

# Ex9C AC Contactor

## Overview

Ex9C Series AC Contactor is use to frequently make or break the AC circuit with load, of which rated voltage is up to 1000 VAC, rated current is up to 500A@AC-3/400V. Ex9C series contactor coule be widely used in manufacturing, metallurgy, petrochemical, paper, building and power.

Ex9C series has eight kinds of shell frame current level , 22 models:

Mini contactor



Frame current: 12A  
Ex9CS06  
Ex9CS09  
Ex9CS12

Contactor



Frame current: 18A  
Ex9C09  
Ex9C12  
Ex9C18



Frame current: 38A  
Ex9C25  
Ex9C32  
Ex9C38



Frame current: 65A  
Ex9C40  
Ex9C50  
Ex9C65



Frame current: 100A  
Ex9C80  
Ex9C100



Frame current: 185A  
Ex9C115  
Ex9C150  
Ex9C185



Frame current: 300A  
Ex9C225  
Ex9C265  
Ex9C300



Frame current: 500A  
Ex9C400  
Ex9C500

# Ex9C AC Contactor

Ex9CR series reversible contactor , 22 models :

Mini Reversible contactor



Frame current:12A  
Ex9CSR06  
Ex9CSR09  
Ex9CSR12

Conventional Reversible contactor



Frame current:18A  
Ex9CR09  
Ex9CR12  
Ex9CR18



Frame current:38A  
Ex9CR25  
Ex9CR32  
Ex9CR38



Frame current:65A  
Ex9CR40  
Ex9CR50  
Ex9CR65



Frame current:100A  
Ex9CR80  
Ex9CR100



Frame current:185A  
Ex9CR115  
Ex9CR150  
Ex9CR185



Frame current:300A  
Ex9CR225  
Ex9CR265  
Ex9CR300



Frame current:500A  
Ex9CR400  
Ex9CR500



## Standards and Certifications

Standards
Product Standards
IEC 60947-1
IEC 60947-4-1
IEC 60947-5-1
—
Extreme environmental testing standards
IEC 60068-2-1
IEC 60068-2-2
IEC 60068-2-11
IEC 60068-2-30

## Operating Conditions

### Temperature

- -20 - +60

### Altitude

- altitude 2,000 m.

### Humidity

The following conditions must be met during normal operation:

- If the ambient air temperature is +40°C, the atmospheric relative humidity can not exceed 50%. If the temperature is lower, use it under the conditions for a higher degree of humidity
- The monthly mean relative humidity needs to be below 90% in the dampest month
- The effects of condensation on the product surface impacts its performance and needs to be taken into consideration

### Pollution Level



- Level

### Installation



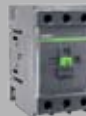
- Contactors with rated current <100A could be either installed by screw or Din-rail. ( DIN Rail(35mm)/DIN Rail(75mm) )
- Contactors with rated current between 115A~500A should be installed with screws.
- Inclination between mounting and vertical plane should be less than  $\pm 30^\circ$

# Ex9C AC Contactor

## Parameters


Ex9C Series AC Contactor		Ex9CS06	Ex9CS09	Ex9CS12	Ex9C09	Ex9C12	Ex9C18
IEC 60947-4-1							
Poles		3P/4P			3P		
Electrical performance							
Operation frequency		50/60			50/60		
Rated conventional heating current $I_{th}$ (A) $\leq 60$		20			25		32
Rated operational current (A)		20			25		32
	AC-1	20			25		32
	380V/400V AC-2/AC-3/AC-4	6	9	12	9	12	18
	660V/690V AC-3	3.8	4.9		6.7	9	10.6
	AC-4/AC-2	3.8	4.9		4.9		6.7
Rated insulation voltage $U_i$ (V)		690			690		
Max. power of 3-phase motor (kW)	380V/400V AC-3/AC-4	2.2	4	5.5	4	5.5	7.5
	660V/690V AC-3	30	40		5.5	7.5	9
	AC-4	30	40		4		5.5
Electrical cycles ( $\times 10^3$ cycles)	380V/400V	AC-3	1,200			1,200	
		AC-4	50	40		50	40
Mechanical cycles ( $\times 10^3$ cycles)		1000			1000		
Holding power	9C (VA)	7.5			9.5		
	9Ci (W)	/			2.4		
Control voltage $U_c$ (V)	9C	AC:24、36、42、48、110、127、220、230、240、380、400、415					
	9Ci	/			DC:12、24、48、110、220		
Connection and installation							
Auxiliary contacts		1NO/1NC			1NO+1NC/2NO+2NC		
Mounting type		DIN Rail(35mm)			DIN Rail(35mm)		
Dimension (L x W x H)		59 x 45 x 58			89 x 45 x 94		
Weight (Kg)		0.18			0.35		
Safe area (mm)		0			3		
Matched thermal overload relay							
Models		Ex9R12			Ex9R38		
Matched mechanical interlocking device							
Models		MIT41			MIT42		
Add-on auxiliary contact blocks							
Top mounting	4NC	AX4104			AX4204		
	1NO+3NC	AX4113			AX4213		
	2NO+2NC	AX4122			AX4222		
	3NO+1NC	AX4131			AX4231		
	4NO	AX4140			AX4240		
	2NC	—			AX4202		
	1NO+1NC	—			AX4211		
	2NO	—			AX4220		
Side mounting	1NO+1NC	—			AX4311		

Note 1: the electrical performance of 9Ci is the same to 9C.

Ex9C25	Ex9C32	Ex9C38	Ex9C40	Ex9C50	Ex9C65	Ex9C80	Ex9C100
							
3P			3P			3P	
50/60			50/60			50/60	
40	50		60	80		125	
40	50		60	80		125	
25	32	38	40	50	65	80	100
17.3	21.9		34	39	42	49	
14	17.3		34	39	42	49	
690			1000			1000	
11	15	18.5	18.5	22	30	37	45
15	18.5		30	33	37	45	
11	15		30	33	37	45	
1,200			1,200			1,200	
50	40		35	30		25	
1000			1000			1000	
10.5			25.0			30.0	
2.4			3.6			1	
AC:24, 36, 42, 48, 110, 127, 220, 230, 240, 380, 400, 415							
DC:12, 24, 48, 110, 220			DC:12 AC/DC:24, 48, 110, 220			DC:12 AC/DC:24, 48, 110, 220, 380	
1NO+1NC/2NO+2NC			1NO+1NC			1NO+1NC	
DIN Rail(35mm)			DIN Rail(35mm)/DIN Rail(75mm)			DIN Rail(35mm)/DIN Rail(75mm)	
100 x 45 x 108			122 x 76 x 123			130 x 87 x 130	
0.4			1.23			1.5	
5			12			12	
Ex9R38			Ex9R100			Ex9R100	
MIT42			MIT43			MIT43	
AX4204							
AX4213							
AX4222							
AX4231							
AX4240							
AX4202							
AX4211							
AX4220							
AX4311							

## Parameters

Ex9C Series AC Contactor			Ex9C115	Ex9C150	Ex9C185
IEC 60947-4-1					
Poles			3P		
Electrical performance					
Operation frequency ( Hz )			50/60		
Rated conventional heating current $I_{th}$ ( A ) $\leq 40$			160	185	215
Rated operational current (A)	AC-1	380V/400V	160	185	215
		AC-3	115	150	185
	AC-4	380V/400V	54	68	81
		660V/690V	115	150	170
	AC-3	660V/690V	48	57	65
		1000V	53	65	65
AC-4	1000V	34	38	42	
	Rated insulation voltage $U_e$ ( V )			1000	
Max. power of 3-phase motor ( kW )	380V/400V	AC-3	55	75	90
		AC-4	30	37	45
	660V/690V	AC-3	110	132	160
		AC-4	50	55	63
	1000V	AC-3	75	90	90
		AC-4	50	55	63
Electrical durability ( $\times 10^3$ cycles )	380V/400V	AC-3	1000		
		AC-4	200	200	200
Holding power(VA)			10		
Control voltage ( V ) AC/DC			24, 36, 42, 48, 110, 127, 220, 230, 240, 380, 400, 415		
Auxiliary contacts			2NO+2NC		
Dimension ( L $\times$ W $\times$ H ) ( mm )			173x120x174		
Weight ( Kg )			3		
Matched thermal overload relay					
Models			Ex9R185		
Matched mechanical interlocking device					
Models			MIT44		
Add-on auxiliary contact blocks : Use categories for AC-15 and DC-13					
Top mounting	4NC		AX4204		
	1NO+3NC		AX4213		
	2NO+2NC		AX4222		
	3NO+1NC		AX4231		
	4NO		AX4240		
	2NC		AX4202		
	1NO+1NC		AX4211		
	2NO		AX4220		
Side mounting	1NO+1NC		AX4411		
	2NC		AX4402		
	2NO		AX4420		

Ex9C225		Ex9C265		Ex9C300		Ex9C400		Ex9C500	
									
3P					3P				
50/60					50/60				
275		330		330		430		610	
275		330		330		430		610	
225		265		300		400		500	
96		117		125		150		175	
225		265		280		400		450	
85		105		115		135		150	
68		95		95		180		200	
42		57		57		80		80	
1000					1000				
110		132		160		220		250	
55		63		75		90		100	
200		250		250		355		400	
80		100		110		132		150	
90		132		132		250		315	
63		80		80		110		110	
1000					1000				
200		200		200		200		200	
10					10				
24, 36, 42, 48, 110, 127, 220, 230, 240, 380, 400, 415					24, 36, 42, 48, 110, 127, 220, 230, 240, 380, 400, 415				
2NO+2NC									
213x145x208					216x160x229				
6					9.5				
Ex9R500					Ex9R500				
MIT44					MIT44				
AX4204					AX4204				
AX4213					AX4213				
AX4222					AX4222				
AX4231					AX4231				
AX4240					AX4240				
AX4202					AX4202				
AX4211					AX4211				
AX4220					AX4220				
AX4411					AX4411				
AX4402					AX4402				
AX4420					AX4420				

## Accessories

Accessories of Ex9C Series AC Contactor including :  
 AX4 series auxiliary contacts, TDD series pneumatic time block, CCU series surge suppressor

### Contactor



CCU surge suppressor

- 【Function】**  
 Suppress the instantaneous high frequency voltage
- 【Type】**
- CCU41
  - CCU42
  - CCU43

AX43 Auxiliary Contact



AX43 Auxiliary Contact

- 【Function】**  
 Control solenoid load
- 【Type】**
- 1N/O+1N/C



AX42 Auxiliary Contact  
 ( 2 poles )

- 【Function】**  
 Control the load of electromagnet
- 【Type】**
- AX4202 2NC
  - AX4211 1NO+1NC
  - AX4220 2NO



AX42 Auxiliary Contact  
 ( 4 poles )

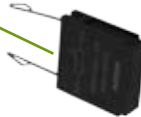
- 【Function】**  
 Control the load of electromagnet
- 【Type】**
- AX4204 4NC
  - AX4213 1NO+3NC
  - AX4222 2NO+2NC
  - AX4231 3NO+1NC
  - AX4240 4NO



TDD pneumatic time block

- 【Function】**  
 Time delay when making or breaking
- 【Type】**
- TDD41 On delay
  - TDD42 Off delay

### Mini Contactor



CCU Surge suppressor

- 【Type】**  
 CCU41



AX41 Auxiliary contacts ( 4 poles )

- 【Type】**
- AX4104 4NC
  - AX4113 1NO+3NC
  - AX4122 2NO+2NC
  - AX4131 3NO+1NC
  - AX4140 4NO



## Ex9C AC Contactor



AX41



AX42 ( 2 poles )



AX42 ( 4 poles )



AX43



AX44



TDD41/42



CCU41



CCU42



CCU43

### Auxiliary contacts ( CE Approvals )

Models	Installation	Contacts number	Matching contactor model
AX4104	Top mounting	4NC	Ex9CS06-12
AX4113		1NO+3NC	
AX4122		2NO+2NC	
AX4131		3NO+1NC	
AX4140		4NO	
AX4202		2NC	Ex9C09-Ex9C500
AX4211		1NO+1NC	
AX4220		2NO	
AX4204		4NC	
AX4213		1NO+3NC	
AX4222		2NO+2NC	
AX4231		3NO+1NC	
AX4240		4NO	
AX4311	Side mounting	1NO+1NC	Ex9C09-Ex9C100, Ex9CC Series
AX4411		1NO+1NC	Ex9C115-Ex9C500
AX4402		2NC	
AX4420		2NO	

### Pneumatic time block

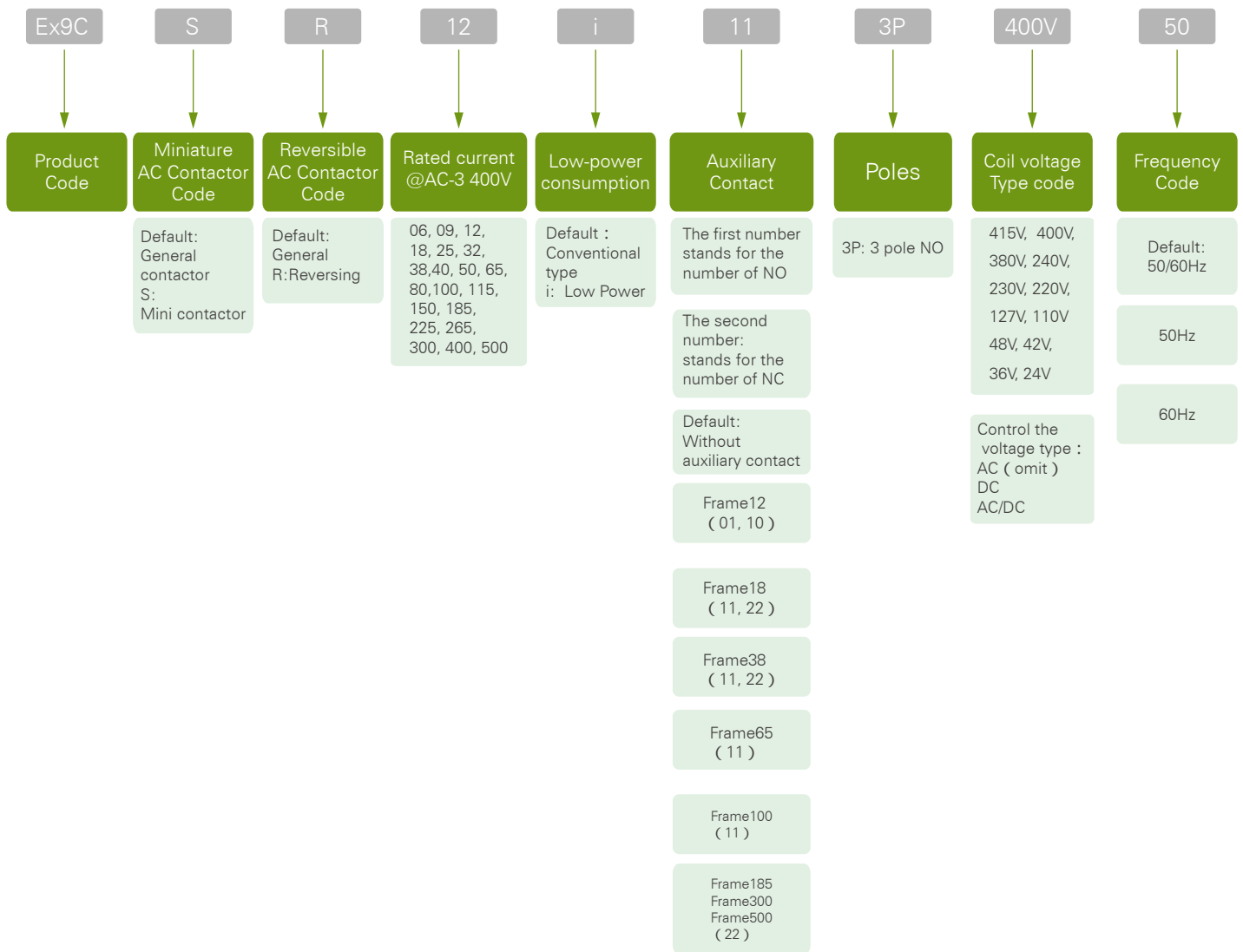
Models	Range of time delay	Number of contacts	Delay	Matching contactor
TDD41A	0.1 - 3S	1NO+1NC	On delay	Ex9C09 - Ex9C500
TDD41B	0.1 - 30S			
TDD41C	10 - 180S			
TDD42A	0.1 - 3S		Off delay	Ex9C09 - Ex9C500
TDD42B	0.1 - 30S			
TDD42C	10 - 180S			

### Surge suppressor

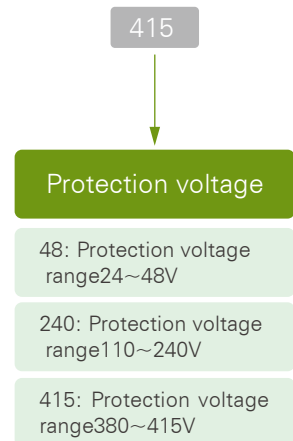
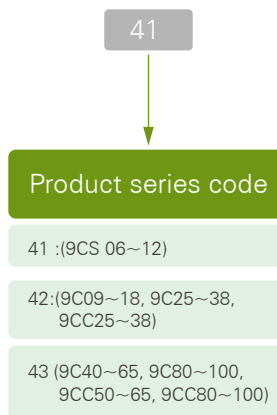
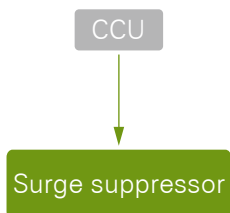
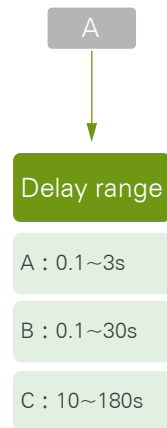
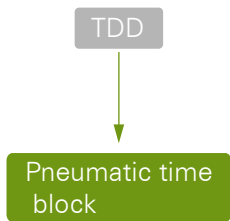
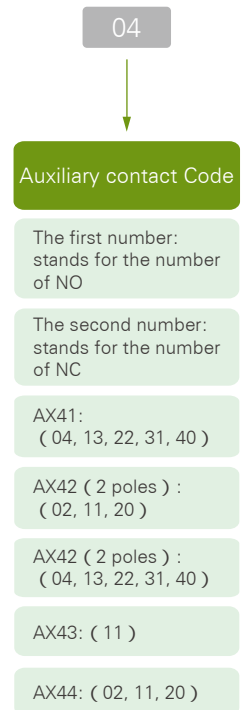
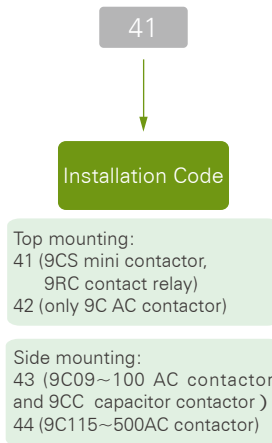
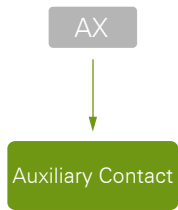
Models	Specification	Protection voltage range ( V )	Matching contactor
CCU41	48	24/36/42/48	Ex9CS06 ~ 12
	240	110/127/220/230/240	
	415	380/400/415	
CCU42	48	24/36/42/48	Ex9C09 ~ 18
	240	110/127/220/230/240	Ex9C25 ~ 38
	415	380/400/415	Ex9CC25 ~ 38
CCU43	48	24/36/42/48	Ex9C40 ~ 65
	240	110/127/220/230/240	Ex9C80 ~ 100
	415	380/400/415	Ex9CC50 ~ 65 Ex9CC80 ~ 100

# Ex9C AC Contactor

## Selection



Accessories Selection



## Electrical cycles

Electrical cycles of Ex9C series contactor @AC-2 or AC-4 (  $U_e \leq 440V$  )

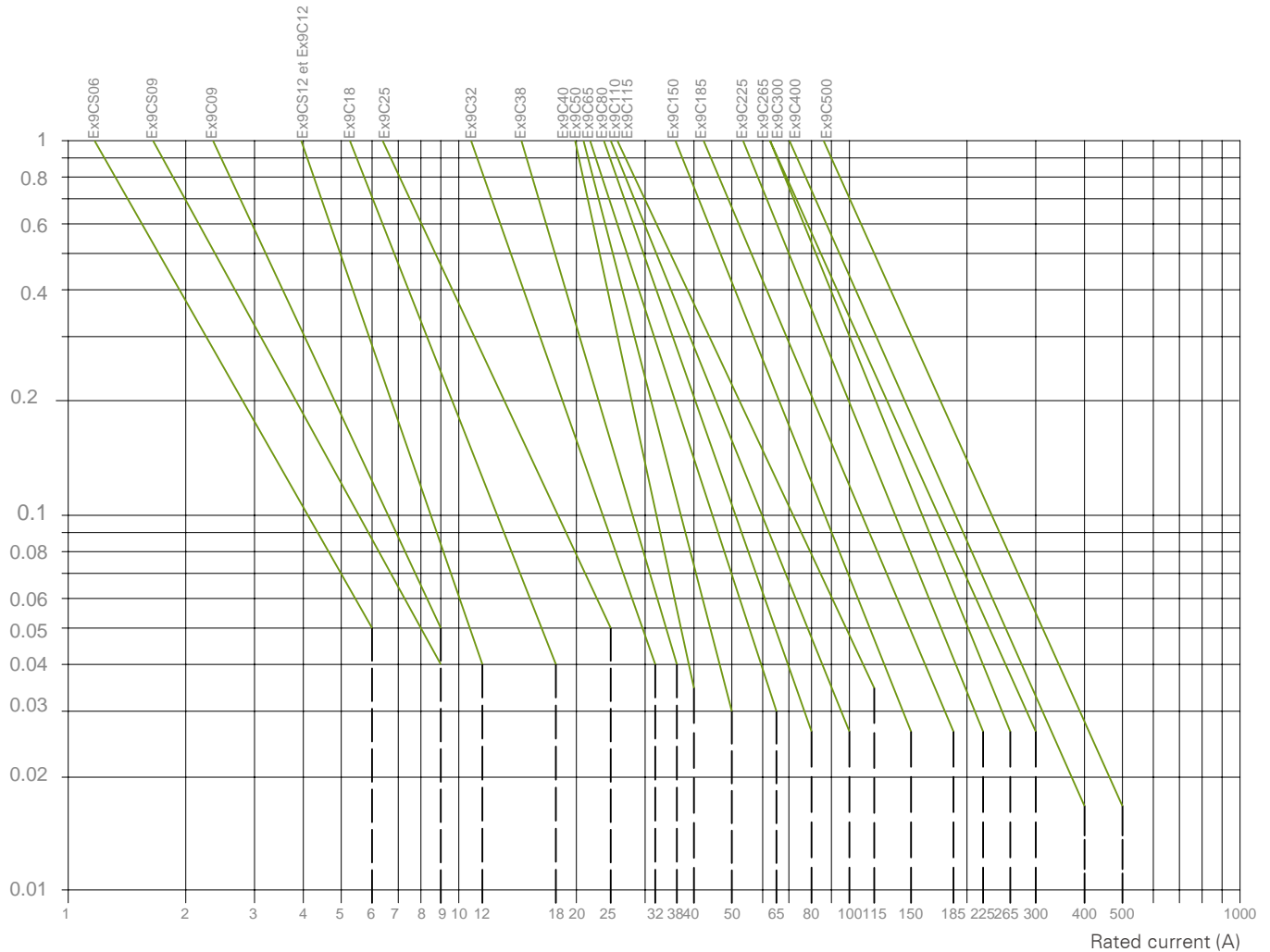
Three-phase asynchronous

For Cage motor(AC-4)or slip ring motor(AC-2), the contactors will break when locked rotor

breaking current(Ic) @AC-2 categories is  $2.5 \times I_e$ .

breaking current(Ic) @AC-4 categories is  $6 \times I_e$ .( $I_e$ =rated current of motor)

millions of operating cycles



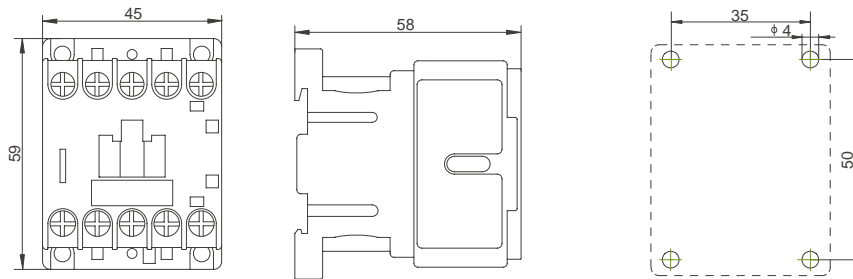
Example : Asynchroner Motor ,  $P=5.5kW$  ,  $U_e=400V$  ,  $I_e=11A$  ,  $I_c=6 \times I_e=66A$  OR Asynchroner Motor ,  $P=5.5kW$  ,  $U_e=415V$  ,  $I_e=11A$  ,  $I_c=6 \times I_e=66A$

Need to 2 billion times the life, the selection of the curve indicates that required contactor specifications : : Ex9C25

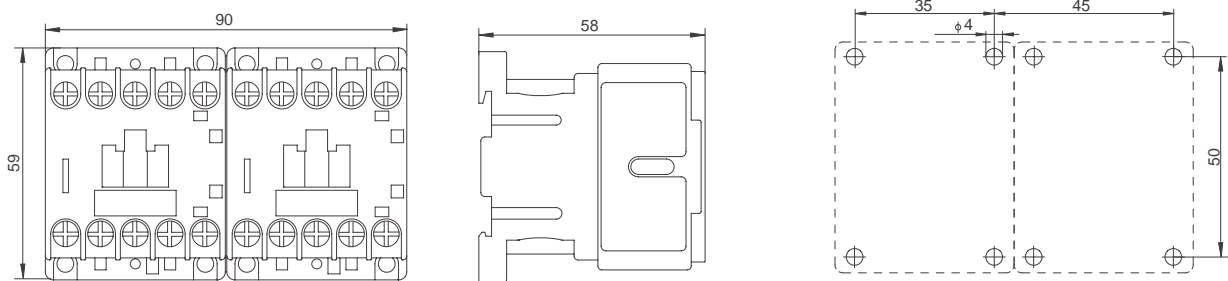
Dimension

mm

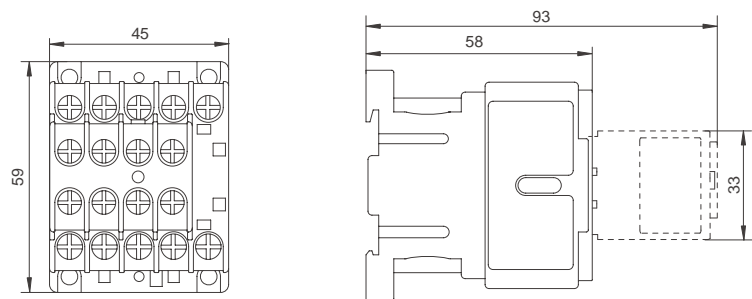
Ex9CS06/Ex9CS09/Ex9CS12



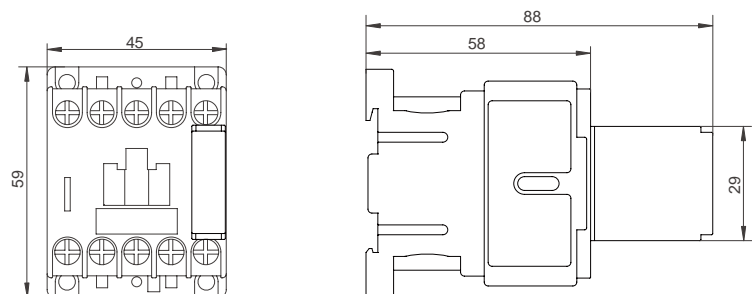
Ex9CSR06/Ex9CSR09/Ex9CSR12



Ex9CS06/Ex9CS09/Ex9CS12+AX41(auxiliary contacts)



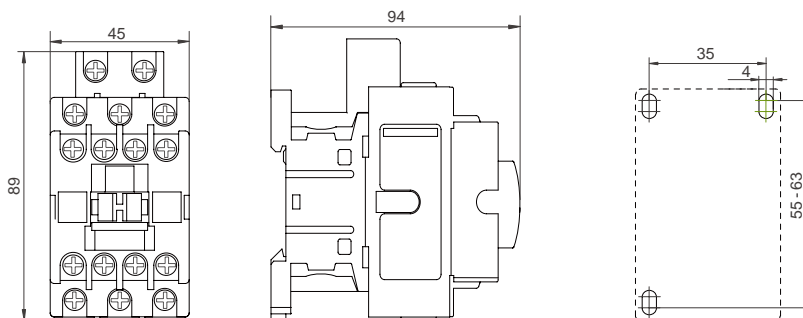
Ex9CS06/Ex9CS09/Ex9CS12+CCU41



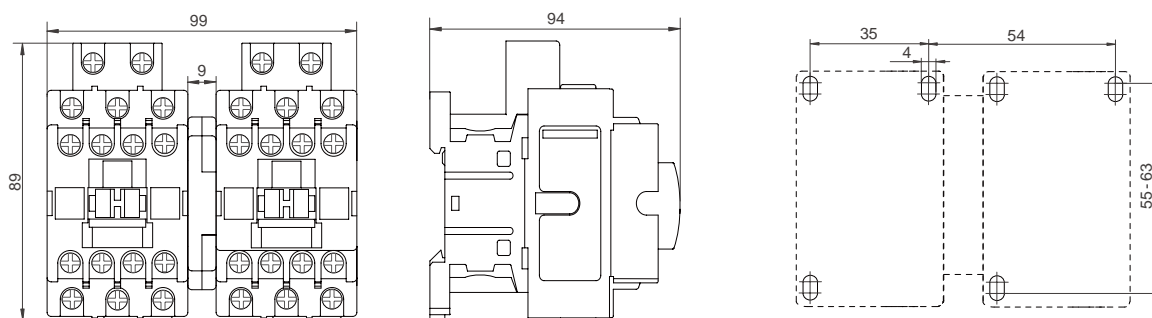
# Ex9C AC Contactor

mm

Ex9C09/Ex9C12/Ex9C18

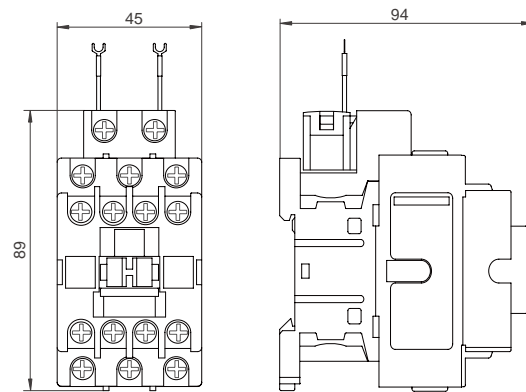
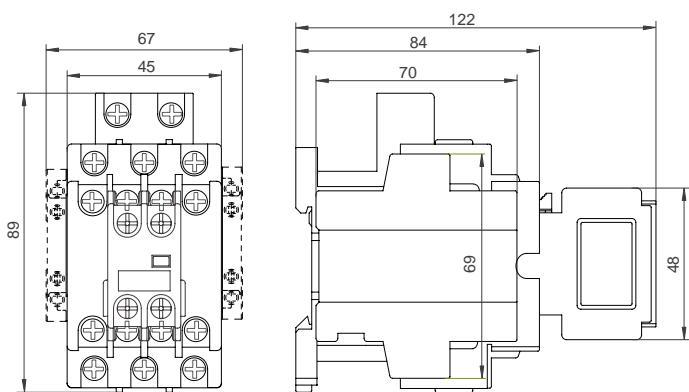


Ex9CR09/Ex9CR12/Ex9CR18

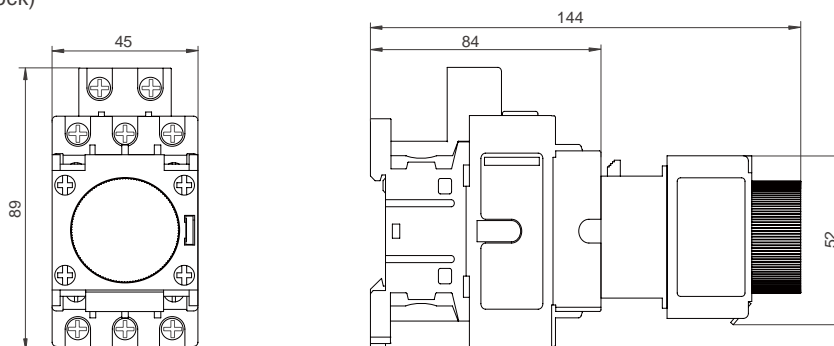


Ex9C09/Ex9C12/Ex9C18 +AX42/AX43(auxiliary contact)

Ex9C09/Ex9C12/Ex9C18 +CCU42(surge suppressor)



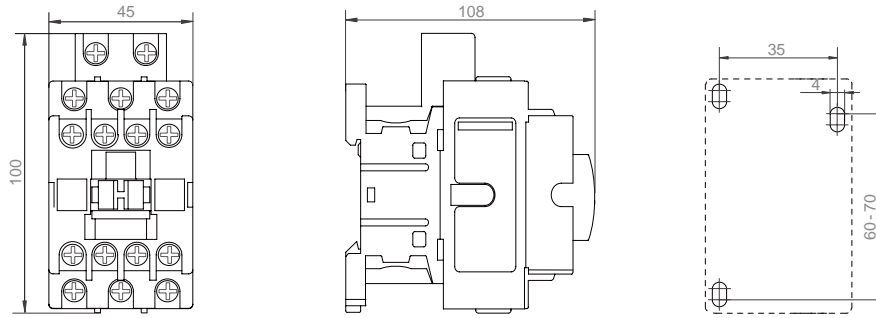
Ex9C09/Ex9C12/Ex9C18+TDD(pneumatic time block)



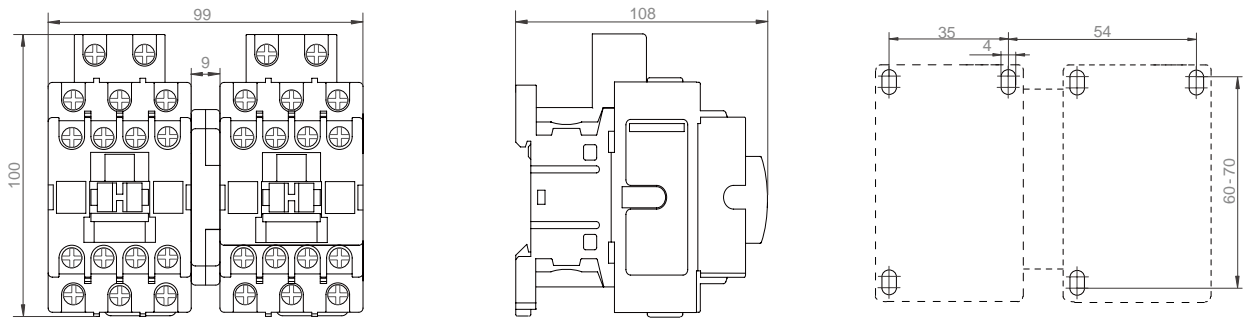
# Ex9C AC Contactor

Ex9C25/Ex9C32/Ex9C38

mm

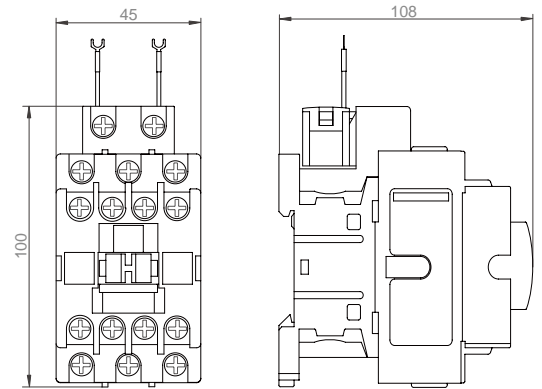
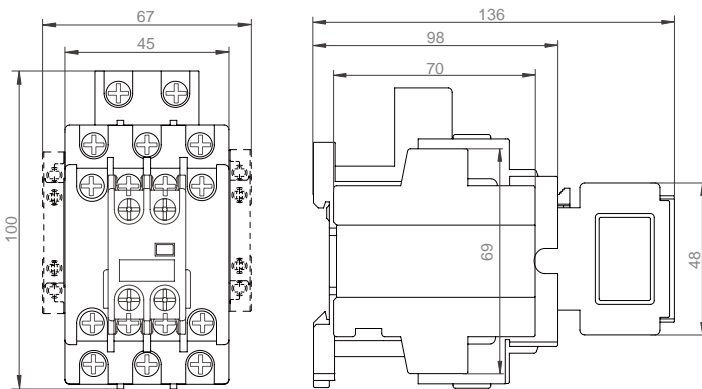


Ex9CR25/Ex9CR32/Ex9CR38

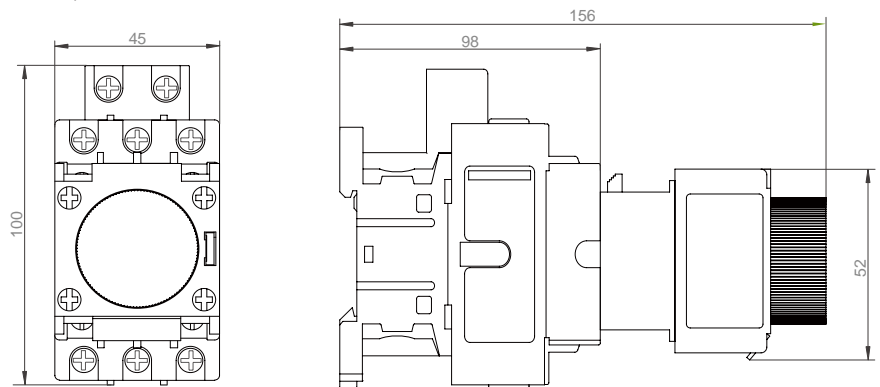


Ex9C25/Ex9C32/Ex9C38+AX42/AX43(auxiliary contacts)

Ex9C25/Ex9C32/Ex9C38/CCU42(surge suppressor)



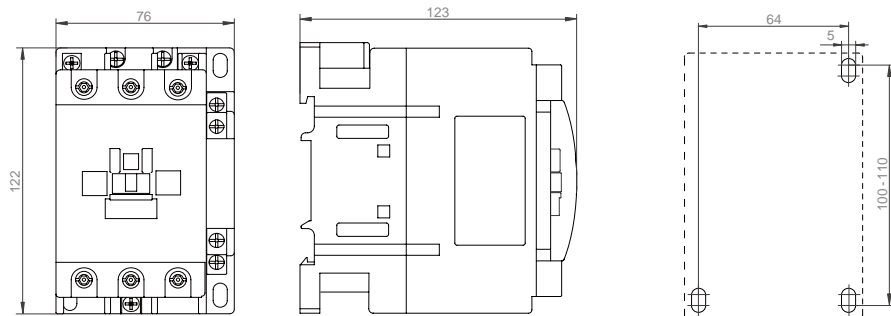
Ex9C25/Ex9C32/Ex9C38+TDD( pneumatic time block)



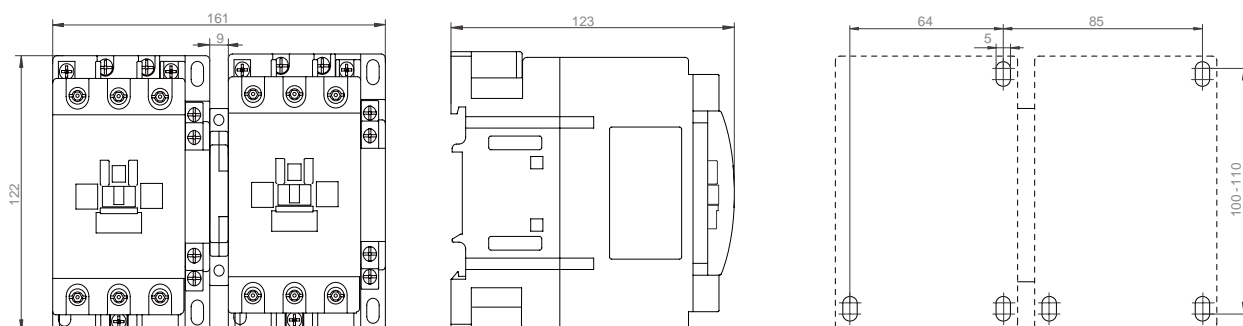
# Ex9C AC Contactor

Ex9C40/Ex9C50/Ex9C65

mm

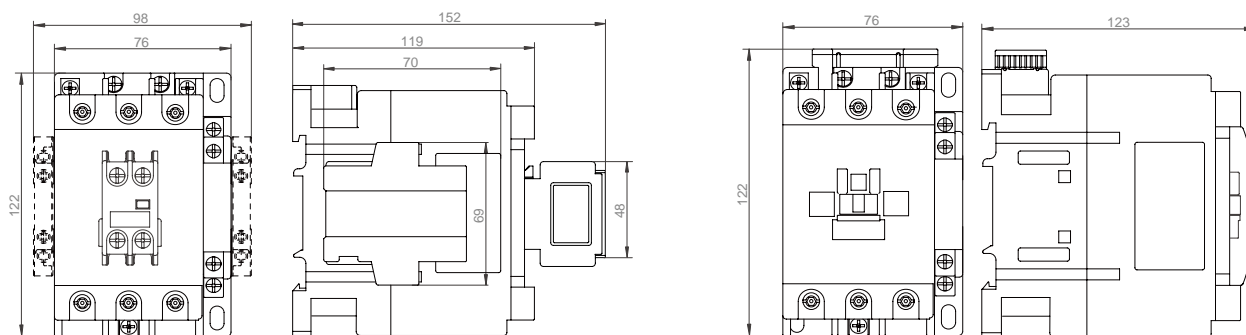


Ex9CR40/Ex9CR50/Ex9CR65

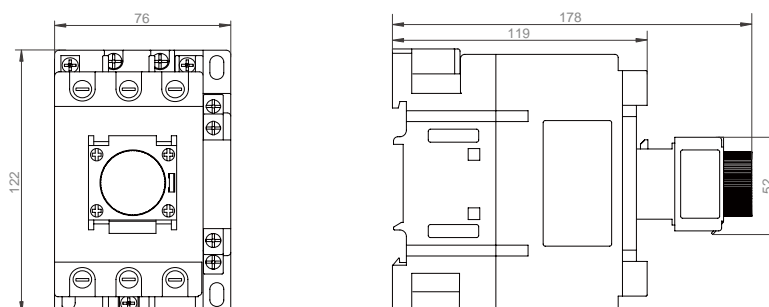


Ex9C40/Ex9C50/Ex9C65+AX42/AX43(auxiliary contact)

Ex9C40/Ex9C50/Ex9C65+CCU43(surge suppressor)



Ex9C40/Ex9C50/Ex9C65+TDD(pneumatic time block)

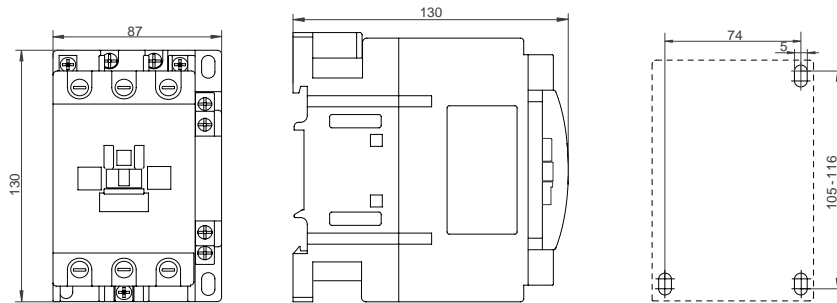




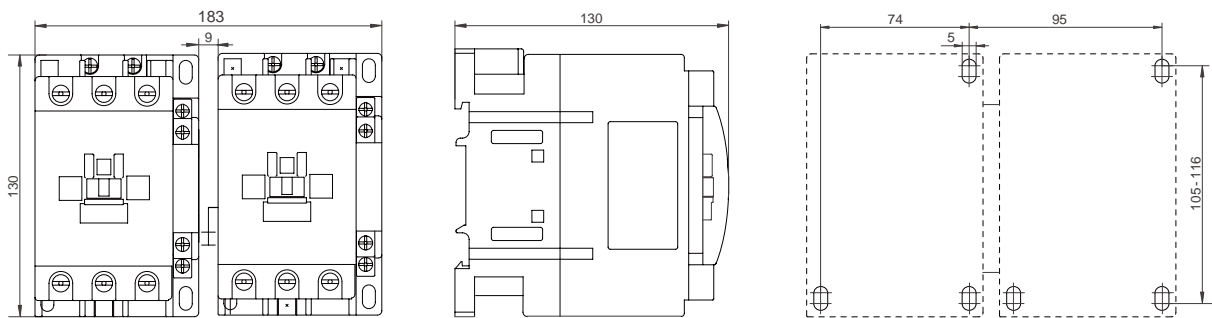
# Ex9C AC Contactor

Ex9C80/Ex9C100

mm

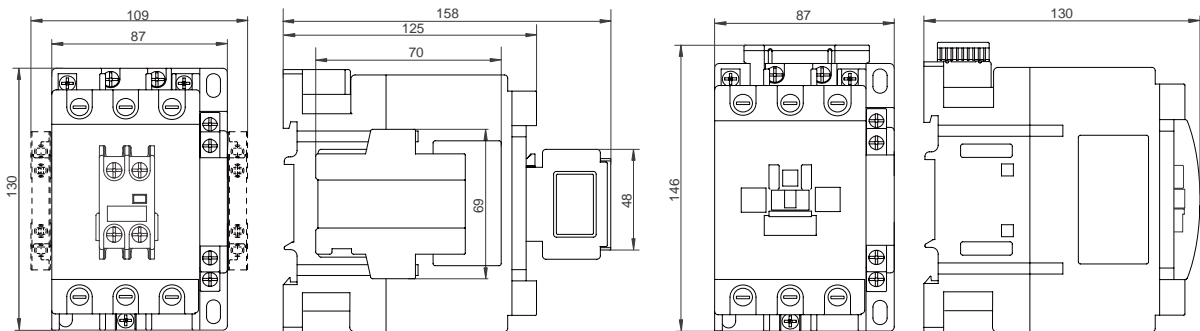


Ex9CR80/Ex9CR100

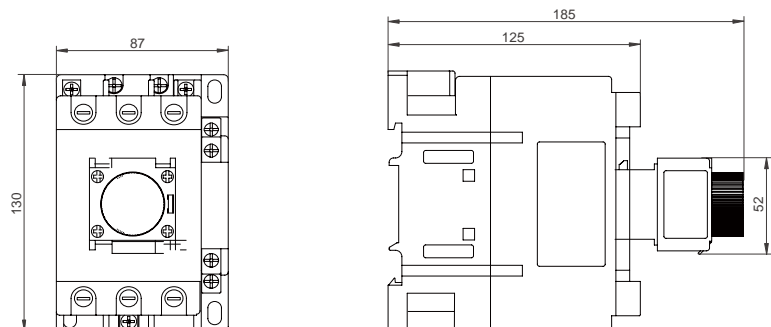


Ex9C80/Ex9C100+AX42/AX43(auxiliary contact)

Ex9C80/Ex9C100+CCU43 (surge suppressor)



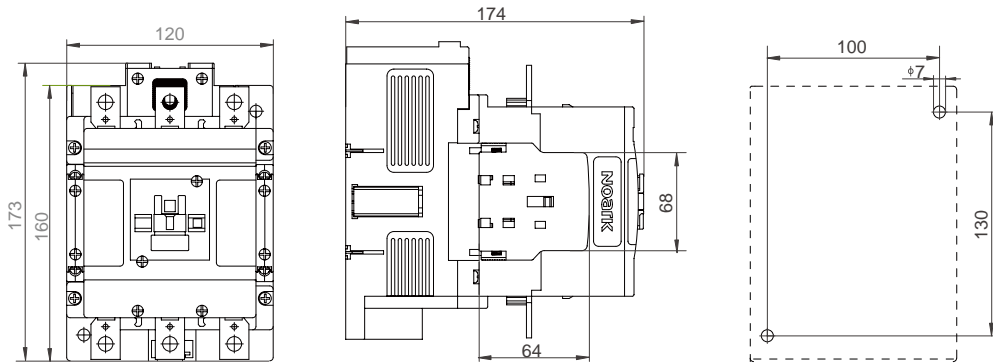
Ex9C80, Ex9C100 +TDD(pneumatic time block)



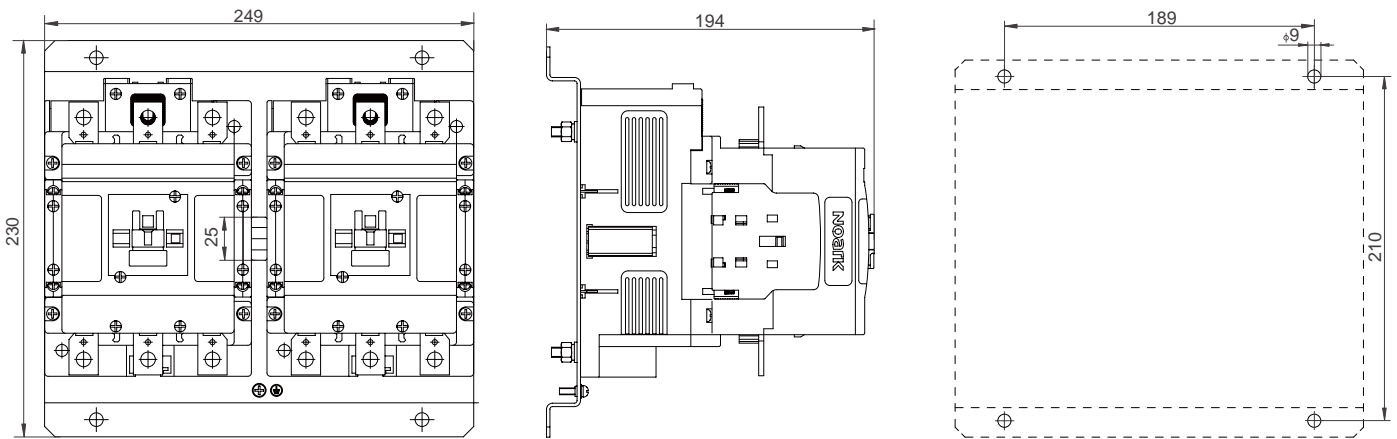
# Ex9C AC Contactor

Ex9C115/Ex9C150/Ex9C185

mm



Ex9CR115/Ex9CR150/Ex9CR185



Ex9C115/Ex9C150/Ex9C185+AX42/AX44(auxiliary contacts)

