

AE 9 ... AE 40 Contactors NE... Contactor Relays

1SBC 0093 00 R1002





AE 9 ... AE 40 Contactors NE.. Contactor Relays

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AE 9 ... AE 40 Contactors

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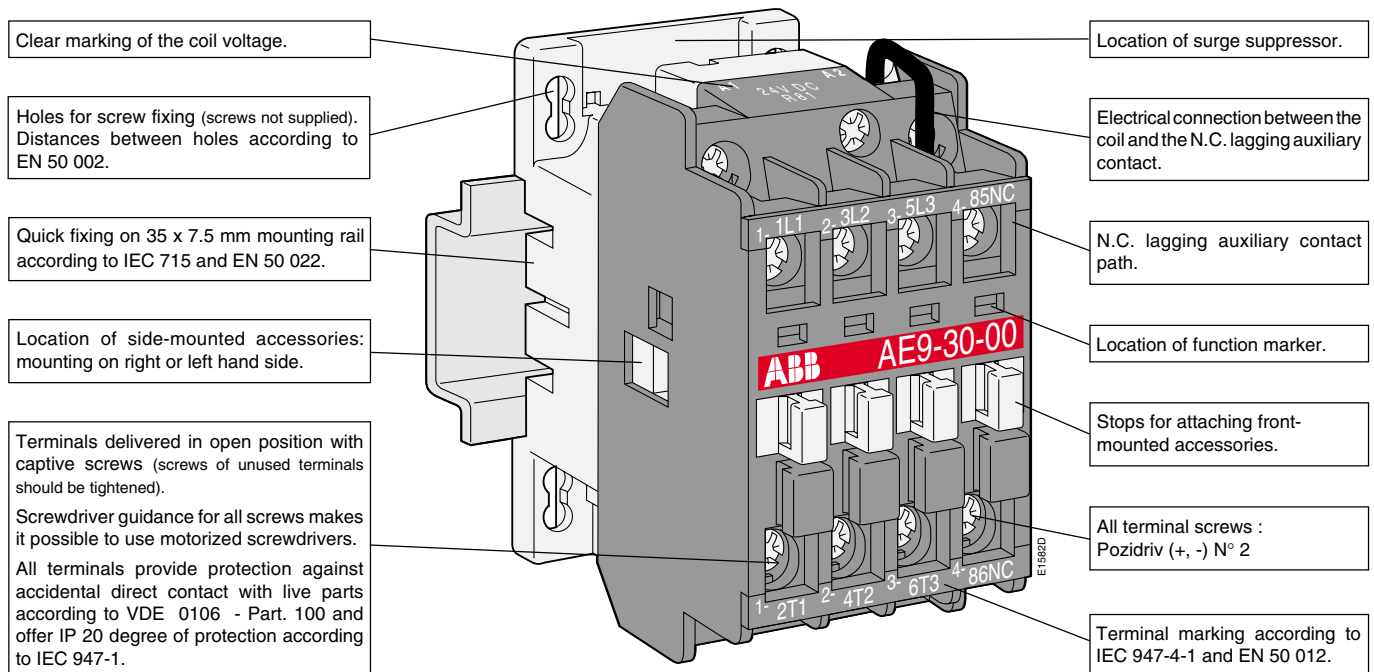
AE 9 ... AE 40 Contactors

Application

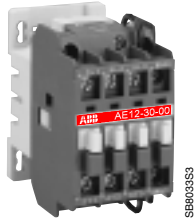
AE contactors are mainly used for controlling 3-phase motors and generally speaking for controlling power circuits corresponding to their operating characteristics up to 690 V a.c. and 440 V d.c.

Description

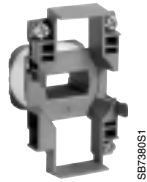
- Contactors with laminated magnet circuit and double-winding coil fed from a d.c. supply via a built-in N.C. lagging auxiliary contact.
- 1-stack version with 3 N.O. poles,
- Side by side mounting possible.



AE 9 ... AE 40 3-pole Contactors D.C. operated - A.C. Circuit Switching



AE 12-30-00



ZAE 16

Coil voltage codes :

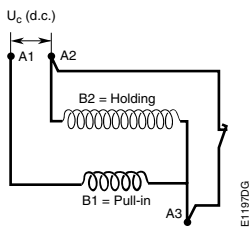
Voltage V d.c.	Code R □ □ . .
12	8 0
24	8 1
42	8 2
48	8 3
50	2 1
60	8 4
75	8 5
110	8 6
125	8 7
220	8 8
240	8 9
250	3 8

Ordering Details

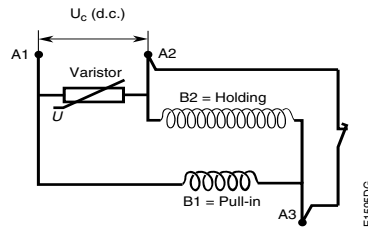
Motor power AC-3			Rated operational current		Mounted aux.cont.		Type	Order code	Weight
380 V	400 V	415 V	690 V	AC-3	AC-1		State coil	to be completed with	in kg
kW	kW	kW	kW	400 V	$\theta \leq 40^\circ\text{C}$		voltage: <input type="text"/>	coil voltage code : <input type="text"/>	Pack ^{ing}
A	A	A	A	A	A		See table below	See table below	1 piece
4	4	5.5	9	25			AE 9-30-00 <input type="text"/>	1SBL 14 9001 R <input type="text"/>	0.340
5.5	5.5	7.5	12	27			AE 12-30-00 <input type="text"/>	1SBL 16 9001 R <input type="text"/>	0.340
7.5	9	9	16	30			AE 16-30-00 <input type="text"/>	1SBL 18 9001 R <input type="text"/>	0.340
11	11	15	26	45			AE 26-30-00 <input type="text"/>	1SBL 24 9001 R <input type="text"/>	0.600
15	15	18.5	32	55			AE 30-30-00 <input type="text"/>	1SBL 28 9001 R <input type="text"/>	0.710
18.5	18.5	22	37	60			AE 40-30-00 <input type="text"/>	1SBL 32 9001 R <input type="text"/>	0.710

Note: for higher kW/current ratings, please refer to page 2/15 - Main Catalogue ref. 1SBC 0004 99 R1001.

Block diagrams for contactor coil supply



Coil supply $U_c < 110$ V d.c.



Coil supply via built-in varistor $U_c \geq 110$ V d.c.

Coils

For contactor:	Type	Order code	Weight
	State coil	to be completed with	in kg
	voltage: <input type="text"/>	coil voltage code : <input type="text"/>	Pack ^{ing}
	See table below	See table below	1 piece
AE 9 ... AE 16	ZAE 16 <input type="text"/>	1SBN 15 1490 R <input type="text"/>	0.093
AE 26 ... AE 40	ZAE 40 <input type="text"/>	1SBN 15 2490 R <input type="text"/>	0.148

Accessories and thermal O/L relays

AE contactor accessories and thermal O/L relays are the same as those of standard A contactors (see Main Catalogue 1SBC 0004 99 R1001 - Sections 4 and 5).

Use type **CA5-..E 4-pole** auxiliary contact blocks for correct contact terminal marking.

When contactors are mounted acc. to position 5 (see pages 5 and 6) do not use more than 2 add-on front mounted N.C. auxiliary contact blocks. Type **CAL5-11** (1 N.O. + 1 N.C.) side mounted auxiliary contact blocks provide extra N.C. auxiliary contacts, if required.

>> Technical Data pages 4 ... 6
>> Terminal Marking and Positioning page 6

>> Dimensions pages 7 ... 12

AE 9 ... AE 40 3-pole Contactors

D.C. Operated

Technical Data



Type	AE 9	AE 12	AE 16	AE 26	AE 30	AE 40	
Number of poles	3						
Insulation Characteristics							
Rated insulation voltage U_i according to IEC 947-4-1 and VDE 0110 (Gr. C)				1000			
				600			
Rated impulse withstand voltage $U_{imp.}$				8			
Main Pole Utilization Characteristics							
Rated operational voltage U_e	690						
Conventional free air thermal current I_{th} acc. to IEC 947-4-1, open contactors $\theta \leq 40^\circ\text{C}$	26	28	30	45	65	65	
with conductor cross-sectional area	4	4	4	6	16	16	
Rated operational current $I_e/AC-1$ for air temperature close to contactor. U_e max. 690 V							
$\left\{ \begin{array}{l} \theta \leq 40^\circ\text{C} \\ \theta \leq 55^\circ\text{C} \\ \theta \leq 70^\circ\text{C} \end{array} \right.$	A	25	27	30	45	55	60
	A	22	25	27	40	55	60
	A	18	20	23	32	39	42
with conductor cross-sectional area	mm²	2.5	4	4	6	10	16
Utilization category AC-3 for air temperature close to contactor $\leq 55^\circ\text{C}$							
Rated operational current $I_e/AC-3$ ⁽¹⁾							
220-230-240 V	A	9	12	17	26	33	40
380-400 V	A	9	12	17	26	32	37
415 V	A	9	12	17	26	32	37
440 V	A	9	12	16	26	32	37
500 V	A	9	12	14	22	28	33
690 V	A	7	9	10	17	21	25
1000 V	A	-	-	-	-	-	-
Rated operational power AC-3 ⁽¹⁾							
220-230-240 V	kW	2.2	3	4	6.5	9	11
380-400 V	kW	4	5.5	7.5	11	15	18.5
415 V	kW	4	5.5	9	11	15	18.5
440 V	kW	4	5.5	9	15	18.5	22
500 V	kW	5.5	7.5	9	15	18.5	22
690 V	kW	5.5	7.5	9	15	18.5	22
1000 V	kW	-	-	-	-	-	-
Rated frequency limits	Hz						
25 - 400							
Mechanical durability in millions of operating cycles	5						
Max. mechanical switching frequency	cycles/h						
3600							
Max. electrical switching frequency							
for AC-1	cycles/h						
600							
for AC-3	cycles/h						
600							
for AC-2, AC-4	cycles/h						
300							
Electrical durability							
see Main Catalogue 1SBC 0004 99 R1001 page 2/55 ... 2/59							
Rated making capacity AC-3 according to IEC 947-4-1	$10 \times I_e / AC-3$						
Rated breaking capacity AC-3 according to IEC 947-4-1	$8 \times I_e / AC-3$						
Max. breaking capacity with $\cos \varphi = 0.45$ at 440 V	A	250	250	250	420	820	820
($\cos \varphi = 0.35$ for $I_e > 100$ A) at 690 V	A	100	100	100	170	340	340
Short-circuit protection for contactors without thermal O/L relay - Motor protection excluded ⁽²⁾							
$U_e \leq 500$ V a.c. - gG (gl) type fuses	A	25	32	32	50	63	63
Rated short-time withstand current I_{cw}							
1 s	A	250	280	300	400	600	600
at 40°C ambient temperature,	A	100	120	140	210	400	400
in free air, from cold state	A	60	70	80	110	225	225
30 s	A	60	70	80	110	225	225
1 min	A	50	55	60	90	150	150
15 min	A	26	28	30	45	65	65
Heat dissipation per pole							
$I_e/AC-1$	W	0.8	1	1.2	1.8	2.5	3
$I_e/AC-3$	W	0.1	0.2	0.35	0.6	0.9	1.3

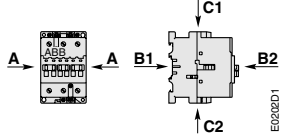
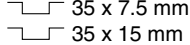
(1) For the corresponding kW/hp/A values of 1500 r.p.m., 50 Hz, 3-phase motors, refer to page 0/0 of Main Catalogue 1SBC 0004 99 R1001.

(2) For the protection of motor starters against short circuits, see page 7/17 of Main Catalogue 1SBC 0004 99 R1001.

AE 9 ... AE 40 3-pole Contactors D.C. Operated



Technical Data (cont.)

Type	AE 9	AE 12	AE 16	AE 26	AE 30	AE 40
Number of poles	3					
General Technical Data						
Standards	Devices complying with international standards IEC 947-1 / 947-4-1 and European standards EN 60 947-1 / 60 947-4-1 Electromagnetic compatibility (EMC) according to amendment A11 to IEC 947-1; EN 60 947-1 and amendment 2 to IEC 947-4-1 See also Main Catalogue 1SBC 0004 99 R1001 - Section 7					
Certifications - approvals	CSA - UL					
Air temperature close to contactor						
– fitted with a thermal O/L relay	°C		– 25 to + 50 (0.85 to 1.1 U _c)			
– without thermal O/L relay	°C		– 40 to + 55 (0.85 to 1.1 U _c) / – 40 to + 70(U _c)			
– for storage	°C		– 60 to + 80			
Climatic withstand	according to IEC 68-2-30 and 68-2-11 - UTE C 63-100 specification II					
Mounting positions: (see drawing p. 6)	Positions 1 to 5 - Ambient temperature ≤ + 55 °C and control voltage 0.85 - 1.1 U _c – Ambient temperature + 55...70 °C and control voltage equal to U _c Position 6 – Ambient temperature ≤ + 55 °C and control voltage 0.95 - 1.1 U _c – Ambient temperature ≤ + 55 °C unauthorized					
Operating altitude	m ≤ 3000					
Shock withstand acc. to IEC 68-2-27 and EN 60068-2-27 Mounting position 1 (see page 6)	1/2 sinusoidal shock for 11 ms: no change in contact position					
	Shock direction: A, C1, C2 : 20 g B1 : 5 g B2 : 15 g					
Fixing	according to IEC 715 and EN 50 022					
• on mounting rail	 35 x 7.5 mm 35 x 15 mm					
• by screws (not supplied)	2 x M 4		2 x M 4		2 x M 4	
Connecting terminals – Main poles (delivered in open position)	M 3.5 (+, –) pozidriv 2 screws with cable clamp		M 4		M 5 with 2 x (5.6 x 6.5mm) double connector	
– Coil terminals	M 3.5 (+,-) pozidriv 2 screws with cable clamp					
Connecting capacity Main conductors (poles)	min. - max.		min. - max.		min. - max.	
Rigid solid (≤ 4 mm ²) / rigid stranded (≥ 6 mm ²)	1 x mm² 2 x mm²		1 - 4 1.5 - 6		2.5 - 16 2.5 - 16	
Flexible without cable end	1 x mm² 2 x mm²		0.75 - 2.5 1 - 4		2.5 - 10 2.5 - 10	
Bars or lugs: max. width hole Ø	mm ≤ mm >		8 3.7		10 4.2	
Auxiliary conductors (built-in auxiliary terminals + coil terminals)	min. - max.					
Rigid solid	1 or 2 x mm² 1 - 4					
Flexible without cable end	1 x mm² 2 x mm² 1 - 2.5 0.75 - 2.5					
Degree of protection acc. to IEC 529, IEC 947-1 and EN 60529	Protection against direct contact according to VDE 0106 - Part. 100					
– Main terminals	IP 20					
– Coil terminals	IP 20					
– Auxiliary terminals	IP 20					

AE 9 ... AE 40 3-pole Contactors

D.C. Operated

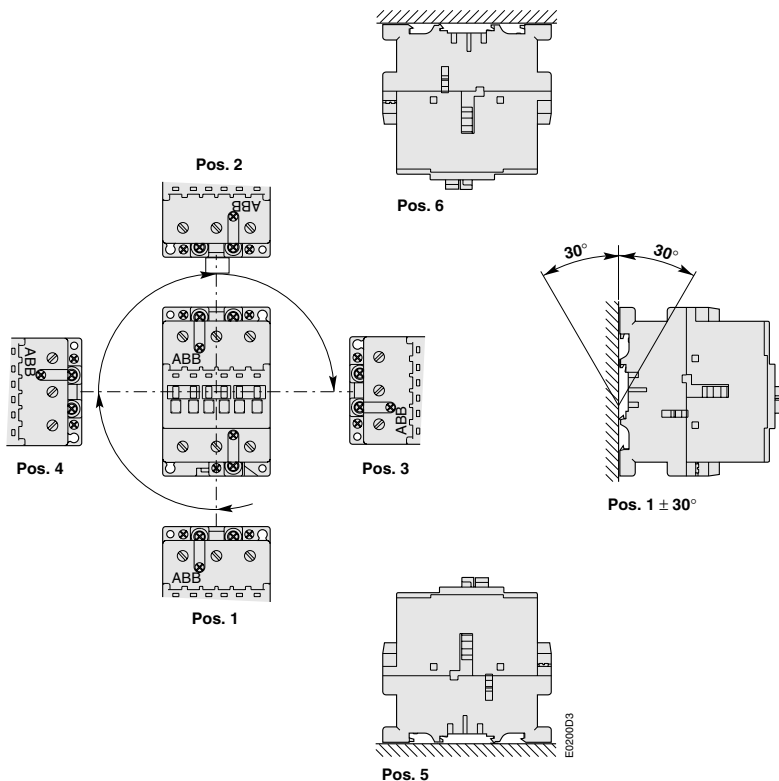


Technical Data

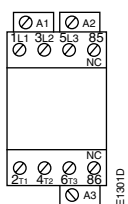
Type	AE 9	AE 12	AE 16	AE 26	AE 30	AE 40
Number of poles	3					
Magnet System Characteristics						
Coil operating limits acc. to IEC 947-4-1: 0.85 to 1.1 x U _c	$\theta \leq 55^\circ\text{C}$			$\theta \leq 55^\circ\text{C}$		
Drop-out voltage % of U _c	10 ... 30 %			10 ... 30 %		
Coil consumption (average value)						
– pull-in, from cold state	W		90		110	
– holding, from warm state	W		2		2.5	
Rated control circuit voltage U _c						
– open	L/R ms		2		3	
– closed	L/R ms		9		16	
	V		12 - 240		12 - 240	
Operating time (without surge suppressor)						
Between coil energization and:						
– N.O. contact closing	ms		10 ... 16		13 ... 21	
– N.C. contact opening	ms		8 ... 12		11 ... 16	
Between coil de-energization and:						
– N.O. contact opening	ms		5 ... 14*		6 ... 12*	
– N.C. contact closing	ms		11 ... 17*		8 ... 16*	

*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.

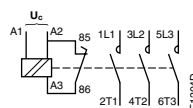
Mounting Positions (see page 5)



Terminal Marking and Positioning



AE 9 ... AE 40-30-00

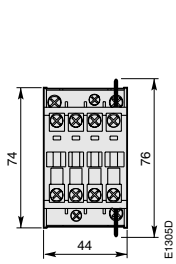


AE9 ... AE 40-30-00

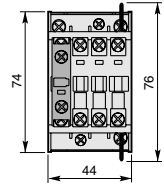
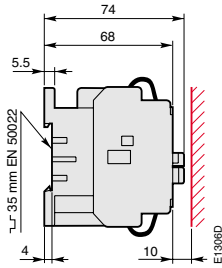
AE 9, AE 12 and AE 16 Contactors



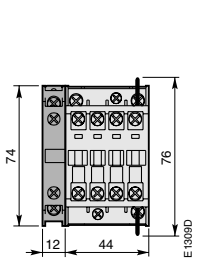
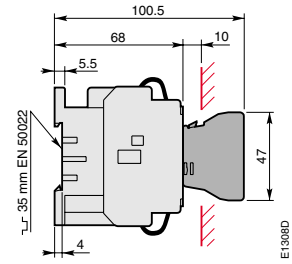
Dimensions (in mm)



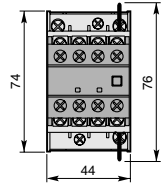
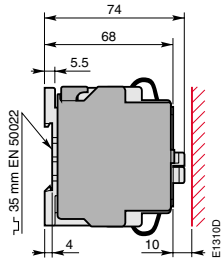
AE 9, AE 12, AE 16



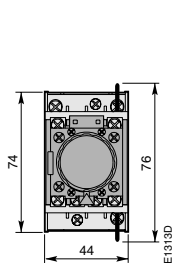
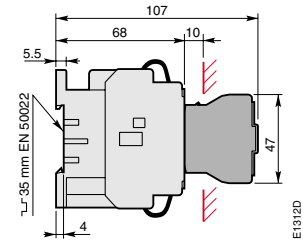
**AE 9, AE 12, AE 16
+ CA 5 Front-Mounted 1-Pole Auxiliary Contact Block**



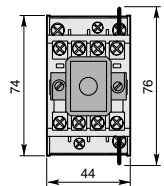
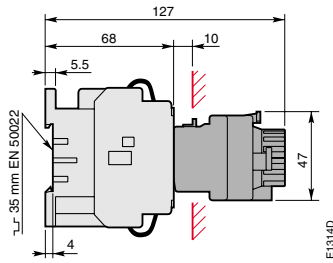
**AE 9, AE 12, AE 16
+ CAL 5 Side-Mounted 2-Pole Auxiliary Contact Block**



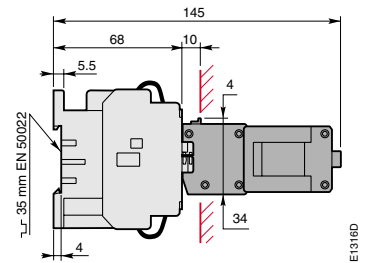
**AE 9, AE 12, AE 16
+ CA 5 Front-Mounted 4-Pole Auxiliary Contact Block**



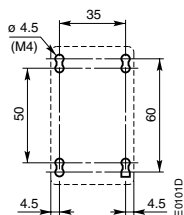
**AE 9, AE 12, AE 16
+ TP Pneumatic Timer**



**AE 9, AE 12, AE 16
+ WB 75-A On-Position Latch**



Drilling Plan

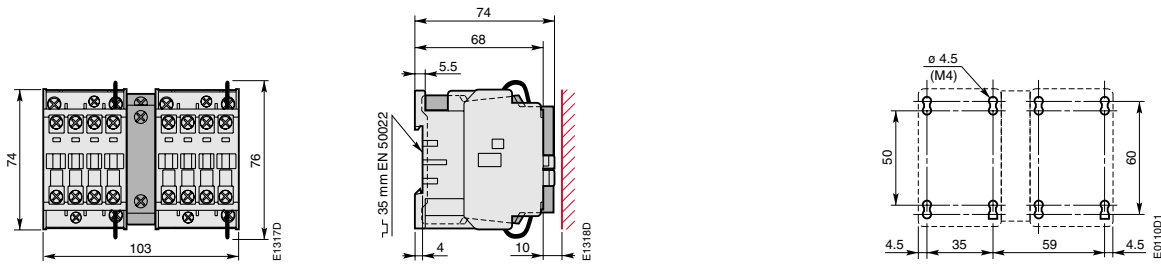


Detailed dimension drawings on Autocad DWG / DXF formats available on request

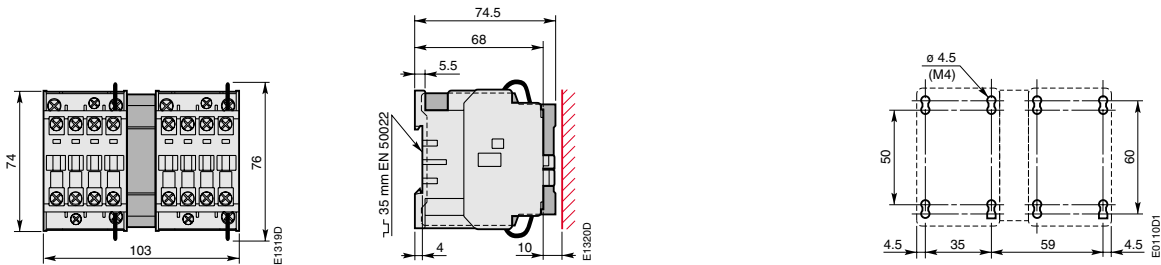
AE 9, AE 12 and AE 16 Contactors



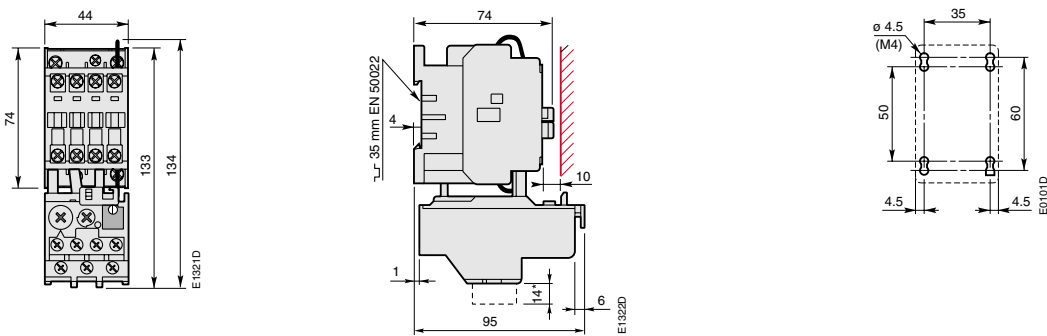
Dimensions (in mm)



**AE 9, AE 12, AE 16
+ VE 5-1 Electrical and Mechanical Interlock Unit**



**AE 9, AE 12, AE 16
+ VM 5-1 Mechanical Interlock Unit**



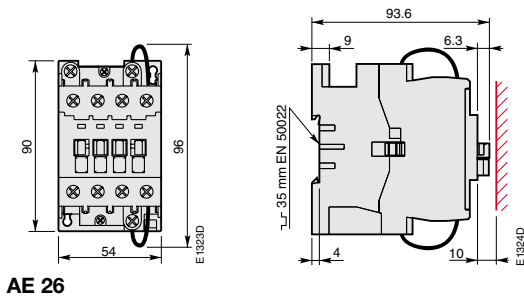
**AE 9, AE 12, AE 16
+ TA 25 DU Thermal O/L Relay**

*For TA 25 DU 32 only

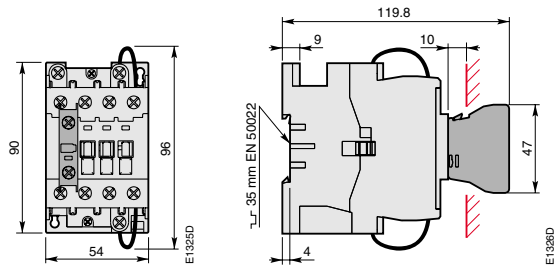
Detailed dimension drawings on Autocad DWG / DXF formats available on request



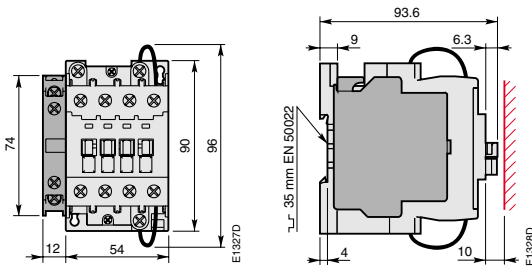
Dimensions (in mm)



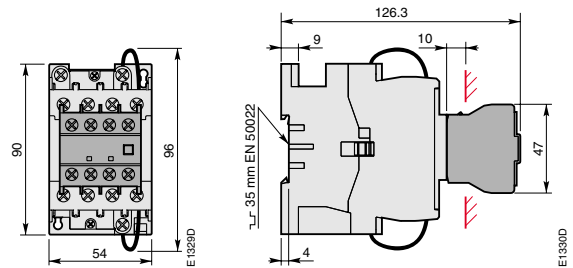
AE 26



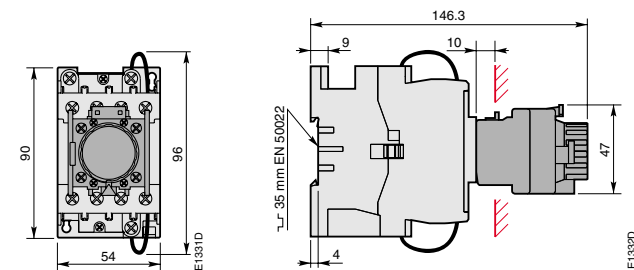
**AE 26
+ CA 5 Front-Mounted 1-Pole Auxiliary Contact Block**



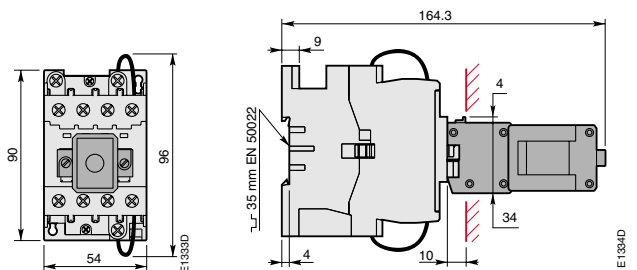
**AE 26
+ CAL 5 Side-Mounted 2-Pole Auxiliary Contact Block**



**AE 26
+ CA 5 Front-Mounted 4-Pole Auxiliary Contact Block**

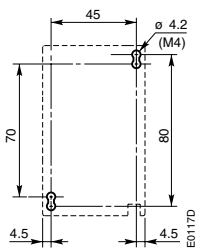


**AE 26
+ TP Pneumatic Timer**



**AE 26
+ WB 75-A On-Position Latch**

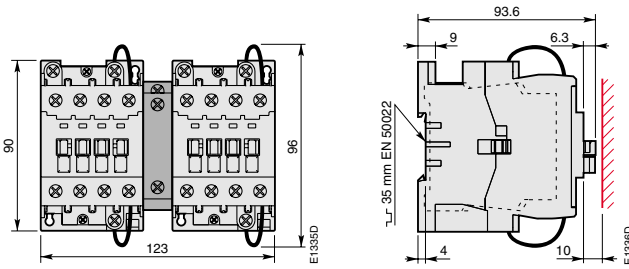
Drilling Plan



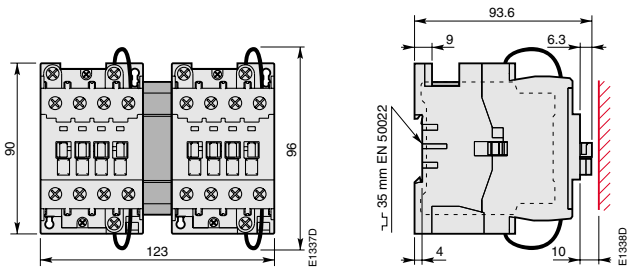
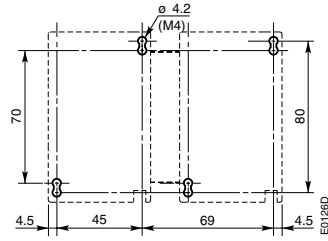
Detailed dimension drawings on Autocad DWG / DXF formats available on request



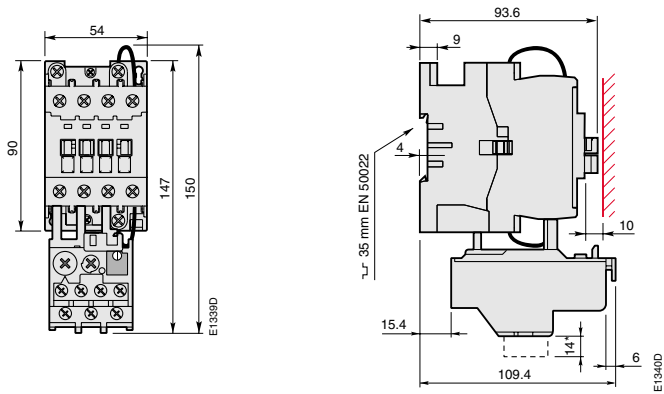
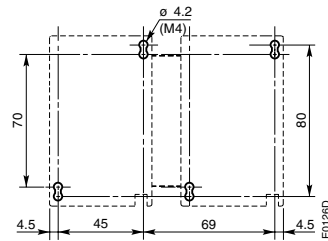
Dimensions (in mm)



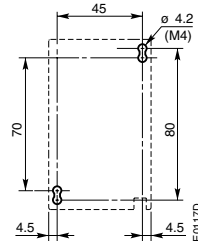
AE 26
+ VE 5-1 Electrical and Mechanical Interlock Unit



AE 26
+ VM 5-1 Mechanical Interlock Unit



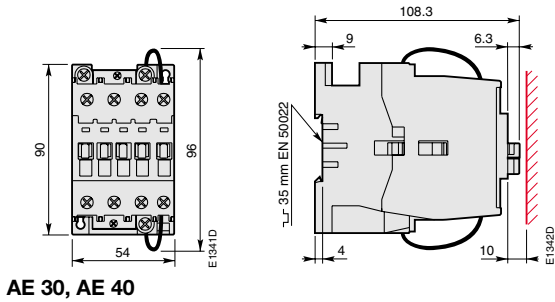
AE 26
+ TA 25 DU Thermal O/L Relay
*For TA 25 DU 32 only



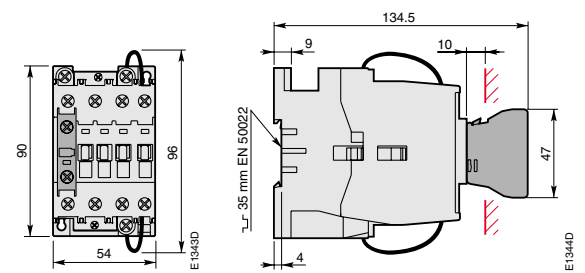
AE 30 and AE 40 Contactors



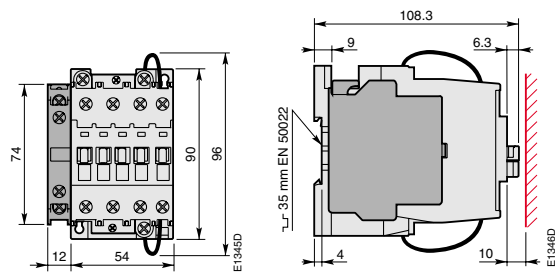
Dimensions (in mm)



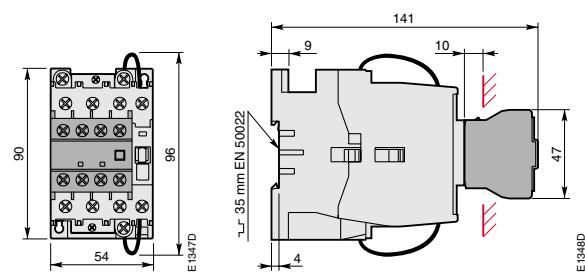
AE 30, AE 40



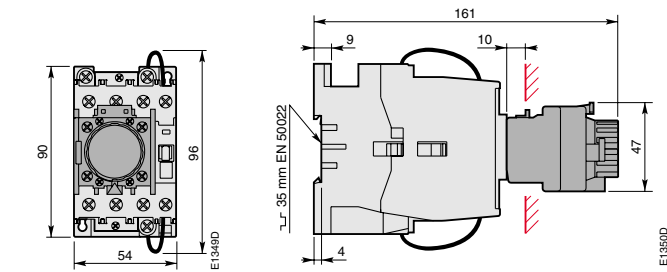
AE 30, AE 40
+ CA 5 Front-Mounted 1-Pole Auxiliary Contact Block



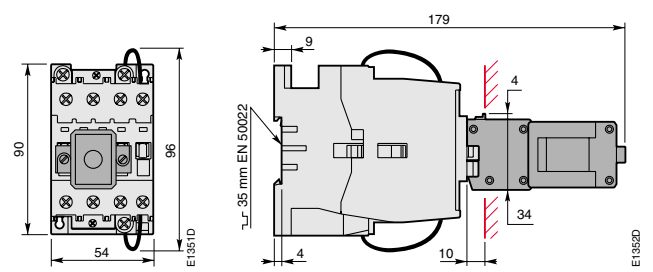
AE 30, AE 40
+ CAL 5 Side-Mounted 2-Pole Auxiliary Contact Block



AE 30, AE 40
+ CA 5 Front-Mounted 4-Pole Auxiliary Contact Block

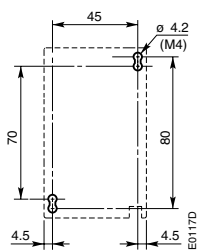


AE 30, AE 40
+ TP Pneumatic Timer



AE 30, AE 40
+ WB 75-A On-Position Latch

Drilling Plan

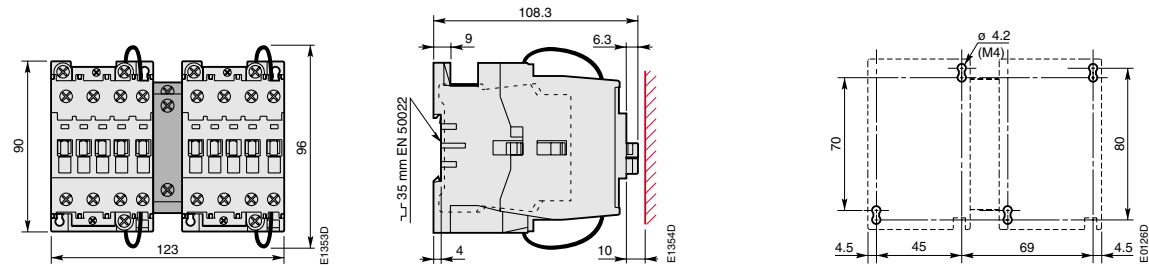


Detailed dimension drawings on Autocad DWG / DXF formats available on request

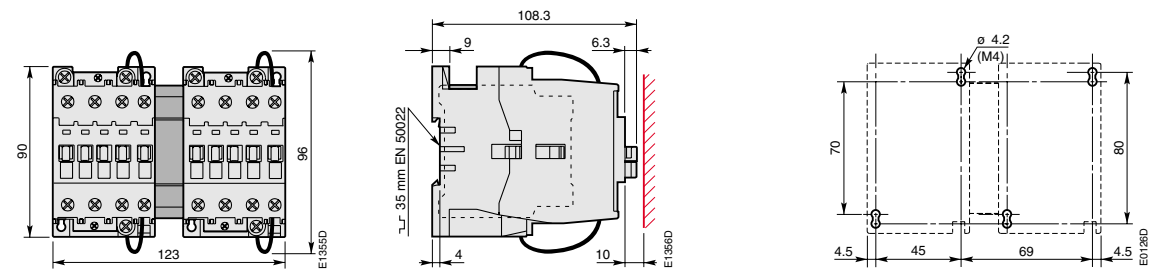
AE 30 and AE 40 Contactors



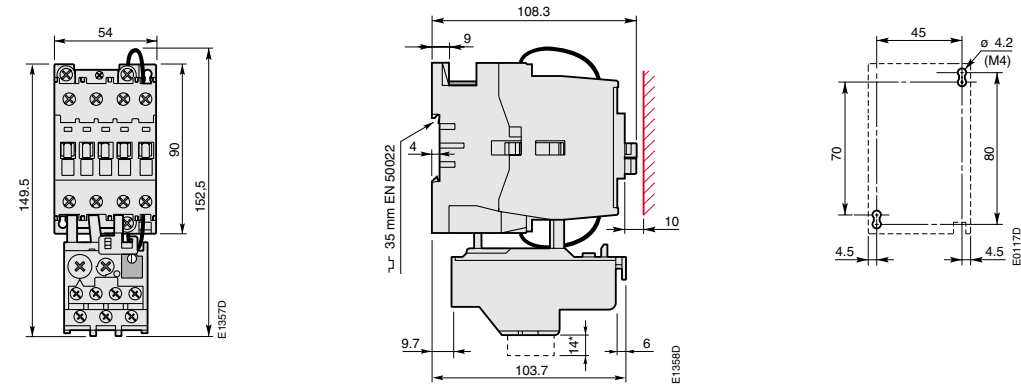
Dimensions (in mm)



**AE 30, AE 40
+ VE 5-1 Electrical and Mechanical Interlock Unit**

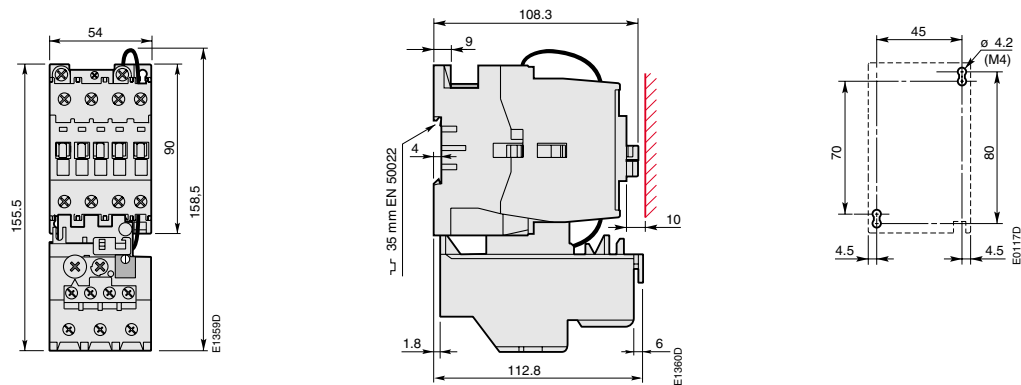


**AE 30, AE 40
+ VM 5-1 Mechanical Interlock Unit**



**AE 30, AE 40
+ TA 25 DU Thermal O/L Relay**

*For TA 25 DU 32 only



**AE 30, AE 40
+ TA 42 DU Thermal O/L Relay**

Detailed dimension drawings on Autocad DWG / DXF formats available on request



Contents

Contactor Relays

Description	14
Ordering Details	15
Technical Data	16
Terminal marking and positioning	18
Dimensions	19

NE... Contactor Relays D.C. Operated

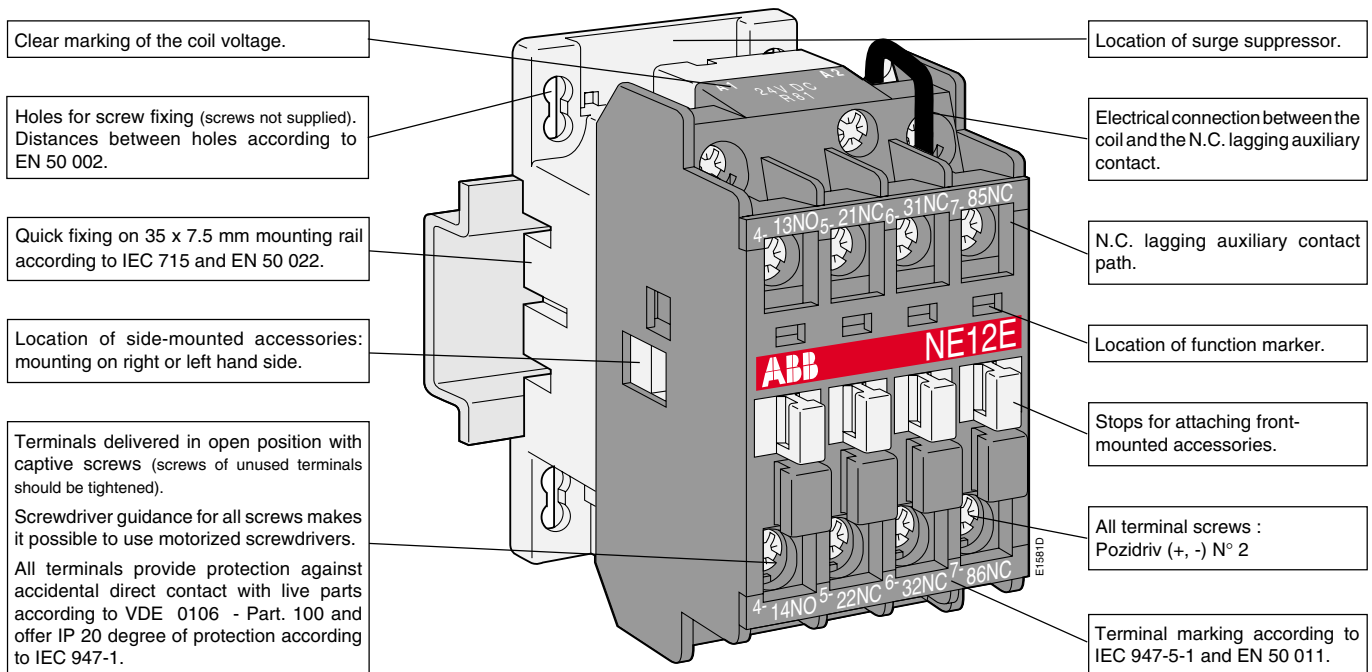


Application

NE... contactor relays are used for switching auxiliary circuits and control circuits.

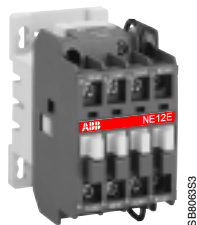
Description

- Contactor relays with laminated magnet circuit and double-winding coil fed from a d.c. supply via a built-in N.C. lagging auxiliary contact.
- 1-stack version with 3 built-in auxiliary contacts.
- Self-cleaning auxiliary contacts.
- Alone or fitted with a 4-pole CA 5 auxiliary contact block, these devices offer mechanically linked contacts.
- Side by side mounting possible.



>> Ordering Details	page 15	>> Terminal Marking and Positioning	page 18
>> Technical Data	page 16	>> Dimensions	page 19

NE... Contactor Relays D.C. Operated



NE 12-30-00



ZAE 16

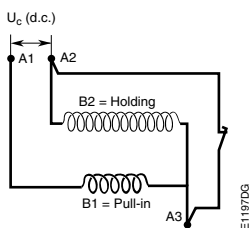
Coil voltage codes :

Voltage V d.c.	Code R □ □ . .
12	8 0
24	8 1
42	8 2
48	8 3
50	2 1
60	8 4
75	8 5
110	8 6
125	8 7
220	8 8
240	8 9
250	3 8

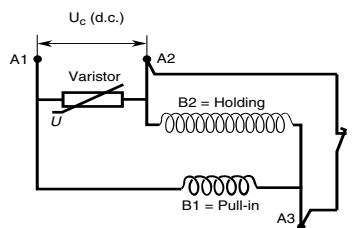
Ordering Details

Built-in auxiliary contacts	Type	Order code	Weight in kg
	State coil voltage: <input type="checkbox"/> <input type="checkbox"/>	to be completed with coil voltage code : <input type="checkbox"/> <input type="checkbox"/>	1 piece
	See table below	See table below	
1 2	NE 12 E <input type="checkbox"/> <input type="checkbox"/>	1SBH 14 9001 R <input type="checkbox"/> <input type="checkbox"/> 12	0.340
2 1	NE 21 E <input type="checkbox"/> <input type="checkbox"/>	1SBH 14 9001 R <input type="checkbox"/> <input type="checkbox"/> 21	0.340
3 0	NE 30 E <input type="checkbox"/> <input type="checkbox"/>	1SBH 14 9001 R <input type="checkbox"/> <input type="checkbox"/> 30	0.340

Block diagrams for NE... contactor relay coil supply



Coil supply $U_c < 110$ V d.c.



Coil supply via built-in varistor $U_c \geq 110$ V d.c.

Coils

For contactor relays:	Type	Order code	Weight in kg
	State coil voltage: <input type="checkbox"/> <input type="checkbox"/>	to be completed with coil voltage code : <input type="checkbox"/> <input type="checkbox"/>	Pack ^{ing} 1 piece
	See table below	See table below	
NE 12, NE 21, NE 30	ZAE 16 <input type="checkbox"/> <input type="checkbox"/>	1SBN 15 1490 R <input type="checkbox"/> <input type="checkbox"/> 06	0.093

Accessories

NE contactor relay accessories are the same as those of standard N contactor relays (See Main catalogue 1SBC 0004 99 R1001 - Section 4).

If extra auxiliary contact blocks are required, use type CA5-.. ; CC5-.. **single pole** add-on auxiliary contact blocks.

When contactor relays are mounted acc. to position 5 (see page 16) do not use more than 2 add-on front mounted N.C. auxiliary contact blocks. Type **CAL5-11** (1 N.O. + 1 N.C.) side mounted auxiliary contact blocks provide extra N.C. auxiliary contacts, if required.

>> Technical Data pages 16, 17 >> Dimensions pages 19, 20
>> Terminal Marking and Positioning page 18

NE... Contactor Relays D.C. Operated



Technical Data

Type	NE 12, NE 21, NE 30
Number of poles	3

Insulation Characteristics

Rated insulation voltage U_i acc. to IEC 947-5-1 and VDE 0110 (Gr. C)	V	690
acc. to UL/CSA	V	600
Rated impulse withstand voltage U_{imp} acc. to IEC 947-5-1	kV	8

General Technical Data

Standards	Devices complying with international standards IEC 947-5-1 / 947-4-1 and European standards EN 60 947-5-1 / 60 947-4-1 Electromagnetic compatibility (EMC) according to amendment A11 to IEC 947-1 ; EN 60 947-1 and amendment 2 to IEC 947-4-1 See also Main Catalogue 1SBC 0004 99 R1001 - Section 7
Certifications - approvals	CSA - UL

Air temperature near contactor		
– for operation in free air :	°C	– 40 to + 55 (0.85 - 1.1 U_c) / +55 to + 70 (U_c)
– for storage :	°C	– 60 to + 80

Climatic withstand	according to IEC 68-2-30 and 68-2-11 - UTE C 63-100, Specification II
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Mounting positions :	Positions 1 to 5 - $\theta \leq 55^\circ\text{C}$: 0.85 1.1 U_c - $\theta = 55 \dots 70^\circ\text{C}$: U_c Position 6 - $\theta \leq 55^\circ\text{C}$: 0.95 1.1 U_c - $\theta > 55^\circ\text{C}$: not acceptable.
----------------------	---

(see diagrams below)

Operating altitude	m	≤ 3000
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Shock withstand according to IEC 68-2-27 and EN 60068-2-27 Mounting position 1 (see below)		1/2 sinusoidal shock, 11 ms : no change in contact position
Shock direction :	A, C1, C2 : 20 g B1 : 5 g B2 : 15 g	

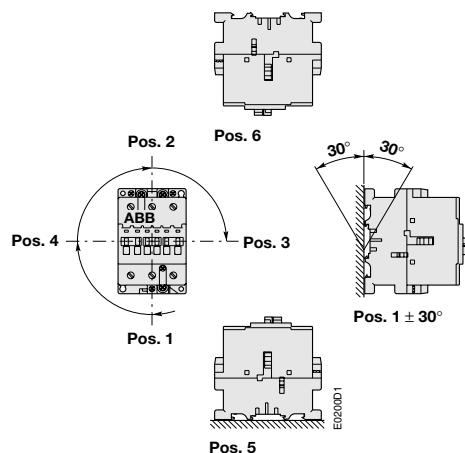
Fixing	– on mounting rail – with screws (not supplied)	35 mm according to IEC 715 and EN 50 022 2 x M 4
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Connection terminals (delivered in open position, screws of unused terminals must be tightened)		M 3.5 (+, -) pozidriv 2 screw with cable clamp
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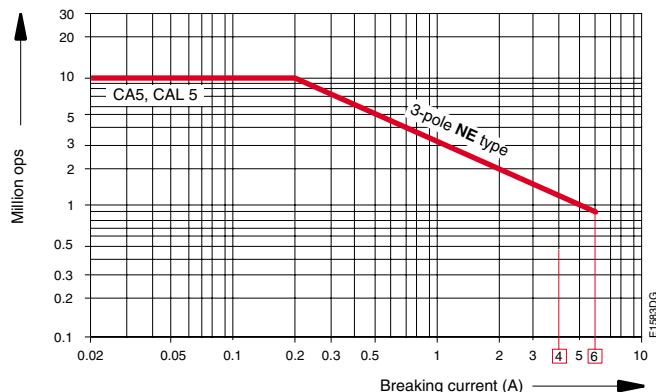
Connecting capacity		
Rigid solid	1 x mm ² 2 x mm ²	1 - 4 1 - 4
Flexible without cable end	1 x mm ² 2 x mm ²	0.75 - 2.5 0.75 - 2.5
With lugs	max. width mm hole Ø mm	8 3.7

Degree of protection acc. to IEC 947-1 EN 60947-1, IEC 529, EN 60529	– Pole terminals – Coil terminals	IP 20 IP 20
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Mounting positions		Electrical durability of contacts : utilization category AC - 15 according to IEC 947-5-1 making current : 10 x I_e with $\cos \varphi = 0.7$ and U_e breaking current : I_e with $\cos \varphi = 0.4$ and U_e
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The curves opposite show the electrical durability of the contactor relays as well as the add-on auxiliary contact blocks in relation to the breaking current I_e . These curves have been drawn for resistive and inductive loads up to 690 V, 40... 60 Hz.



NE... Contactor Relays D.C. Operated

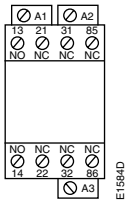


Technical Data

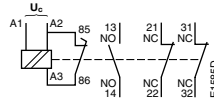
Type	NE 12, NE 21, NE 30	
Number of poles	3	
Pole Utilization Characteristics		
Rated operational voltage U_e	V	690
Conventional thermal current in free air I_{th} according to IEC 947-5-1 $\theta \leq 40^\circ\text{C}$	A	16
Rated operating current I_e in AC-15 according to IEC 947-5-1		
24-127 V 50/60 Hz	A	6
230-240 V 50/60 Hz	A	4
400-415 V 50/60 Hz	A	3
500 V 50/60 Hz	A	2
690 V 50/60 Hz	A	2
in DC-13 according to IEC 947-5-1		
24 V d.c.	A/W	6/144
48 V d.c.	A/W	2.8/134
72 V d.c.	A/W	1/72
125 V d.c.	A/W	0.55/69
250 V d.c.	A/W	0.3/75
Field of rated frequencies	Hz	25... 400
Mechanical durability in operating cycles		10
Max. switching frequency	cycles/h	3600
Electrical durability in operating cycles		See curves page 16
Max. switching frequency	cycles/h	1200
Rated making capacity according to IEC 947-5-1		$10 \times I_e/\text{AC-15}$
Rated breaking capacity according to IEC 947-5-1		$10 \times I_e/\text{AC-15}$
gG (gl) protection fuse	A	10
Rated short-time withstand current	1.0 s	100 A
at ambient temp. of 40°C , in free air, from cold state	0.1 s	140 A
Insulation resistance at 500 V d.c.		after durability test: $5 \text{ M}\Omega$
Min. switching capacity with failure rate below 10^{-6}		17 V / 5 mA
Non-overlapping time between N.O. and N.C. contacts	ms	≥ 2
Power loss per pole at 6A	W	0.10
Magnet System Characteristics		
Coil operating limits $\theta \leq 40^\circ\text{C}$		according to IEC 947-5-1: $0.85 - 1.1 U_e$
Drop-out voltage in % of U_e		10 to 30 %
Coil consumption (average value)		
– cold, pull-in	W	90
– warm, holding	W	2
Rated control voltage U_c	V d.c.	12 ... 250
Max permissible short supply interruption without opening of contacts	ms	2
Operating time (without surge suppressor)		
between coil energization and:		
– closing of N.O. contact	ms	10 - 16
– opening of N.C. contact	ms	8 - 12
between coil de-energization and:		
– opening of N.O. contact	ms	5 - 14*
– closing of N.C. contact	ms	11 - 17*
* 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.		
Influence of length of conductors in control circuit on contactor opening and closing		See Main Catalogue 1SBC 0004 99 R1001 pages 2/52 and 2/53



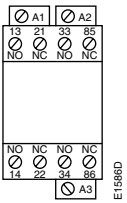
Terminal Marking and Positioning



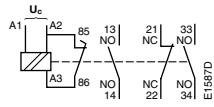
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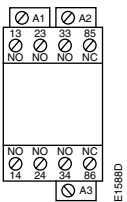
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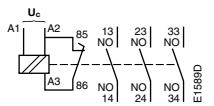
NE 21 E



NE 21 E



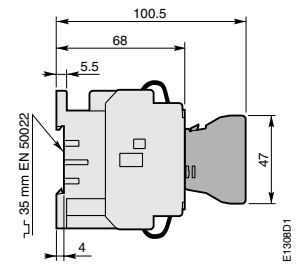
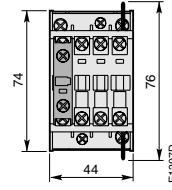
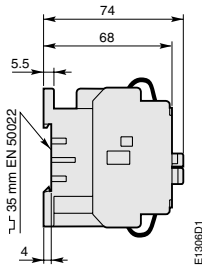
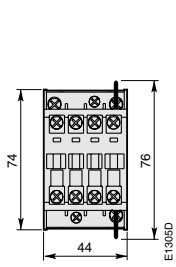
NE 30 E



NE 30 E



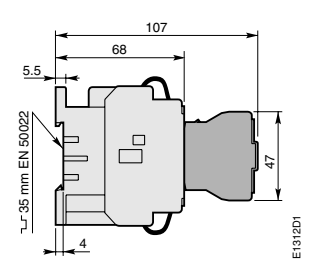
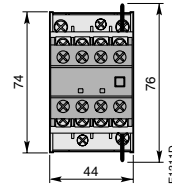
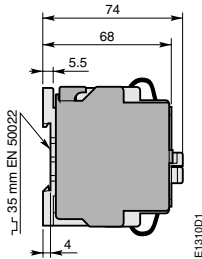
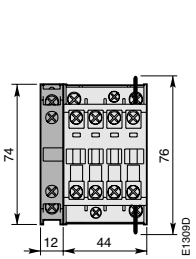
Dimensions (in mm)



NE...

NE...

+ CA 5 Front-Mounted 1-Pole Auxiliary Contact Block

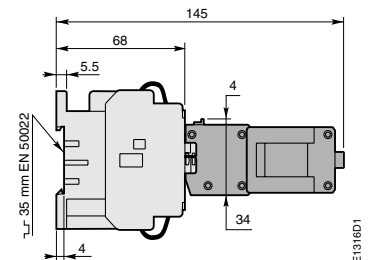
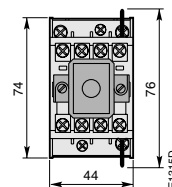
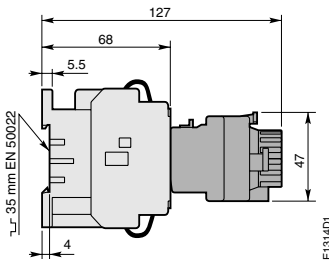
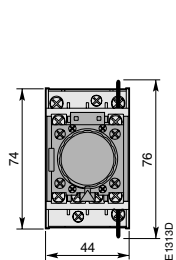


NE...

+ CAL 5 Side-Mounted 2-Pole Auxiliary Contact Block

NE...

+ CA 5 Front-Mounted 4-Pole Auxiliary Contact Block



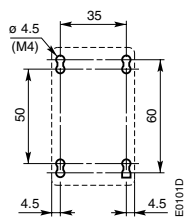
NE...

+ TP Pneumatic Timer

NE...

+ WB 75-A On-Position Latch

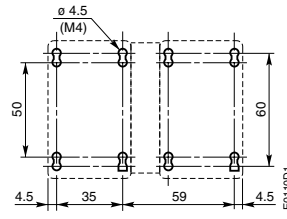
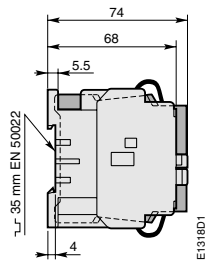
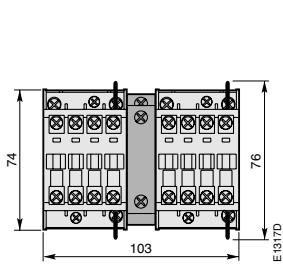
Drilling Plan



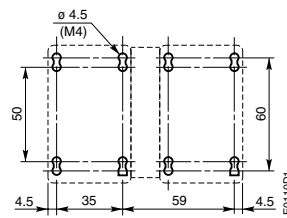
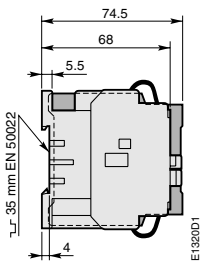
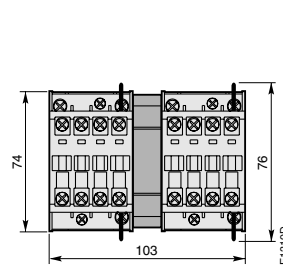
Detailed dimension drawings on Autocad DWG / DXF formats available on request



Dimensions (in mm)



NE... + VE 5-1 Electrical and Mechanical Interlock Unit



NE... + VM 5-1 Mechanical Interlock Unit



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