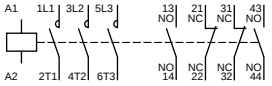
BC30-30-22



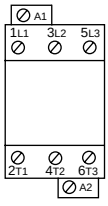
BC9 – BC25-30-01



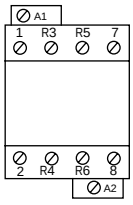
BC9 – BC25-30-10



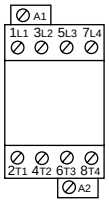
BC30-30-22



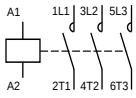
BC30-30-00



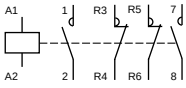
BC9 – BC25-22-00



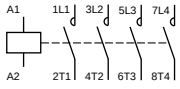
BC9 – BC25-40-00



BC30-30-00

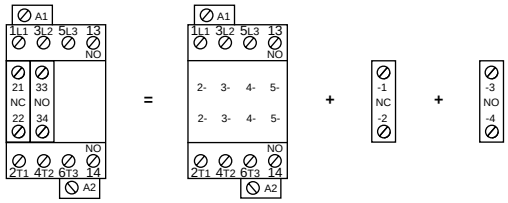


BC9 – BC25-22-00

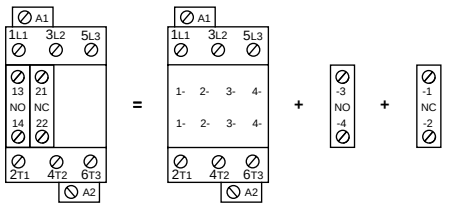


BC9 – BC25-40-00

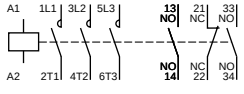
Other possible contact combinations with auxiliary contacts added by the user



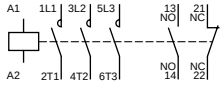
Combination 21 = BC9 – BC25-30-10 + CA5-01 + CA5-10



Combination 11 = BC30-30-00 + CA5-10 + CA5-01

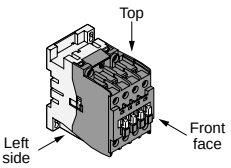


Combination 21



Combination 11

Possible accessory combinations
for A contactors & N, KC control relays

Positioning	Accessories — Front face mounting			Accessories — Side mounting		
	Auxiliary contacts 1 – pole	Auxiliary contacts 4 – pole	Pneumatic timers	Auxiliary contacts	Electrical or mechanical interlock①	
	CA5-10 or CA5-01	CA5-40 or CA5-22 or CA5-31	TP – D or TP – I	CAL 5-11	VE5-1 or VM 5-1	VE 5-2

Configurations of accessories are different depending on whether front or side mounted.

N Contactor relays A and AE Contactors Type	Main poles	Built-in auxiliary contacts	Accessories — Front mounting Auxiliary contact blocks 1-pole CA5-		Auxiliary contact blocks 4-pole CA5-		TP - A Pneumatic timer block		Accessories — Side mounting Auxiliary contact Blocks 2-pole CAL5-11		Interlock units ● mechanical VM5- ● mech. + elec. VE5-
N ..... ①	**2**	**2 E**	1 to 4 **CA5-** 1-pole blocks	or	1 **CA5-** 4-pole block	or	1 **TP - A** block	+	1 to 2 **CAL5-11** block	or	1 $V^M/_E$**5-1** block + 1 **CAL5-11** block
N ..... ①	**3**	**1 E**									
N	**4**	**0 E**									
N	**4**	**4 E**	—		—		—	+	1 to 2 **CAL5-11** blocks	or	1 $V^M/_E$**5-1** block + 1 **CAL5-1** block
N	**5**	**3 E**									
N	**6**	**2 E**									
N	**7**	**1 E**									
N	**8**	**0 E**									
A9 – A26	**– 3 0 – 1**	**0**	1 to 4 **CA5-** 1-pole blocks	or	1 **CA5-** 4-pole block	or	1 **TP - A** block	+	1 to 2 **CAL5-11** blocks	or	1 $V^M/_E$ **5-1** block + 1 **CAL5-11** block
A9 – A26 ①	**– 3 0 – 0**	**1**									
A9 – A26	**– 4 0 – 0**	**0**									
A9 – A26 ①	**– 2 2 – 0**	**0**									
A9 – A16	**– 3 0 – 2**	**2**	—		—		—	+	1 to 2 **CAL5-11** blocks	or	1 $V^M/_E$ **5-1** block + 1 **CAL5-11** block
A9 – A26	**– 3 0 – 3**	**2**									
A30, A40	**– 3 0 – 1**	**0**	1 to 5 **CA5-** 1-pole blocks	or	1 **CA5-** 4-pole block + 1 **CA5-** 1-pole block	or	1 **TP - A** block + 1 **CA5-** 1-pole block	+	1 to 2 **CAL5-11** blocks	or	1 $V^M/_E$ **5-1** block + 1 **CAL5-11** block
A30, A40	**– 3 0 – 0**	**1**									
A30, A40	**– 3 0 – 3**	**2**	1 **CA5-** 1-pole block		—		—	+	1 to 2 **CAL5-11** blocks	or	1 $V^M/_E$ **5-1** block + 1 **CAL5-11** block
A50 – A75	**– 3 0 – 0**	**0**	1 to 6 **CA5-** 1-pole blocks	or	1 **CA5-** 4-pole block + 2 **CA5-** 1-pole blocks	or	1 **TP - A** block + 2 **CA5-** 1-pole blocks	+	1 to 2 **CAL5-11** blocks	or	1 **VE5-2** block + 1 **CAL5-11** block
A45 – A75	**– 4 0 – 0**	**0**					—				
A45, A75 ②	**– 2 2 – 0**	**0**									
A95, A110	**– 3 0 – 0**	**0**									
A50 – A75	**– 3 0 – 2**	**2**	2 **CA5-** 1-pole blocks		—		—	+	1 to 2 **CAL5-11** blocks	or	1 **VE5-2** block + 1 **CAL5-11** block
A95, A110	**– 3 0 – 2**	**2**									
AE50 – AE75	**– 3 0 – 0**	**0**	1 to 6 **CA5-** 1-pole blocks	or	1 **CA5-** 4-pole block + 2 **CA5-** 1-pole blocks	or	1 **TP - A** block + 2 **CA5-** 1-pole blocks	+	1 **CAL5-11** block	or	1 **VE5-2** block
AE45 – AE75	**– 4 0 – 0**	**0**					—				
AE45, AE75 ②	**– 2 2 – 0**	**0**									
AE95, AE110	**– 3 0 – 0**	**0**									
A50 – A75	**– 3 0 – 1**	**1**	1 to 6 **CA5-** 1-pole blocks	or	1 **CA5-** 4-pole block + 2 **CA5-** 1-pole blocks	or	1 **TP - A** block + 2 **CA5-** 1-pole blocks	+	1 **CAL5-11** block —	or	1 **VE5-2** block —
AE50, AE75	**– 3 0 – 1**	**1**							1 **CAL5-11** block	or	1 **VE5-2** block
A95, A110	**– 3 0 – 1**	**1**					—		—		—
AE95, AE110	**– 3 0 – 1**	**1**									

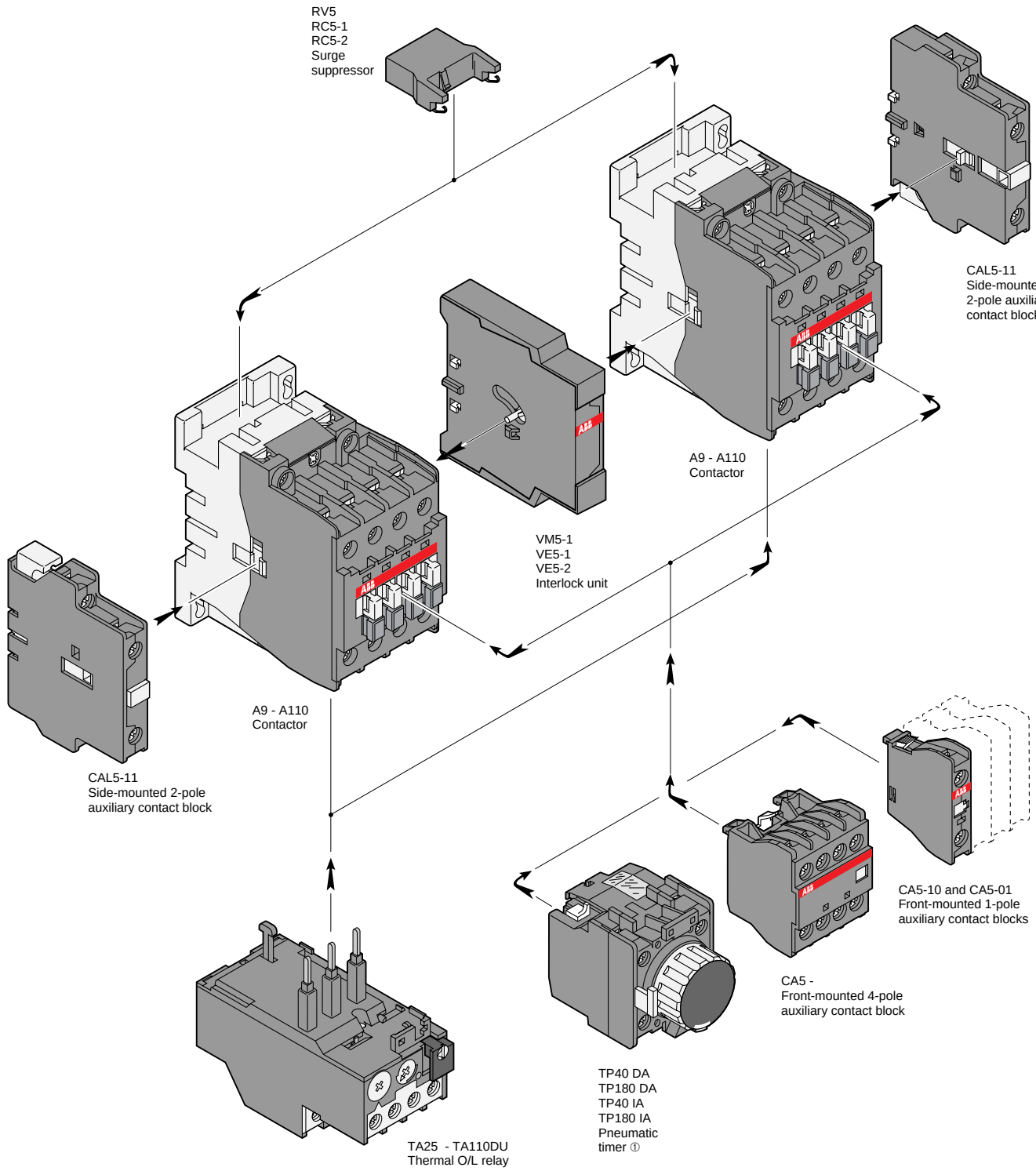
Contactor mounting configurations (standard from factory)

Auxiliary contacts are mounted on the contactor in the following order:

Left – 1st
Right – 2nd
Top – 3rd (L to R)

① In mounting position 5 (see page 1.20), there should be no more than 2 "N.C." front-mounted auxiliary contacts – The **CAL 5-11** side-mounted blocks offer additional "N.C." contacts.
② Whatever the mounting position (see page 1.20), there should be no more than 2 "N.C." front-mounted auxiliary contacts – The **CAL 5-11** side-mounted blocks offer additional "N.C." contacts.

Accessory mounting information
for A & AE contactors

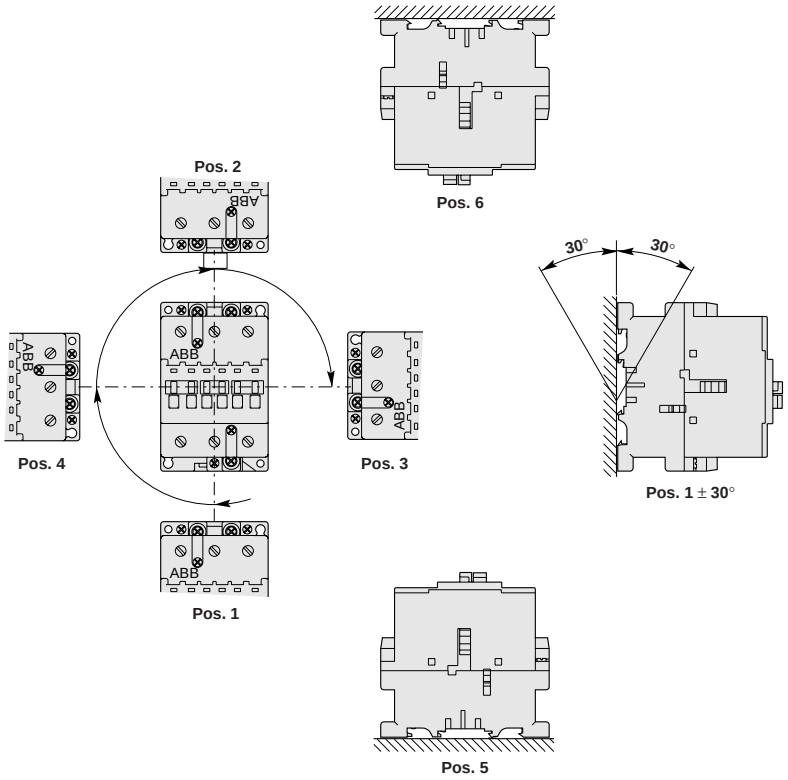


① Not for use with A95 & A110 contactors.

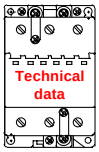
UL & CSA Technical data
for AC operated A contactors
Mounting positions

ABB contactor frame size	A9	A12	A16	A26	A30	A40	A45	A50	A63	A75	A95	A110
NEMA size	00	—	0	1	1P	—	—	2	—	3	—	—
Number of poles	3 or 4	3	3 or 4	3 or 4	3	3	4	3 or 4	3	3 or 4	3	3
A.C. rating information												
NEMA cont. amp rating (thermal current)	9	—	18	27	36	—	—	45	—	90	—	—
NEMA maximum H.P ratings (1 phase)												
115VAC	1/3	.75	1	2	3	—	—	3	—	—	—	—
230VAC	2	2	3	3	7.5	—	—	10	—	—	—	—
NEMA maximum H.P. ratings (3 phase)												
200VAC	1.5	—	3	7.5	—	—	—	10	—	25	—	—
230VAC	1.5	—	3	7.5	—	—	—	15	—	30	—	—
460/575VAC	2	—	5	10	—	—	—	25	—	50	—	—
U.L. general purpose current (40ºC) A	21	25	30	40	50	60	65	80	90	105	125	140
U.L. max 3 Ph. switching motor loads A	9	11	17	28	32	41	—	54	65	80	95	110
U.L. maximum H.P. ratings (1 phase)												
115 VAC	1/2	3/4	1	2	3	3	—	3	5	7.5	7.5	10
230 VAC	2	2	3	5	7.5	7.5	—	7.5	10	15	20	25
U.L. maximum H.P. ratings (3 phase)												
200 - 208 VAC	2	3	5	7.5	10	10	—	15	20	25	30	30
220 - 240 VAC	2	3	5	10	10	15	—	20	25	30	30	40
440 - 480 VAC	5	7.5	10	20	20	30	—	40	50	60	60	75
550 - 600 VAC	7.5	10	15	25	30	40	—	50	60	75	75	100
Lighting-ballast and incand., 600 VAC	15	15	20	35	50	60	65	65	85	105	—	—
Resistive heating applications, 600 VAC	15	15	20	35	50	60	65	65	85	105	—	—
Auxiliary contacts												
NEMA rating, AC	A600	A600	A600	A600	A600	A600	—	A600	A600	A600	A600	A600
AC rated voltage, VAC	600	600	600	600	600	600	—	600	600	600	600	600
AC thermal rated current, A	10	10	10	10	10	10	—	10	10	10	10	10
AC maximum volt-ampere making, VA	7200	7200	7200	7200	7200	7200	—	7200	7200	7200	7200	7200
AC maximum volt-ampere breaking, VA	720	720	720	720	720	720	—	720	720	720	720	720
NEMA rating, DC	P600	P600	P600	P300	P300	P300	—	P300	P300	P300	P300	P300
DC rated voltage, VDC	600	600	600	600	600	600	—	600	600	600	600	600
DC thermal rated current A	5	5	5	5	5	5	—	5	5	5	5	5
DC maximum make-break A	0.2	0.2	0.2	0.2	0.2	0.2	—	0.2	0.2	0.2	0.2	0.2
Approximate weight												
Contactor Lbs.	0.7	0.7	0.7	1.01	1.2	2.25	2.25	2.25	2.25	2.25	3.5	5
Starter Lbs.	1.04	1.04	1.04	1.35	1.54	3	—	3	3	3	6	7
Wire range AWG	18 – 10	18 – 10	18 – 10	12 – 8	8 – 4	8 – 4	8 – 1	8 – 1	8 – 1	8 – 1	6 – 2/0	6 – 2/0
Number of wires per phase	2	2	2	2	2	2	1	1	1	1	1	1
Tightening torque, lb. in.	9	9	9	15	20	20	40	40	40	40	50	50

Mounting positions



IEC Technical data
for AC operated A contactors



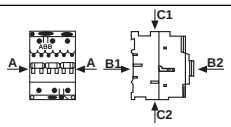
Type			A9	A12	A16	A26	A30	A40	A45	A50	A63	A75	A95	A110
Number of poles			**3 or 4**	**3**	**3 or 4**	**3 or 4**	**3**	**3**	**4**	**3 or 4**	**3**	**3 or 4**	**3**	**3**
Insulation characteristics														
Rated insulation voltage U_i														
according to IEC947-4-1 and VDE0110 (Gr. C)		**V**	1000											
according to UL/CSA		**V**	600											
Rated impulse withstand voltage $U_{imp.}$			8 **kV**											
Main pole utilization characteristics														
Rated operational voltage U_e		V	690			690			1000				1000	
Conventional free-air thermal current I_{th}														
acc. to IEC947-4-1, open contactors	θ ≤ 40°C	A	26	28	30	45	65	65	100	100	125	125	145	160
with conductor cross-sectional area		mm^2	4	4	4	6	16	16	35	35	50	50	50	70
Rated operational current I_e/AC-1 for air temperature close to contactor														
	θ ≤ 40°C	A	25	27	30	45	55	60	70	100	115	125	145	160
	θ ≤ 55°C	A	22	25	27	40	55	60	60	85	95	105	135	145
	θ ≤ 70°C	A	18	20	21	32	39	42	50	70	80	85	115	130
with conductor cross sectional area		mm^2	2.5	4	4	6	10	16	25	35	50	50	50	70
Utilization category AC-3 for air temperature close to contactor ≤ 55°C														
Rated operational current I_e/AC-3 (1)														
3-phase Motors	220-230-240 V	A	9	12	17	26	33	40	40	53	65	75	96	110
	380-400 V	A	9	12	17	26	32	37	37	50	65	75	96	110
	415 V	A	9	12	17	26	32	37	37	50	65	72	96	110
	440 V	A	9	12	16	26	32	37	37	45	65	70	93	100
	500 V	A	9	12	14	22	28	33	33	45	55	65	80	100
	690 V	A	7	9	10	17	21	25	25	35	43	46	65	82
	1000 V	A	—	—	—	—	—	—	—	23	25	28	30	30
Rated operational power AC-3 (1)														
1500 r.p.m. - 50 Hz 1800 r.p.m. - 60 Hz 3-phase Motors	220-230-240 V	kW	2.2	3	4	6.5	9	11	11	15	18.5	22	25	30
	380-400 V	kW	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45	55
	415 V	kW	4	5.5	9	11	15	18.5	18.5	25	37	40	55	59
	440 V	kW	4	5.5	9	15	18.5	22	22	25	37	40	55	59
	500 V	kW	5.5	7.5	9	15	18.5	22	22	30	37	45	55	59
	690 V	kW	5.5	7.5	9	15	18.5	22	22	30	37	40	55	75
	1000 V	kW	—	—	—	—	—	—	—	30	33	37	40	40
Rated frequency limits		Hz	25 – 400											
Mechanical durability in millions of operating cycles			10										10	
Max. mechanical switching frequency		cycles/h	3600										3600	
Max. electrical switching frequency	for AC-1	cycles/h	600	600	600	600	600	600	600	600	600	600	300	300
	for AC-3	cycles/h	1200	1200	1200	1200	1200	1200	600	600	600	600	300	300
	for AC-2, AC-4	cycles/h	300	300	300	300	300	300	150	150	150	150	150	150
Electrical durability			see pages 1.27 – 1.30											
Rated making capacity AC-3 according to IEC947-4-1			10 x I_e AC-3										12 x I_e AC-3	
Rated breaking capacity AC-3 according to IEC947-4-1			8 x I_e AC-3										8 x I_e AC-3	
Max. breaking capacity cos φ = 0.45	at 440 V	A	250	250	250	420	820	820	900	900	900	900	1160	1160
(cos φ = 0.35 for I_e > 100 A)	at 690 V	A	100	100	100	170	340	340	490	490	490	490	800	800
Short-circuit protection for contactors without thermal O/L relays - Motor protection excluded① U_e ≤ 500 V a.c. – gG (gl) type fuses		A	25	32	32	50	63	63	80	100	125	160	160	200
Rated short-time withstand current I_{cw}	1 s	A	250	280	300	400	600	600	1000	1000	1000	1000	1320	1320
at 40°C ambient temp., in free air,	10 s	A	100	120	140	210	400	400	650	650	650	650	800	800
from a cold state	30 s	A	60	70	80	110	225	225	370	370	370	370	500	500
	1 min	A	50	55	60	90	150	150	250	250	250	250	350	350
	15 min	A	26	28	30	45	65	65	100	100	100	100	160	175
Heat dissipation per pole	I_e/AC-1	W	0.8	1	1.2	1.8	2.5	3	2.5	5	6.5	7	6.5	7.5
	I_e/AC-3	W	0.1	0.2	0.35	0.6	0.9	1.3	0.65	1.3	1.5	2	2.7	3.6

① Please consult us for the protection of motor starters against short circuits.

IEC Technical data
for AC operated A contactors

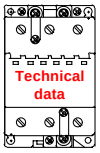
Type	A9	A12	A16	A26	A30	A40	A45	A50	A63	A75	A95	A110
Number of poles	**3 or 4**	**3**	**3 or 4**	**3 or 4**	**3**	**3**	**4**	**3 or 4**	**3**	**3 or 4**	**3**	**3**

General technical data

Standards	Devices complying with international standards IEC947-1 / 947-4-1 and European standards EN60 947-1 / 60 947-4-1 Electromagnetic compatibility (EMC) according to amendment A11 to IEC947-1; EN60 947-1 and amendment 2 to IEC947-4-1											
Certifications – approvals	See page V											
Air temperature close to contactor												
— fitted with thermal O/L relay °C	— 25 to + 55 (0.85 – 1.1 $\mathbf{U_c}$)										– 25 to +55 (0.85 –1.1$\mathbf{U_c}$)	
— without thermal O/L relay °C	— 40 to + 55 (0.85 – 1.1 $\mathbf{U_c}$) / – 40 to + 70 ($\mathbf{U_c}$)										– 25 to +70 (0.85 –1.1$\mathbf{U_c}$)	
— for storage °C	— 60 to + 80										– 40 to +70	
Climatic withstand	acc. to IEC 68-2-30 and 68-2-11 – UTE C 63-100 specification II										acc. to IEC 68-2-30	
Mounting positions: (see diagram, page 1.20)	Positions 1 to 5 — Ambient temperature ≤ 55°C and control voltage 0.85 – 1.1 $\mathbf{U_c}$ — Ambient temperature 55 – 70°C and control voltage equal to $\mathbf{U_c}$ Position 6 — Ambient temperature ≤ 55°C and control voltage 0.95 – 1.1 $\mathbf{U_c}$ — Ambient temperature > 55°C unauthorized											
Operating altitude m	≤ 3000											
Shock withstand acc. to IEC68-2-27 and EN60068-2-27 Mounting position1 (See page 1.20)	 1/2 sinusoidal shock for 11ms: no change in contact position Shock direction: A, C1, C2 : 20 g B1 : 5 g B2 : 15 g Note: only on plate for A95 and A110											
Mounting • on mounting rail	acc. to IEC715 and EN50 022 35 x 7.5 mm 35 x 15 mm						acc. to IEC715 35 x 15 EN50 022 75 x 25 EN50 023				acc. to IEC715 and EN50 023 75 x 25	
• by screws (not supplied)	2 x M4						2 x M6					
Connecting terminals (delivered in open position) — Main poles	(+,–) pozidriv 2screw											
	M 3.5 with cable clamp			M 4 with clamp	M 5 with 2x(5.6x6.5mm) double connect.		M 8 slotted screw head with single connector 13 x 10 mm				HC, M 8 hexagon socket screw with single connector 14 x 14 mm	
— Coil terminals	M 3.5 (+,-) pozidriv 2 screws with cable clamp											
— Built in aux. terminals	(+,-) pozidriv 2 screw and cable clamp											
	M 3.5			M 4	M 3.5							
Connecting capacity												
Main conductors (poles)	min. – max.			min.– max.	min. – max.		min. – max.				min. – max.	
Rigid solid (≤4 mm²) / rigid stranded (≥6 mm²) **1 x mm²**	1 – 4			1.5 – 6	2.5 – 16		6 – 50				6 – 95	
2 x mm²	1 – 4			1.5 – 6	2.5 – 16		6 – 25				6 – 35	
Flexible without cable end **1 x mm²**	0.75 – 2.5			1 – 4	2.5 – 10		6 – 35				6 – 70	
2 x mm²	0.75 – 2.5			1 – 4	2.5 – 10		6 – 16				6 – 35	
Bars or lugs: max. width **mm** ≤	8			10	—		—				30	
hole Ø **mm** >	3.7			4.2	—		—				6	
Auxiliary conductors (built in aux. terminals + coil terminals)	min. - max.											
Rigid solid **1 or 2 x mm²**	1 - 4										0.75 – 2.5	
Flexible without cable end **1 x mm²**	0.75 – 2.5			①	0.75 – 2.5		1 – 2.5				0.75 – 2.5	
2 x mm²	0.75 – 2.5			①	0.75 – 2.5		0.75 – 2.5				0.75 – 2.5	
Degree of protection	Protection against direct contact acc. to VDE0106 — Part. 100											
acc. to IEC529, IEC947-1 and EN60529 — Main terminals	IP20									IP10		
— Coil terminals	IP20											
— Auxiliary terminals	IP20											

① 1 or 2 times 0.75 – 2.5 mm² but with 0.75 and 1 mm² cable end.

IEC Technical data
for AC operated A contactors



Magnet system characteristics

Type				A9	A12	A16	A26	A30	A40	A45	A50	A63	A75	A95	A110
Number of poles				3 or 4	3	3 or 4	3 or 4	3	3	4	3 or 4	3	3 or 4	3	3
Coil operating limits acc. to IEC947-4-1: 0.85 – 1.1 x **U_c**				θ ≤ 55°C										θ ≤ 70°C	
Drop out voltage in % of U_c				roughly 40 – 65 %											
Coil consumption															
Average pull in value	— 50 Hz		**VA**	70			120			180				350	
	— 60 Hz		**VA**	80			140			210				450	
	— 50/60 Hz①		**VA/VA**	74/70			125/120			190/180				410 / 365	
Average holding value	— 50 Hz		**VA/W**	8/2			12/3			18/5.5				22 / 6.5	
	— 60 Hz		**VA/W**	8/2			12/3			18/5.5				26 / 8	
	— 50/60 Hz①		**VA/W**	8/2			12/3			18/5.5				27 / 7.5	
Rated control circuit voltage U_c															
	at 50 Hz		**V**	20 – 690											
	at 60 Hz		**V**	24 – 600											
Operating time	Between coil energization and:														
	— N.O. contact closing		**ms**	10 – 26			8 – 21			8 – 27				10 – 25	
	— N.C. contact opening		**ms**	7 – 21			6 – 18			7 – 22				7 – 22	
	Between coil deenergization and:														
	— N.O. contact opening		**ms**	4 – 11			4 – 11			4 – 11				7 – 15	
	— N.C. contact closing		**ms**	9 – 16			7 – 14			7 – 14				10 – 18	

Characteristics of A9 – A40 contactor built in auxiliary contacts
(for additional auxiliary contact blocks: see page 1.17)

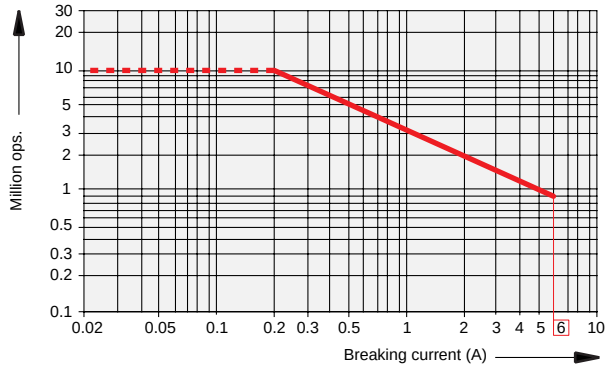
Rated operational voltage U_e			**V**	690
Conventional free air thermal current I_{th} - θ ≤ 40°C			**A**	16
Rated operational current	24 – 127 V	50/60 Hz	**A**	6
I_e /AC-15 acc. to IEC947-5-1	220 – 240 V	50/60 Hz	**A**	4
	380 – 440 V	50/60 Hz	**A**	3
	500 V	50/60 Hz	**A**	2
	690 V	50/60 Hz	**A**	2
I_e /DC-13 acc. to IEC947-5-1	24 V	d.c.	**A/W**	6 / 144
	48 V	d.c.	**A/W**	2.8 / 134
	72 V	d.c.	**A/W**	2 / 144
	125 V	d.c.	**A/W**	1.1 / 138
	250 V	d.c.	**A/W**	0.55 / 138
Operational current frequency			**Hz**	25 – 400
Rated making capacity	acc. to IEC 947-5-1	10 x I_e/AC-15		
Rated breaking capacity	acc. to IEC 947-5-1	10 x I_e/AC-15		
Short circuit protection – gG (gl) type fuses			**A**	10
Rated short time withstand current I_{cw}			**for 1.0 s**	100A
			for 0.1 s	140A
Insulating resistance at 500 V d.c.				after durability test: 5MΩ
Min. switching capacity				17V/ 5 mA
Non overlapping time between N.O. and N.C. contacts			**ms** ≥ 2	
Heat dissipation per pole at 6 A			**W**	0.10

Electrical durability

Max. switching frequency **1200 cycles/h**

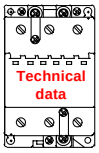
AC-15 according to IEC947-5-1
making current: 10 x I_e with cos φ = 0.7 and **U_e**
breaking current: I_e with cos φ = 0.4 and **U_e**

The curve opposite shows the electrical durability of the built in auxiliary contacts with respect to the breaking current.



This curve has been drawn for resistive and inductive loads up to 690 V, 40 - 60 Hz.

① 50/60 Hz coils: voltage codes 80 to 88, see page 1.13.



IEC Technical data
for DC operated A contactors

Type			BC9	BC16	BC25	BC30	AE45	AE50	AE63	AE75	AE95	AE110
Number of poles			3 or 4	3 or 4	3 or 4	3	4	3 or 4	3	3 or 4	3	3
Insulation characteristics												
Rated insulation voltage U_i												
according to IEC947-4-1 and VDE0110 (Gr. C)		V	690		1000		1000				1000	
according to UL/CSA		V	600		600		600				600	
Rated impulse withstand voltage $U_{imp.}$			6 **kV**				8 **kV**				8 **kV**	
Main pole utilization characteristics												
Rated operational voltage U_e		V	690		690		1000				1000	
Conventional free air thermal current I_{th}												
acc. to IEC947-4-1, open contactors	θ ≤ 40°C	A	26	28	45	65	100	100	125	125	145	160
with conductor cross sectional area		mm²	4	4	6	10	35	35	50	50	50	70
Rated operational current Ie/AC–1 for air temperature close to contactor												
	θ ≤ 40°C	A	22	28	45	55	70	100	115	125	145	160
	θ ≤ 55°C	A	20	25	40	45	60	85	95	105	135	145
	θ ≤ 70°C	A	17	23	32	36	50	70	80	85	115	130
with conductor cross sectional area		mm²	2.5	4	6	6	25	35	50	50	50	70
Utilization category AC-3 for air temperature close to contactor ≤ 55°C												
Rated operational current I_e/AC-3 (1)												
3 phase motors	220 – 230 – 240 V	A	9	16	25	33①	40	53	65	75	96	110
	380 – 400 V	A	9	16	25	30	37	50	65	75	96	110
	415 V	A	9	16	25	30	37	50	65	72	96	110
	440 V	A	9	16	20	27	37	45	65	70	93	100
	500 V	A	7	13	17	23	33	45	55	65	80	100
	690 V	A	6	8	13	18	25	35	43	46	65	82
	1000 V	A	—	—	—	—	—	23	25	28	30	30
Rated operational power AC-3 (1)												
1500 r.p.m. – 50 Hz or 1800 r.p.m. – 60 Hz 3 phase motors	220 – 230 – 240 V	kW	2.2	4	6.5②	9	11	15	18.5	22	25	30
	380-400 V	kW	4	7.5	11	15	18.5	22	30	37	45	55
	415 V	kW	4	7.5	11	15	18.5	25	37	40	55	59
	440 V	kW	4	7.5	11	15	22	25	37	40	55	59
	500 V	kW	4	7.5	11	15	22	30	37	45	55	59
	690 V	kW	4	5.5	11	15	22	30	37	40	55	75
	1000 V	kW	—	—	—	—	—	30	33	37	40	40
Rated frequency limits		Hz	25 – 400									
Mechanical durability in millions of operating cycles				10	10			10			10	
Max. mechanical switching frequency		cycles/h		6000	3000			3600			3600	
Max. electrical switching frequency	for AC-1	cycles/h		600	600			300			300	
	for AC-3	cycles/h		1200	600			300			300	
	for AC-2, AC-4	cycles/h		300	150			150			150	
Electrical durability			see page 1.27 – 1.30									
Rated making capacity AC-3 according to IEC947-4-1			10 x I_e / AC-3								12 x I_e / AC-3	
Rated breaking capacity AC-3 according to IEC947-4-1			8 x I_e / AC-3								8 x I_e / AC-3	
Max. breaking capacity with cos j = 0.45	at 440V	A	200		315	380	900				1160	
(cos j = 0.35 for I_e > 100 A)	at 690V	A	120		210	290	490				800	
Short-circuit protection for contactors without thermal O/L relay – Motor protection excluded③ U_e ≤ 500 V a.c. – gG (gl) type fuses		A	25	32/35	50	63	80	100	125	160	160	200
Rated short-time withstand current I_{cw} at 40°C ambient temperature, in free air, from cold state	1 s	A	200	280	350	400	1000	1000	1000	1000	1320	1320
	10 s	A	90	130	200	250	650	650	650	650	800	800
	30 s	A	50	70	110	150	370	370	370	370	500	500
	1 min	A	40	50	90	120	250	250	250	250	350	350
	15 min	A	22	28	45	55	100	100	115	125	160	175
Heat dissipation per pole	I_e/AC-1	W	0.55	1.5	2.4	2.2	2.5	5	6.5	7	6.5	7.5
	I_e/AC-3	W	0.10	0.4	0.6	0.6	0.65	1.3	1.5	2	2.7	3.6

① 32 A at 240V
② 7.5 kW at 240V
③ For the protection of motor starters against short circuits, please consult us.

IEC Technical data
for DC operated A contactors

Type	BC9	BC16	BC25	BC30	AE45	AE50	AE63	AE75	AE95	AE110
Number of poles	**3 or 4**	**3 or 4**	**3 or 4**	**3**	**4**	**3 or 4**	**3**	**3 or 4**	**3**	**3**

General technical data

Standards
Devices complying with international standards IEC947-1 / 947-4-1
and European standards EN60 947-1 / 60 947-4-1
Electromagnetic compatibility (EMC) according to amendment A11 to IEC947-1;
EN60 947-1 and amendment 2 to IEC947-4-1

Certifications – approvals — See pg V

Air temperature close to contactor

– with a thermal O/L relay mounted	°C	-25 to +50 (0.85 to 1.1 U_c)	-25 to +50 (0.85 to 1.1 U_c)	-25 to +55 (0.85 to 1.1U_c)
– without thermal O/L relay mounted	°C	-40 to +55 (0.85 to 1.1 U_c) / +55 to +70 (U_c)	-40 to +55 (0.85 to 1.1 U_c) / +55 to +70 (U_c)	-25 to +70 (0.85 to 1.1U_c)
– for storage	°C	-60 to +80	-60 to +80	-40 to +70

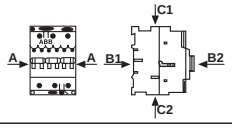
Climatic withstand — according to IEC 68-2-30 and 68-2-11 – UTE C 63-100 specification II

Mounting positions:
(see drawing page 1.20)

Positions 1,3 ,4 -θ ≤ 55 °C: 0.85 to 1.1 U_c; -θ = 55 to 70 °C: — U_c
Positions 2,6 -θ ≤ 55 °C: 0.95 to 1.1 U_c; -θ > 55 °C: not acceptable
Positions 1 to 5 - θ ≤ 55 °C: 0.85 to 1.1 U_c; - θ = 55 to 70 °C: **— U_c**
Position 6 - θ ≤ 55 °C: 0.95 to 1.1 U_c; - θ > 55 °C: not acceptable
Position 5: see tables p. 1.19

Operating altitude — m — ≤ 3000

Shock withstand
acc. to IEC68-2-27
and EN60068-2-27
Mounting position 1
(See page 1.20)



1/2 sinusoidal shock for 11ms: no change in contact position

Shock direction: A, C1, C2 : 20 g
B1 : 5 g
B2 : 15 g
Note: only on plate for A95 and A110

Mounting

	BC9 BC16 BC25 BC30	AE45 AE50 AE63 AE75	AE95 AE110
• on mounting rail	according to IEC715 and EN50 022 35 x 7.5 mm 35 x 15 mm	according to IEC715 35 x 15 EN50 022 75 x 25 EN50 023	acc. to IEC715 and EN 50 023 75 x 25
• by screws (not supplied)	2 x M 4	2 x M 6	

Connecting terminals
(delivered in open position)

	BC9 BC16 BC25 BC30	AE45 AE50 AE63 AE75	AE95 AE110
– Main poles	(+,-) pozidriv 2 screw with cable clamp M 3.5 / M 4 / M 5	M8 slotted screw head with single connector 13 x 10 mm	HC, M8, hexagon socket screw with single connector 14 x 14 mm
– Coil terminals	M 3.5 (+,-) pozidrive 2 screw with cable clamp		
– Built in aux. terminals	(+,-) pozidriv 2 screw with cable clamp M 3.5 / M 4		

Connecting capacity

		BC9 BC16 BC25 BC30	AE45 AE50 AE63 AE75	AE95 AE110
Main conductors (poles)		min. – max.	min. – max.	min. – max.
Rigid solid (≤ 4 mm²) / rigid stranded (≥ 6 mm²)	**1 x mm²**	1 – 4 / 1.5 – 6 / 2.5 – 10	6 – 50	6 – 95
	2 x mm²	1 – 4 / 1.5 – 6 / 2.5 – 10	6 – 25	6 – 35
Flexible without cable end	**1 x mm²**	1 – 2.5 / 1.5 – 4 / 2.5 – 6	6 – 35	6 – 70
	2 x mm²	0.75 – 2.5 / 1.5 – 4 / 2.5 – 6	6 – 16	6 – 35
Bars or lugs:	max. width	**mm** ≤ 8 / 10	13	— 30
	hole Ø	**mm** > 3.7 / 4	5	— 6
Auxiliary conductors (built in auxiliary terminals + coil terminals)		min. – max.		min. – max.
Rigid solid	**1 or 2 x mm²**	1 – 4		0. 75 – 2.5
Flexible without cable end①	**1 x mm²**	1 – 2.5		min. – max.
	2 x mm²	0.75 – 2.5		0.75 – 2.5

Degree of protection acc. to IEC529, IEC947-1 and EN60529 — Protection against direct contact according to VDE 0106 – Part. 100

	BC9 BC16 BC25 BC30	AE45 AE50 AE63 AE75	AE95 AE110
– Main terminals	IP10		IP10
– Coil terminals	IP20		IP20
– Auxiliary terminals	IP10		IP20

① Except auxiliary built into BC 25: 0.75 – 4 mm²

IEC Technical data
for DC operated A contactors

Magnet system characteristics

Type			BC9	BC16	BC25	BC30	AE45	AE50	AE63	AE75	AE95	AE110
Number of poles			3 or 4	3 or 4	3 or 4	3	4	3 or 4	3	3 or 4	3	3
Coil operating limits acc. to IEC947-4-1: 0.85 to 1.1 x $\mathbf{U_c}$			$\theta \leq 55°C$								$\theta \leq 70°C$	
Drop out voltage % of U_c			roughly 15 – 40 %									
Coil consumption (average value)	— pull in, from cold state	W	7				200				400	
	— holding, from warm state	W	7				4				2.4	
Rated control circuit voltage U_c		V	6 – 250				12 – 250				12 – 250	
Operating time	Between coil energization and:											
	— N.O. contact closing	ms	50 – 75				13 – 30				15 – 25	
	— N.C. contact opening	ms	45 – 70				10 – 27				12 – 22	
	Between coil de-energization and:											
	— N.O. contact opening	ms	15 – 30*				5 – 15*				15 – 20*	
	— N.C. contact closing	ms	17 – 32*				8 – 18*				18 – 23*	
			*The use of surge suppressors increases the opening time on a scale of 1.1 to 1.5 for a varistor suppressor and on a scale of 4 to 8 for a diode suppressor.									

Characteristics of BC9 – BC25 contactor built in auxiliary contacts

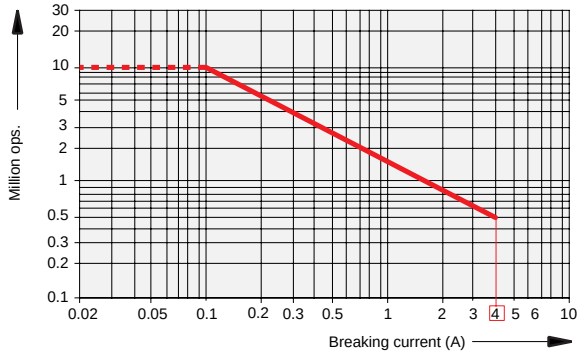
Rated operational voltage U_e			V	690
Conventional free air thermal current I_{th}			A	10
Rated operational current	24 – 127 V	50/60 Hz	A	6
I_e /AC-15 acc. to IEC947-5-1	220 – 240 V	50/60 Hz	A	4
	380 – 440 V	50/60 Hz	A	3
	500 V	50/60 Hz	A	2
	690 V	50/60 Hz	A	2
I_e /DC-13 acc. to IEC947-5-1	24 V	d.c.	A/W	6 / 144
	48 V	d.c.	A/W	2.8 / 134
	72 V	d.c.	A/W	2 / 144
	125 V	d.c.	A/W	1.1 / 138
	250 V	d.c.	A/W	0.55 / 138
Operational current frequency			Hz	25 – 400
Rated making capacity		acc. to IEC947-5-1		10 x I_e/AC – 15
Rated breaking capacity		acc. to IEC947-5-1		10 x I_e/AC –15
Short circuit protection – gG (gl) type fuses			A	10
Rated short time withstand current I_{cw}			for 1.0 s for 0.1 s	50 A 100 A
Insulation resistance at 500 V d.c.				after durability test: 5 MΩ
Min. switching capacity				24V / 5 mA
Non overlapping time between N.O. and N.C. contacts			ms	≥ 2
Heat dissipation per pole at 6 A			W	0.15

Electrical durability
Max. switching frequency 1200 cycles/h

AC-15 according to IEC947-5-1
making current: 10 x $\mathbf{I_e}$ with cos φ = 0.7 and $\mathbf{U_e}$
breaking current: $\mathbf{I_e}$ with cos φ = 0.4 and $\mathbf{U_e}$

The curve opposite shows the electrical durability of the built in auxiliary contacts with respect to the breaking current.

This curve has been drawn for resistive and inductive loads up to 690 V, 40 – 60 Hz.



Motor data

Ampere ratings of 3 phase, AC induction motors①

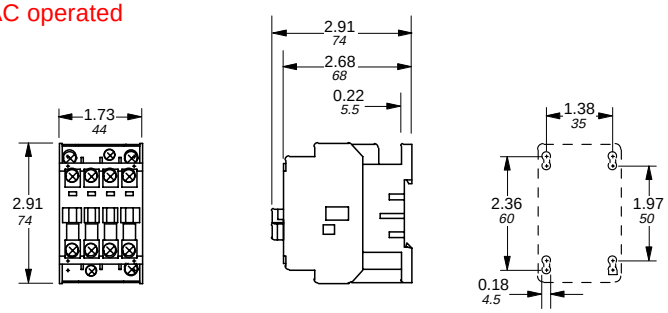
Horse power	110 – 120V			220 – 240V			380 – 415V①②		440 – 480V			550 – 600V		
	Single phase	Two phase	Three phase	Single phase	Two phase	Three phase	Single phase	Three phase	Single phase	Two phase	Three phase	Single phase	Two phase	Three phase
1/10	3.0	—	—	1.5	—	—	1.0	—	—	—	—	—	—	—
1/8	3.8	—	—	1.9	—	—	1.2	—	—	—	—	—	—	—
1/6	4.4	—	—	2.2	—	—	1.4	—	—	—	—	—	—	—
1/4	5.8	—	—	2.9	—	—	1.8	—	—	—	—	—	—	—
1/3	7.2	—	—	3.6	—	—	2.3	—	—	—	—	—	—	—
1/2	9.8	4.0	4.4	4.9	2.0	2.2	3.2	1.3	2.5	1.0	1.1	2.0	0.8	0.9
3/4	13.8	4.8	6.4	6.9	2.4	3.2	4.5	1.8	3.5	1.2	1.6	2.8	1.0	1.3
1	16.0	6.4	8.4	8.0	3.2	4.2	5.1	2.3	4.0	1.6	2.1	3.2	1.3	1.7
1 1/2	20.0	9.0	12.0	10.0	4.5	6.0	6.4	3.3	5.0	2.3	3.0	4.0	1.8	2.4
2	24.0	11.8	13.6	12.0	5.9	6.8	7.7	4.3	6.0	3.0	3.4	4.8	2.4	2.7
3	34.0	16.6	19.2	17.0	8.3	9.6	10.9	6.1	8.5	4.2	4.8	6.8	3.3	3.9
5	56.0	26.4	30.4	28.0	13.2	15.2	17.9	9.7	14.0	6.6	7.6	11.2	5.3	6.1
7 1/2	80.0	38.0	44.0	40.0	19.0	22.0	27.0	14.0	21.0	9.0	11.0	16.0	8.0	9.0
10	100.0	48.0	56.0	50.0	24.0	28.0	33.0	18.0	26.0	12.0	14.0.	20.0	10.0	11.0
15	135.0	72.0	84.0	68.0	36.0	42.0	44.0	27.0	34.0	18.0	21.0	27.0	14.0	17.0
20	—	94.0	108.0	88.0	47.0	54.0	56.0	34.0	44.0	23.0	27.0	35.0	19.0	22.0
25	—	118.0	136.0	110.0	59.0	68.0	70.0	44.0	55.0	29.0	34.0	44.0	24.0	27.0
30	—	138.0	160.0	136.0	69.0	80.0	87.0	51.0	68.0	35.0	40.0	54.0	28.0	32.0
40	—	180.0	208.0	176.0	90.0	104.0	112.0	66.0	88.0	45.0	52.0	70.0	36.0	41.0
50	—	226.0	260.0	216.0	113.0	130.0	139.0	83.0	108.0	56.0	65.0	86.0	45.0	52.0
60	—	—	—	—	133.0	154.0	—	103.0	—	67.0	77.0	—	53.0	62.0
75	—	—	—	—	166.0	192.0	—	128.0	—	83.0	96.0	—	66.0	77.0
100	—	—	—	—	218.0	248.0	—	165.0	—	109.0	124.0	—	87.0	99.0
125	—	—	—	—	—	312.0	—	208.0	—	135.0	156.0	—	108.0	125.0
150	—	—	—	—	—	360.0	—	240.0	—	156.0	180.0	—	125.0	144.0
200	—	—	—	—	—	480.0	—	320.0	—	208.0	240.0	—	167.0	192.0
250	—	—	—	—	—	602.0	—	403.0	—	—	302.0	—	—	242.0
300	—	—	—	—	—	—	—	482.0	—	—	361.0	—	—	289.0
350	—	—	—	—	—	—	—	560.0	—	—	414.0	—	—	336.0
400	—	—	—	—	—	—	—	636.0	—	—	477.0	—	—	382.0
500	—	—	—	—	—	—	—	786.0	—	—	590.0	—	—	472.0

① To obtain full load currents for 200V and 208V motors, increase corresponding 220 – 240V ratings by 15 percent and 10 percent.
② To obtain full load currents for 265V and 277V motors, decrease corresponding 220 – 240V ratings by 13 percent and 17 percent.

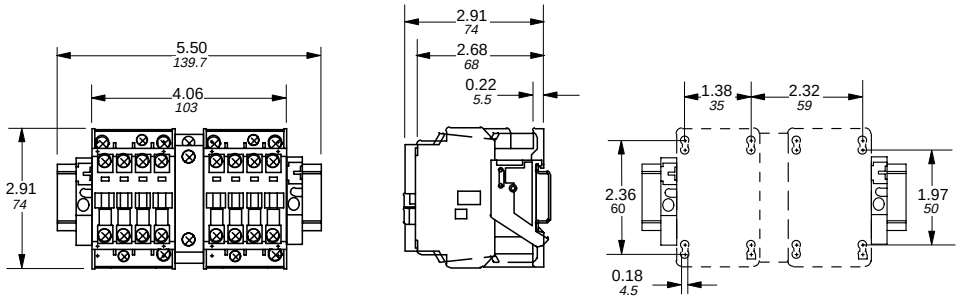
Approximate dimensions
for 3 pole, AC operated A contactors & starters
A9 – A16

00.00 Inches
00.00 Millimeters

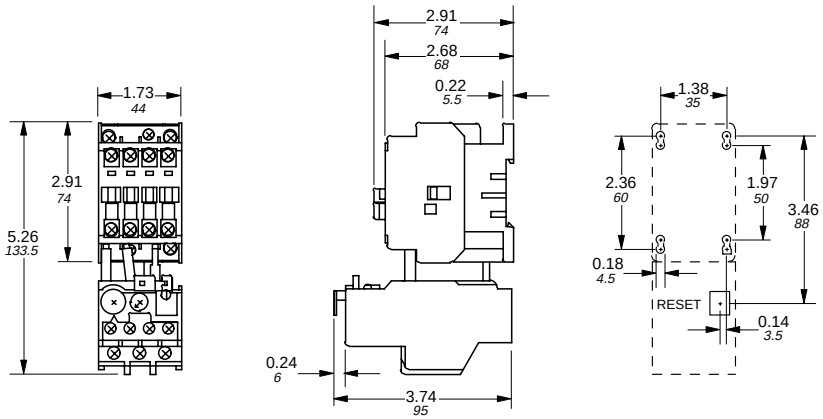
A9 – A16 — Contactor, 3 pole, AC operated



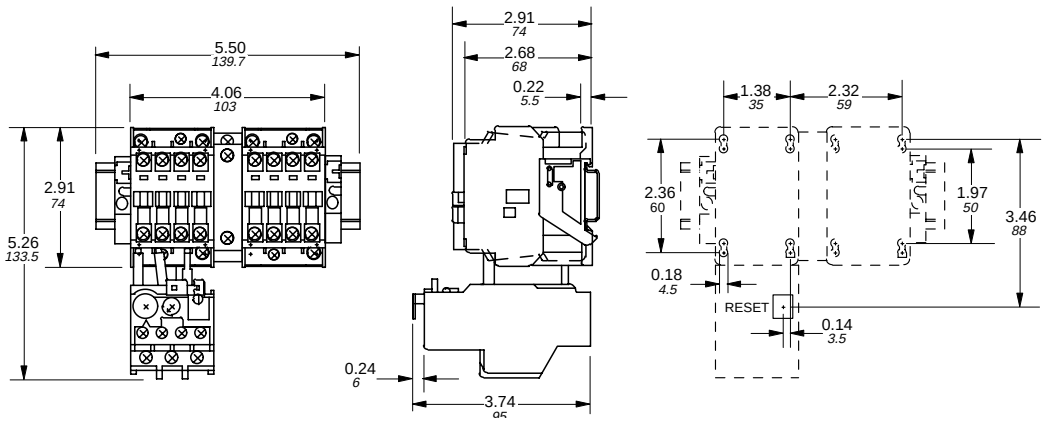
A9 – A16 + VM5 or VE5 — Mechanically interlocked contactor, 3 pole, AC operated



A9 – A16 + TA25 — Starter, 3 pole, AC operated



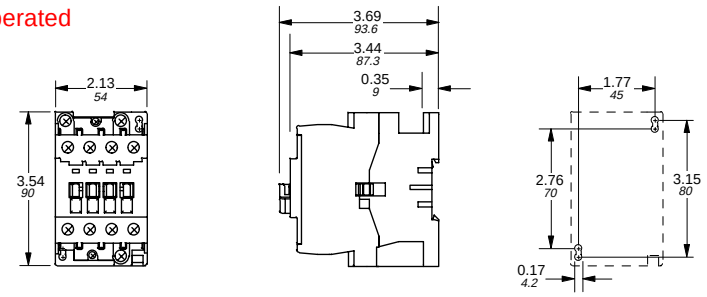
A9 – 16 + VM5 or VE5 + TA25 — Reversing starter, 3 pole, AC operated



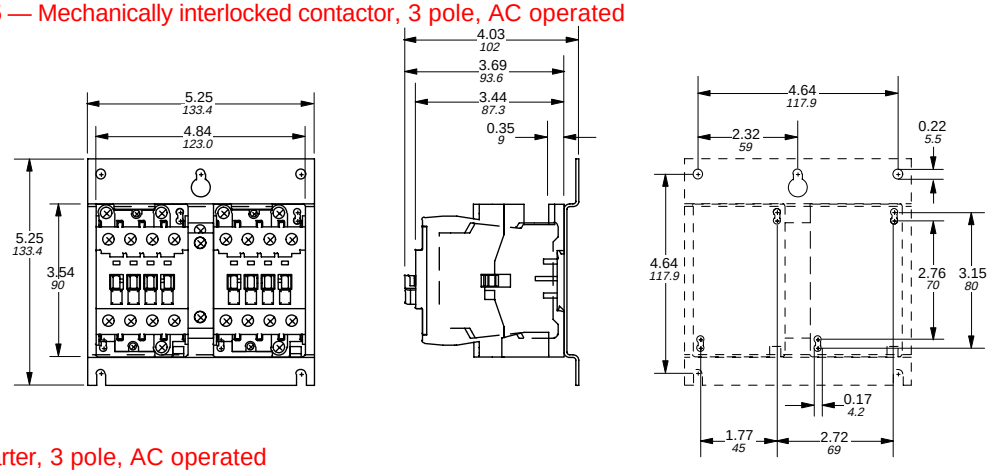
Approximate dimensions
for 3 pole, AC operated A contactors & starters
A26

00.00 Inches
00.00 Millimeters

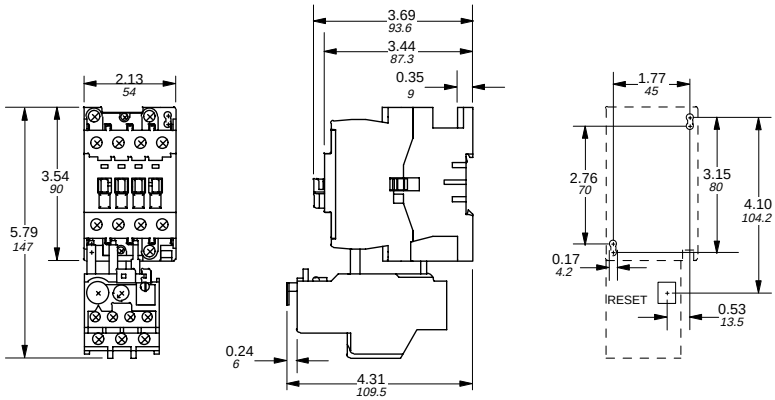
A26 — Contactor, 3 pole, AC operated



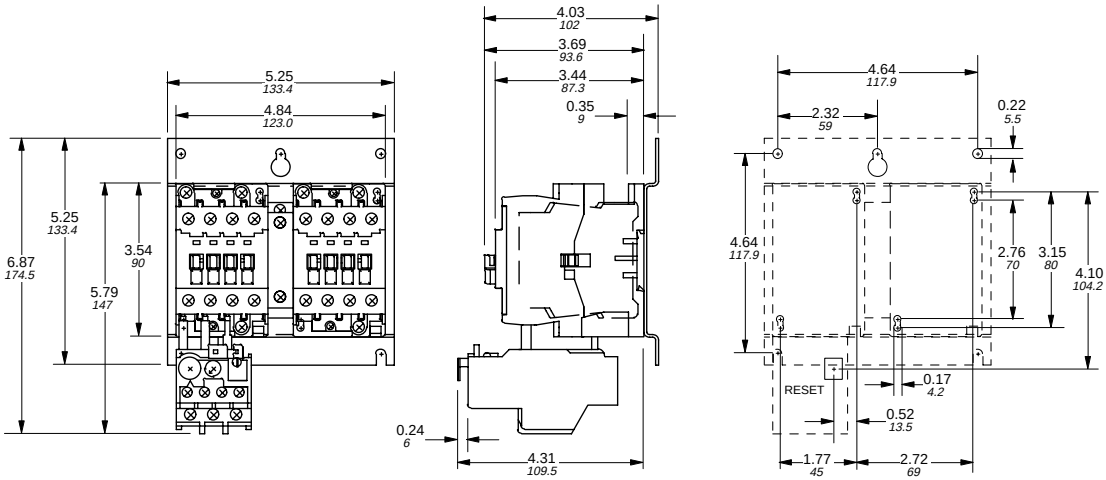
A26 + VM5 or VE5 — Mechanically interlocked contactor, 3 pole, AC operated



A26 + TA25 — Starter, 3 pole, AC operated



A26 + VM5 or VE5 + TA25 — Reversing starter, 3 pole, AC operated



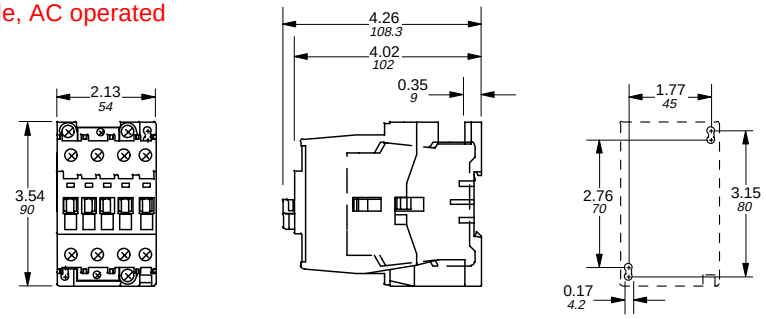
Contactors

AC 1030 – 6/98

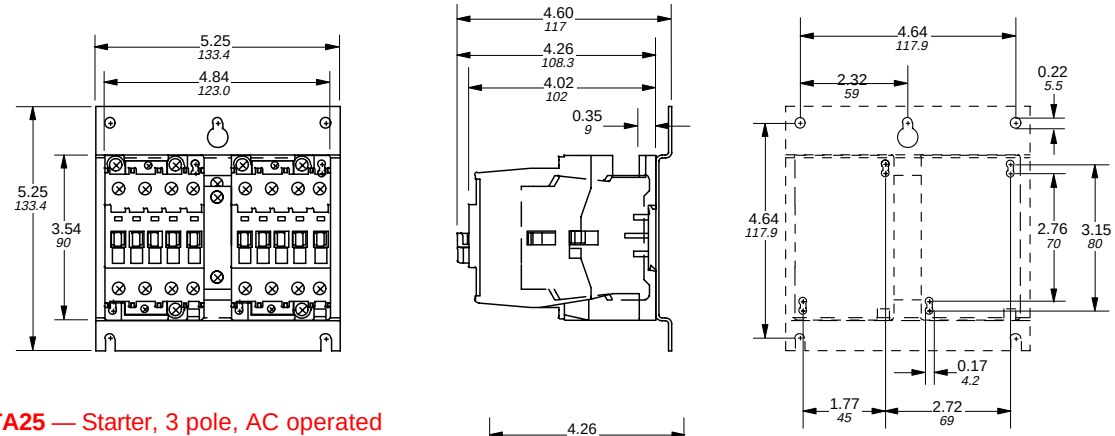
Approximate dimensions
for 3 pole, AC operated A contactors & starters
A30 & A40

00.00 Inches
00.00 Millimeters

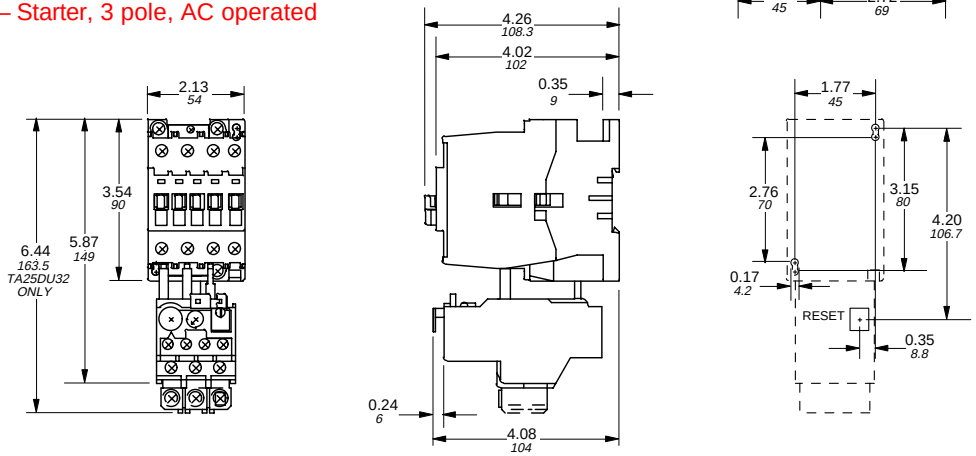
A30 & A40 — Contactor, 3 pole, AC operated



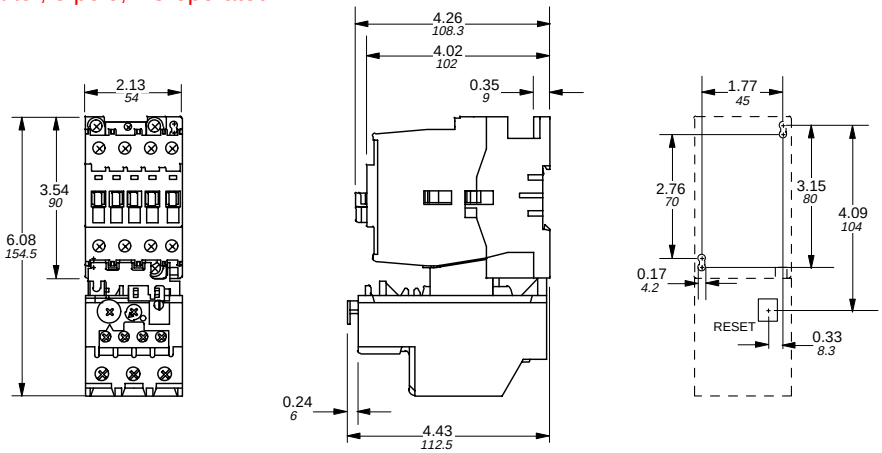
A30 & A40 + VM5 or VE5 — Mechanically interlocked contactor, 3 pole, AC operated



A30 & A40 + TA25 — Starter, 3 pole, AC operated



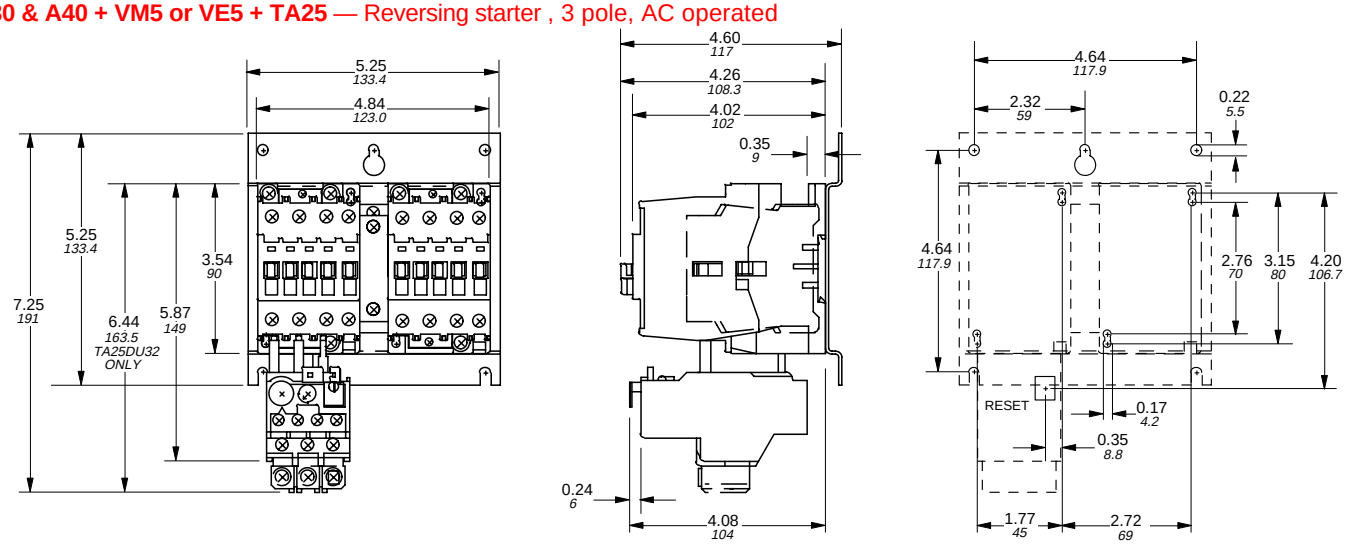
A30 & A40 + TA42 — Starter, 3 pole, AC operated



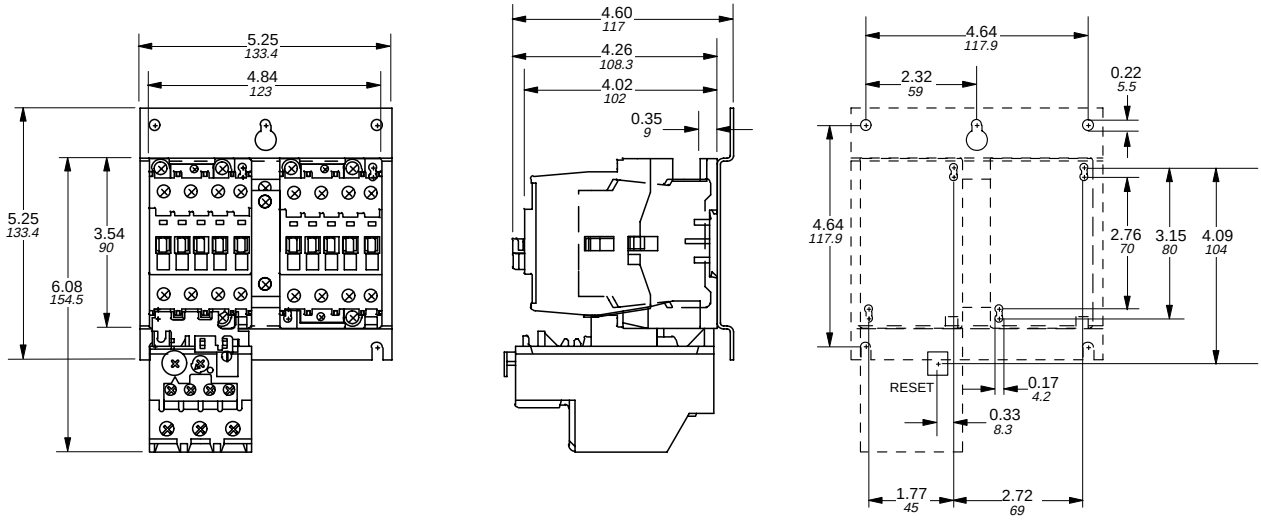
Approximate dimensions
for 3 pole, AC & DC operated A contactors & starters
A30 – A(E)75

00.00 Inches
00.00 Millimeters

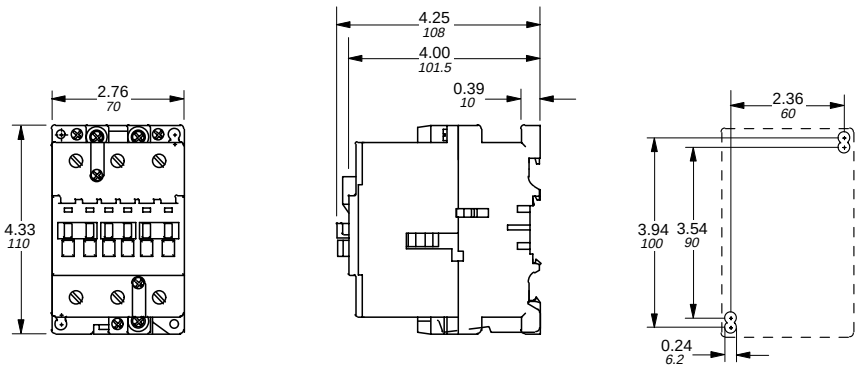
A30 & A40 + VM5 or VE5 + TA25 — Reversing starter , 3 pole, AC operated



A30 & A40 + VM5 or VE5 + TA42 — Reversing starter , 3 pole, AC operated



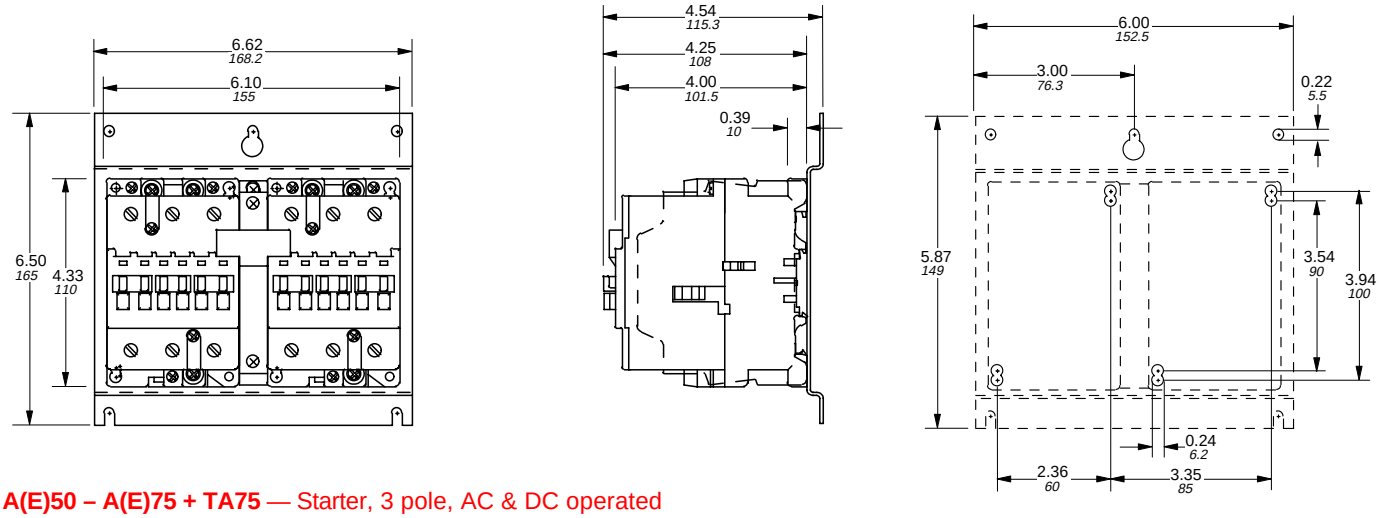
A(E)50 – A(E)75 — Contactor, 3 pole, AC & DC operated



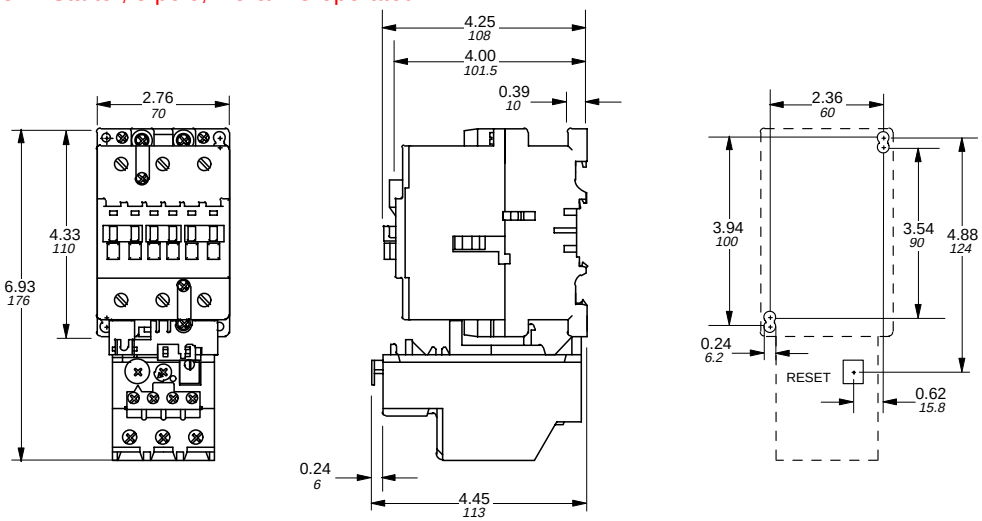
Approximate dimensions
for 3 pole, AC & DC operated A contactors & starters
A(E)50 – A(E)75

00.00 Inches
00.00 Millimeters

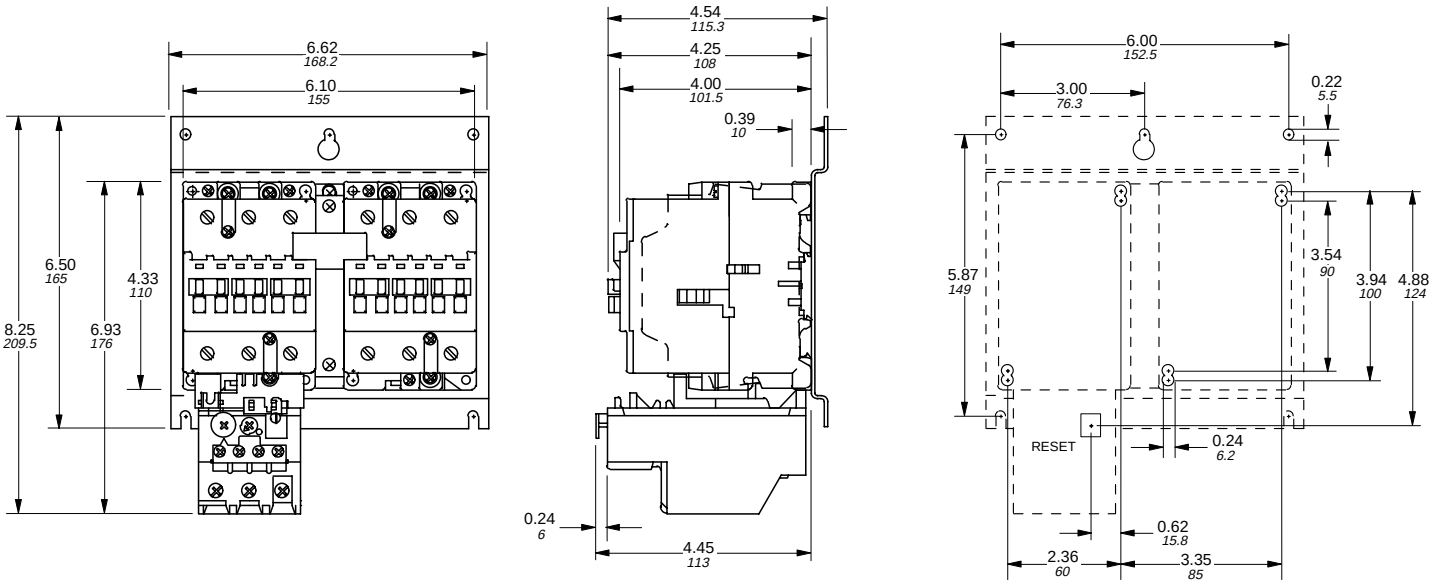
A(E)50 – A(E)75 + VM5 or VE5 — Mechanically interlocked contactor, 3 pole, AC & DC operated



A(E)50 – A(E)75 + TA75 — Starter, 3 pole, AC & DC operated



A(E)50 – A(E)75 + VM5 or VE5 + TA75 — Reversing starter, 3 pole, AC & DC operated

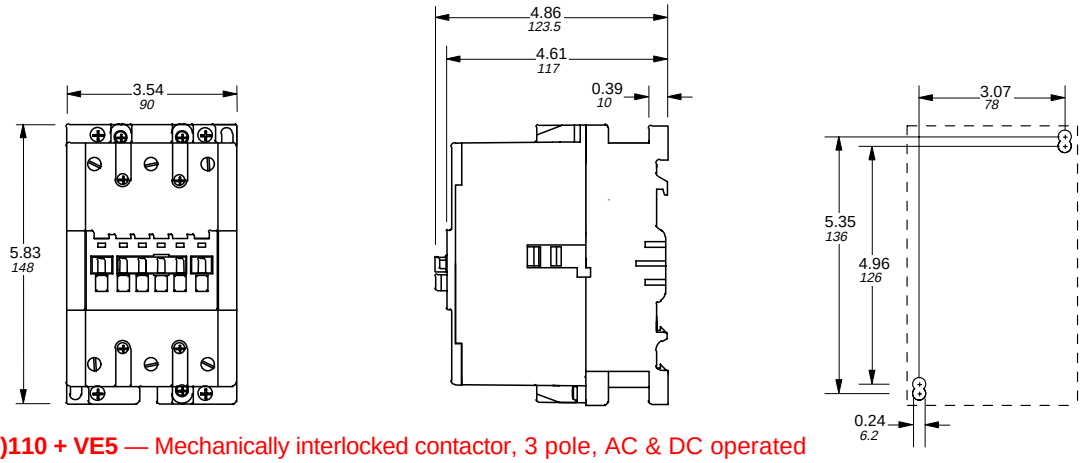


AC 1030 – 6/98

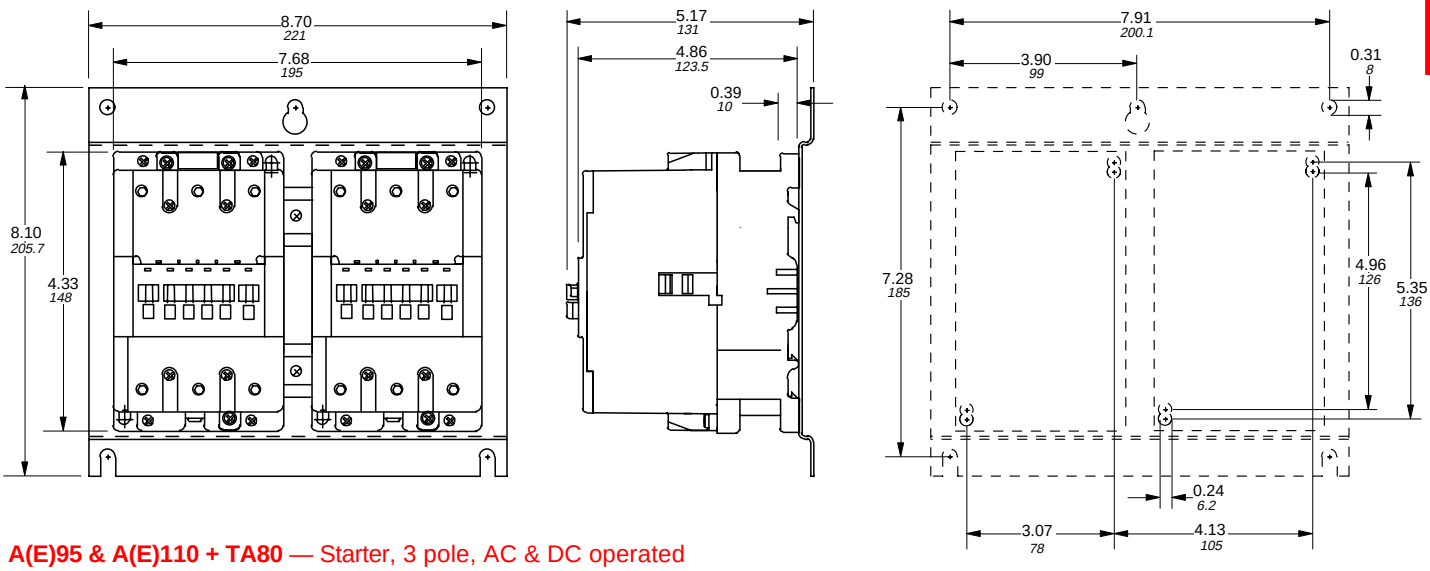
00.00 Inches
00.00 Millimeters

Approximate dimensions
for 3 pole, AC & DC operated A contactors & starters
A(E)95 & A(E)110

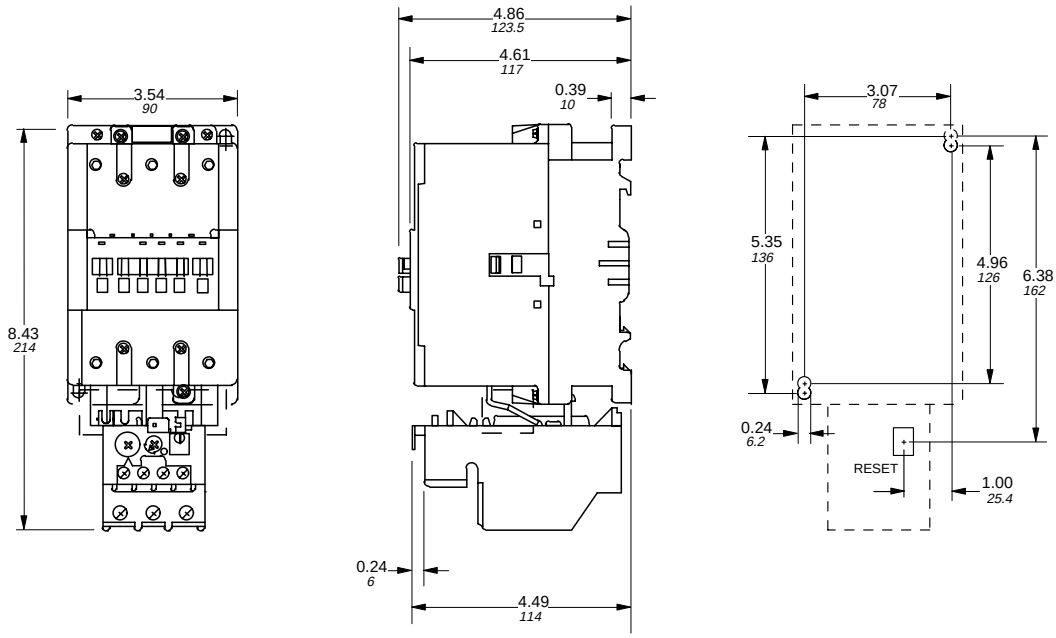
A(E)95 & A(E)110 — Contactor, 3 pole, AC & DC operated



A(E)95 & A(E)110 + VE5 — Mechanically interlocked contactor, 3 pole, AC & DC operated



A(E)95 & A(E)110 + TA80 — Starter, 3 pole, AC & DC operated



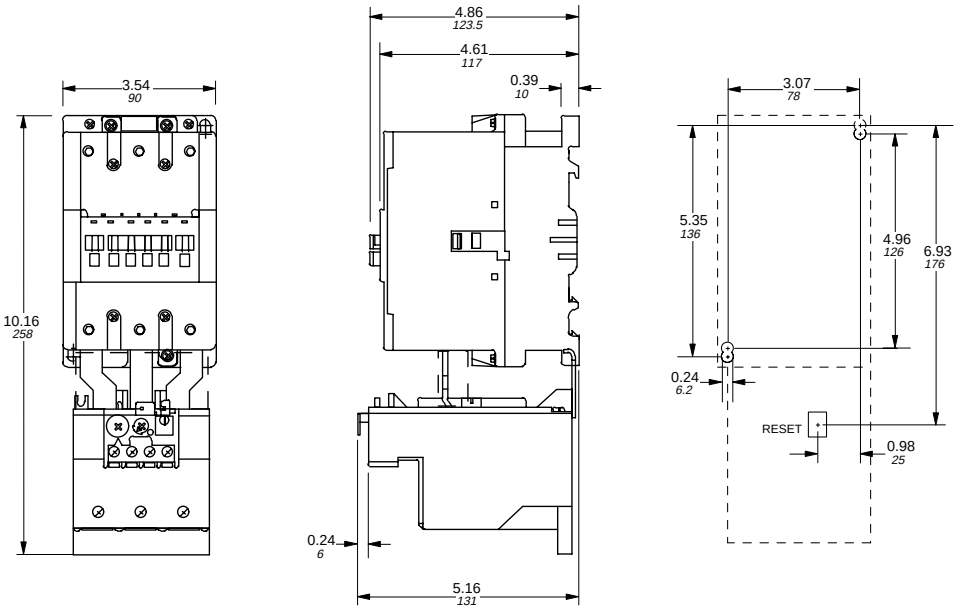
Contactors

AC 1030 – 6/98

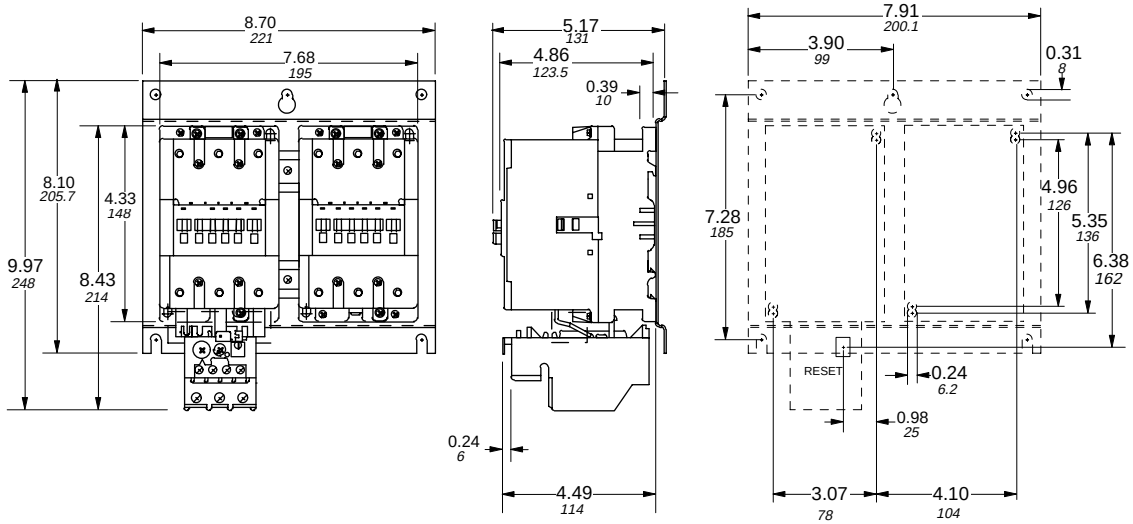
Approximate dimensions
for 3 pole, AC & DC operated A contactors & starters
A(E)95 & A(E)110

00.00 Inches
00.00 Millimeters

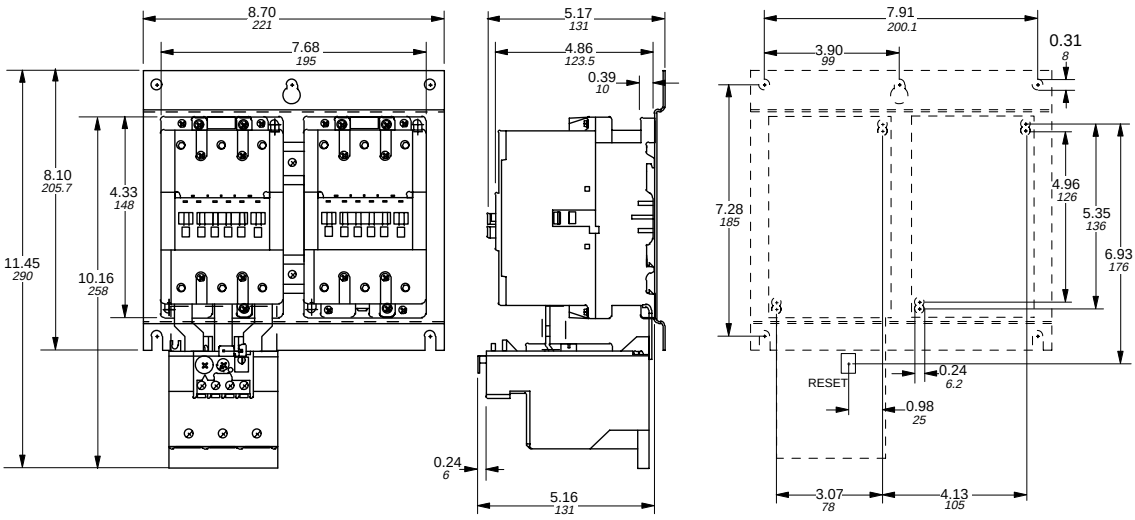
A(E)95 & A(E)110 + TA110 — Starter, 3 pole, AC & DC operated



A(E)95 & A(E)110 + VE5 + TA80 — Reversing starter, 3 pole, AC & DC operated



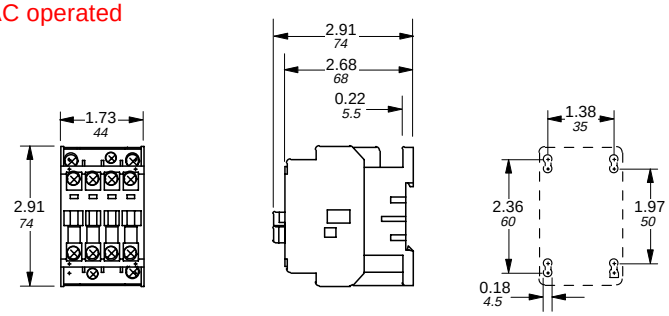
A(E)95 & A(E)110 + VE5 + TA110 — Reversing starter, 3 pole, AC & DC operated



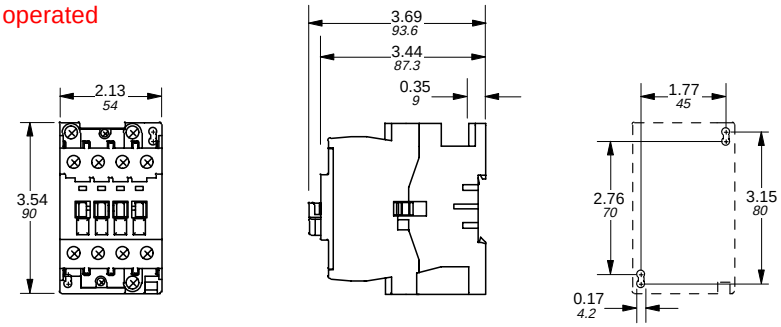
Approximate dimensions
for 4 pole, AC & DC operated A contactors & starters
A9 – A(E)75

00.00 Inches
00.00 Millimeters

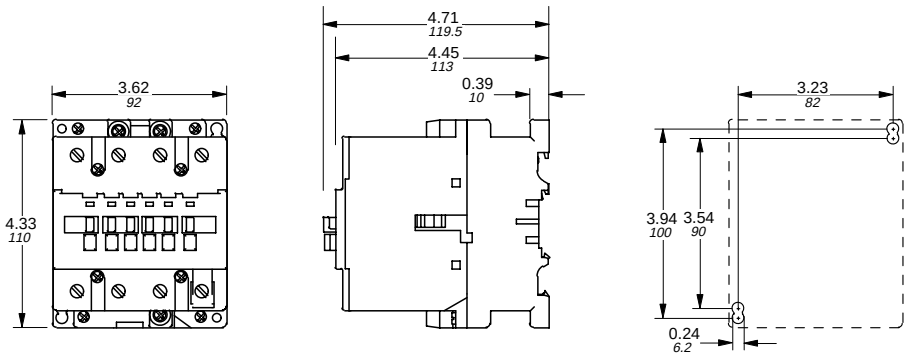
A9 – A16 — Contactor, 4 pole, AC operated



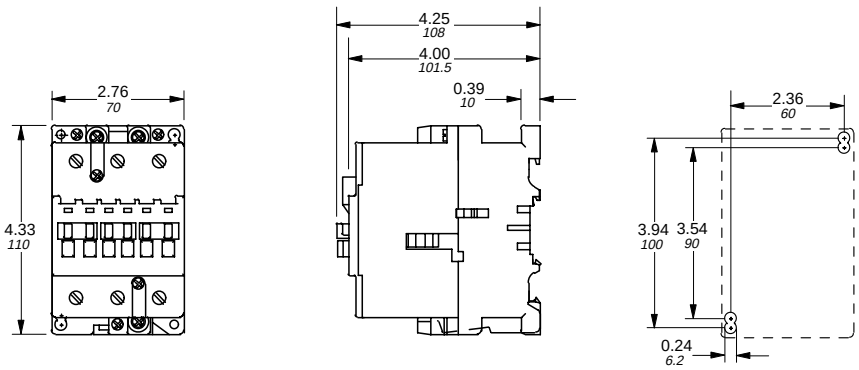
A26 — Contactor, 4 pole, AC operated



A(E)45 — Contactor, 4 pole, AC & DC operated



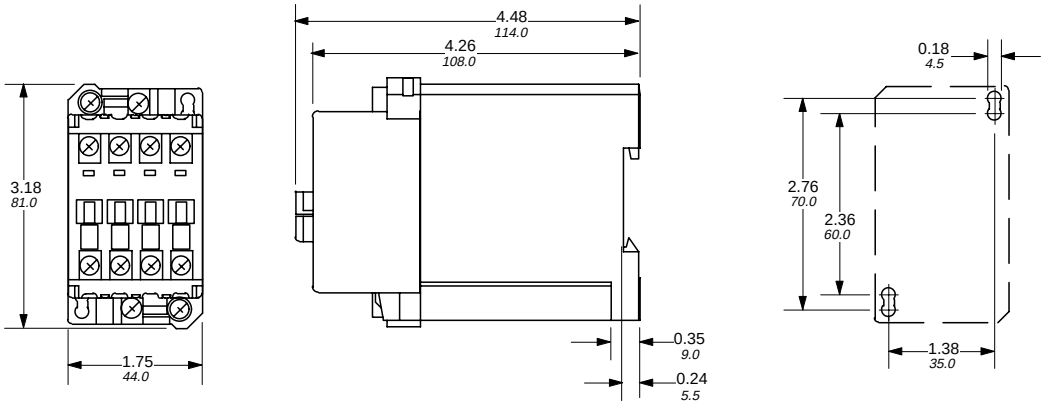
A(E)50 – A(E)75 — Contactor, 4 pole, AC & DC operated



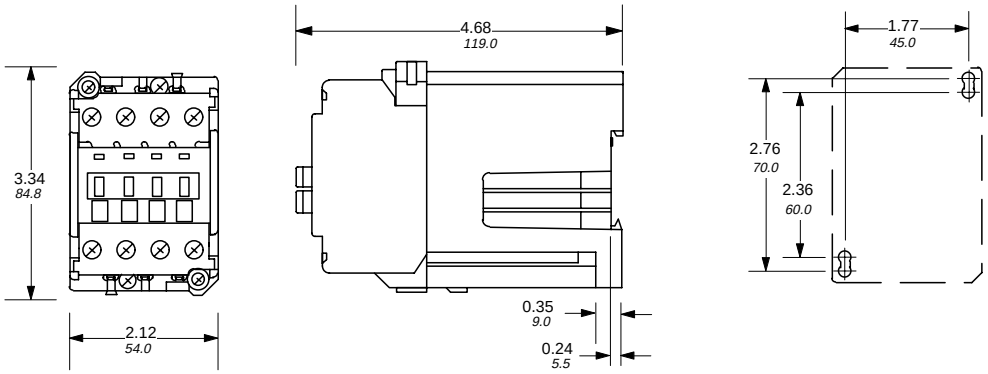
Approximate dimensions
for 3 & 4 pole, DC operated BC contactors
BC9 – BC30

00.00 Inches
00.00 Millimeters

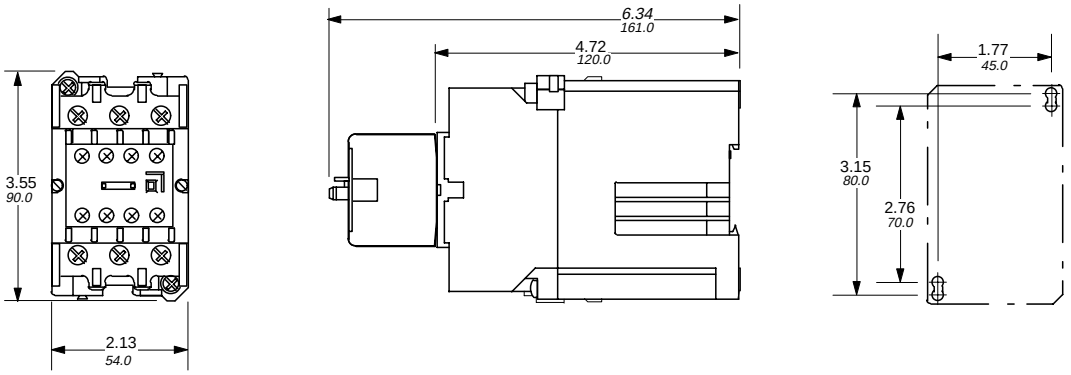
BC9 & BC16 — Contactor, 3 & 4 pole, DC operated



BC25 — Contactor, 3 & 4 pole, DC operated

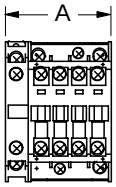


BC30 — Contactor, 3 pole, DC operated

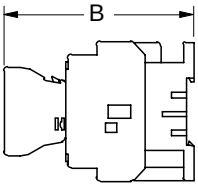


Approximate dimensions
for A & BC contactors
Accessories for A9 – A(E)110; BC9 – BC30

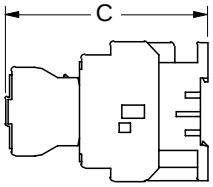
A9 - A(E)110
BC9 - BC30



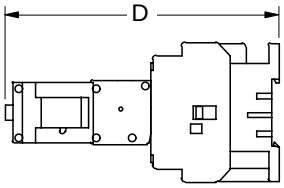
SIDE MOUNTED AUXILIARY



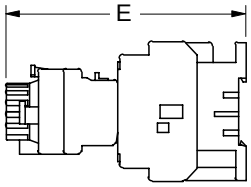
SINGLE POLE TOP MOUNTED AUXILIARY



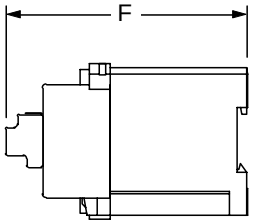
FOUR POLE TOP MOUNTED AUXILIARY



ON-POSITION LATCH



PNEUMATIC TIMER



MECH INTERLOCK D.C. OPERATED

TYPE		A	B	C	D	E	F
A9-16	IN *MM*	2.20 *56*	3.96 *100.5*	4.21 *107*	5.71 *145*	5.00 *127*	– –
A26	IN *MM*	2.20 *56*	4.72 *119.8*	4.97 *126.3*	6.47 *164.3*	5.76 *146.3*	– –
A30-40	IN *MM*	2.20 *56*	5.30 *134.5*	5.55 *141*	7.05 *179*	6.34 *161*	– –
A50-75 AE50-75	IN *MM*	3.23 *82*	5.27 *133.9*	5.52 *140.3*	7.03 *178.5*	6.32 *160.4*	– –
A45	IN *MM*	4.09 *104*	5.73 *145.5*	5.98 *152*	7.48 *190*	6.77 *172*	– –
A95-110 AE95-110	IN *MM*	4.02 *102*	5.91 *150*	6.16 *156.5*	– –	– –	– –
BC9, BC16	IN *MM*	– –	5.53 *140.5*	5.79 *147*	7.28 *185*	6.58 *167*	5.04 *128*
BC25	IN *MM*	– –	5.77 *146.5*	6.02 *153*	7.52 *191*	6.81 *173*	*5.28* *134*
BC30	IN *MM*	– –	– –	– –	– –	– –	*5.51* *140*

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