

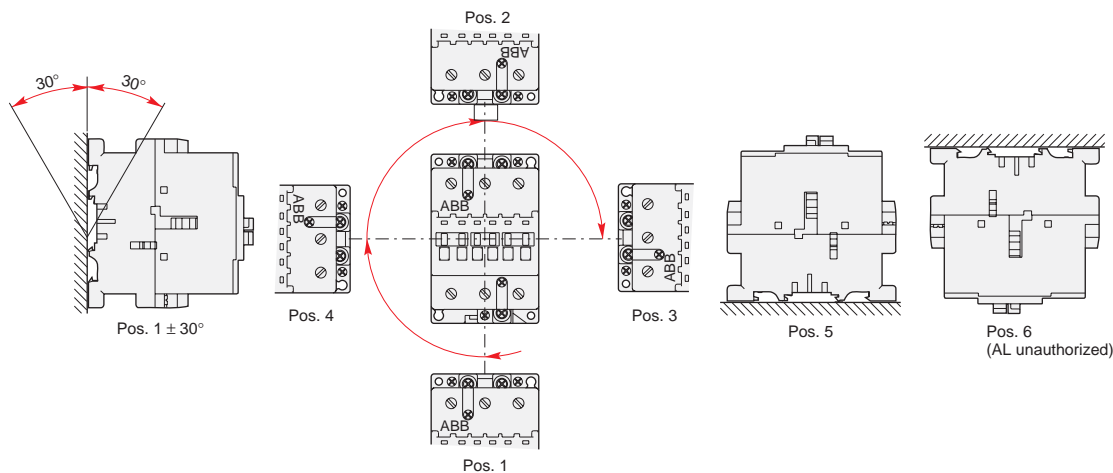
## UL & CSA Technical data

### A/AE9 – A/AE/AF110, AL9 – AL40

### AC & DC operated

ABB contactor frame size		A/AE/AL 9	A/AE/AL 12	A/AE/AL 16	A/AE/AL 26	A/AE/AL 30	A/AE/AL 40	A/AE/AF 45	A/AE/AF 50	A/AE/AF 63	A/AE/AF 75	A/AE/AF 95	A/AE/AF 110
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
<b>AC rating information</b>													
NEMA cont. amp rating	thermal current	9	—	18	27	36	—	—	45	—	90	—	—
NEMA maximum H.P. ratings	1 phase												
	VAC	1/3	—	1	2	3	—	—	3	—	—	—	—
NEMA maximum H.P. ratings	3 phase												
	VAC	1	—	2	3	5	—	—	7.5	—	—	—	—
200	VAC	1.5	—	3	7.5	—	—	—	10	—	25	—	—
	VAC	1.5	—	3	7.5	—	—	—	15	—	30	—	—
	VAC	2	—	5	10	—	—	—	25	—	50	—	—
U.L. general purpose current	40°C	21	25	30	40	50	60	65	80	90	105	125	140
Max. 3 Ph Switching motor loads	A	9	11	17	28	34	42	—	54	65	80	95	110
U.L. maximum H.P. ratings	1 phase												
	VAC	1/2	3/4	1.5	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
	VAC	2	3	5	10	10	15	—	20	25	30	30	40
U.L. maximum H.P. ratings	3 phase												
	VAC	2	3	5	7.5	10	10	—	15	20	25	30	30
200-208	VAC	2	3	5	10	10	15	—	20	25	30	30	40
220-240	VAC	2	3	5	10	10	15	—	20	25	30	30	40
440-480	VAC	5	7.5	10	20	25	30	—	40	50	60	60	75
550-600	VAC	7.5	10	15	25	30	40	—	50	60	75	75	100
U.L. maximum H.P. ratings	VDC	1	1.5	2	3	3	5	—	7.5	10	10	—	—
	VDC	2	3	3	5	7.5	10	—	15	20	25	—	—
	VDC	2	3	3	5	7.5	10	—	15	20	25	—	—
Lighting — ballast and incandescent	600VAC	15	15	20 ①	35	50	60	65	65	85	105	120	—
Resistive heating applications	600VAC	15	15	20	35	50	60	65	65	85	105	—	—
<b>CSA Elevator ratings</b>													
220 – 240VAC	3 phase	—	—	5	—	—	10	—	15	—	20	20	—
440 – 480VAC	3 phase	—	—	10	—	—	20	—	30	—	30	40	—
550 – 600VAC	3 phase	—	—	10	—	—	20	—	30	—	40	50	—
230VAC	1 phase	—	—	2	—	—	5	—	7.5	—	10	10	—
<b>Auxiliary contacts</b>													
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	P600	P600	P600	—	P600	P600	P600	P600	P600
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
<b>Approximate weight</b>													
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	3	6	7
<b>Terminal wire range</b>													
Number of wires per phase	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
		2	2	2	2	2	2	1	1	1	1	1	1
<b>Maximum short circuit ratings</b>													
MCCB,MCP, Amps/kA	480VAC	50/35	50/35	50/35	100/35	150/65	150/65	—	150/85	250/85	250/85	250/85	250/85
MCCB,MCP, Amps/kA	600VAC	10/35	10/35	10/35	100/35	150/25	150/25	—	—	—	—	250/35	250/35
Fuse,Amps — type/kA	600VAC	30J/200	30J/200	30J/200	60J/200	60J/200	100J/200	—	100J/200	200J/200	200J/200	200J/200	200J/200

### Mounting positions



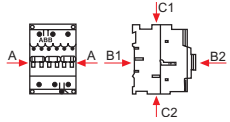
① 30A Ballast

# UL/CSA & IEC Technical data

## A/AE9 – A/AE/AF/TAE110

Across the line  
contactors

1

Contactor types: A..., AE... AF..., TAE...	9	12	16	26	30	40	45	50	63	75	95	110																		
	-	-	-	-	-	-	45	50	63	75	95	110																		
Rated insulation voltage $U_i$ according to IEC 60947-4-1							1000																							
according to UL/CSA							600																							
Rated impulse withstand voltage $U_{imp}$							8																							
Standards	Devices complying with international standards IEC 60947-1 / 60947-4-1 and European standards EN 60947-1 / 60947-4-1																													
Air temperature close to contactor – fitted with thermal O/L relay	°C	see "Conditions for use" page 1.50, for control voltage limits and authorized mounting positions																												
– without thermal O/L relay	°C	-25 to +55																												
– for storage	°C	-40 to +70 (55 max. for TAE... contactors)																												
		-60 to +80										-40 to +70																		
Climatic withstand 30	acc. to IEC 60068-2-30 and 60068-2-11 - UTE C 63-100 specification II											acc. to IEC 68-2-																		
Operating altitude	m	≤ 3000																												
Shock withstand acc. IEC 60068-2-27 and EN 60068-2-27 Mounting position 1 (see page 1.50)	<p>1/2 sinusoidal shock for 11 ms: no change in contact position</p> <table border="1"> <thead> <tr> <th>Shock direction</th> <th>Making position</th> <th>Breaking position</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>20 g</td> <td>20 g</td> </tr> <tr> <td>B1</td> <td>10 g</td> <td>5 g <sup>①</sup></td> </tr> <tr> <td>B2</td> <td>15 g <sup>②</sup></td> <td>15 g <sup>②</sup></td> </tr> <tr> <td>C1</td> <td>20 g</td> <td>20 g</td> </tr> <tr> <td>C2</td> <td>20 g</td> <td>20 g</td> </tr> </tbody> </table>												Shock direction	Making position	Breaking position	A	20 g	20 g	B1	10 g	5 g <sup>①</sup>	B2	15 g <sup>②</sup>	15 g <sup>②</sup>	C1	20 g	20 g	C2	20 g	20 g
Shock direction	Making position	Breaking position																												
A	20 g	20 g																												
B1	10 g	5 g <sup>①</sup>																												
B2	15 g <sup>②</sup>	15 g <sup>②</sup>																												
C1	20 g	20 g																												
C2	20 g	20 g																												
												Not valid for DIN-rail mounting																		

① 3 g for AF 45-22, AE 45-22, AF 75-22 and AE 75-22.

② 10 g for AF 45-22, AE 45-22, AF 75-22 and AE 75-22.

# IEC Technical data

## DC circuit switching

### A/AE9 – GAE75

#### General

The arc switching on d.c. is more difficult than on a.c.

- For selecting a contactor it is essential to determine the current, the voltage and the L/R time constant of the controlled load.
- For information, typical time constant values are quoted hereafter: non inductive loads such as resistance furnaces ( $L/R \geq 1$  ms), inductive loads such as shunt motors ( $L/R \geq 2$  ms) or series motors ( $L/R \geq 7.5$  ms).
- The addition of a resistor in parallel with an inductive winding helps in the elimination of the arcs.
- All the poles required for breaking must be connected in series between the load and the source polarity not linked to earth (or chassis).

a.c. operated contactors		A9	A12	A16	A26	A30	A40	A45	A50	A63	A75	GA75	
a.c. / d.c. operated (electronic coil interface)		-	-	-	-	-	-	AF45	AF50	AF63	AF75	-	
d.c. operated contactors		AE9	AE12	AE16	AE26	AE30	AE40	AE45	AE50	AE63	AE75	GAE75	
<b>Utilization category DC-1, <math>L/R \leq 1</math> ms</b>													
	$\leq 72$ V	A	25	27	30	45	55	60	70	100	110	120	120
	110 V	A	10	15	20	-	-	-	-	-	-	-	120
	220 V	A	-	-	-	-	-	-	-	-	-	-	120
	440 V	A	-	-	-	-	-	-	-	-	-	-	100
	600 V	A	-	-	-	-	-	-	-	-	-	-	75
	$\leq 72$ V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	10	15	20	-	-	-	-	-	-	-	-
	$\leq 72$ V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	25	27	30	45	55	60	70	100	110	120	-
	$\leq 72$ V	A	25	27	30	45	-	-	70	100	-	120	-
	110 V	A	25	27	30	45	-	-	70	100	-	120	-
	220 V	A	25	27	30	45	-	-	70	100	-	120	-
	440 V	A	10	15	20	-	-	-	-	-	-	-	-
<b>Utilization category DC-3, <math>L/R \leq 2</math> ms</b>													
	$\leq 72$ V	A	25	27	30	45	55	60	70	100	110	120	120
	110 V	A	6	7	8	-	-	-	-	-	-	-	120
	220 V	A	-	-	-	-	-	-	-	-	-	-	100
	440 V	A	-	-	-	-	-	-	-	-	-	-	85
	$\leq 72$ V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	6	7	8	-	-	-	-	-	-	-	-
	$\leq 72$ V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	25	27	30	45	55	60	70	100	110	120	-
	$\leq 72$ V	A	25	27	30	45	-	-	70	100	-	120	-
	110 V	A	25	27	30	45	-	-	70	100	-	120	-
	220 V	A	25	27	30	45	-	-	70	100	-	120	-
	440 V	A	6	7	8	-	-	-	-	-	-	-	-
<b>Utilization category DC-5, <math>L/R \leq 7.5</math> ms</b>													
	$\leq 72$ V	A	9	12	16	25	30	40	50	50	63	75	85
	110 V	A	4	4	4	-	-	-	-	-	-	-	85
	220 V	A	-	-	-	-	-	-	-	-	-	-	85
	440 V	A	-	-	-	-	-	-	-	-	-	-	35
	$\leq 72$ V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	10	15	20	30	45	50	70	80	90	100	-
	220 V	A	4	4	4	-	-	-	-	-	-	-	-
	$\leq 72$ V	A	25	27	30	45	55	60	70	100	110	120	-
	110 V	A	25	27	30	45	55	60	70	100	110	120	-
	220 V	A	9	12	16	25	30	40	50	50	63	75	-
	$\leq 72$ V	A	25	27	30	45	-	-	70	100	-	120	-
	110 V	A	25	27	30	45	-	-	70	100	-	120	-
	220 V	A	10	15	20	30	-	-	70	70	-	100	-
	440 V	A	4	4	4	-	-	-	-	-	-	-	-

## IEC Technical data










### DC circuit switching

#### A/AF/AE95 – AF750

#### Technical Data

- The tables indicate for the standard contactors the  $I_b$  max. operating currents depending on: the utilization category (i.e. L/R) DC-1, DC-3, DC-5 as defined in the IEC 60947-4-1 publication, the operating voltage  $U_b$  and the pole coupling details. See page 1.81.  
Ampere values quoted in the tables below are valid for a  $-25 \dots +70$  °C temperature close to the contactors, as long as the AC-1 Ampere values (see pages 1.45 - 146) for the corresponding ambient temperature are not exceeded.
- Max. switching frequency: 300 ops/h.
- For switching higher d.c. ratings, we recommend the use of bar mounted contactors, R series (63 ... 2000 A).

The selection table for AE 50 ... AE 110 contactors can be used for the TAE 50 ... TAE 110 types.

a.c. operated contactors a.c. / d.c. operated (electronic coil interface) d.c. operated contactors			A95 AF95 AE95	A110 AF110 AE110	A145 AF145 -	A185 AF185 -	A210 AF210 -	A260 AF260 -	A300 AF300 -	- AF400 -	- AF460 -	- AF580 -	- AF750 -
<b>Utilization category DC-1, L/R <math>\leq 1</math> ms</b>													
	$\leq 110$ V	A	-	-	-	-	-	-	-	600	700	800	1050
	$\leq 110$ V	A	145	160	250	275	350	400	450	600	700	800	1050
	220 V	A	-	-	-	-	-	-	-	600	700	800	1050
	$\leq 110$ V	A	145	160	250	275	350	400	450	600	700	800	1050
	220 V	A	145	160	250	275	350	400	450	600	700	800	1050
	440 V	A	-	-	-	-	-	-	-	600	700	800	1050
	600 V	A	-	-	-	-	-	-	-	600	700	800	1050
<b>Utilization category DC-3, L/R <math>\leq 2.5</math> ms</b>													
	$\leq 110$ V	A	-	-	-	-	-	-	-	600	700	800	1050
	$\leq 110$ V	A	145	160	250	275	350	400	450	600	700	800	1050
	220 V	A	-	-	-	-	-	-	-	600	700	800	1050
	$\leq 110$ V	A	145	160	250	275	350	400	450	600	700	800	1050
	220 V	A	145	160	250	275	350	400	450	600	700	800	1050
	440 V	A	-	-	-	-	-	-	-	600	700	800	1050
	600 V	A	-	-	-	-	-	-	-	600	700	800	1050
<b>Utilization category DC-5, L/R <math>\leq 15</math> ms</b>													
	$\leq 110$ V	A	-	-	-	-	-	-	-	600	700	800	1050
	$\leq 110$ V	A	145	160	250	275	350	400	450	600	700	800	1050
	220 V	A	-	-	-	-	-	-	-	600	700	800	1050
	$\leq 110$ V	A	145	160	250	275	350	400	450	600	700	800	1050
	220 V	A	145	160	250	275	350	400	450	600	700	800	1050
	440 V	A	-	-	-	-	-	-	-	600	700	800	1050
	600 V	A	-	-	-	-	-	-	-	600	700	800	1050



# IEC Technical data

## A/AE9 — A/AE/AF/TAE110

Across the line  
contactors

1

### Main Pole - Utilization Characteristics

Contactor types:	A..., AE...	9	12	16	26	30	40	45	50	63	75	95	110	
	AF..., TAE...	-	-	-	-	-	-	45	50	63	75	95	110	
Rated operational voltage $U_e$ max.	V	690							1000 (690 for AF... contactors)					
Rated frequency limits	Hz	25-400												
Conventional free-air thermal current $I_{th}$ acc. to IEC 60947-4-1, open contactors $\varnothing \leq 40^\circ\text{C}$	A	26	28	30	45	65	65	100	100	125	125	145	160	
with conductor cross-sectional areamm <sup>2</sup>	4	4	4	6	16	16	35	35	50	50	70	70		
Rated operational current $I_e$ / AC-1 for air temperature close to contactor														
$U_e$ max. 690 V	$\varnothing \leq 40^\circ\text{C}$	A	25	27	30	45	55	60	70	100	115	125	145	160
	$\varnothing \leq 55^\circ\text{C}$	A	22	25	27	40	55	60	60	85	95	105	135	145
	$\varnothing \leq 70^\circ\text{C}$ ①	A	18	20	23	32	39	42	50	70	80	85	115	130
with conductor cross-sectional area	mm <sup>2</sup>	2.5	4	4	6	10	16	25	35	50	50	50	70	
<b>Utilization categorie AC-3</b>														
for air temperature close to contactor $\leq 55^\circ\text{C}$														
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 ②	25 ②	28 ②	30 ②	30 ②
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 ②	33 ②	37 ②	40 ②	40 ②
Rated making capacity AC-3 according to IEC 60947-4-1		10 x $I_e$ AC-3												
Rated breaking capacity AC-3 according to IEC 60947-4-1		8 x $I_e$ AC-3												
Short-circuit protection for contactors without thermal O/L relay - Motor protection excluded $U_e \leq 500$ V a.c. - gG type fuse	A	25	32	32	50	63	80	100	125	160	160	200		
Rated short-time withstand current $I_{cw}$ at $40^\circ\text{C}$ ambient temp., in free air, from a cold state														
1 s	A	250	280	300	400	600	1000	1320	1320					
10 s	A	100	120	140	210	400	650	800	800					
30 s	A	60	70	80	110	225	370	500	500					
1 min	A	50	55	60	90	150	250	350	350					
15 min	A	26	28	30	45	65	110	110	135	135	160	175		
Maximum breaking capacity $\cos \varnothing = 0.45$ ( $\cos \varnothing = 0.35$ for $I_e > 100$ A)														
at 440 V	A	250			420	820	900	1300	1160					
at 690 V	A	90			170	340	490	630	800					
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	
Max. electrical switching frequency														
- for AC-1	cycles/h	600							600 (300 for AF..., AE... TAE...)				300	
- for AC-3	cycles/h	1200 (600 for AE...)							600 (300 for AF..., AE... TAE...)				300	
- for AC-2, AC-4	cycles/h	300							150				150	
Electrical durability		see pages 1.70 - 1.73												
Mechanical durability														
- millions of operating cycles		10 (5 for AE... and TAE... contactors)												
- max. mechanical switching frequency	cycles/h	3600 (300 for AF... contactors)												

① For the corresponding hp/A values of 1500 r.p.m., 50Hz, 3-phase motors, see page 1.76.

② AF... contactors excluded

③ Unauthorized for TAE... contactors.

# IEC Technical data

## AE9 — AE110

## TAE45 — TAE110

Across the line  
contactors

1

### Magnet System Characteristics for AE... Contactors

Contactor types:	AE...	9	12	16	26	30	40	45	50	63	75	95	110
Rated control circuit voltage $U_c$	V d.c.	12 ... 250											
Coil operating limits according to IEC 60947-4-1		$\vartheta \leq 55^\circ\text{C}$ 0.85 ... 1.1 x $U_c$										$\vartheta \leq 70^\circ\text{C}$	
Drop-out voltage in % of $U_c$		roughly 10 ... 30 %						roughly 15 ... 40 %					
Coil consumption - Average values													
- pull-in value	W	90			110			200			400		
- holding value	W	2			2.5			4			2.4		
Coil time constant													
- open	L/R	ms 2			3			3			6		
- closed	L/R	ms 9			16			15			30 ... 40		
Operating time													
between coil energization and:													
- N.O. contact closing	ms	10 ... 16			13 ... 21			13 ... 30			15 ... 25		
- N.C. contact opening	ms	8 ... 12			11 ... 16			10 ... 27			12 ... 22		
between coil de-energization and													
- N.O. contact opening	ms	5 ... 14 ①			6 ... 12 ①			5 ... 15 ①			15 ... 20 ①		
- N.C. contact closing	ms	11 ... 17 ①			8 ... 16 ①			8 ... 18 ①			18 ... 23 ①		

### Magnet System Characteristics for TAE... Contactors

Contactor types:	TAE...	-	-	-	-	-	-	45	50	-	75	95	110
Rated control circuit voltage $U_c$	V d.c.	17 ... 264											
Coil operating limits according to IEC 60947-4-1		$\vartheta \leq 55^\circ\text{C}$ $U_c \text{ min. ... } U_c \text{ max.}$											
Drop-out voltage in % of $U_c \text{ max.}$		roughly 20 ... 35 %											
Coil consumption values for $U_c \text{ min. ... } U_c \text{ max.}$													
- pull-in value	W							120 ... 250			300 ... 1000		
- holding value	W							1.7 ... 6.5			2 ... 7		
Coil time constant													
- open	L/R	ms						3			6		
- closed	L/R	ms						15			40		
Operating time													
between coil energization and:													
- N.O. contact closing	ms							13 ... 30			15 ... 25		
- N.C. contact opening	ms							10 ... 27			12 ... 22		
between coil de-energization and													
- N.O. contact opening	ms							5 ... 15 ②			15 ... 20 ②		
- N.C. contact closing	ms							8 ... 18 ②			18 ... 23 ②		

① 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. AE 9 ... AE 40 contactors and  $U_c \geq 110 \text{ V}$ : table values for contactors with RV 5 surge suppressor (factory mounted).

② 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.

# IEC Technical data

## A/AE9 — AF/TAE110

### Mounting characteristics

Contactor types:	A..., AE...	9	12	16	26	30	40	45	50	63	75	95	110
	AF..., TAE...	-	-	-	-	-	-	45	50	63	75	95	110
Mounting positions	see "Conditions for use"												
Mounting distances	The contactors can be assembled side by side												
Mounting													
on DIN rail	35 x 7.5 mm						35 x 15 mm						
according to IEC 715 and EN 50022 / EN 50023	35 x 15 mm						75 x 25 mm			75 x 25 mm			
by screws (not supplied)	2 x M4						2 x M6						

### Conditions for Use

Sustainable utilization conditions for contactors involving at the same time the Mounting position, Ambient temperature and Control voltage operating limits are summarized in the table below.

Contactors	Mounting position	Ambient temperature	Control voltage
A 9 ... A 110, AE 9 ... AE 110	1, 1 ± 30°, 2, 3, 4, 5	≤ 55 °C 55 ... 70 °C	0.85 ... 1.1 x U <sub>c</sub> U <sub>c</sub>
	6	> 55 °C unauthorized	-
AF 45 ... AF 110	1, 1 ± 30°, 2, 3, 4, 5	≤ 70 °C	0.85 U <sub>c</sub> min. ... 1.1 x U <sub>c</sub> max.
	6 unauthorized	-	-
TAE 45 ... TAE 110	1, 1 ± 30°, 2, 3, 4, 5	≤ 55 °C > 55 °C unauthorized	U <sub>c</sub> min. ... U <sub>c</sub> max. -
	6 unauthorized	-	-

Notes for 4-pole contactors

Whatever the coil voltage: Pos. 5 unauthorized for A 45-22-00, AE 45-22-00, A 75-22-00, AE 75-22-00 contactors.

For 60 Hz coil voltage: (only for devices fitted with CA 5-.. and CAL 5-11 auxiliary contacts or TP timer)

- A 45-40-00, A 50-40-00 and A 75-40-00 contactors

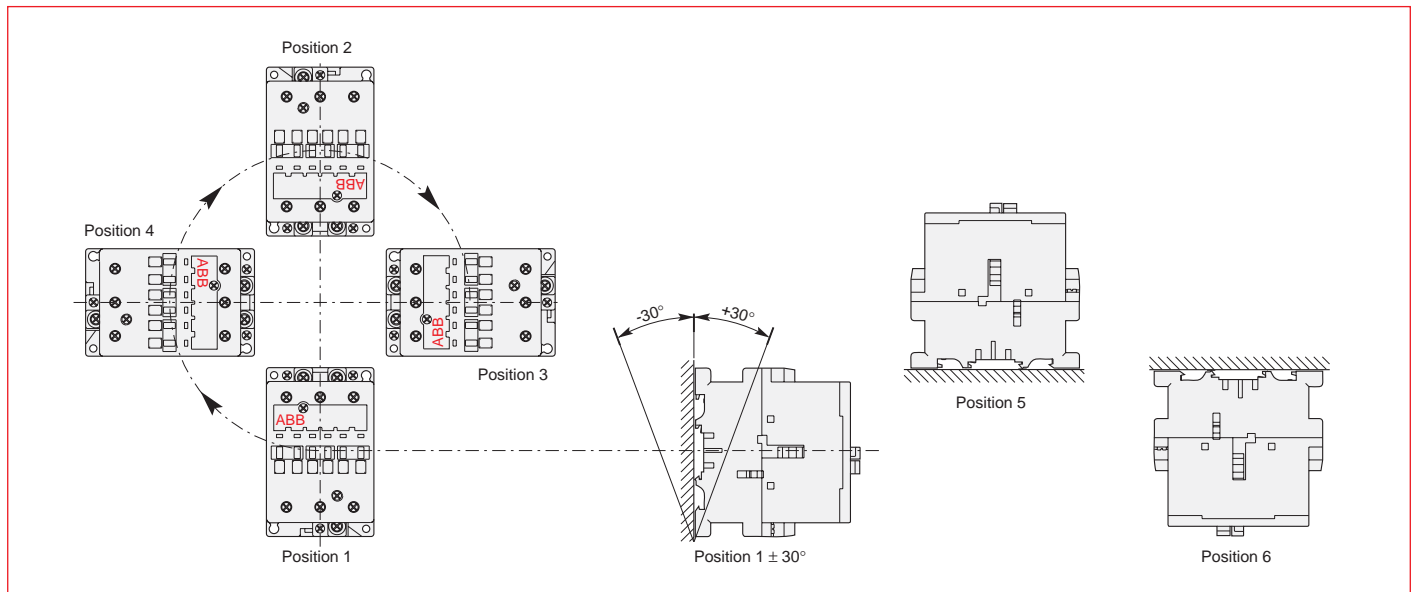
Mounting positions 1 to 5 and ambient temperature ≤ 55 °C: tolerance reduced to 0.9 ... 1.1 U<sub>c</sub> (instead of 0.85 ... 1.1 U<sub>J</sub>) for coil voltage codes 7 □ and 8 □.

- A 45-22-00 and A 75-22-00 contactors

Mounting positions 1 to 4 (pos. 5 unauthorized) and ambient temperature ≤ 55 °C: tolerance reduced to 0.9 ... 1.1 U<sub>c</sub> (instead of 0.85 ... 1.1 U<sub>J</sub>) for coil voltage codes 7 □ and 8 □.

For mounting position 6 or ambient temperature of 55 to 70 °C the information given on this page remains applicable.

### Mounting Positions (see the above table for authorized positions)




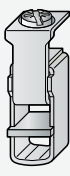
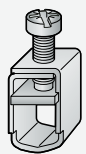
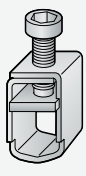













# IEC Technical data

## A/AE9 — AF/TAE110

Across the line  
contactors

1

### Connecting Characteristics

Contactor types:	A..., AE...	9	12	16	26	30	40	45	50	63	75	95	110
	AF..., TAE...	-	-	-	-	-	-	45	50	63	75	95	110
Main terminals													
		with cable clamp		with double connector 2 x (5.6 x 6.5 mm)				with single connector (13 x 10 mm)				with single connector (14 x 14 mm)	
Connecting capacity (min. ... max.)													
Main conductors (poles)													
Rigid: solid ( $\leq 4 \text{ mm}^2$ )	 1 x mm <sup>2</sup>	1 ... 4		1.5 ... 6 2.5 ... 16				6 ... 50				10 ... 95	
stranded ( $\geq 6 \text{ mm}^2$ )		 2 x mm <sup>2</sup>	1 ... 4		1.5 ... 6 2.5 ... 16				6 ... 16				6 ... 35
Rigid with connector													
single for Cu cable	 mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-
single for Al/Cu cable	 mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-
double for Al/Cu cable	 mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-
Flexible with cable end	 1 x mm <sup>2</sup>	0.75 ... 2.5		0.75 ... 4 2.5 ... 10				6 ... 35				10 ... 70	
	 2 x mm <sup>2</sup>	0.75 ... 2.5		0.75 ... 4 2.5 ... 10				6 ... 25				6 ... 35	
Bars or lugs	 L mm $\leq$ 1 mm $>$	8		10				-				30 <sup>②</sup>	
		3.7		4.2				-				6	
Auxiliary conductors													
(built-in auxiliary terminals + coil terminals)													
Rigid solid	 1 x mm <sup>2</sup>	1 ... 4										0.75 ... 2.5	
		 2 x mm <sup>2</sup>	1 ... 4										0.75 ... 2.5
Flexible with cable end	 1 x mm <sup>2</sup>		0.75 ... 2.5						1 ... 2.5				0.75 ... 2.5
		 2 x mm <sup>2</sup>	0.75 ... 2.5										
Lugs	 L mm $\leq$ 1 mm $>$		8		① 8								
		3.7		① 3.7									
Degree of protection acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529		Protection against direct contact acc. to VDE 0106 - Part. 100											
- Main terminals		IP 20						IP 10					
- Coil terminals		IP 20											
- Built-in auxiliary terminals		IP 20											
Screw terminals		(delivered in open position, screws of unused terminals must be tightened)											
Main terminals		(+, -) pozidriv 2 screws										hexagon socket M8 (s = 4 mm)	
		M3.5		M4		M5		M6					
Coil terminals		M3.5 (+, -) pozidriv 2 screws with cable clamp											
Built-in auxiliary terminals		(+, -) pozidriv 2 screws with cable clamp											
		M3.5		M4		M5							
Tightening torque													
Main pole terminals													
- recommended	Nm / lb.in	1.00 / 9		1.7 / 15 2.30 / 20				4.00 / 35				6.00 / 53	
- max.	Nm	1.20		2.20 2.60				4.50				6.50	
Coil terminals													
- recommended	Nm / lb.in	1.00 / 9											
- max.	Nm	1.20											
Built-in auxiliary terminals													
- recommended	Nm / lb.in	1.00 / 9		1.7 / 15 1.00 / 9									
- max.	Nm	1.20		2.20 1.20									
Terminal marking and positioning		see pages 1.34											

①  $L \leq 8$  and  $l > 3.7$  for coil terminal -  $L \leq 10$  and  $l > 4.2$  for built-in auxiliary terminals.  
 ② With LW 110 enlargement piece. See page 1.31.