



賀電  
NHD

# MAGNETIC SWITCHES



EC Declaration  
of Conformity



C US  
LR109321



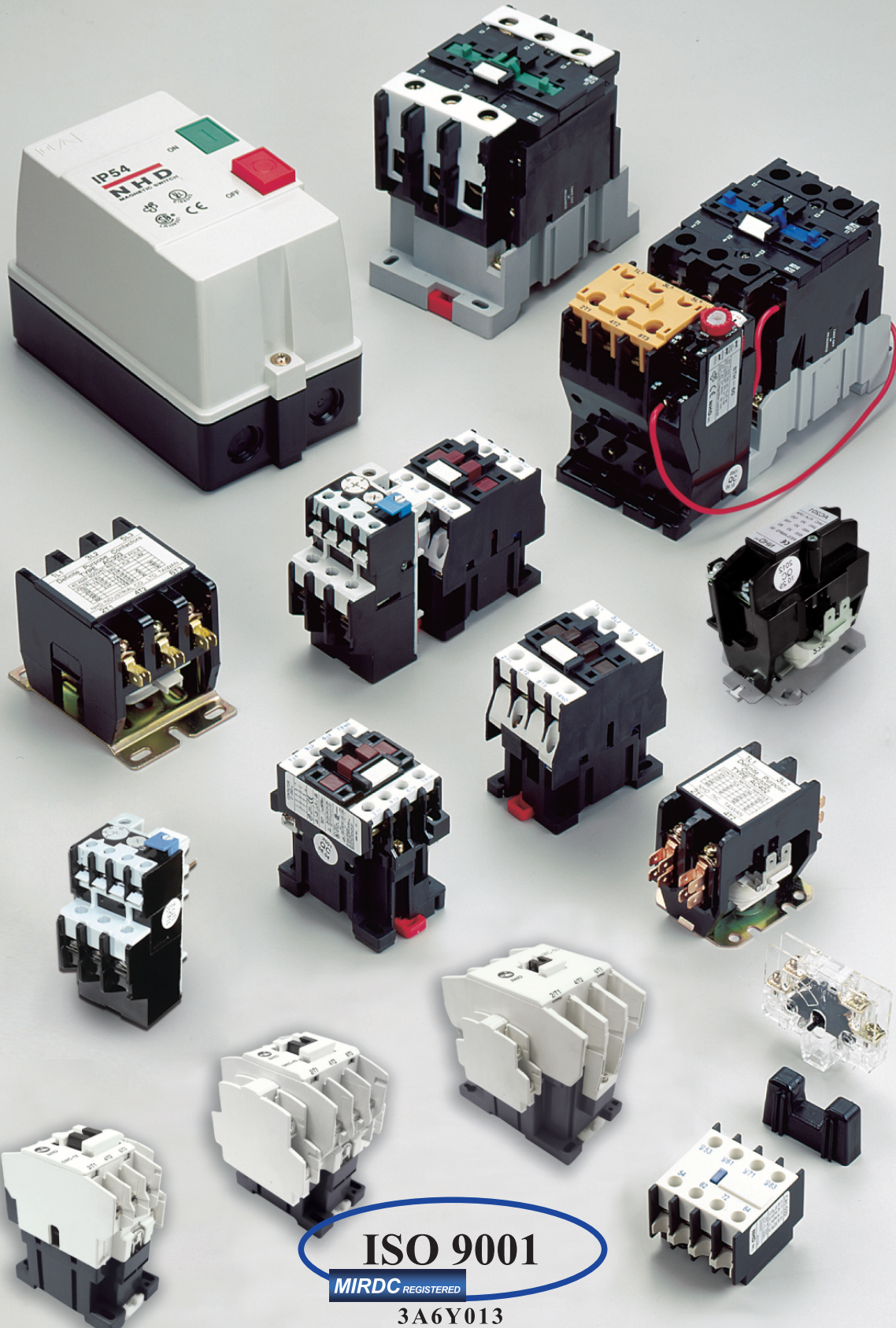
6240



LISTED  
E168542



A004239



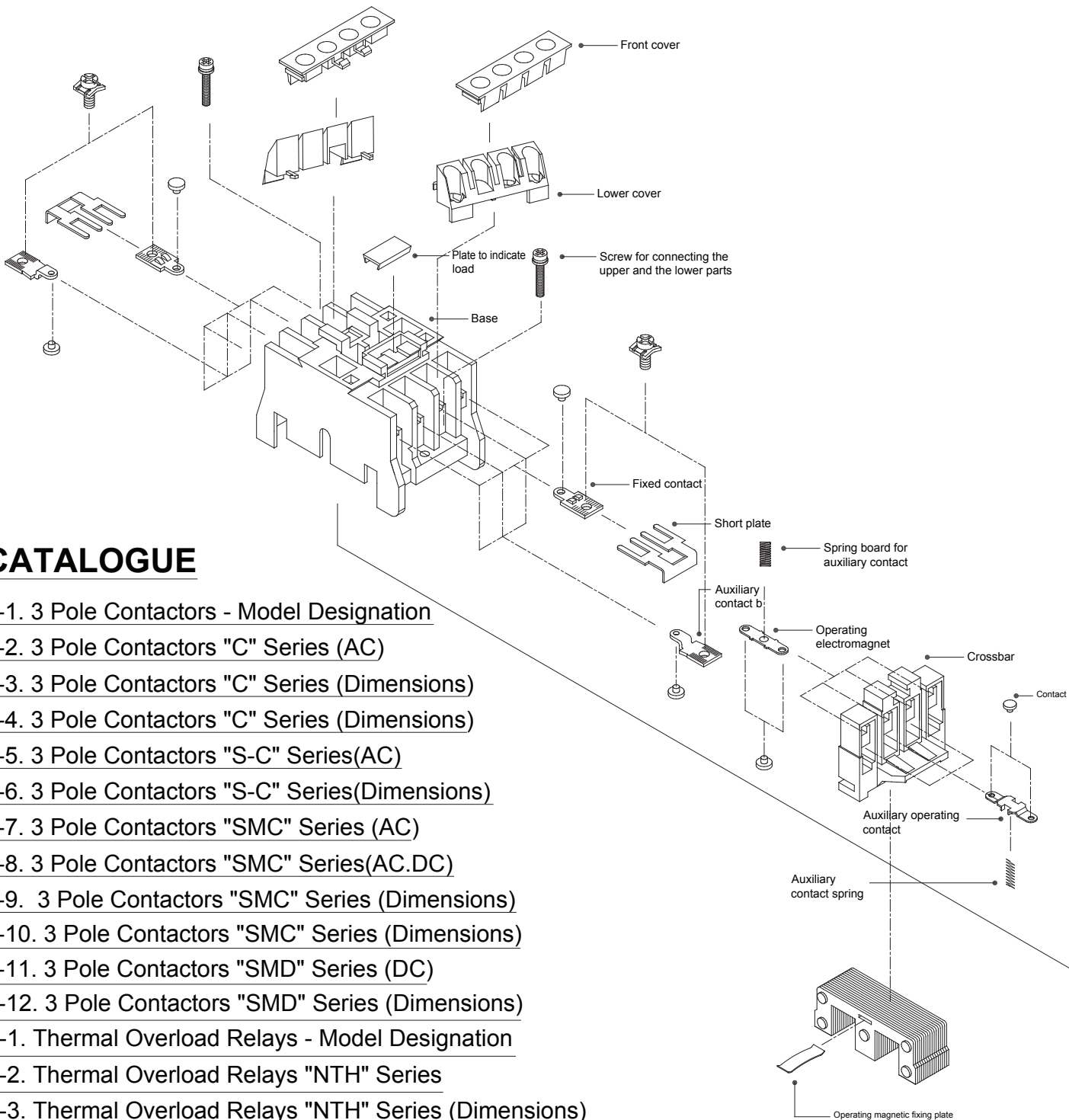
ISO 9001

MIRDC REGISTERED

3A6Y013

# NHD

## Component and accessories



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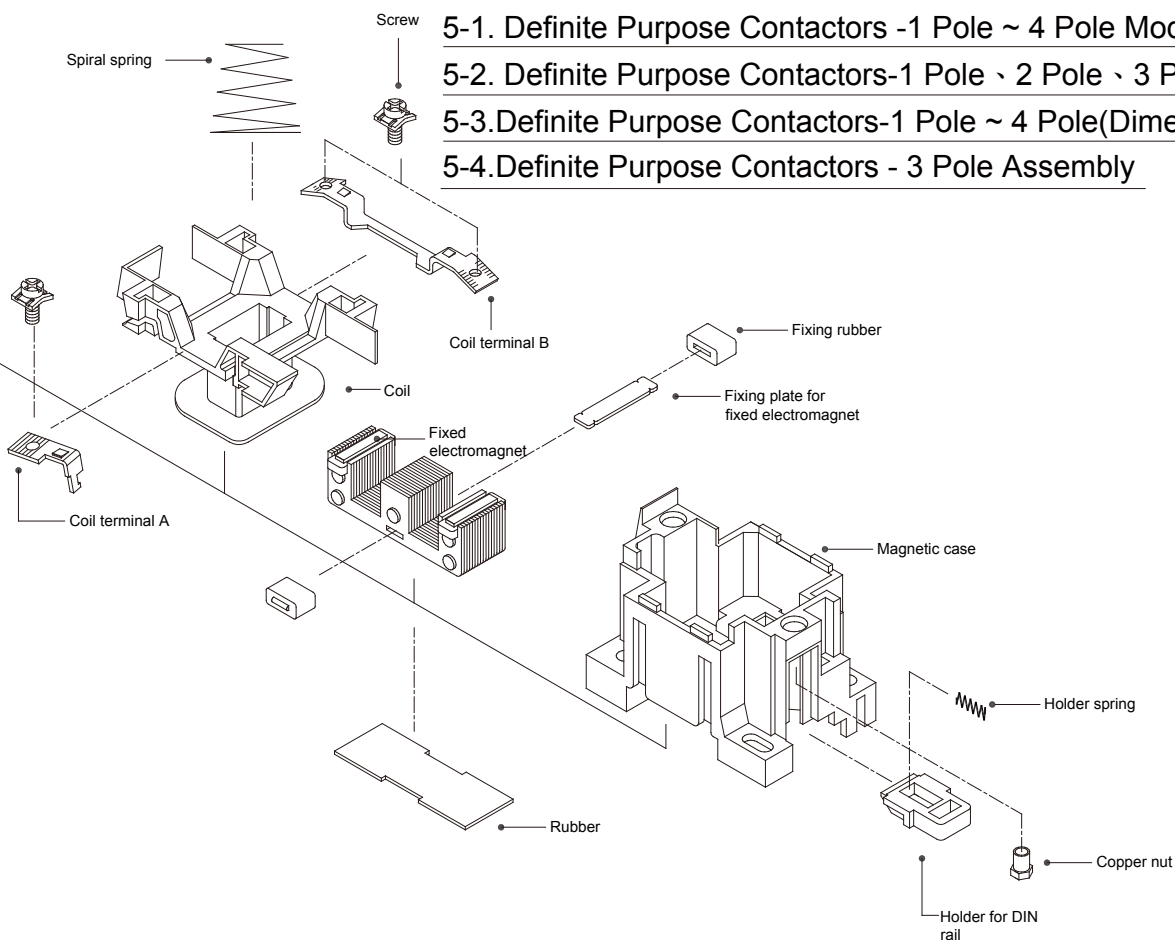
4-6. Moulded Plastic Enclosure(MS1) Assembly

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5-2. Definite Purpose Contactors-1 Pole 、 2 Pole 、 3 Pole and 4 Pole

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# Three Pole Contactors

## Model Designation

**C** – **12D10G7**  
1    2    3    4

### 1. Series

C
C2
S
SMC
SMD

### 2. Type

C	06D 09D 11D 12D 18D 25D 35D 45D 55D 65D 80D 100D
C2	09DC 11DC 12DC 18DC 25DC 35DC 45DC 55DC 65DC 80DC 100DC
S	C11 C12 C16 C21 C35 C50 C60 C65 C80 C100 C125 C150 C220
SMC	09 12 18 22 32 40 50 65 75 85 100
SMD	09 12 18 22 32 40

### 3. Auxiliary Contacts

10	1a	01	1b
11	1a1b	22	2a2b

### 4. Coil Control Voltage

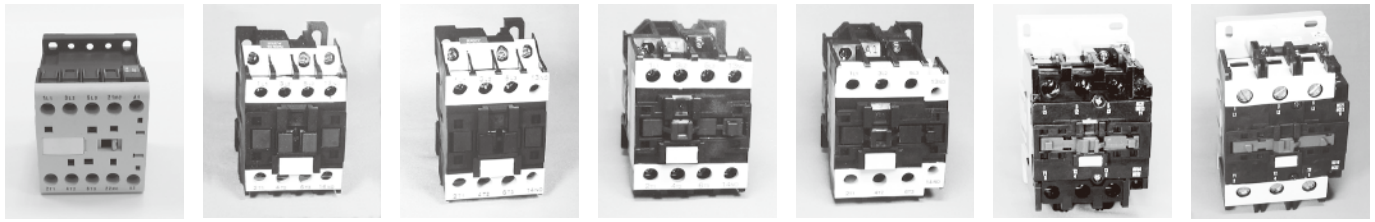
<b>Coil for C-06D to C-100D (AC)</b>																
24V	42V	48V	110V	120V	190V	220V	230V	240V	380V	400V	415V	440V	480V	525V	575V	600V
A7	B7	C7	D7	E7	F7	G7	H7	I7	J7	K7	L7	M7	N7	O7	P7	Q7
<b>Coil for S-C11 to S-C220 (AC)</b>																
24V	42V	48V	110V	120V		220V	230V	240V	380V		415V	440V		525V		
A5	B5	C5	D5	E5		G5	H5	I5	J5		L5	M5		O5		
A6	B6	C6	D6	E6		G6	H6	I6	J6		L6	M6		O6		
						G7										
<b>Coil for SMC-09 to SMC-100 (AC)</b>																
24V	42V	48V	110V	220V	240V	380V	415V	440V	575V							
A7	B7	C7	D5	G5	I5	J5	L5	M5	P5							
			D6	G6	I6	J6	L6	M6	P6							
<b>Coil for SMD-09 to SMD-40 (DC)</b>																
24V	110V	220V														
AD	DD	GD														
A~V for Voltage : 5 for 50Hz ; 6 for 60Hz ; 7 for 50/60Hz																

Note: The coil might be different in different area. If you have a special requirement of the coil, please let us know.  
We can produce as your requirement.

# Three Pole Contactors

"C"- Series 9A to 110A(AC3)

CONTROL CIRCUIT : AC



C-06D10

C-12D10

C-18D10

C-25D10

C-35D10

C-45D11

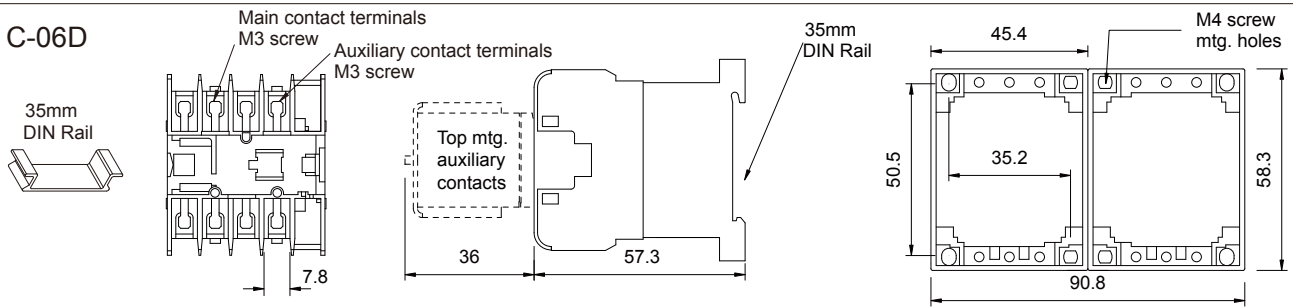
C-80D11

Model Name	Instantaneous auxiliary contacts		Rated Insulation voltage Ui	AC1 duty Ith	le	AC3 duty 3 phase				AC3 duty 1 phase		Weight Kg	Approval
	N/O	N/C				220V	380V	440V	575V	120V	230V		
	KW HP	KW HP				KW HP	KW HP	KW HP	KW HP				
C-06D10	1	-	1000V	16A	9A	2.2	3.7	3.7	3.7	0.2	1.1	0.177	CE CCC A004239
C-06D01	-	1				3	5	5	5	0.33	1.5		
C-09D10	1	-	1000V	20A	9A	2.2	3.7	3.7	3.7	0.37	1.5	0.350	SP US CE UL LISTED CCC A004239
C-09D01	-	1				3	5	5	5	0.5	2		
C-11D10	1	-	1000V	25A	12A	3	5.5	5.5	5.5	0.55	1.5	0.350	SP US CE UL LISTED CCC A004239
C-11D01	-	1				4	7.5	7.5	7.5	0.75	2		
C-12D10	1	-	1000V	25A	16A	4	7.5	7.5	7.5	0.75	2.2	0.350	SP US CE UL LISTED CCC A004239
C-12D01	-	1				5.5	10	10	10	1	3		
C-18D10	1	-	1000V	32A	22A	5.5	11	11	11	1.5	3.7	0.380	SP US CE CCC A004239
C-18D01	-	1				7.5	15	15	15	2	5		
C-25D10	1	-	1000V	40A	32A	7.5	15	15	15	2.2	4	0.525	SP US CE UL LISTED CCC A004239
C-25D01	-	1				10	20	20	20	3	5.5		
C-35D10	1	-	1000V	50A	42A	11	19	19	19	3	5.5	0.550	SP US CE CCC A004239
C-35D01	-	1				15	25	25	25	4	7.5		
C-45D11	1	1	1000V	60A	55A	15	30	30	30			1.100	CE CCC A004239
						20	40	40	40				
C-55D11	1	1	1000V	80A	65A	19	33	33	33			1.100	CE CCC A004239
						25	45	45	45				
C-65D11	1	1	1000V	90A	80A	22	37	37	37			1.100	CE CCC A004239
						30	50	50	50				
C-80D11	1	1	1000V	125A	105A	25	45	55	55			1.430	CE CCC A004239
						35	60	75	75				
C-100D11	1	1	1000V	130A	110A	30	55	55	60			1.430	CE CCC A004239
						40	75	75	80				

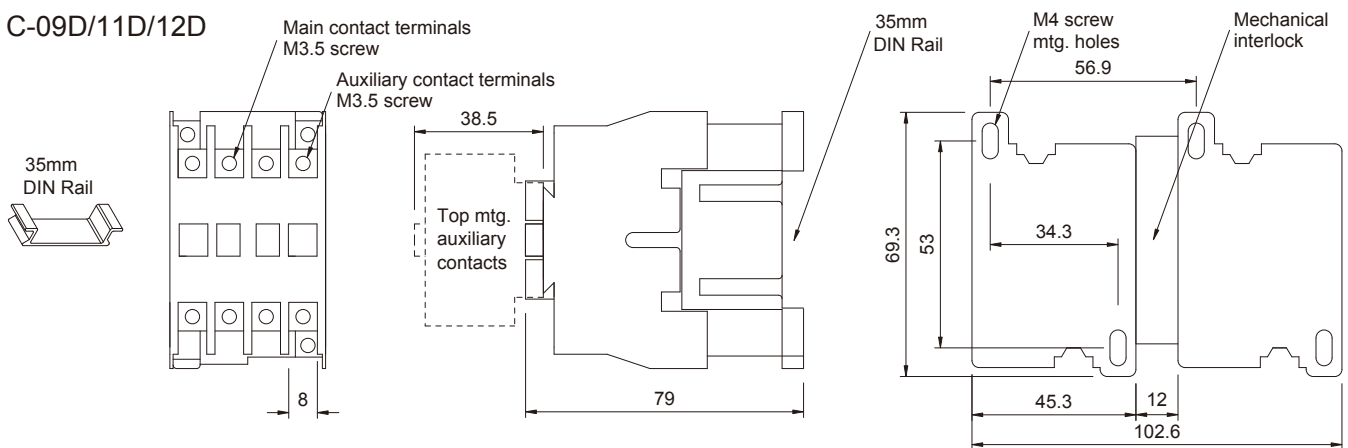
# "C"-Series Contactors

## Dimensions(mm)

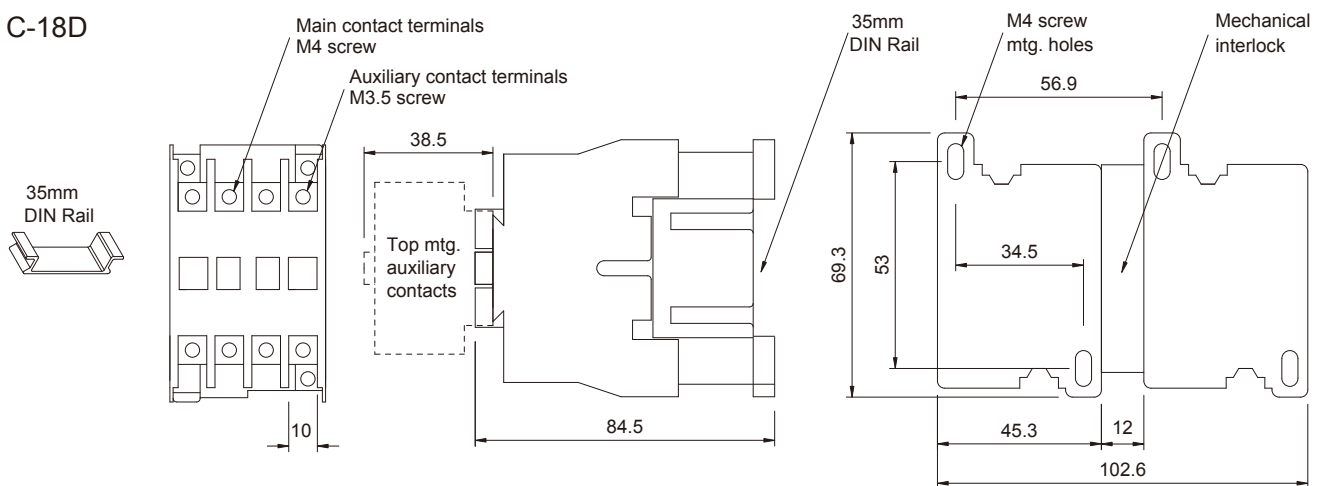
C-06D



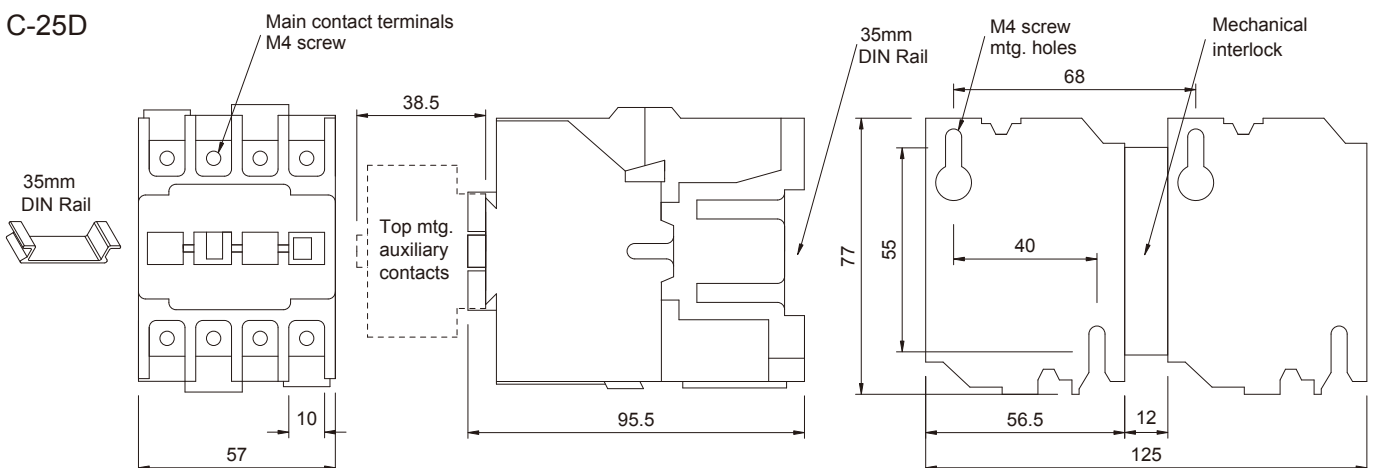
C-09D/11D/12D



C-18D



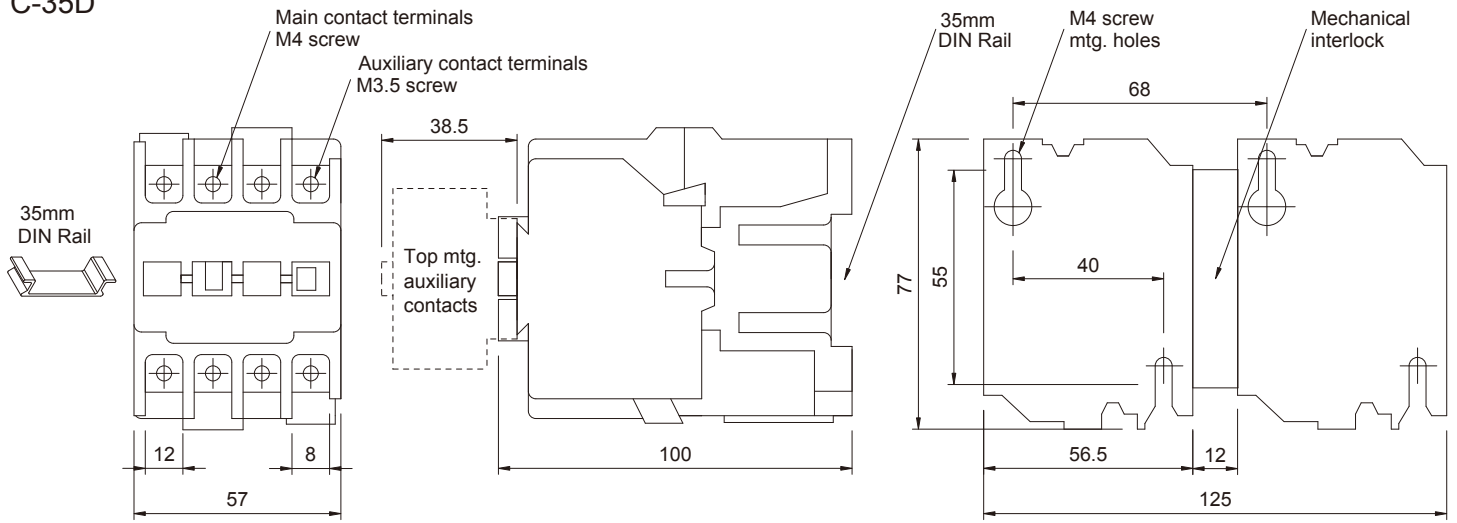
C-25D



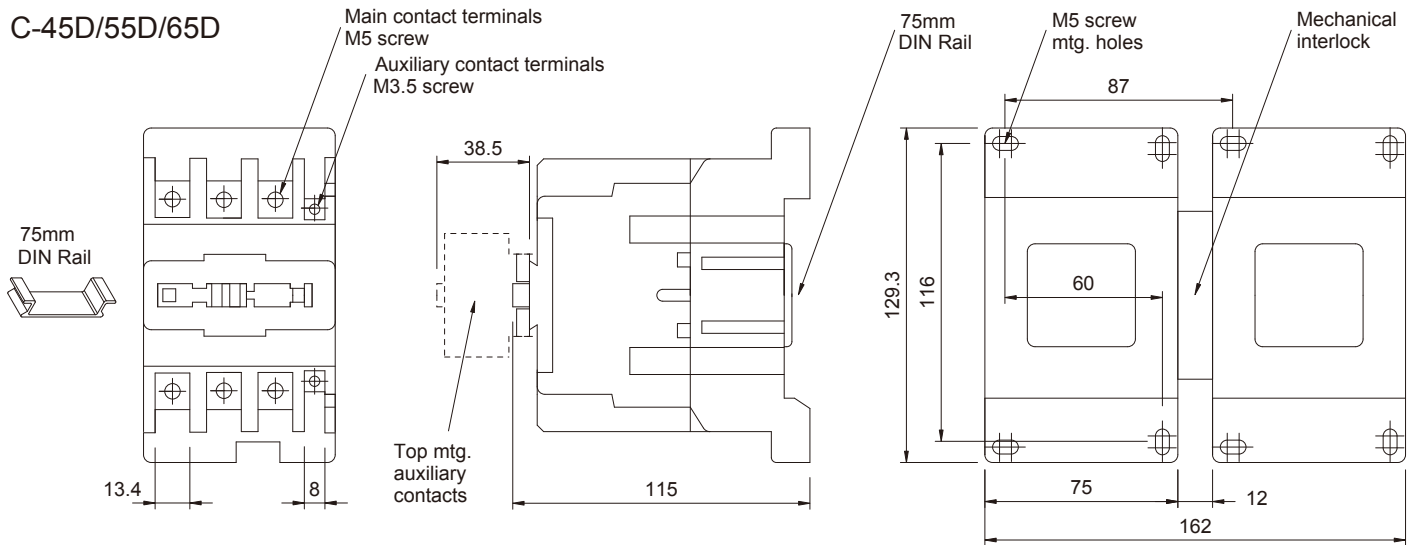
# "C"-Series Contactors

## Dimensions(mm)

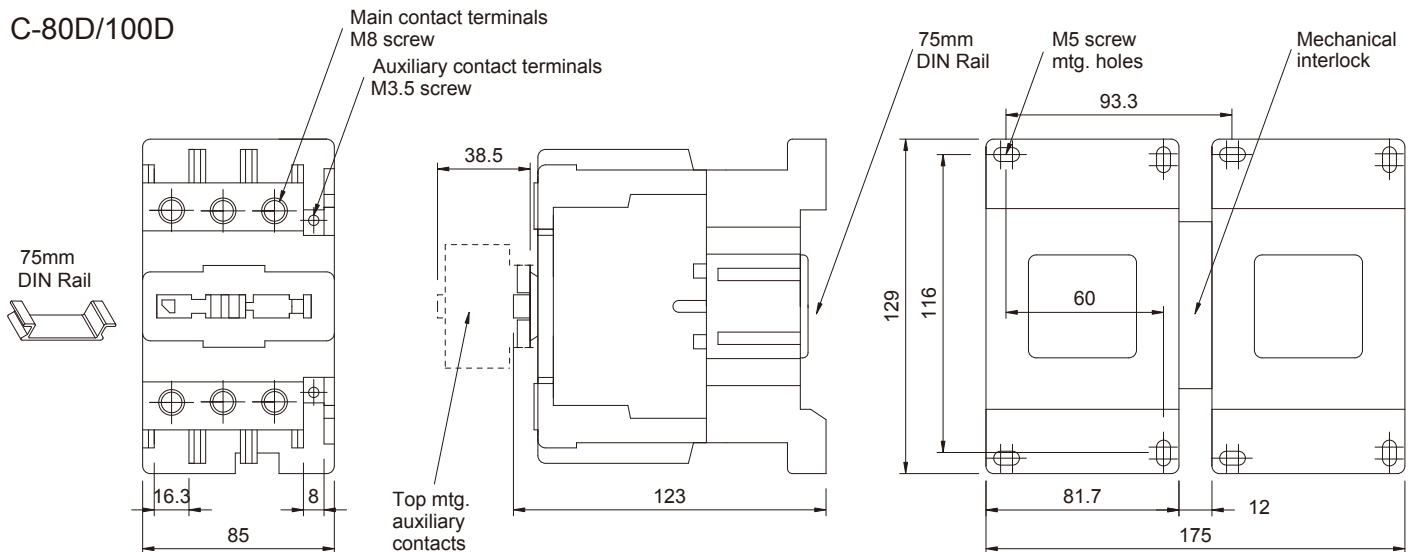
C-35D



C-45D/55D/65D



C-80D/100D



# Three Pole Contactors

"S-C"-Series 12A to 220A(AC3)

CONTROL CIRCUIT : AC



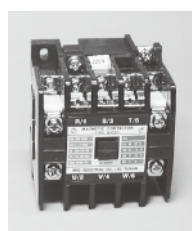
S-C11



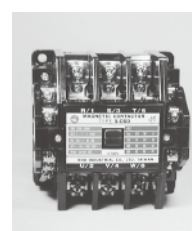
S-C12



S-C16



S-C21



S-C60



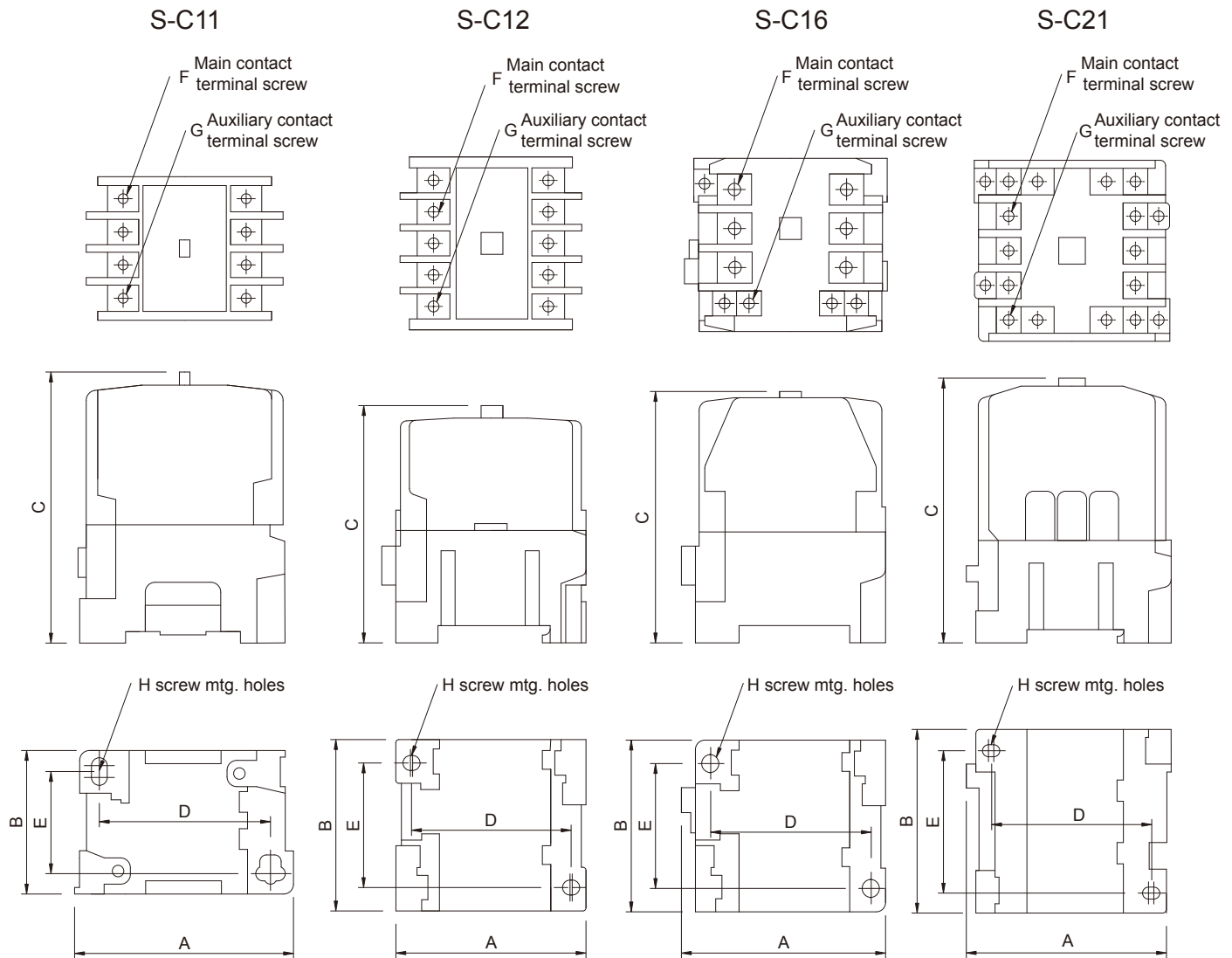
S-C80

Model Name	Instantaneous		AC1 duty $\theta \leq 40^\circ\text{C}$	AC3 duty 1 phase		AC3 duty 3 phase				Ie	Weight Kg	Approval	
	Auxiliary Contacts			110V	220V	220V	380V	415V	500V				
	N/O	N/C	Ith	KW HP	KW HP	KW HP	KW HP	KW HP	KW HP				
S-C11	4a	1	20A	0.55	1.2	3	4	4	4	12A	0.300		
	3a1b	-		1	0.75	1.5	4	5.5	5.5				5.5
S-C12	4a1b	1	20A	0.55	1.2	3	4	4	4	12A	0.335		
	5a	2		0	0.75	1.5	4	5.5	5.5				5.5
	3a2b	0		2									
S-C16	1	1	30A	0.75	1.5	4	5.5	5.5	5.5	16A	0.345		
				1	2	5.5	7.5	7.5	7.5				
S-C21	2	2	36A	1.2	2.2	5.5	11	11	11	24A	0.600		
				1.5	3	7.5	15	15	15				
S-C35	2	2	45A	2.2	4	9	15	15	15	35A	0.960		
				3	5.5	12.5	20	20	20				
S-C50	2	2	65A	3	5.5	13	24	24	24	50A	1.240		
				4	7.5	17.5	32	32	32				
S-C60	2	2	80A	4	7.5	15	30	30	30	58A	1.240		
				5.5	10	20	40	40	40				
S-C65	2	2	100A		11	19	37	37	37	67A	2.085		
					15	25	50	50	50				
S-C80	2	2	125A		15	22	44	44	44	85A	2.085		
					20	30	60	60	60				
S-C100	2	2	145A			30	60	60	60	110A	2.860		
						40	80	80	80				
S-C125	2	2	165A			37	75	75	75	135A	2.860		
						50	100	100	100				
S-C150	2	2	200A			45	90	90	90	165A	4.920		
						60	125	125	125				
S-C220	2	2	250A			65	110	110	110	220A	6.865		
						85	150	150	150				



# "S-C"-Series Contactors

## Dimensions



Model Name	Outline Dimensions (mm)								AUX. Contacts	Din Rail
	A	B	C	D	E	F	G	H		
S-C11	63	44	82	50	30	M3.5	M3.5	M4	1NO,1NC	35mm
S-C12	61	56	82	52	41	M3.5	M3.5	M4	1NO+1NC 2NC, 2NO	35mm
S-C16	61	57	82	52	41	M4	M3.5	M4	1NO+1NC	35mm
S-C21	73	69	100	59	54	M4	M4	M4	2NO+2NC	35mm
S-C35	92	85	108	68	71	M5	M4	M5	2NO+2NC	35mm
S-C50/60	106	101	105	90	86	M6	M4	M5	2NO+2NC	
S-C65/80	121	117	129	100	100	M6	M4	M6	2NO+2NC	
S-C100/125	141	141	143	125	115	M8	M4	M6	2NO+2NC	
S-C150	154	161	163	140	130	M10	M4	M6	2NO+2NC	
S-C220	160	179	192	146	140	M10	M4	M6	2NO+2NC	

# Three Pole Contactors

Approval 

"SMC"- Series 9A to 110A(AC3)

CONTROL CIRCUIT : AC



SMC-09~SMC-22



SMC-32~SMC-40

Frame size		22AF				40AF		
Type		SMC-09	SMC-12	SMC-18	SMC-22	SMC-32	SMC-40	
Number of poles		3poles				3poles		
Rated operational voltage, Ue		690V				690V		
Rated insulation voltage, Ui		1000V				1000V		
Rated frequency		50/60Hz				50/60Hz		
Rated impulse withstand voltage, Uimp		6kV				6kV		
Maximum operating rate in operating cycles per hour(AC3)		1200 operating per hour				1200 operating per hour		
Durability	Mechanical	10mil. operating				10mil. operating		
	Electrical	5 mil. operating				5 mil. operating		
Current	AC-1, Thermal current	20A	25A	32A	40A	50A	60A	
	le	9A	12A	15A	22A	32A	42A	
AC-3 3 phase	220V	KW	2.2	3	3.7	5.5	7.5	11
		HP	3	4	5	7.5	10	15
	380V	KW	3.7	5.5	7.5	11	15	19
		HP	5	7.5	10	15	20	25
	440V	KW	3.7	5.5	7.5	11	15	19
		HP	5	7.5	10	15	20	25
575V	KW	3.7	5.5	7.5	11	15	19	
	HP	5	7.5	10	15	20	25	
AC-3 duty 1 phase	120V	KW	0.37	0.55	0.75	1.5	2.2	3
		HP	0.5	0.75	1	2	3	4
	230V	KW	1.5	1.5	2.2	3.7	4	5.5
		HP	2	2	3	5	5.5	7.5
Size and weight	AC	Weight	kg	0.36		0.37		0.48
	control	Size(W×H×D)	mm	44x80x87.2			68.6x83.8x94.6	
Auxiliary(standard)				1NO 1NC		2NO 2NC		
Auxiliary	Side mount			SMC-D11		SMC-D11		

Note: SMC-32 ~ SMC-85 include 2PCS SMC-D11

# Three Pole Contactors

"SMC"- Series 9A to 110A(AC3)

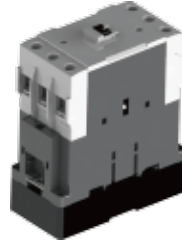
CONTROL CIRCUIT : AC



SMC-50~SMC-85



SMC-75~SMC-100 (AC)



SMC-75~SMC-100 (AC.DC)

## Auxiliary contact blocks

### SMC-D11

Applicable Contactors	Weight Kg	Approval
SMC-09 to SMC-85	0.034	CE



## Auxiliary contact blocks

### SMC-T11

Applicable Contactors	Weight Kg	Approval
SMC-75 to SMC-100 (100AF)	0.034	CE



## INTERLOCKS UNIT

### SMC-IN9

Applicable Contactors	Weight Kg	Approval
SMC-09 to SMC-85	0.027	CE



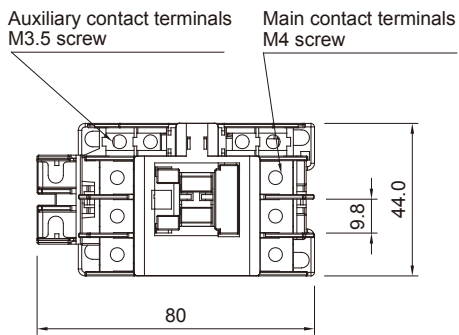
85AF				100AF		
SMC-50	SMC-65	SMC-75	SMC-85	SMC-75	SMC-85	SMC-100
3poles				3poles		
690V				690V		
1000V				1000V		
50/60Hz				50/60Hz		
6kV				8kV		
1200 operating per hour				1800 operating per hour		
10mil. operating				12mil. operating		
5 mil. operating				2 mil. operating		
80A	100A	110A	135A	110A	135A	160A
55A	65A	80A	105A	80A	105A	110A
15	19	22	25	22	25	30
20	25	30	35	30	35	40
30	33	37	45	37	45	55
40	45	50	30	50	60	75
30	33	37	55	37	55	55
40	45	50	75	50	75	75
30	33	37	55	37	55	55
40	45	50	75	50	75	75
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
1.3				1.6		
94.2x99x118				70x140x135.8		
-				3.2		
-				70x140x172.3		
2NO 2NC				2NO 2NC		
SMC-D11				SMC-T11		

Note: SMC-32 ~ SMC-85 include 2PCS SMC-D11

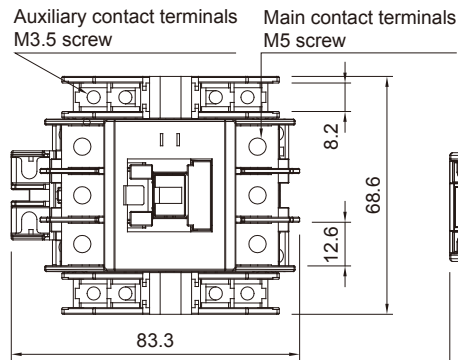
# "SMC"-Series Contactors

## Dimensions(mm)

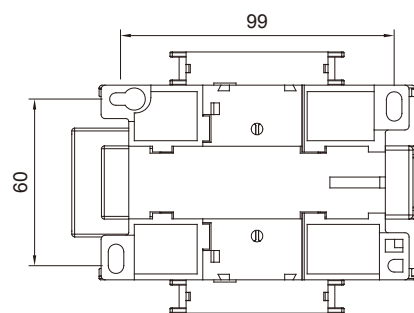
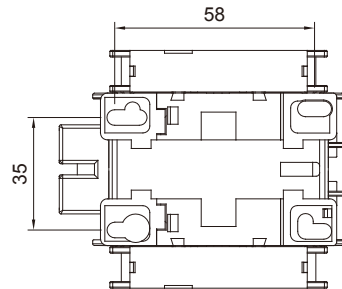
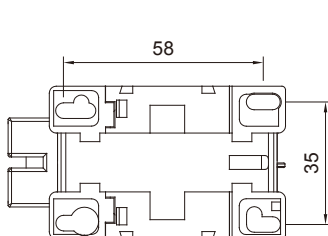
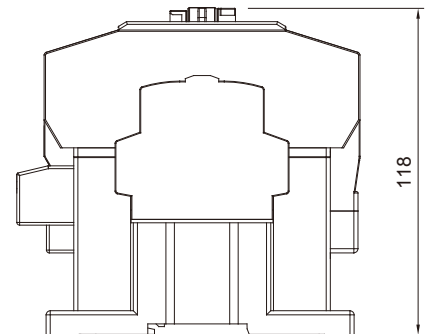
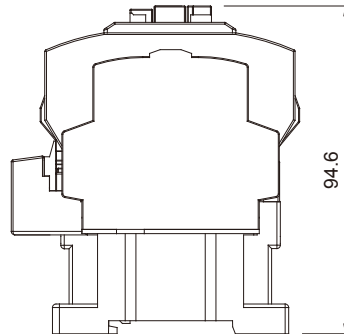
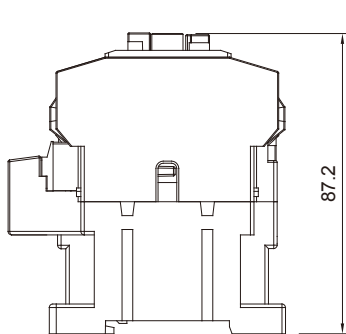
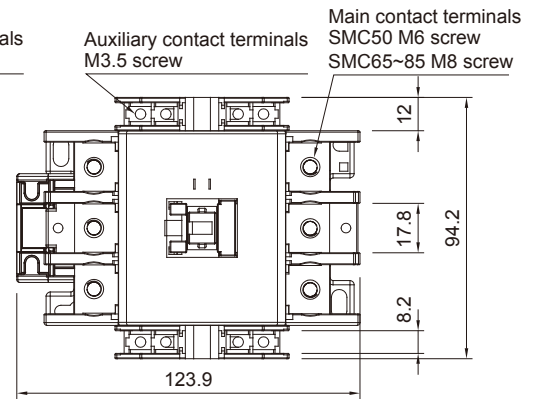
### SMC-09~22



### SMC-32~40



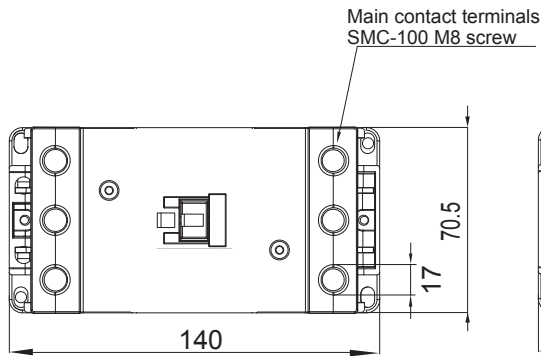
### SMC-50~85



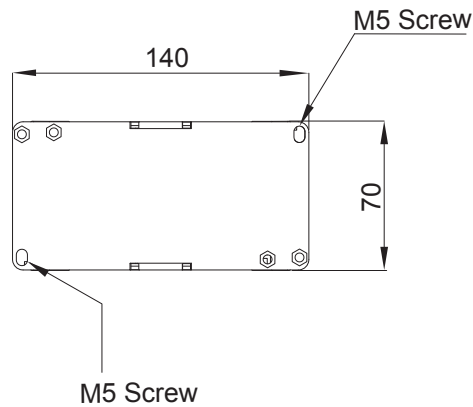
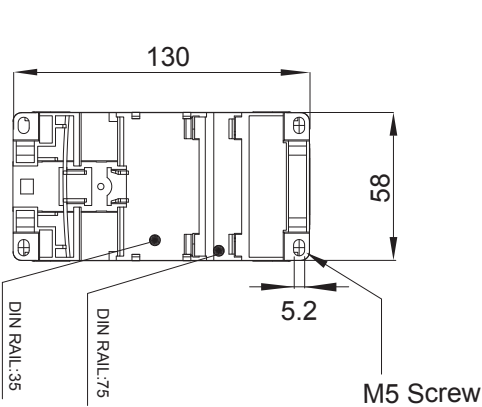
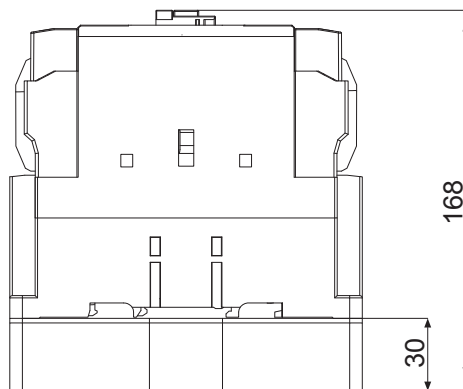
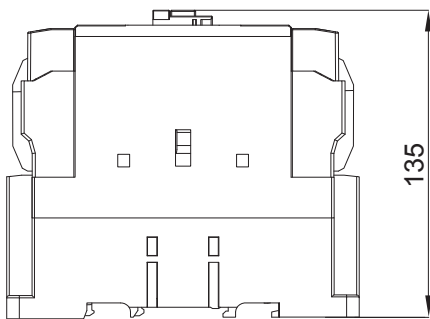
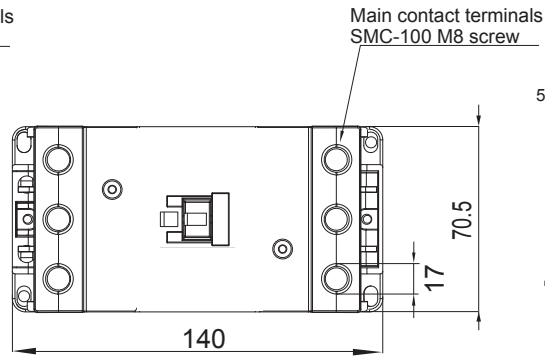
# "SMC"-Series Contactors

## Dimensions(mm)

### SMC75~100 (AC) (100AF)



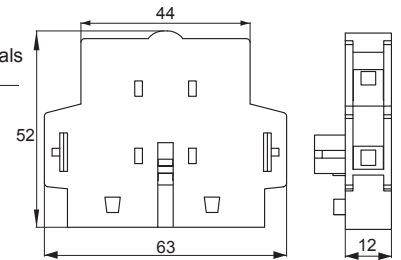
### SMD75~100 (AC.DC) (100AF)



## Auxiliary contact blocks

### SMC-D11

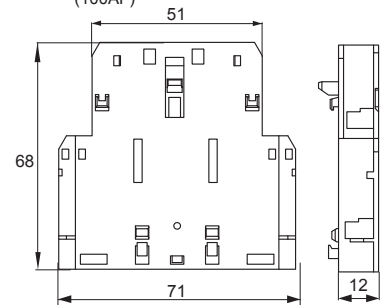
Applicable Contactors	Weight Kg	Approval
SMC-09 to SMC-85	0.034	CE



## Auxiliary contact blocks

### SMC-T11

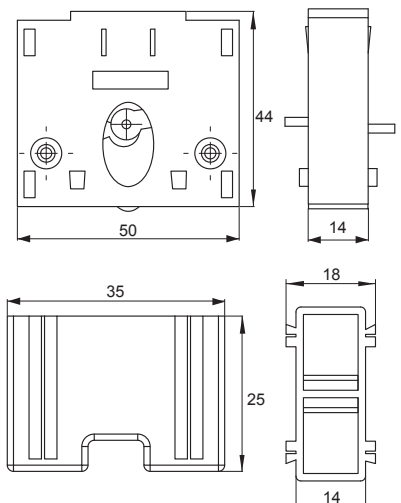
Applicable Contactors	Weight Kg	Approval
SMC-75 to SMC-100 (100AF)	0.034	CE




## INTERLOCKS UNIT

### SMC-IN9

Applicable Contactors	Weight Kg	Approval
SMC-09 to SMC-85	0.027	CE



# Three Pole Contactors

Approval 

"SMD"- DC Series 9A to 42A (AC3)

CONTROL CIRCUIT : DC



SMD -09-SMD-22



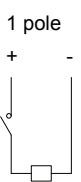

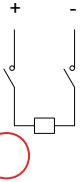

SMD-32-SMD-40

Frame size		22AF				40AF		
Type		SMD-09	SMD-12	SMD-18	SMD-22	SMD-32	SMD-40	
Number of poles		3poles				3poles		
Rated operational voltage, Ue		690V				690V		
Rated insulation voltage, Ui		1000V				1000V		
Rated frequency		50/60Hz				50/60Hz		
Rated impulse withstand voltage, Uimp		6KV				6KV		
Maximum operating rate in operating cycles per hour(AC3)		1200 operating per hour				1200 operating per hour		
Durability	Mechanical	10mil. operating				10mil. operating		
	Electrical	5 mil. operating				5 mil. operating		
Current	AC-1, Thermal current	20A	25A	32A	40A	50A	60A	
	le	9A	12A	15A	22A	32A	42A	
AC-3 3 phase	220V	KW	2.2	3	3.7	5.5	7.5	11
		HP	3	4	5	7.5	10	15
	380V	KW	3.7	5.5	7.5	11	15	19
		HP	5	7.5	10	15	20	25
	440V	KW	3.7	5.5	7.5	11	15	19
		HP	5	7.5	10	15	20	25
575V	KW	3.7	5.5	7.5	11	15	19	
	HP	5	7.5	10	15	20	25	
AC-3 duty 1 phase	120V	KW	0.37	0.55	0.75	1.5	2.2	3
		HP	0.5	0.75	1	2	3	4
	230V	KW	1.5	1.5	2.2	3.7	4	5.5
		HP	2	2	3	5	5.5	7.5
Size and weight	DC control	Weight	kg	0.5		0.51		0.57
		Size(W×H×D)	mm	44x80x113			68.6x83.8x121.3	
Auxiliary(standard)				1NO 1NC		2NO 2NC		
Auxiliary	Side mount			SMC-D11		SMC-D11		

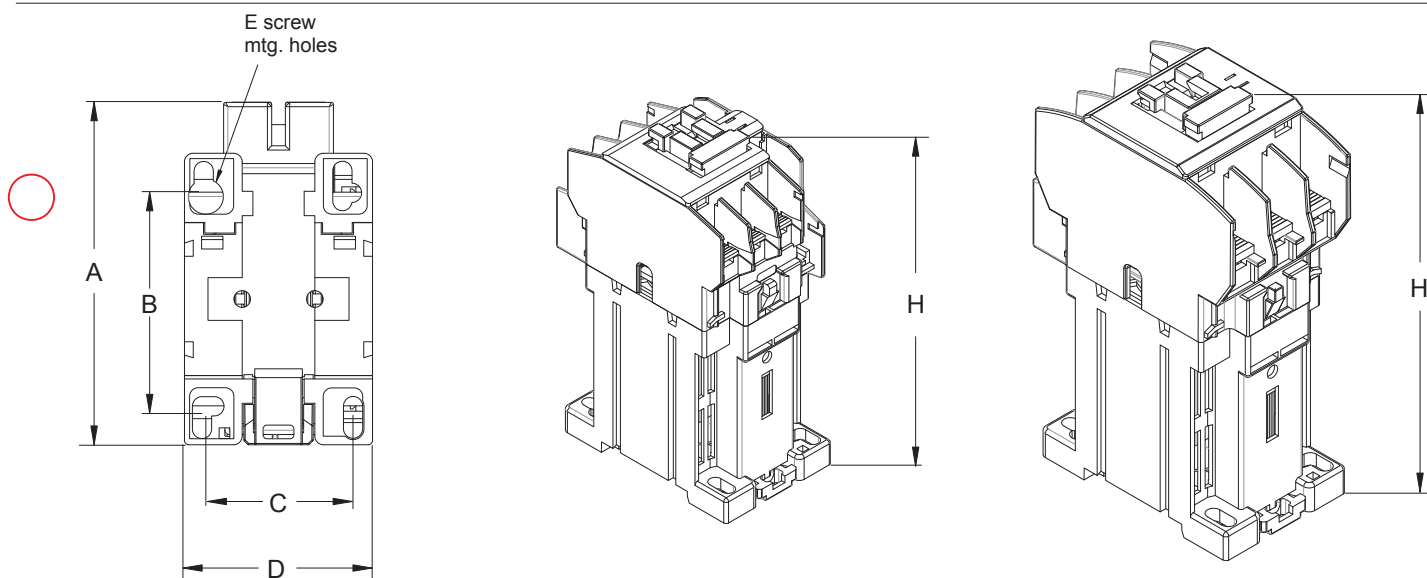
Note: SMD-32 ~ SMD-42 (DC) include 1PCS SMC-D11

# "DC"-Series Contactors

## According to the category of utilization for DC operation

		Maximum operational current I <sub>e</sub> in amps												
		Voltage U <sub>e</sub>	Number of poles to be connected in series	SMC-09	SMC-12	SMC-18	SMC-22	SMC-32	SMC-40	SMC-50	SMC-65	SMC-75	SMC-85	SMC-100
 <p>1 pole</p> <p>DC1</p> <p>(<math>\frac{L}{R} = 1 \text{ ms}</math>)</p> 	24 V	1	8	10	12	18	20	30	35	40	60	65	70	
		2	10	12	18	20	25	35	50	50	75	80	100	
		3	10	12	18	20	25	35	50	65	75	80	100	
	48 V	1	8	10	12	12	20	25	25	25	25	25	25	30
		2	10	12	18	20	25	35	40	40	65	65	100	
		3	10	12	18	20	25	35	50	65	75	80	100	
	110 V	1	5	8	8	8	8	8	8	8	8	8	8	10
		2	6	10	13	15	25	35	35	35	50	50	80	
		3	8	12	18	20	25	35	50	65	75	80	100	
220 V	1	3	5	5	5	5	5	5	5	5	5	5	6	
	2	3	7	8	10	12	12	15	15	20	20	50		
	3	8	12	18	20	22	30	40	50	55	60	80		
		Maximum operational current I <sub>e</sub> in amps												
		Voltage U <sub>e</sub>	Number of poles to be connected in series	SMC-09	SMC-12	SMC-18	SMC-22	SMC-32	SMC-40	SMC-50	SMC-65	SMC-75	SMC-85	SMC-100
 <p>2 poles in series</p> <p>DC2, DC4</p> <p>(<math>\frac{L}{R} = 15 \text{ ms}</math>)</p> 	24 V	1	10	12	20	20	25	35	35	40	40	40	45	
		2	8	12	12	20	25	35	45	45	65	65	100	
		3	8	12	12	20	25	35	50	50	80	80	100	
	48 V	1	8	10	15	15	15	15	15	15	15	15	15	20
		2	4	6	6	15	20	20	25	25	40	40	60	
		3	6	10	10	20	25	30	35	35	60	60	90	
	110 V	1	1.5	2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3
		2	2.5	4	4	8	10	10	15	15	20	20	40	
		3	4	8	8	15	20	20	30	30	50	50	80	
220 V	1	0.5	0.75	1	1	1	1	1	1	1	1	1	1	
	2	0.8	1.2	1.2	2	3	3	3.5	3.5	5	5	30		
	3	2	4	4	8	10	10	12	12	20	20	50		

## Dimensions(mm)



Model Name	Outline Dimensions (mm)						
	A	B	C	D	E	H	Din Rail
SMD-09~22 (DC)	80	58	35	44	M4	87.2	35
SMD-32~40 (DC)	83.3	58	35	68.6	M4	94.6	35

# Thermal Overload Relays

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## Model Designation

NTH —  $\frac{172PS}{1\ 2\ 3}$

### 1. Current Rating(max.)

0.5	0.75	1.05	1.45	1.9	2.5	3	4	5	6.5	
8	11	14	15	17	21	25	28	32	38	44

### 2. Phase-Failure Protect

2P	2 Heaters
3P	Phase-Failure

### 3. Separate Blocks

none	Normal
S	Install

## Model Designation

TH —  $\frac{12T3.5O}{1\ 2\ 3\ 4}$

### 1. Type

12
20
60
120

### 2. Load Plug

none	Normal
T	Install

### 3. Current Rating(mean)

12	0.8	1.2	2.1	3.5	5	6.5			
	9	11	15						
20	2.1	3.5	6.5	9	11	15	22	30	41
60	30	41	54	67	80				
120	80	105	130						

### 4. Rear Connector

none	S-C Series
O	C Series

## Model Designation

MTH —  $\frac{52P}{1\ 2}$

### 1. Current Rating(max.)

0.5	0.65	1.0	1.5	2.0	2.7	3.6	5
6.5	8.5	12	15				

### 2. Phase-Failure Protect

2P	2 Heaters
3P	Phase-Failure



# Thermal Overload Relays

## "NTH"-Series 0.35A to 44A



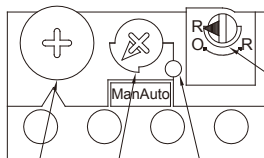
### THERMAL OVERLOAD RELAYS

Compensated and differential overload relays

With 1 N/O + 1 N/C electrically separated auxiliary contacts

For direct connection with "C and SMC"- series contactors

Model Name	Relay Setting Range RC (FLC) A	Contactor Type	Weight Kg	Approval	Motor Capacity (HP)			
					1 phase		3 phase	
					100-110V 200-220V	200-220V 380-440V	500-550V	
NTH-0.5	0.35 - 0.5A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC		0.125		
NTH-0.75	0.5 - 0.75A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC		0.125	0.25	
NTH-1.05	0.75 - 1.05A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC				0.5
NTH-1.45	1.05 - 1.45A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC			0.25	0.5 1
NTH-1.9	1.4 - 1.9A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC		0.125	0.75	
NTH-2.5	1.8 - 2.5A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC		0.25	0.5	1 1.5
NTH-3	2.4 - 3A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC				1.5 2
NTH-4	2.9 - 4A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC	1/8	0.5	1	2
NTH-5	3.8 - 5A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC	1/4	0.75		3 3
NTH-6.5	4.5 - 6.5A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC	1/2	0.75	1.5	
NTH-8	6 - 8A	C-09D,SMC-09	0.14	CE, UL, IEC, CCC	1/2		2	5
NTH-11	8 - 11A	C-11D,SMC-09	0.14	CE, UL, IEC, CCC		1.5	3	5
NTH-14	11 - 14A	C-12D,SMC-12	0.14	CE, UL, IEC, CCC	0.75	2	4	7.5 10
NTH-15	10 - 15A	C-12D,SMC-18	0.14	CE, UL, IEC, CCC	0.75	2	4	7.5 10
NTH-17	14 - 17A	C-12D,SMC-18	0.14	CE, UL, IEC, CCC	1	2	5	10 15
NTH-21	17 - 21A	C-18D,SMC-22	0.15	CE, UL, IEC, CCC	1.5	3		15 20
NTH-25	21 - 25A	C-18D,SMC-32	0.15	CE, UL, IEC, CCC	2	4	7.5	
NTH-28	24 - 28A	C-25D,SMC-32	0.15	CE, UL, IEC, CCC				20
NTH-32	26 - 32A	C-25D,SMC-32	0.15	CE, UL, IEC, CCC		5	10	
NTH-38	30 - 38A	C-35D,SMC-40	0.18	CE				25 30
NTH-44	36 - 44A	C-35D,SMC-40	0.18	CE		7.5	15	30 40



Button for reset and disconnection -setting: O/R or R; O/R=reset and disconnection R=reset only

Setting current button  
Setting lever  
Man & Auto button  
Switching position indication

Knob for changing to "reset". Function depends on the position of the reset button.

1. MAN-position

A. MAN-position and reset button on position R.  
The blue reset button is for manual reset only. Accidental pushing of the reset button of the untripped relay does not result in any contact function.

B. MAN-position and reset button on position O/R.

The blue reset button is for manual reset and it can be used as a STOP-button as well. Contact 95-96 open while pressing the reset button.

2. AUTO-position

A. AUTO-position and reset button on position R.

The tripped relay will automatically reset itself after approx. 1 min.

B. AUTO-position and reset button on position O/R.

The tripped relay will automatically reset itself after approx. 1 min.

The blue reset button is used only as a STOP-button. Contact 95-96 open while the reset button is pressed.

Note : Select and set the overload relay according to the current value on the motor rating plate. Direct mounting on the underside of the contactors.

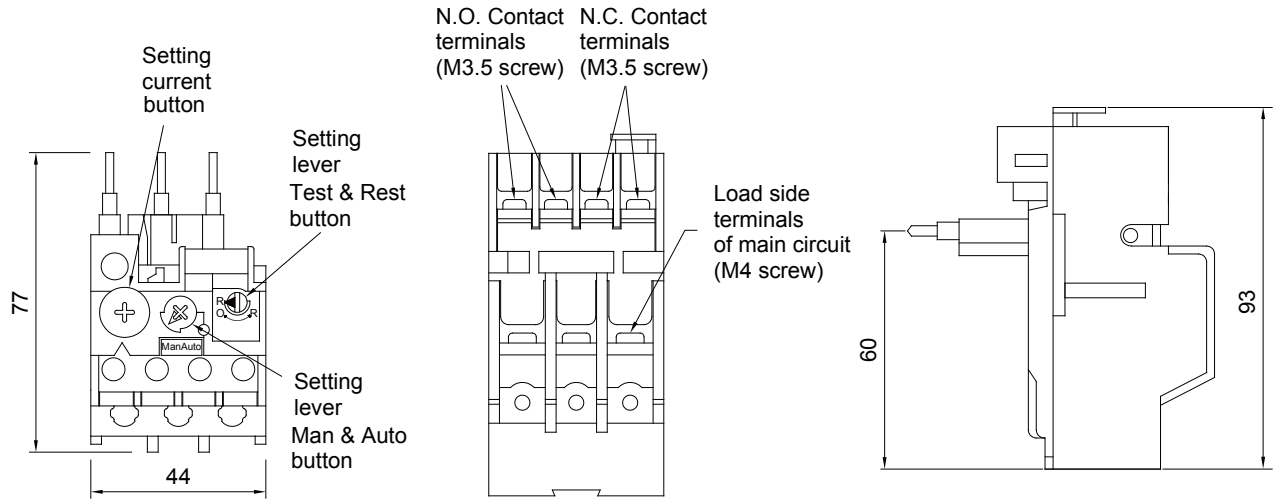
Terminals protected against direct finger contact and fitted with ready to tighten screws. Lockable and sealable Man/Auto switch.

Trip Test. Cover locks the function.

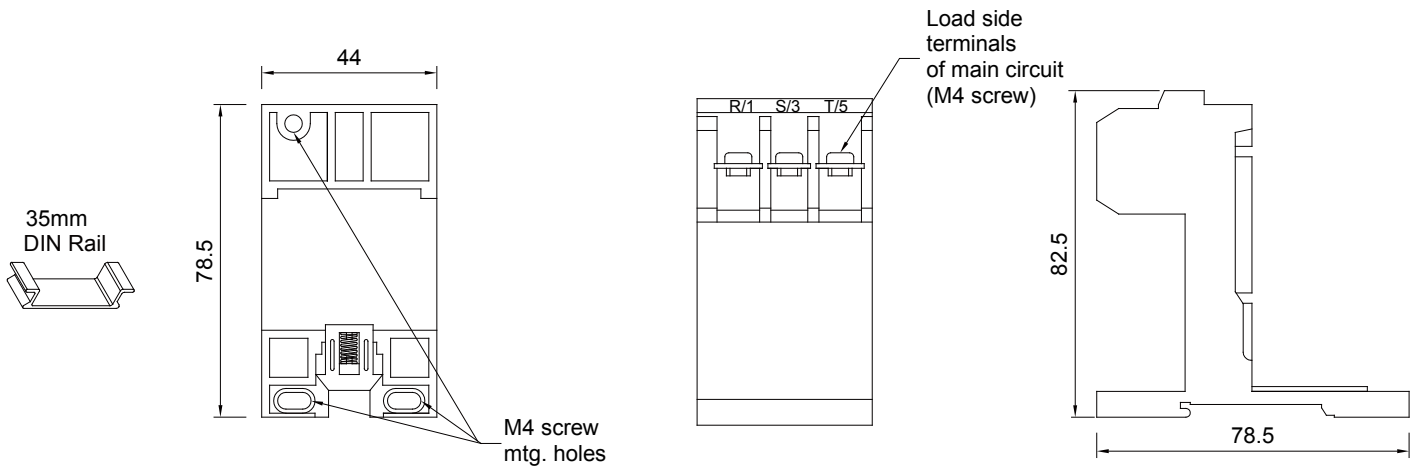
# "NTH"- Series Thermal Overload Relays

## Dimensions(mm)

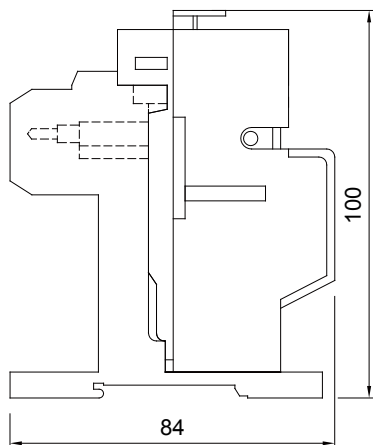
### NTH-Series



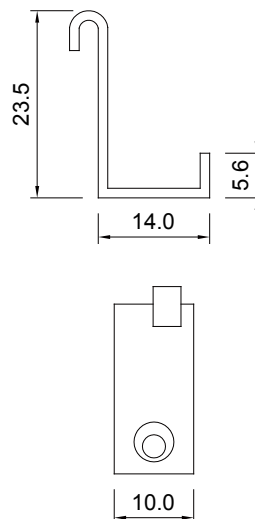
### NTH-04 Separate Blocks



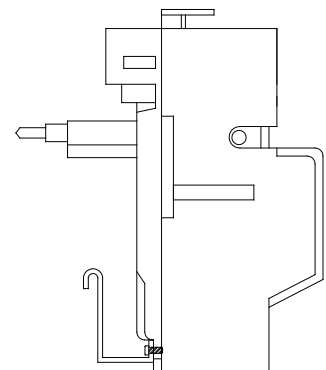
### NTH+NTH-04



### NTH-51 Rear connector

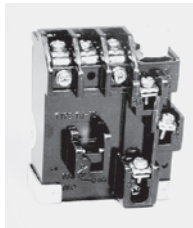


### NTH+NTH-51 (C-25D.C-35D only)



# Thermal Overload Relays

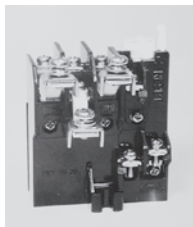
## "TH"- Series 0.64A to 160A



TH-12



TH-20



TH-20(T)



TH-60



TH-60(T)



TH-120

Compensated and differential overload relays  
With 1 N/O + 1 N/C (1 com) auxiliary contacts  
For direct connection with "S-C"- series contactors

Approval



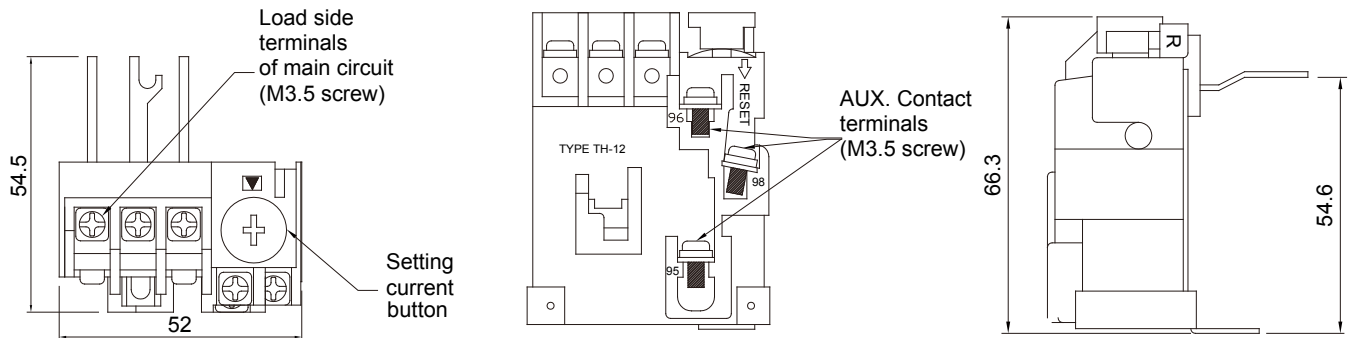
TH12 ~ TH60

Model Name	Relay Setting Range RC (FLC) A	Mean A	Contactor Type	Weight Kg	Motor Capacity (HP)					
					1 phase		3 phase			
					100-110V	200-220V	200-220V	380-440V	500-550V	
TH-12	0.64 - 0.96A	0.8A	S-C11~S-C12	0.095			0.125	0.25	0.5	
TH-12	0.9 - 1.5A	1.2A	S-C11~S-C12	0.095			0.25	0.5	0.75	
TH-12	1.6 - 2.6A	2.1A	S-C11~S-C12	0.095			0.5	1	1.5	
TH-12	2.8 - 4.2A	3.5A	S-C11~S-C12	0.095	0.125	0.5	1	2	3	
TH-12	4 - 6A	5A	S-C11~S-C12	0.095	0.25	0.75	1.5	3	4	
TH-12	5 - 8A	6.5A	S-C11~S-C12	0.095	0.5	1	2	4		
TH-12	7 - 11A	9A	S-C11~S-C12	0.095			3	5	7.5	
TH-12	9 - 13A	11A	S-C12	0.095	0.75	1.5	4	7.5	10	
TH-12	12 - 18A	15A	S-C16	0.095	1	2	5	10		
TH-20(T)	1.6 - 2.6A	2.1A	S-C16~S-C21	0.135			0.5	1	1.5	
TH-20(T)	2.8 - 4.2A	3.5A	S-C16~S-C21	0.135	0.125	0.5	1	2	3	
TH-20(T)	4 - 6A	5A	S-C16~S-C21	0.135	0.25	0.75	1.5	3	4	
TH-20(T)	5 - 8A	6.5A	S-C16~S-C21	0.135	0.5	1	2	4		
TH-20(T)	7 - 11A	9A	S-C16~S-C21	0.135			3	5	7.5	
TH-20(T)	9 - 13A	11A	S-C16~S-C21	0.135	0.75	1.5	4	7.5	10	
TH-20(T)	12 - 18A	15A	S-C16~S-C21	0.135	1	2	5	10		
TH-20(T)	18 - 26A	22A	S-C21	0.135	1.5		7.5	15	20	
TH-20(T)	24 - 36A	30A	S-C35	0.135		5	10	20		
TH-20(T)	33 - 50A	41A	S-C35	0.135	3	7.5	15	30	40	
TH-60(T)	24 - 36A	30A	S-C50	0.225		5	10	20		
TH-60(T)	33 - 50A	41A	S-C50	0.225	3	7.5	15	30	40	
TH-60(T)	43 - 65A	54A	S-C60	0.225			20	40	50	
TH-60(T)	54 - 80A	67A	S-C65	0.225	6		25	50	60	
TH-60(T)	60 - 100A	80A	S-C80	0.225			30	60	75	
TH-120	60 - 100A	80A	S-C100	0.490			30	60	75	
TH-120	80 - 130A	105A	S-C100	0.490			40	75	100	
TH-120	100 - 160A	130A	S-C125	0.490			50	100	125	

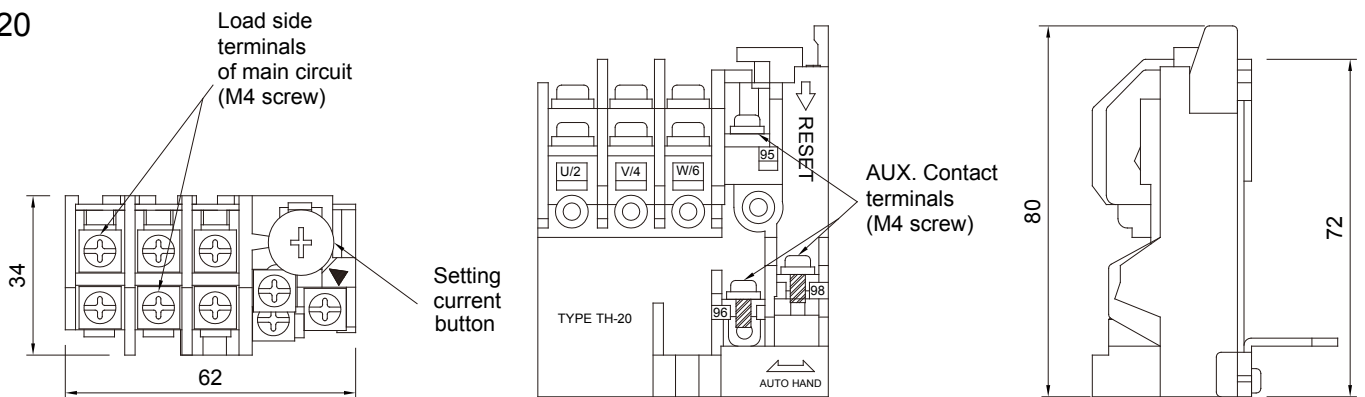
# "TH"- Series Thermal Overload Relays

## Dimensions(mm)

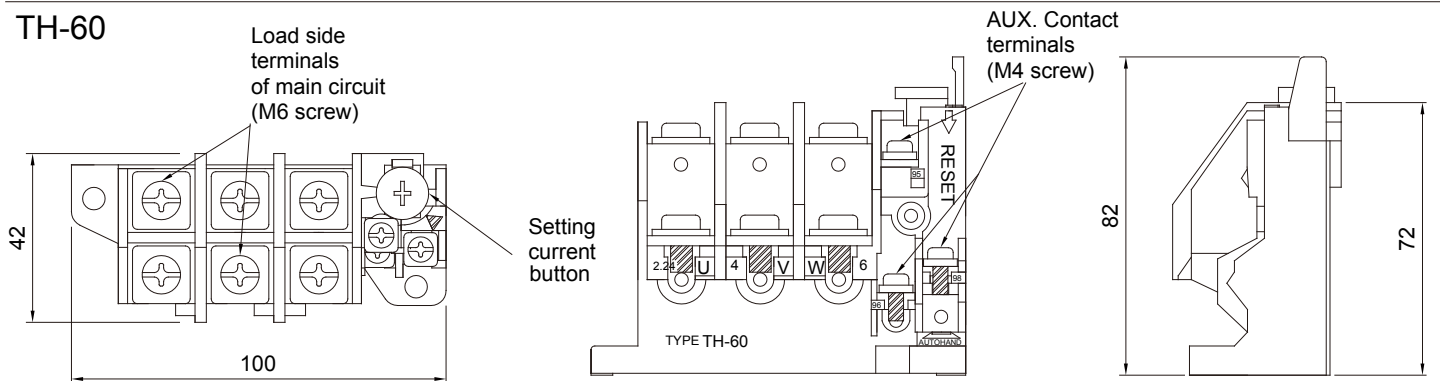
TH-12



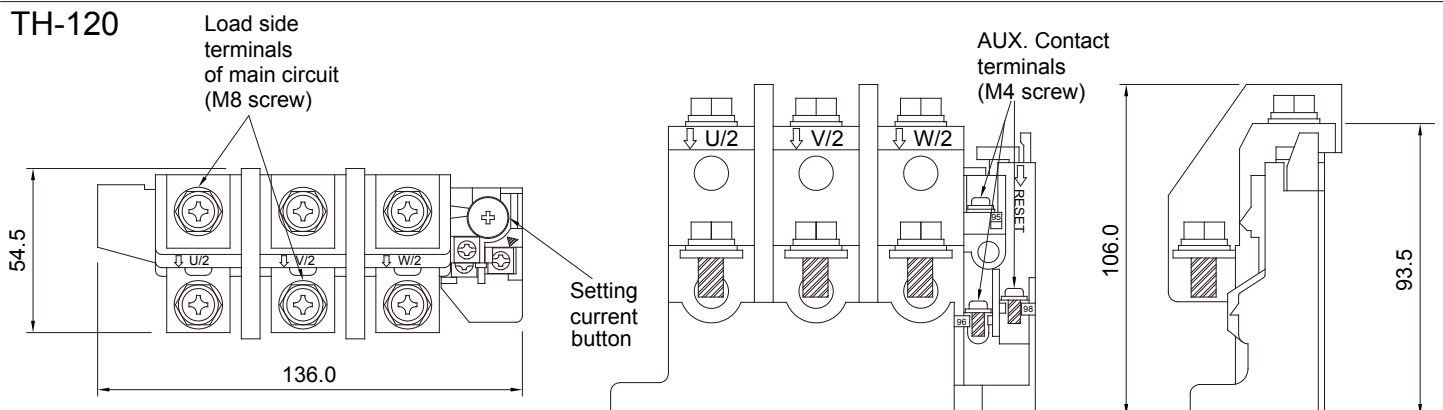
TH-20



TH-60

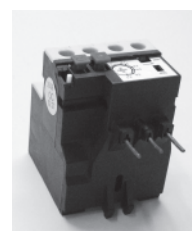
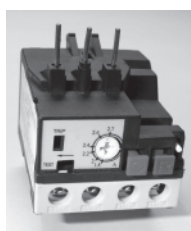
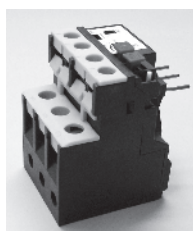


TH-120



# Thermal Overload Relays

## "MTH"-Series 0.3A to 15A



### THERMAL OVERLOAD RELAYS

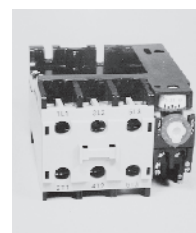
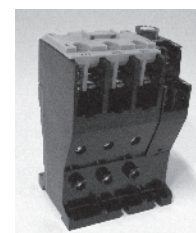
Compensated and differential overload relays  
 With 1 N/O + 1 N/C electrically separated auxiliary contacts  
 For direct connection with "C-06D"- series contactors

Model Name	Relay Setting Range RC (FLC) A	Contactor Type	Weight Kg	Motor Capacity (HP)				
				1 phase		3 phase		
				100-110V	200-220V	200-220V	380-440V	500-550V
MTH-0.5	0.3 - 0.5A	C-06D	0.106				0.125	
MTH-0.65	0.45 - 0.65A	C-06D	0.106			0.125	0.25	
MTH-1	0.6 - 1A	C-06D	0.106					0.5
MTH-1.5	1 - 1.5A	C-06D	0.106			0.25	0.5	0.75
MTH-2	1.4 - 2A	C-06D	0.106		0.125		0.75	1
MTH-2.7	1.8 - 2.7A	C-06D	0.106	0.125	0.25	0.5	1	1.5
MTH-3.6	2.6 - 3.6A	C-06D	0.106		0.5	1	2	2
MTH-5	3.5 - 5A	C-06D	0.106	0.25			2	3
MTH-6.5	4.5 - 6.5A	C-06D	0.106			1.5	3	5
MTH-8.5	6 - 8A	C-06D	0.106	0.5	1	2	5	
MTH-12	8 - 12A	C-06D	0.106		1.5	3	7.5	7.5
MTH-15	11 - 15A	C-06D	0.106	0.75	2	4	10	10

## "NTH"-Series 26A to 126A

Compensated and differential overload relays  
 With 1 N/O + 1 N/C electrically separated auxiliary contacts  
 For direct connection with "C and SMC"- series contactors

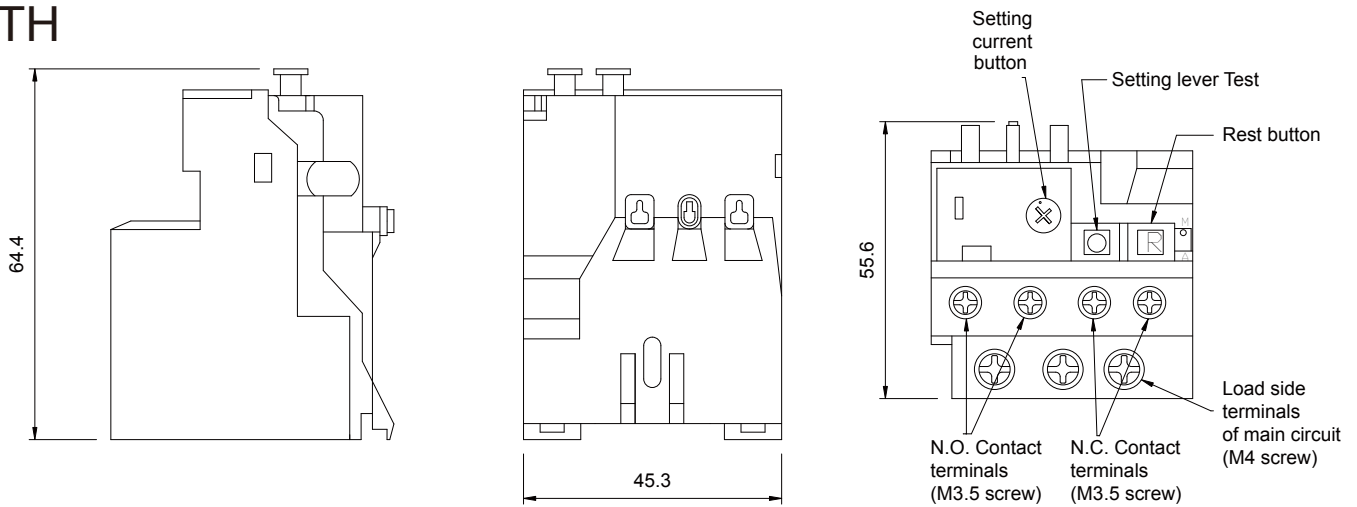
Model Name	Relay Setting Range RC (FLC) A	Mean A	Contactor Type	Weight Kg	Approval
NTH-50	33 - 50A	41A	C-45D,SMC-50	0.427	CE
NTH-65	43 - 65A	54A	C-55D,SMC-50	0.427	CE
NTH-80	54 - 80A	67A	C-65D,SMC-65	0.427	CE
NTH-96	64 - 96A	80A	C-80D(C-100D),SMC-75	0.427	CE
NTH-126	85 - 126A	105A	C-100D,SMC-85	0.427	CE



# "MTH" -Series Thermal Overload Relays

## Dimensions(mm)

### MTH

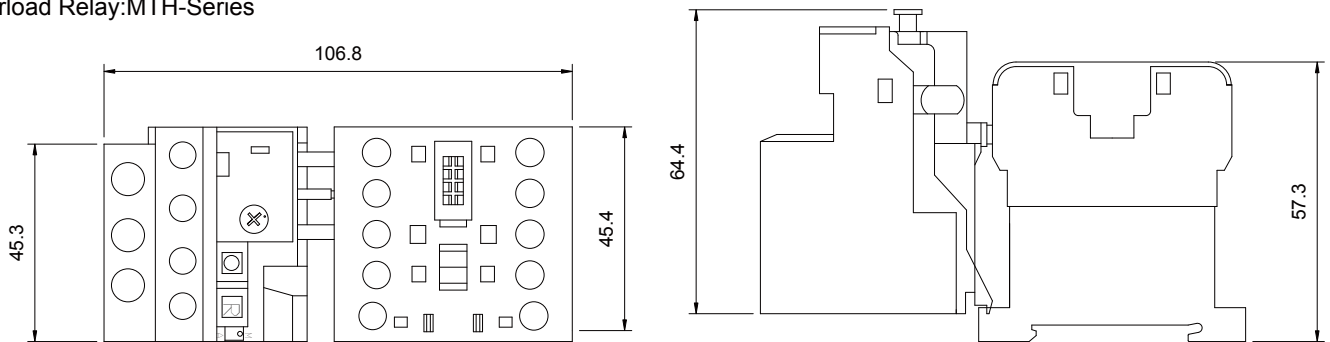


## Open type Without Box

## Dimensions(mm)

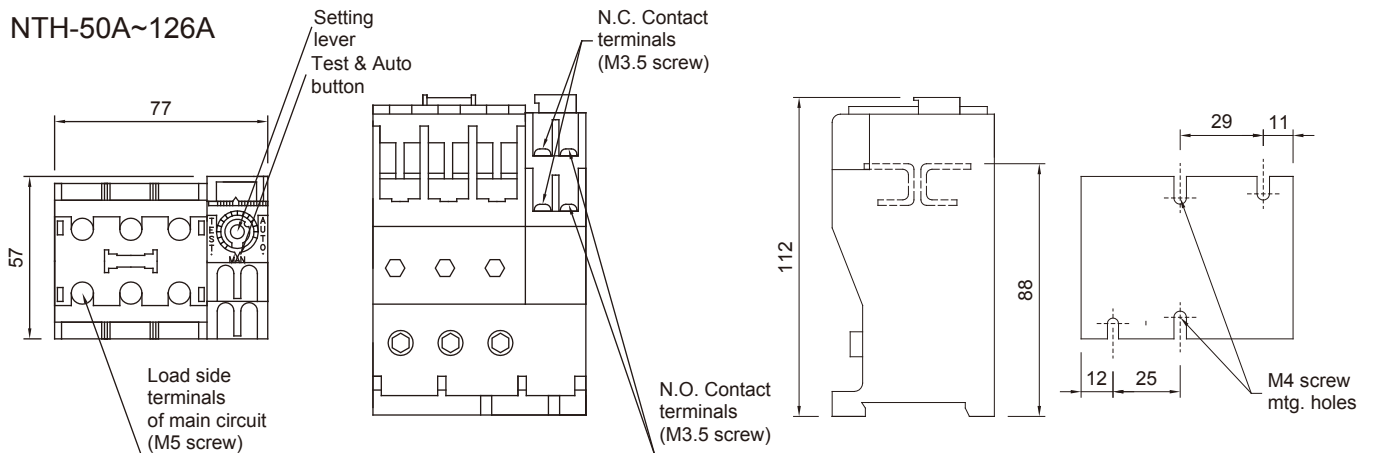
MSO-06D

Overload Relay:MTH-Series



# "NTH-26A~126A"-Series

NTH-50A~126A



# AC Motor Starters

Moulded Plastic Enclosure(MS1 IP65)

## Model Designation

# MSO-09D-N1G7N2.52P

### 1.Type

MSO	Open
MS	Enclosure
MS1	Enclosure with push button

### 2.Capacity

MSO	C-06D~C-100D
MS	C-09D~C-35D
MS1	C-09D~C-35D

### 3.Cover Model

none	Normal
N	Lock
R	Reset
G	Start Only
S	Stop Only

### 4.Phase

1	Single Phase
2	Single Phase Terminal Jumper
3	3 Phase

### 7.Phase-Failure Protection

2P	2 Heaters
3P	Phase-Failure

### 6.Overload Relay

M	MTH
N	NTH
T12	TH12
T20	TH20

### 5.Coil Control Voltage

Detail Page 1-1

# Enclosure of Motor Starters

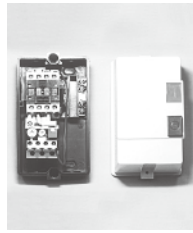
## MS1 IP65



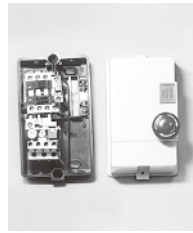
MSO-09D



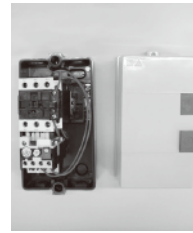
MS-12D



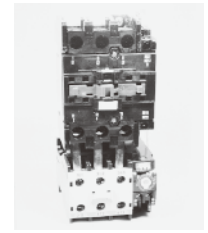
MS1-18D



MS1-25D-R



MS1-35D



MSO-45D

### Non-reversing starters - enclosed and open type

Model Name	3-phase				1-phase		Overload Relay Type	Instantaneous Auxiliary Contacts		Weight Kg	Approval
	220V	380V	440V	575V	120V	230V		N/O	N/C		
Open type Non-push button Starters	KW HP A	KW HP A	KW HP A	KW HP A	KW HP A	KW HP A					
MSO-06D	2.2 3 9	3.7 5 9	3.7 5 8	3.7 5 6.5	0.2 0.33 7.2	1.1 1.5 10	MTH	1	-	0.285	CE
MSO-09D	2.2	3.7	3.7	3.7	0.37	1.5	TH12/20,NTH			0.485	CE
MS-09D	3	5	5	5	0.75	2	NTH	1	-	0.866	
MS1-09D	9	9	8	6.5	13.8	12	NTH			0.940	
MSO-11D	3	5.5	5.5	5.5	0.55	1.5	TH12/20,NTH			0.485	CE
MS-11D	4	7.5	7.5	7.5	0.75	2	NTH	1	-	0.866	
MS1-11D	12	12	11	9	13.8	12	NTH			0.940	
MSO-12D	4	7.5	7.5	7.5	0.75	2.2	TH12/20,NTH			0.485	CE
MS-12D	5.5	10	10	10	1	3	NTH	1	-	0.866	
MS1-12D	16	16	15	13	16	17	NTH			0.940	
MSO-18D	5.5	11	11	11	1.5	3.7	TH20,NTH			0.515	CE
MS-18D	7.5	15	15	15	2	5	NTH	1	-	0.915	
MS1-18D	23	22	21	16	24	28	NTH			0.969	
MSO-25D	7.5	15	15	15	2.2	4	TH20,NTH			0.673	CE
MS-25D	10	20	20	20	3	5.5	NTH	1	-	1.435	
MS1-25D	30	30	30	25	34	33	NTH			1.450	
MSO-35D	11	19	19	19	3	5.5	TH20,NTH			0.690	CE
MS-35D	15	25	25	25	4	7.5	NTH	1	-	1.460	
MS1-35D	42	39	36	29	45	40	NTH			1.475	
MSO-45D	15 20 55	30 40 64	30 40 52	30 40 46			NTH	1	1	1.700	CE
MSO-55D	19 25 65	33 45 68	33 45 57	33 45 50			NTH	1	1	1.700	CE
MSO-65D	22 30 75	37 50 72	37 50 64	37 50 53			NTH	1	1	1.700	CE
MSO-80D	25 35 90	45 60 85	55 75 95	55 75 72			NTH	1	1	1.900	CE
MSO-100D	30 40 105	55 75 105	55 75 95	60 80 76			NT H	1	1	1.900	CE

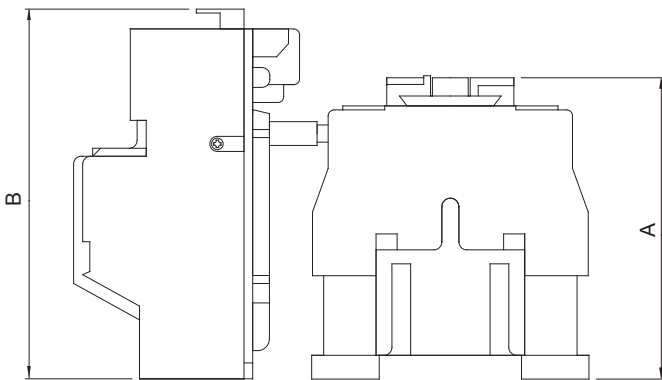
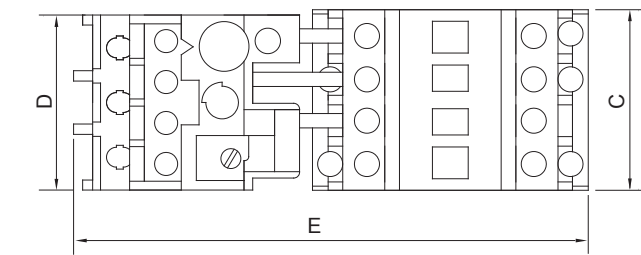


# Open type

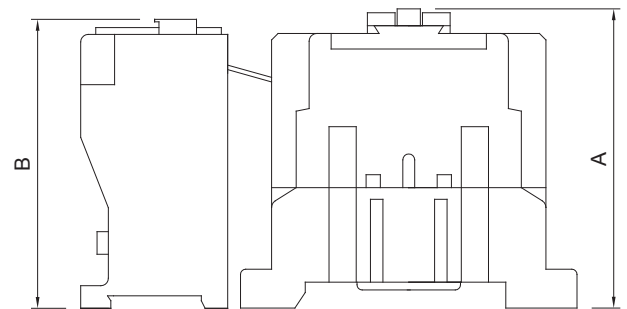
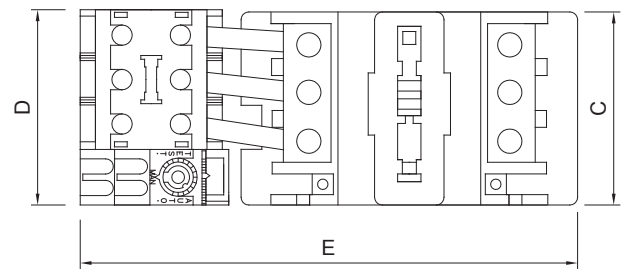
## Without Box

### Dimensions(mm)

MSO-09D/11D/12D/18D/25D/35D  
Overload Relay: NTH-Series



MSO-45D/55D/65D/80D/100D  
Overload Relay: NTH-Series



Model Name	Dimensions (mm)				
	A	B	C	D	E
MSO-09D	79	93	45.3	44	128
MSO-11D	79	93	45.3	44	128
MSO-12D	79	93	45.3	44	128
MSO-18D	84.5	93	45.3	44	128
MSO-25D	95.5	105	57	44	135
MSO-35D	100	105	57	44	137.5

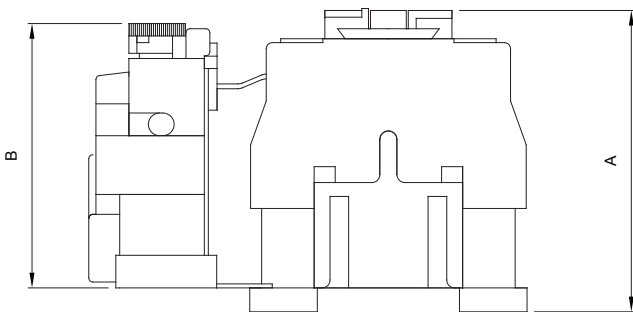
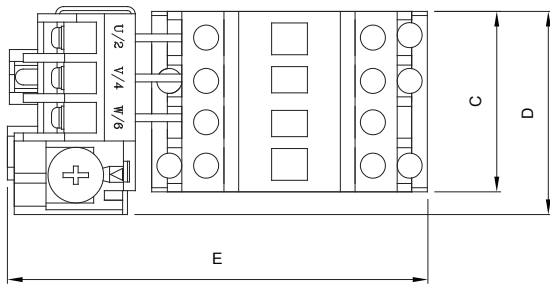
Model Name	Dimensions (mm)				
	A	B	C	D	E
MSO-45D	115	112	75	77	185
MSO-55D	115	112	75	77	185
MSO-65D	115	112	75	77	185
MSO-80D	123	112	85	77	185
MSO-100D	123	112	85	77	185

# Open type

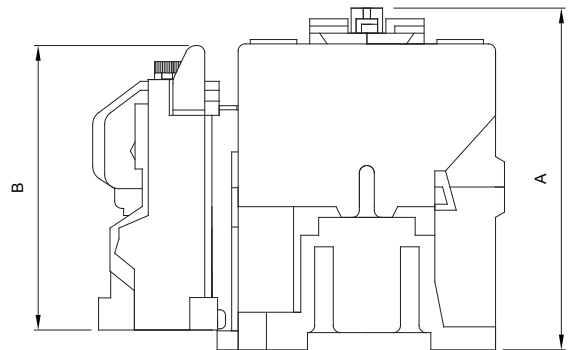
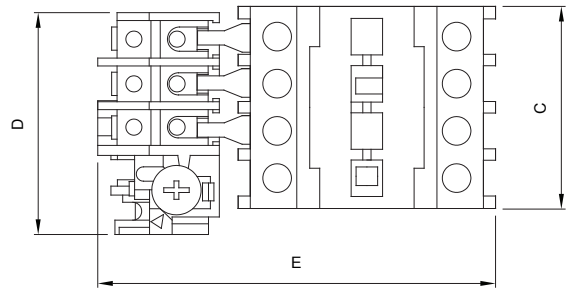
## Without Box

### Dimensions (mm)

MSO-09D/11D/12D  
Overload Relay: TH12-Series



MSO-09D/11D/12D/18D/25D/35D  
Overload Relay: TH20-Series



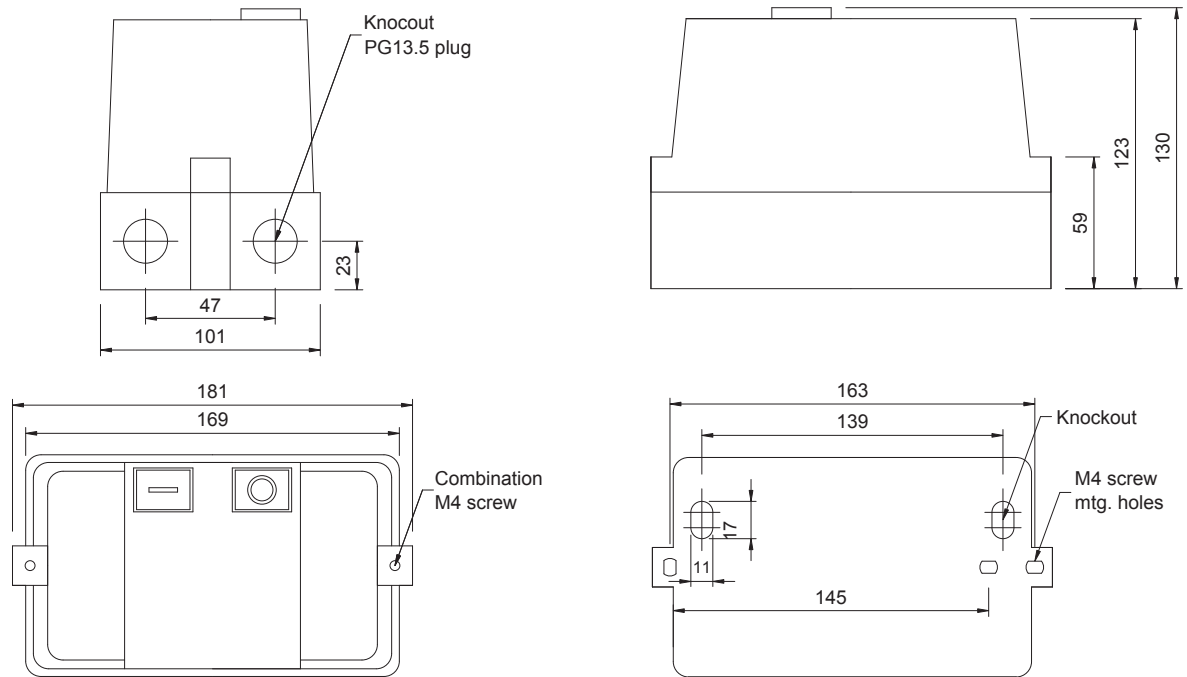
Model Name	Dimensions (mm)					Model Name	Dimensions (mm)				
	A	B	C	D	E		A	B	C	D	E
MSO-09D	79	66.3	45.3	50.3	105	MSO-09D	79	80	45.3	62	107
MSO-11D	79	66.3	45.3	50.3	105	MSO-11D	79	80	45.3	62	107
MSO-12D	79	66.3	45.3	50.3	105	MSO-12D	79	80	45.3	62	107
						MSO-18D	84.5	80	45.3	62	107
						MSO-25D	95.5	80	57	62	116
						MSO-35D	100	80	57	62	113

# Enclosure of Motor Starters

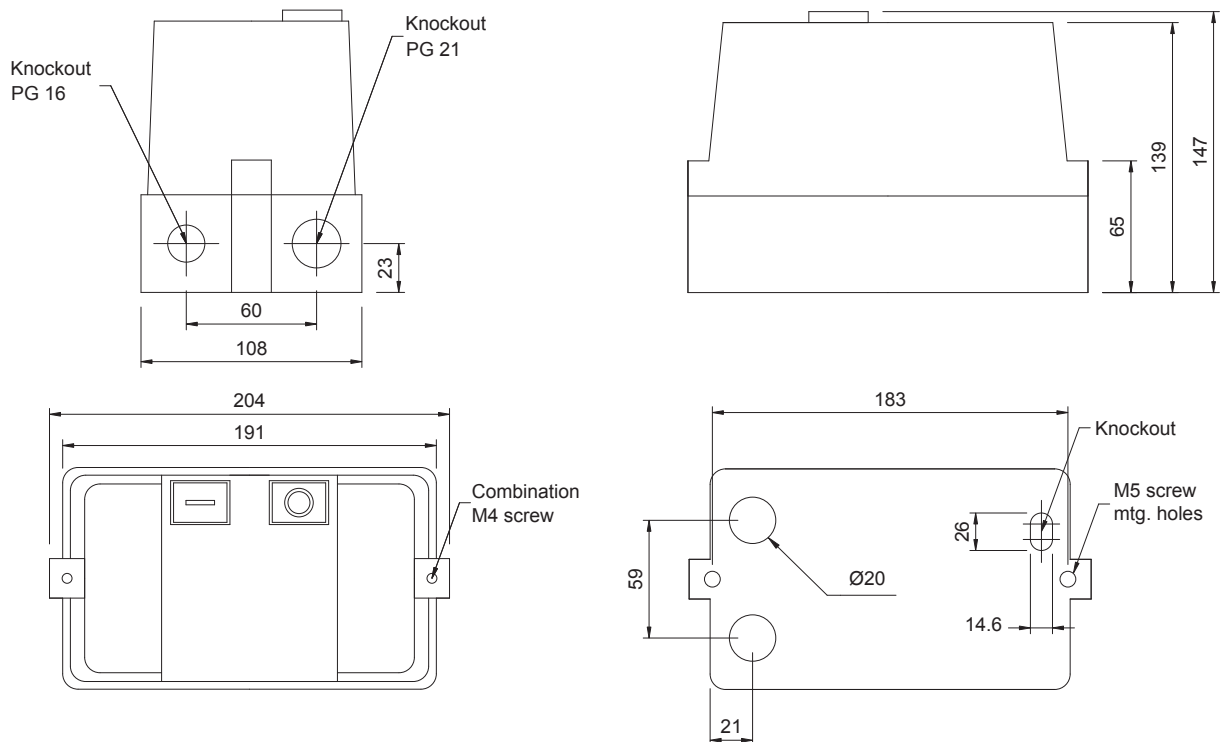
## MS1 IP65

### Dimensions(mm)

MS1-09D/11D/12D/18D



MS1-25D/35D

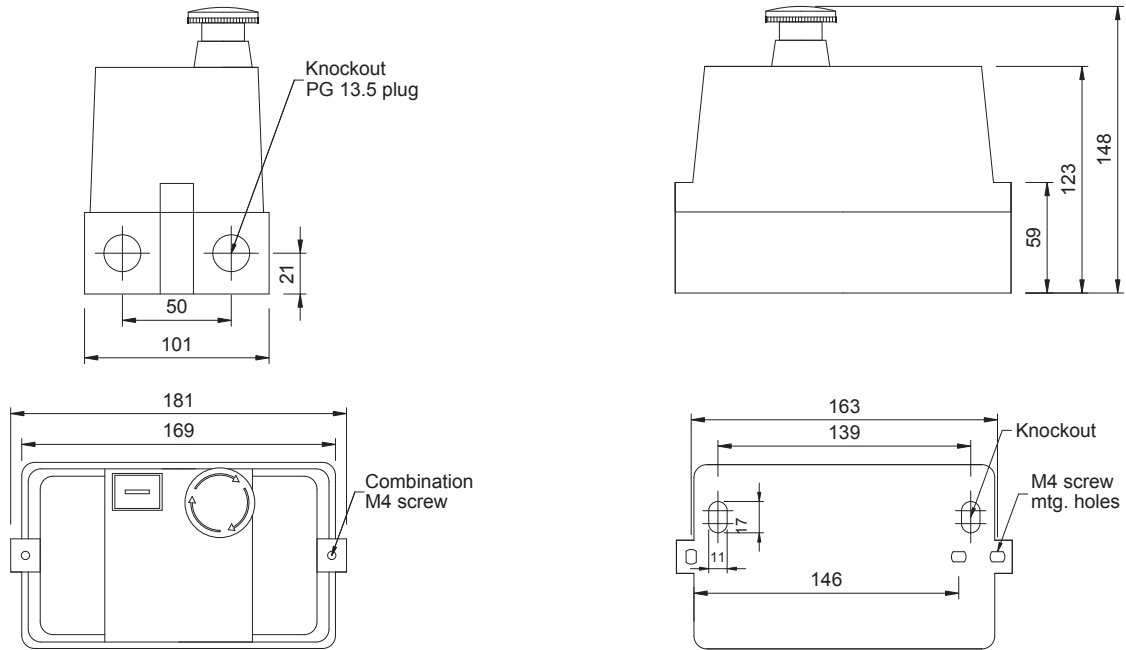


# Enclosure of Motor Starters

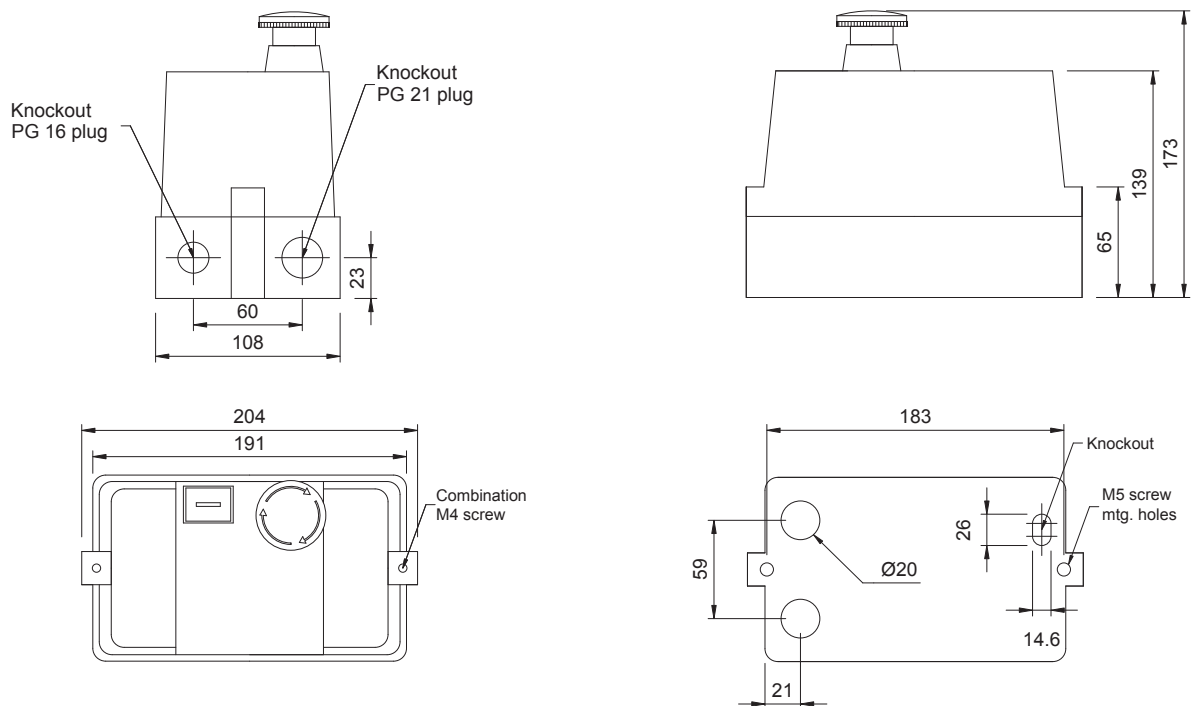
MS1 IP65

## Dimensions(mm)

MS1-09D/11D/12D/18D-R



MS1-25D/35D-R



# AC Motor Starters

Moulded Plastic Enclosure(MSP IP42)

## Model Designation

# MSP11 – C11 1G7N8 2P – PB

### 1. Series

MSP11
MSP21
MSP35

### 2. Capacity

MSP11	09D 11D 12D S-C11
MSP21	09D~35D S-C11~S-C21 S09~S22
MSP35	S32~S40

\*S09=SMC-09

### 3. Phase

1	Single Phase
2	Single Phase Terminal Jumper
3	3 Phase

### 4. Coil Control Voltage

Detail Page 1-1
-----------------

### 7. Cover Model

none	Enclosure
PB	Enclosure with push button

### 6. Phase-Failure Protection

2P	2 Heaters
3P	Phase-Failure

### 5. Overload Relay

T12	TH12
T20	TH20
T60	TH60
N	NTH

# Enclosure of Motor Starters

## MSP IP42

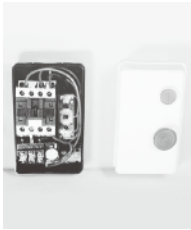
### Non-reversing starters - enclosed without push-button type

With differential overload relay , 1 N/O + 1 N/C auxiliary contacts(NTH) , 1 N/O + N/C(1com) auxiliary contacts(TH)  
Maximum power rating (50 or 60Hz)

Model Name	3-phase				Overload Relay Type	Instantaneous Auxiliary Contacts		Weight Kg
	220V	380V	440V	575V		N/O	N/C	
Non-push button Starters	KW HP	KW HP	KW HP	KW HP				
MSP11-C11	3	4	4	4	TH-12	1	-	0.577
MSP11-C11-PB	4	5.5	5.5	5.5	TH-12			0.592
MSP11-09D	2.2	3.7	3.7	3.7	TH-12/20	1	-	0.620
MSP11-09D-PB	3	5	5	5	TH-12/20			0.635
MSP11-11D	3	5.5	5.5	5.5	TH-12/20	1	-	0.625
MSP11-11D-PB	4	7.5	7.5	7.5	TH-12/20			0.640
MSP11-12D	4	7.5	7.5	7.5	TH-12/20	1	-	0.625
MSP11-12D-PB	5.5	10	10	10	TH-12/20			0.640
MSP21-C11	3	4	4	4	TH-12	1	-	0.695
MSP21-C11-PB	4	5.5	5.5	5.5	TH-12			0.645
MSP21-C12	3	4	4	4	TH-12	1	1	0.723
MSP21-C12-PB	4	5.5	5.5	5.5	TH-12			0.670
MSP21-C16	4	5.5	5.5	5.5	TH-12/20	1	1	0.750
MSP21-C16-PB	5.5	7.5	7.5	7.5	TH-12/20			0.800
MSP21-C21	5.5 7.5	11 15	11 15	11 15	TH-20	2	2	1.015
MSP21-09D	2.2	3.7	3.7	3.7	TH-12/20	1	-	0.740
MSP21-09D-PB	3	5	5	5	TH-12/20			0.790
MSP21-11D	3	5.5	5.5	5.5	TH-12/20	1	-	0.740
MSP21-11D-PB	4	7.5	7.5	7.5	TH-12/20			0.790
MSP21-12D	4	7.5	7.5	7.5	TH-12/20	1	-	0.740
MSP21-12D-PB	5.5	10	10	10	TH-12/20			0.790
MSP21-18D	5.5	11	11	11	TH-20,NTH	1	-	0.754
MSP21-18D-PB	7	15	15	15	TH-20,NTH			0.804
MSP21-25D	7.5	15	15	15	TH-20	1	-	0.940
MSP21-25D-PB	10	20	20	20	TH-20			0.990
MSP21-35D	11	19	19	19	TH-20	1	-	0.965
MSP21-35D-PB	15	25	25	25	TH-20			1.015
MSP21-S09	2.2	3.7	3.7	3.7	TH-12,NTH	1	1	0.804
MSP21-S09-PB	3	5	5	5	TH-12,NTH			1.854
MSP21-S12	3	5.5	5.5	5.5	TH-12,NTH	1	1	0.804
MSP21-S12-PB	4	7.5	7.5	7.5	TH-12,NTH			1.854
MSP21-S18	3.7	7.5	7.5	7.5	TH-20,NTH	1	1	0.804
MSP21-S18-PB	5	10	10	10	TH-20,NTH			1.854
MSP21-S22	5.5	11	11	11	TH-20,NTH	1	1	0.804
MSP21-S22-PB	7.5	15	15	15	TH-20,NTH			1.854
MSP35-S32	7.5	15	15	15	TH-20,NTH	2	2	1.055
MSP35-S32-PB	10	20	20	20	TH-20,NTH			1.085
MSP35-S40	11	19	19	19	TH-60,NTH	2	2	1.136
MSP35-S40-PB	15	25	25	25	TH-60,NTH			1.166



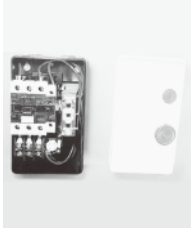
MSP11-C11



MSP11-09-PB



MSP21-C21



MSP21-35D-PB



MSP21-S09



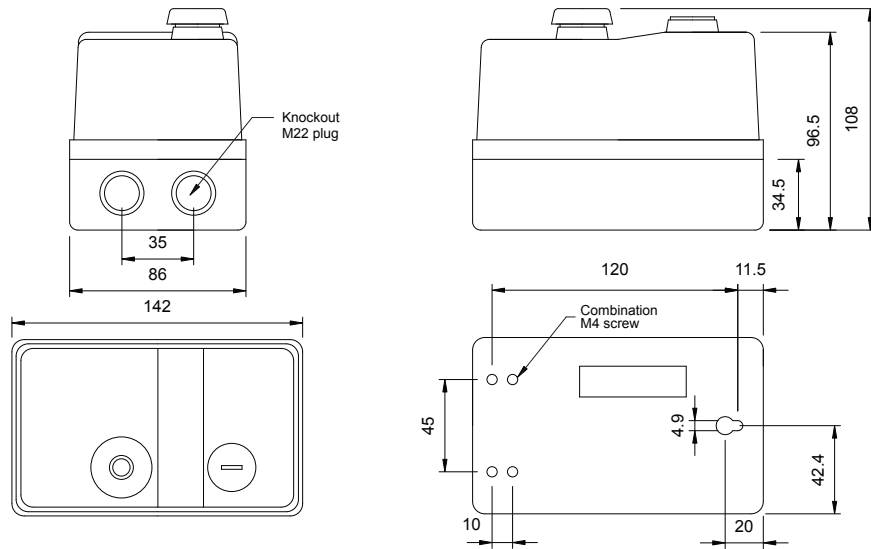
MSP35-S32-PB

# Enclosure of Motor Starters

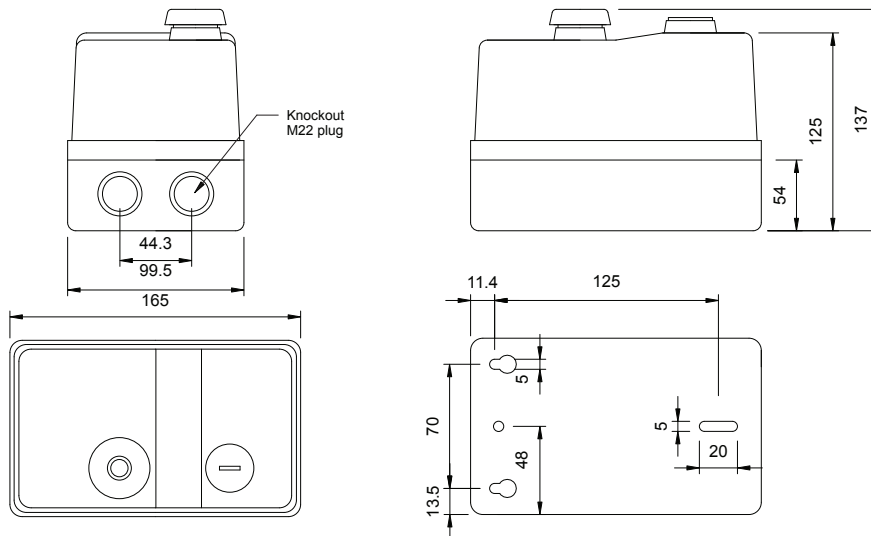
## MSP IP42

### Dimensions(mm)

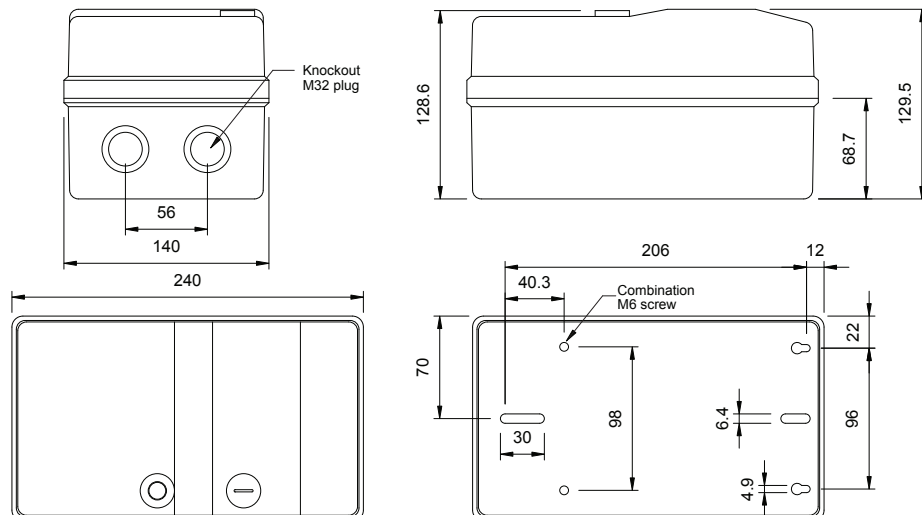
#### MSP11



#### MSP21



#### MSP35



# AC Motor Starters

Moulded Metal Enclosure(MSN IP40)

## Model Designation

# MSN11– C111G7T123.52P–PB

### 1.Series

MSO	Open
MSN11	11 Iron Box
MSN12	12 Iron Box
MSN21	21 Iron Box
MSN35	35 Iron Box
MSN65	65 Iron Box
MSN100	100 Iron Box
MSN150	150 Iron Box

### 2.Capacity

MSO	S-C11~S-C150 S09~S85
MSN11	S-C11 09D 11D 12D
MSN12	S-C11 S-C12 09D 11D 12D S09 S12
MSN21	S-C16~S-C21 09D~25D S09~S22
MSN35	S-C35 25D 35D S32 S40
MSN65	S-C50~S-C80 S50 S65
MSN100	S-C100~S-C125 45D~100D S65~S85
MSN150	S-C150

\*S09=SMC-09

### 3.Phase

1	Single Phase
2	Single Phase Terminal Jumper
3	3 Phase

### 7.Cover Model

none	Enclosure
PB	Enclosure with push button

### 6.Phase-Failure Protect

2P	2 Heaters
3P	Phase-Failure

### 5.Overload Relay

T12	TH12
T20	TH20
T60	TH60
T120	TH120
N	NTH

### 4.Coil Control Voltage

Detail Page 1-1



# AC Motor Starters

## Open Type "S-C"-Series

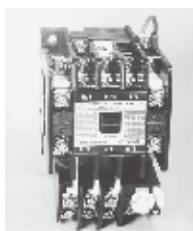
### Non-reversing starters - open type

With differential overload relay , 1 N/O + N/C(1com) auxiliary contacts  
Maximum power rating (50 or 60Hz)

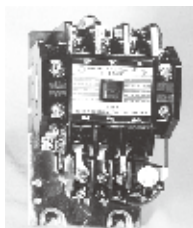
Model Name	3-phase				Overload Relay Type	Instantaneous Auxiliary Contacts		Weight Kg
	220V	380V	440V	575V		N/O	N/C	
	KW HP A	KW HP A	KW HP A	KW HP A				
MSO-C11	3 4 12	4 5.5 9	4 5.5 9	4 5.5 7	TH12	1	-	0.405
MSO-C12	3 4 12	4 5.5 9	4 5.5 9	4 5.4 7	TH12	1	1	0.445
MSO-C16	4 5.5 16	5.5 7.5 12	5.5 7.5 11	5.5 7.5 10	TH12/20	1	1	0.495
MSO-C21	5.5 7.5 24	11 15 21	11 15 20	11 15 17	TH20	2	2	0.750
MSO-C35	9 12.5 35	15 20 27	15 20 25	15 20 22	TH20	2	2	1.270
MSO-C50	13 17.5 50	24 32 44	24 32 41	24 32 35	TH60	2	2	1.695
MSO-C60	15 20 58	30 40 56	30 40 54	30 40 45	TH60	2	2	1.695
MSO-C65	19 25 67	37 50 63	37 50 60	37 50 52	TH60	2	2	2.730
MSO-C80	22 30 85	44 60 80	44 60 75	44 60 64	TH60	2	2	2.730
MSO-C100	30 40 110	60 80 90	60 80 85	60 80 72	TH120	2	2	4.000
MSO-C125	37 50 135	75 100 130	75 100 120	75 100 105	TH120	2	2	4.000
MSO-C150	44 60 150	93 125 165	93 125 155	93 125 130	TH120	2	2	5.450



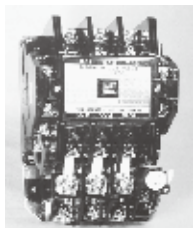
MSO-C11



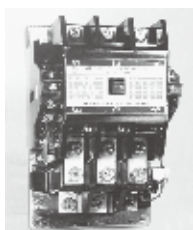
MSO-C21



MSO-C35



MSO-C50



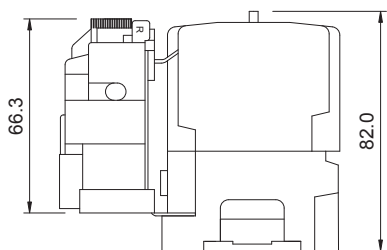
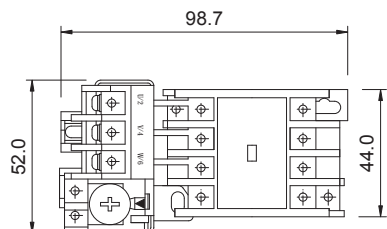
MSO-C100

# Open type

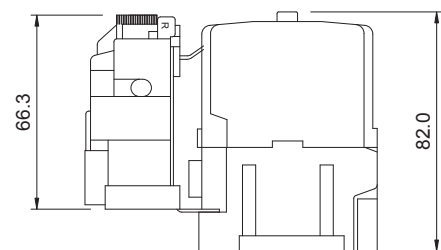
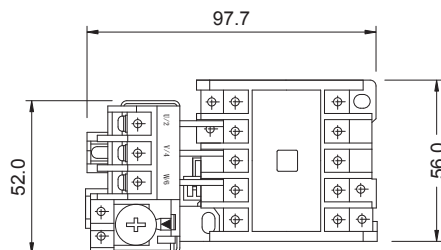
Without Box

## Dimensions(mm)

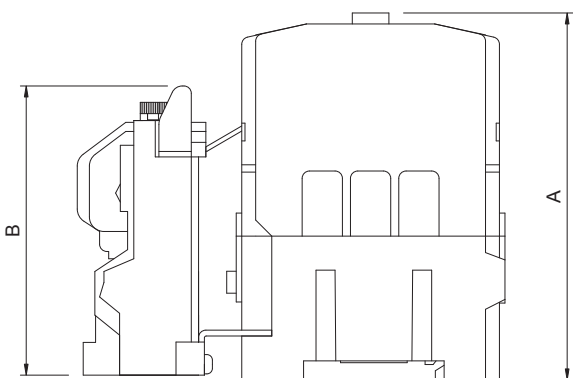
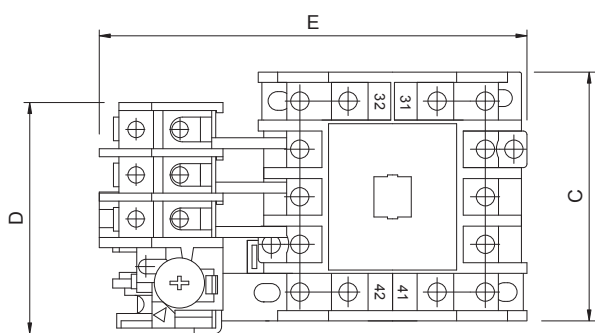
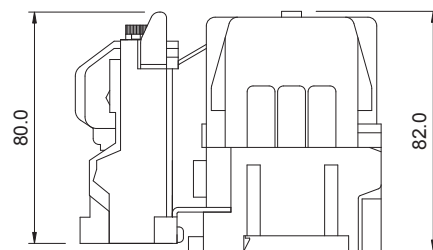
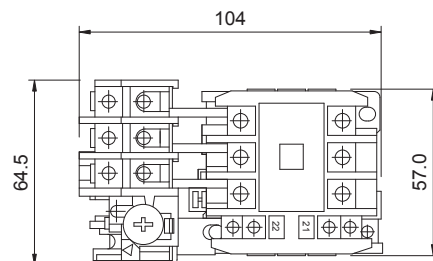
MSO-C11



MSO-C12



MSO-C16



Model Name	Dimensions ( mm )				
	A	B	C	D	E
MSO-C21	100	80	69	64.5	116
MSO-C35	108	80	85	64.5	126
MSO-C50	105	82	101	100	160
MSO-C60	105	82	101	100	160
MSO-C65	129	82	117	100	162
MSO-C80	129	82	117	100	162
MSO-C100	143	106	141	136	196
MSO-C125	143	106	141	136	196
MSO-C150	163	106	161	136	223

# Moulded Metal Enclosure

## MSN IP40

### Non-reversing starters - enclosed

With differential overload relay , 1 N/O + 1 N/C auxiliary contacts(NTH) , 1 N/O + N/C(1com) auxiliary contacts(TH)  
Maximum power rating (50 or 60Hz)

Model Name	3-phase				Overload Relay Type	Instantaneous Auxiliary Contacts		Weight Kg
	220V	380V	440V	575V		N/O	N/C	
Type	KW HP A	KW HP A	KW HP A	HP hp A				
MSN11-C11	3 4 12	4 5.5 9	4 5.5 9	4 5.5 7	TH12	1	-	0.705
MSN11-09D	2.2 3 9	3.7 5 9	3.7 5 8	3.7 5 6.5	TH12	1	-	0.731
MSN11-11D	3 4 12	5.5 7.5 12	5.5 7.5 11	5.5 7.5 9	TH12	1	-	0.735
MSN11-12D	4 5.5 16	7.5 10 16	7.5 10 15	7.5 10 13	TH12	1	-	0.735
MSN12-C11-PB	3 4 12	4 5.5 9	4 5.5 9	4 5.5 7	TH12	1	-	0.860
MSN12-C12-PB	3 4 12	4 5.5 9	4 5.5 9	4 5.5 7	TH12	1	1	0.905
MSN12-09D-PB	2.2 3 9	3.7 5 9	3.7 5 8	3.7 5 6.5	TH12/20	1	-	0.886
MSN12-11D-PB	3 4 12	5.5 7.5 12	5.5 7.5 11	5.5 7.5 9	TH12/20	1	-	0.890
MSN12-12D-PB	4 5.5 16	7.5 10 16	7.5 10 15	7.5 10 13	TH12/20	1	-	0.890
MSN21-C16	4 5.5 16	5.5 7.5 12	5.5 7.5 11	5.5 7.5 10	TH20	1	1	1.045 1.115
MSN21-C16-PB	5.5 7.5 24	11 15 21	11 15 20	11 15 17	TH20	2	2	1.300 1.375
MSN21-09D	2.2 3 9	3.7 5 9	3.7 5 8	3.7 5 6.5	TH12/20,NTH	1	-	1.025 1.085
MSN21-09D-PB	3 4 12	5.5 7.5 12	5.5 7.5 11	5.5 7.5 9	TH12/20,NTH	1	-	1.025 1.085
MSN21-11D	4 5.5 16	7.5 10 16	7.5 10 15	7.5 10 13	TH12/20,NTH	1	-	1.025 1.085
MSN21-11D-PB	5.5 7.5 23	11 15 22	11 15 21	11 15 16	TH20,NTH	1	-	1.030 1.090
MSN21-12D	7.5 10 30	15 20 30	15 20 30	15 20 25	TH20	1	-	1.225 1.295
MSN21-12D-PB	10 20 30	20 30 30	20 30 30	20 25 25	TH20	1	-	1.225 1.295



MSN12-C11-PB



MSN12-12D-PB



MSN21-C16-PB



MSN21-11D



MSN21-25D-PB

# Moulded Metal Enclosure

## MSN IP40

### Non-reversing starters - enclosed

With differential overload relay , 1 N/O + 1 N/C auxiliary contacts(NTH) , 1 N/O + N/C(1com) auxiliary contacts(TH)  
Maximum power rating (50 or 60HZ)

Model Name	3-phase				Overload Relay Type	Instantaneous Auxiliary Contacts		Weight Kg
	220V	380V	440V	575V		N/O	N/C	
Type	KW HP A	KW HP A	KW HP A	KW HP A				
MSN35-C35	9	15	15	15				2.260
MSN35-C35-PB	12.5	20	20	20	TH20	2	2	2.234
MSN35-25D	7.5	15	15	15				1.950
MSN35-25D-PB	10	20	20	20	TH20.NTH	1	-	2.070
MSN35-35D	11	19	19	19				1.950
MSN35-35D-PB	15	25	25	25	TH20.NTH	1	-	2.070
MSN65-C50	13	24	24	24				3.140
MSN65-C50-PB	17.5	32	32	32	TH60	2	2	3.440
MSN65-C60	15	30	30	30				3.140
MSN65-C60-PB	20	40	40	40	TH60	2	2	3.445
MSN65-C65	19	37	37	37				4.090
MSN65-C65-PB	25	50	50	50	TH60	2	2	4.240
MSN65-C80	22	44	44	44				4.090
MSN65-C80-PB	30	60	60	60	TH60	2	2	4.240
MSN100-C100	30	60	60	60				6.280
MSN100-C100-PB	40	80	80	80	TH120	2	2	6.430
MSN100-C125	37	75	75	75				6.280
MSN100-C125-PB	50	100	100	100	TH120	2	2	6.430
MSN100-45D	15	30	30	30				3.980
MSN100-45D-PB	20	40	40	40	NTH	1	1	4.130
MSN100-55D	19	33	33	33				3.980
MSN100-55D-PB	25	45	45	45	NTH	1	1	4.130
MSN100-65D	22	37	37	37				3.980
MSN100-65D-PB	30	50	50	50	NTH	1	1	4.130
MSN100-80D	25	45	55	55				4.190
MSN100-80D-PB	35	60	75	75	NTH	1	1	4.330
MSN100-100D	30	55	55	60				4.190
MSN100-100D-PB	40	75	75	80	NTH	1	1	4.330
MSN150-C150-PB	105	105	95	76				4.330
MSN150-C150-PB	44	93	93	93				8.950
MSN150-C150-PB	60	125	125	125	TH120	2	2	8.950
MSN150-C150-PB	150	165	155	130				



MSN35-C35



MSN35-C35-PB



MSN65-C65-PB



MSN100-45D-PB

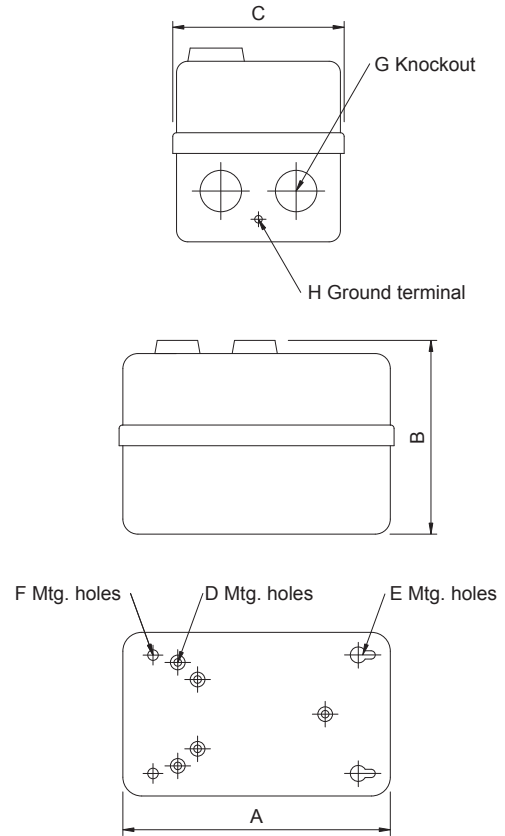
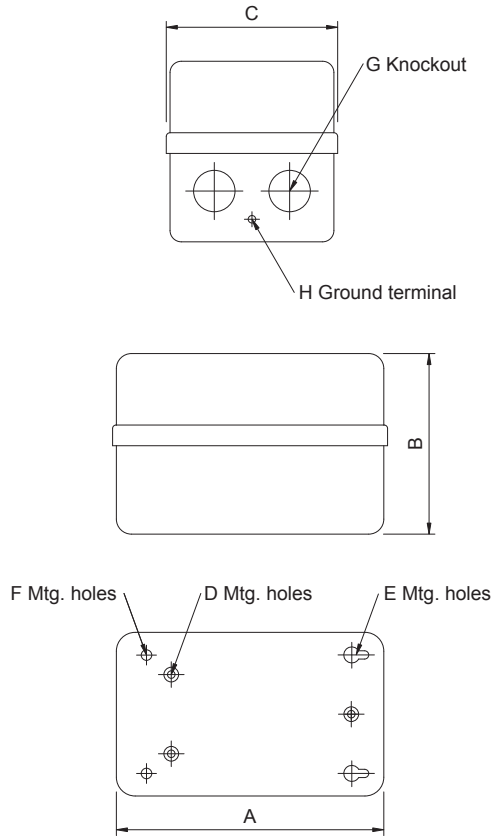


MSN150-C150-PB

# Enclosure of Motor Starters

MSN IP40

## Dimensions(mm)



Model Name	Dimensions (mm)								Model Name	Dimensions (mm)							
	A	B	C	D	E	F	G	H		A	B	C	D	E	F	G	H
MSN11	137	90	66	4	4.5	4.5	22	4	MSN12 -PB	141	103	90	4	4.5	6	22	4
MSN12	141.5	97	90	4	4.5	6	22	4	MSN21 -PB	166	120	100	4	5	6	22	4
MSN21	166	113	100	4	5	6	22	4	MSN35 -PB	225	139	129	5	6	6	28	5
MSN35	225	132	129	5	6	6	28	5	MSN65 -PB	265	153	152	5	6	6	35	5
MSN65	265	147	152	5	6	6	35	5	MSN100 -PB	298	177	190	5	7	7.5	35	5
MSN100	298	170	190	5	7	7.5	35	5	MSN150 -PB	350	177	230	6	8	8	55	6

# Moulded Metal Enclosure

## MSN IP40

### Non-reversing starters - enclosed and open type

With differential overload relay , 1 N/O + N/C(1com) auxiliary contacts  
Maximum power rating (50 or 60HZ)

Model Name	3-phase				Overload Relay Type	Instantaneous Auxiliary Contacts		Weight Kg
	220V	380V	440V	575V		N/O	N/C	
Type	KW HP A	KW HP A	KW HP A	KW HP A				
MSO-S09	2.2	3.7	3.7	3.7				0.500
MSN12-S09	3	5	5	5	TH12,NTH	1	1	0.788
MSN12-S09-PB	9	9	8	6.5				0.913
MSO-S12	3	5.5	5.5	5.5				0.500
MSN12-S12	4	7.5	7.5	7.5	TH12,NTH	1	1	0.788
MSN12-S12-PB	12	12	11	9				0.913
MSN21-S09	2.2	3.7	3.7	3.7				0.970
MSN21-S09-PB	3	5	5	5	TH12,NTH	1	1	1.045
	9	9	8	6.5				
MSO-S32	3	5.5	5.5	5.5				0.970
MSN21-S12	4	7.5	7.5	7.5	TH12,NTH	1	1	0.970
MSN21-S12-PB	12	12	11	9				1.045
MSO-S18	3.7	7.5	7.5	7.5				0.510
MSN21-S18	5	10	10	10	TH20,NTH	1	1	0.980
MSN21-S18-PB	15	15	14	13				1.055
MSO-S22	5.5	22	11	11				0.510
MSN21-S22	7.5	15	15	15	TH20,NTH	1	1	0.980
MSN21-S22-PB	22	22	21	16				1.055
MSO-S32	7.5	15	15	15				0.620
MSN35-S32	10	20	20	20	TH20,NTH	2	2	1.575
MSN35-S32-PB	32	32	30	25				1.695
MSO-S40	11	19	19	19				0.620
MSN35-S40	15	25	25	25	TH20,NTH	2	2	1.575
MSN35-S40-PB	42	42	36	29				1.695
*MSO-S50	15	30	30	30				1.727
MSN65-S50	20	40	40	40	TH60,NTH	2	2	3.355
MSN65-S50-PB	55	55	52	46				3.505
*MSO-S65	19	33	33	33				1.727
MSN65-S65	25	45	45	45	TH60,NTH	2	2	3.355
MSN65-S65-PB	65	65	57	50				3.505
*MSN100-S65	19	33	33	33				4.124
MSN100-S65	25	45	45	45	TH60,NTH	2	2	4.274
MSN100-S65-PB	65	65	57	50				
*MSO-S75	22	37	37	37				1.790
MSN100-S75	30	50	50	50	TH120,NTH	2	2	4.187
MSN100-S75-PB	80	80	64	53				4.337
*MSO-S85	25	45	45	55				1.790
MSN100-S85	35	60	60	75	TH120,NTH	2	2	4.187
MSN100-S85-PB	105	105	80	75				4.337

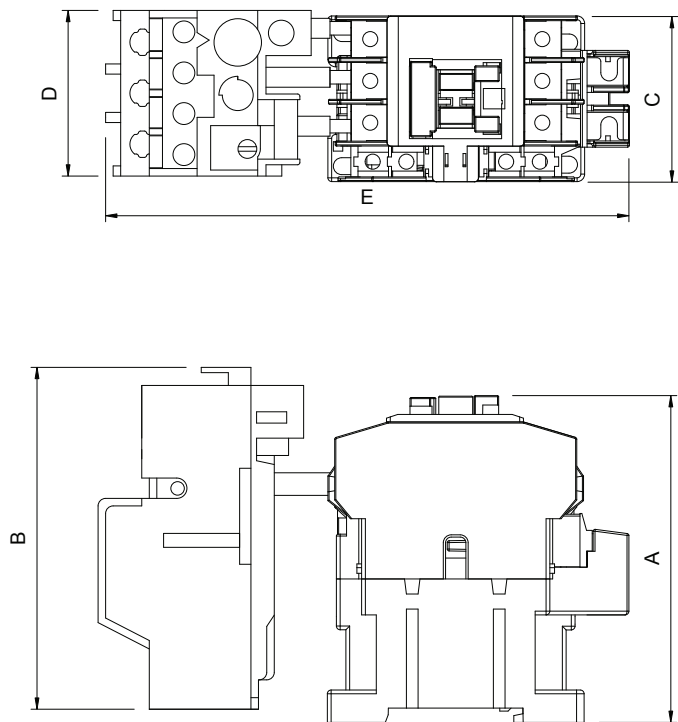
Note: \* MSN box used only with SMC 85AF size.

# Open type

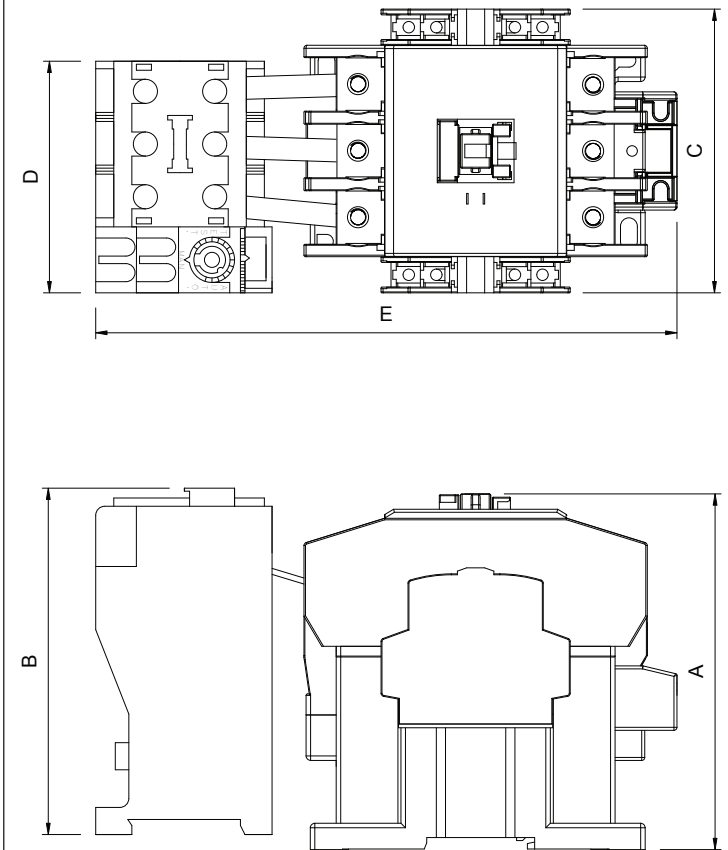
## Without Box

### Dimensions(mm)

MSO-S09/S12/S18/S22/S32/S40  
Overload Relay:NTH-Series



MSO-S50/S65/S75/S85  
Overload Relay: NTH-Series



Model Name	Dimensions (mm)				
	A	B	C	D	E
MSO-S09	87.2	93	44	44	141
MSO-S12	87.2	93	44	44	141
MSO-S18	87.2	93	44	44	141
MSO-S22	87.2	93	44	44	141
MSO-S32	94.6	93	68.6	44	144
MSO-S40	94.6	93	68.6	44	144

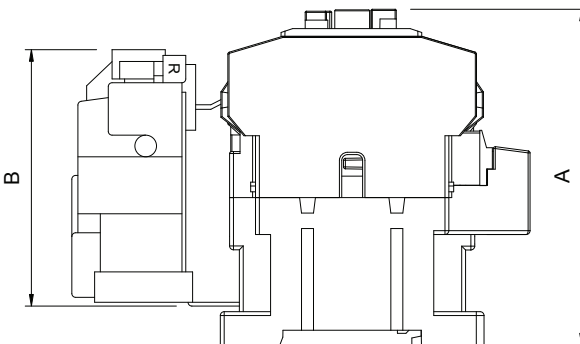
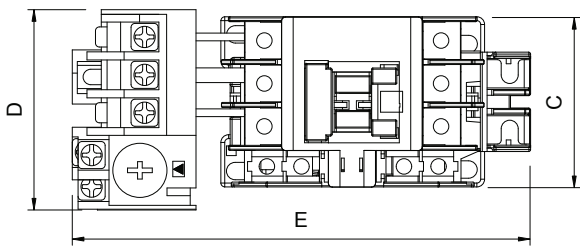
Model Name	Dimensions (mm)				
	A	B	C	D	E
MSO-S50	118	112	94.2	77	193
MSO-S65	118	112	94.2	77	193
MSO-S75	118	112	94.2	77	193
MSO-S85	118	112	94.2	77	193

# Open type

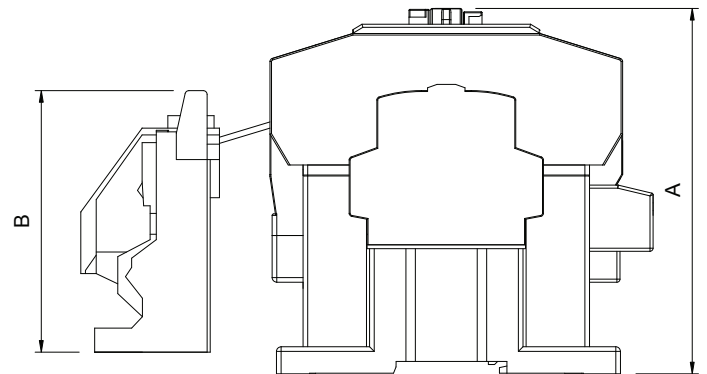
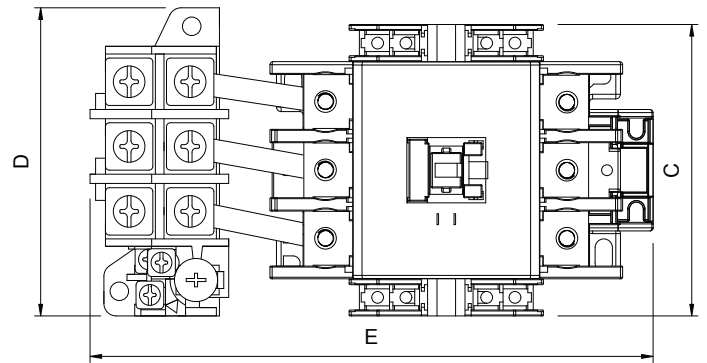
## Without Box

### Dimensions(mm)

MSO-S09/S12/S18/S22/S32/S40  
Overload Relay: TH12~TH20



MSO-S50/S65/S75/S85  
Overload Relay: TH60~TH120



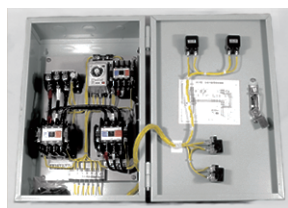
Model Name	Dimensions (mm)				
	A	B	C	D	E
MSO-S09	87.2	66.3	44	52	118.5
MSO-S12	87.2	66.3	44	52	118.5
MSO-S18	87.2	80	44	62	119
MSO-S22	87.2	80	44	62	119
MSO-S32	94.6	80	68.6	62	122
MSO-S40	94.6	80	68.6	62	122

Model Name	Dimensions (mm)				
	A	B	C	D	E
MSO-S50	118	72	94.2	100	185
MSO-S65	118	72	94.2	100	185
MSO-S75	118	93.5	94.2	136	196
MSO-S85	118	93.5	94.2	136	196



# Star-delta Starters

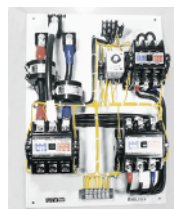
CONTROL CIRCUIT : AC



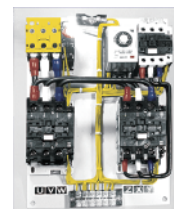
EYD<sub>3</sub>-35



EYD<sub>3</sub>-S40



EYO<sub>3</sub>-100



EYO<sub>3</sub>-45D

Type	220~240V			380~415V			MCM	MCY	MC $\Delta$	BOX Dimensions (mm)
	HP	A	CT	HP	A	CT				

## "S-C" Series

EYD <sub>3</sub> -21	7.5~10	22~30A	-	10~15	15~22A	-	S-C21	S-C21	S-C21	300*460*170
EYD <sub>3</sub> -35	15~20	41~54A	-	20~30	30~41A	-	S-C35	S-C21	S-C35	300*460*170
EYD <sub>3</sub> -50	25~30	67~80A	-	40~50	54A~67A	-	S-C50	S-C35	S-C50	360*520*190
EYD <sub>3</sub> -65	40	105A	-	60	80A	-	S-C65	S-C35	S-C65	420*560*210
EYD <sub>3</sub> -80	50	130A	-	75	105A	-	S-C80	S-C50	S-C80	420*560*210
EYD <sub>3</sub> -100	60	2CT TH20-3.5A	200:5	100	2CT TH20-5A	150:5	S-C100	S-C60	S-C100	420*560*210
EYD <sub>3</sub> -125	75	2CT TH20-3.5A	250:5	125	2CT TH20-5A	200:5	S-C125	S-C65	S-C125	420*560*210
EYD <sub>3</sub> -150	100	2CT TH20-3.5A	300:5	150	2CT TH20-5A	300:5	S-C150	S-C80	S-C150	480*700*230
EYD <sub>3</sub> -220	125	2CT TH20-3.5A	400:5	200	2CT TH20-5A	400:5	S-C220	S-C100	S-C220	850*550*250

## "C" Series

EYD <sub>3</sub> -12D	7.5~10	22~30A	-	10~15	15~22A	-	C-12D10	C-12D10 +CA8-D11	C-12D10 +CA8-D11	300*460*170
EYD <sub>3</sub> -25D	15~20	41~54A	-	20~30	30~41A	-	C-25D10	C-12D10 +CA8-D11	C-25D10 +CA8-D11	300*460*170
EYD <sub>3</sub> -35D	25~30	67~80A	-	40~50	54~67A	-	C-35D10	C-25D10 +CA8-D11	C-35D10 +CA8-D11	300*460*170
EYD <sub>3</sub> -55D	40	105A	-	60	80A	-	C-55D11	C-35D10 +CA8-D11	C-55D11 +CA8-D11	300*460*170
EYD <sub>3</sub> -65D	50	2CT NTH-5A	150:5	75	105A	-	C-65D11	C-45D11	C-65D11 +CA8-D11	360*520*190
EYD <sub>3</sub> -80D	60	2CT NTH-4A	200:5	100	2CT NTH-5A	150:5	C-80D11	C-55D11	C-80D11 +CA8-D11	360*520*190
EYD <sub>3</sub> -100D	75	2CT NTH-4A	250:5	125	2CT NTH-5A	200:5	C-100D11	C-65D11	C-100D11 +CA8-D11	360*520*190

## "SMC" Series

EYD <sub>3</sub> -S18	7.5~10	22~30A	-	10~15	15~22A	-	SMC-1811	SMC-1811	SMC-18 +SMC-D11	300*460*170
EYD <sub>3</sub> -S32	15~20	41~54A	-	20~30	30~41A	-	SMC-3211	SMC-1811	SMC-32 +SMC-D11	300*460*170
EYD <sub>3</sub> -S40	25~30	67~80A	-	40~50	54~67A	-	SMC-4011	SMC-32 +SMC-D11	SMC-40 +SMC-D11	360*520*190
EYD <sub>3</sub> -S65	40	105A	-	60	80A	-	SMC-6511	SMC-40 +SMC-D11	SMC-65 +SMC-D11	420*560*210
EYD <sub>3</sub> -S75	50	2CT NTH-5A	150:5	75	105A	-	SMC-7511	SMC-65 +SMC-D11	SMC-75 +SMC-D11	420*560*210
EYD <sub>3</sub> -S85	60	2CT NTH-4A	200:5	100	2CT NTH-5A	150:5	SMC-8511	SMC-75 +SMC-D11	SMC-85 +SMC-D11	420*560*210

# Accessories

## 4 Pole contactors

### Model Designation

# C-12D22G7

1    2    3

#### 1.Type

09D 11D 12D 25D

#### 2.Contacts

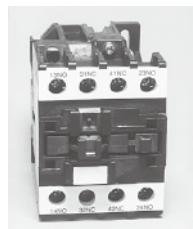
09D	11D	12D	25D	
40	4a	40	4a	
22	2a2b	22	2a2b	
04	4b			

#### 3.Coil Control Voltage

Detail page 1-1



C-12D22

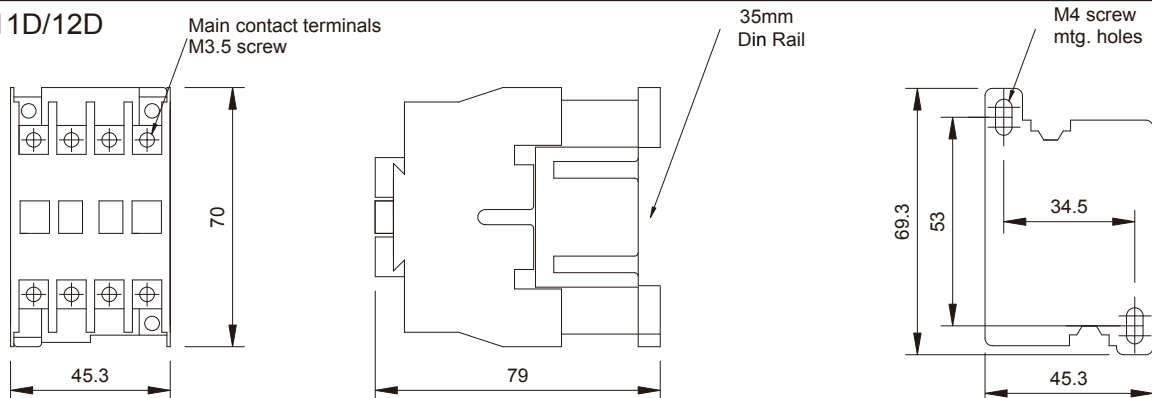


C-25D22

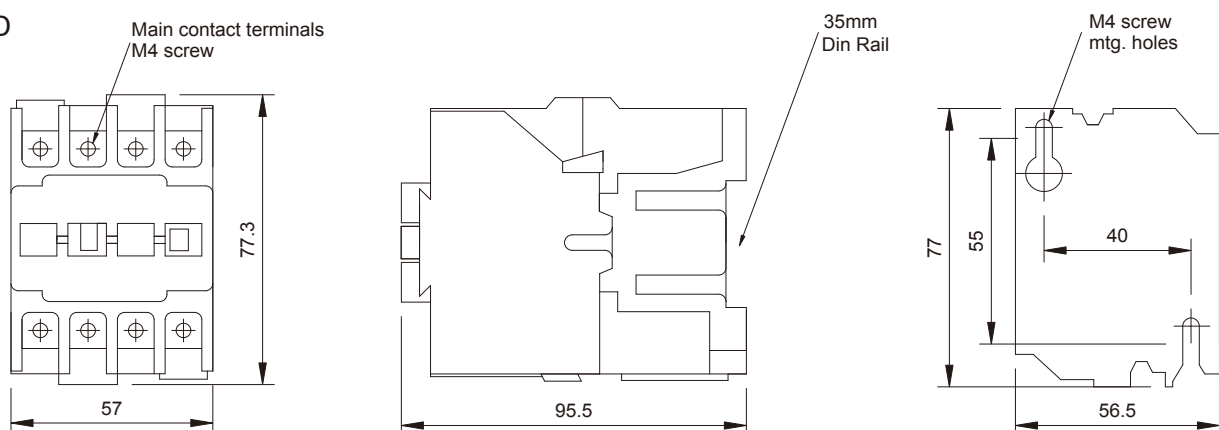
Model Name	Contacts		Insulation Voltage	AC1 duty $q \leq 40^\circ\text{C}$	AC3 $I_e$	Weight Kg	Approval
	N/O	N/C					
C-09D40	4	-	1000V	20A	9A	0.326	
C-09D22	2	2	1000V	20A	9A	0.326	
C-09D04	-	4	1000V	20A	9A	0.326	
C-11D40	4	-	1000V	25A	12A	0.326	
C-11D22	2	2	1000V	25A	12A	0.326	
C-11D04	-	4	1000V	25A	12A	0.326	
C-12D40	4	-	1000V	25A	16A	0.326	
C-12D22	2	2	1000V	25A	16A	0.326	
C-12D04	-	4	1000V	25A	16A	0.326	
C-25D40	4	-	1000V	40A	32A	0.525	UL LISTED
C-25D22	2	2	1000V	40A	32A	0.525	UL LISTED
C-25D04	-	4	1000V	40A	32A	0.525	UL LISTED

### Dimensions(mm)

#### C-09D/11D/12D



#### C-25D



# Accessories

## Control relays and auxiliary contact blocks

Model Designation

**CR2-1040G7**  
1 2 3

Note: rated 20A max at 600Vac  
 general use and 7.5HP max  
 at 575Vac 3Phase

### 1.Type

10	Control Circuit AC
----	--------------------

### 2.Contacts

10	
40	4a
22	2a2b
31	3a1b
13	1a3b
04	4b

### 3.Coil Control Voltage

Detail page 1-1



CR2-1022

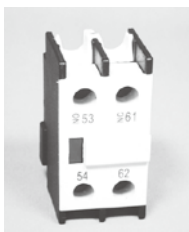
Model Name	Contacts N/O	Contacts N/C	Insulation Voltage	Thermal Current	Weight Kg	Approval
CR2-1040	4	-	660V	20A	0.335	UL, CE
CR2-1031	3	1	660V	20A	0.335	UL, CE
CR2-1022	2	2	660V	20A	0.335	UL, CE
CR2-1013	1	3	660V	20A	0.335	UL, CE
CR2-1004	0	4	660V	20A	0.335	UL, CE

## Auxiliary contact blocks

**CA1-D11**

1 2

Note: Rated 10A max at 600Vac  
 Ui:600V  
 Ith:10A



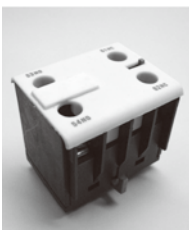
CA1-D11

### 1.Series

CA1	Top mtg.
CA6	Top mtg.
CA8	Side mtg.
CA9	Mechanical Interlock

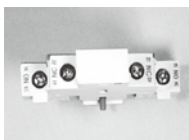
### 2.Contacts

20	2a	31	3a1b
11	1a1b	13	1a3b
02	2b	22	2a2b
40	4a	04	4b



CA6-D11

Model Name	Applicable Contactor	Auxiliary N/O	Contacts N/C	Insulation Voltage	Thermal Current	Weight Kg	Approval
CA1-D20	C-09D to C-100D11	2	-	660V	10A	0.033	UL, CE
CA1-D11	C-09D to C-100D11	1	1	660V	10A	0.033	UL, CE
CA1-D02	C-09D to C-100D11	-	2	660V	10A	0.033	UL, CE
CA1-D40	C-09D to C-100D11	4	-	660V	10A	0.059	UL, CE
CA1-D31	C-09D to C-100D11	3	1	660V	10A	0.059	UL, CE
CA1-D22	C-09D to C-100D11	2	2	660V	10A	0.059	UL, CE
CA1-D13	C-09D to C-100D11	1	3	660V	10A	0.059	UL, CE
CA1-D04	C-09D to C-100D11	-	4	660V	10A	0.059	UL, CE
CA6-D20	C-06D	2	-	660V	10A	0.032	CE
CA6-D11	C-06D	1	1	660V	10A	0.032	CE
CA6-D02	C-06D	-	2	660V	10A	0.032	CE
CA6-D40	C-06D	4	-	660V	10A	0.032	CE
CA6-D31	C-06D	3	1	660V	10A	0.032	CE
CA6-D22	C-06D	2	2	660V	10A	0.032	CE
CA6-D13	C-06D	1	3	660V	10A	0.032	CE
CA6-D04	C-06D	-	4	660V	10A	0.032	CE
CA8-D20	C-09D to C-100D11	2	-	660V	10A	0.035	UL, CE
CA8-D11	C-09D to C-100D11	1	1	660V	10A	0.035	UL, CE
CA8-D02	C-09D to C-100D11	-	2	660V	10A	0.035	UL, CE
CA9-D02	C-09D to C-100D11	-	2	660V	10A	0.035	UL, CE



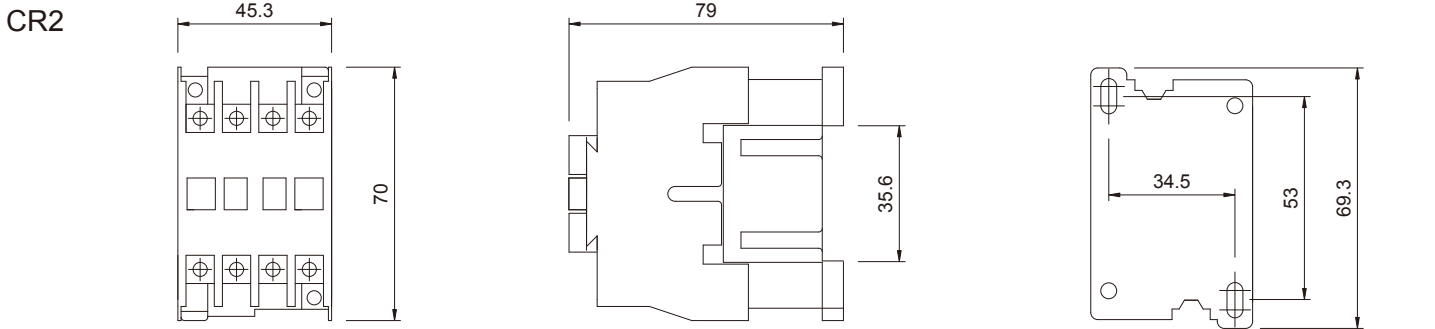
CA8-D11



CA9-DO2

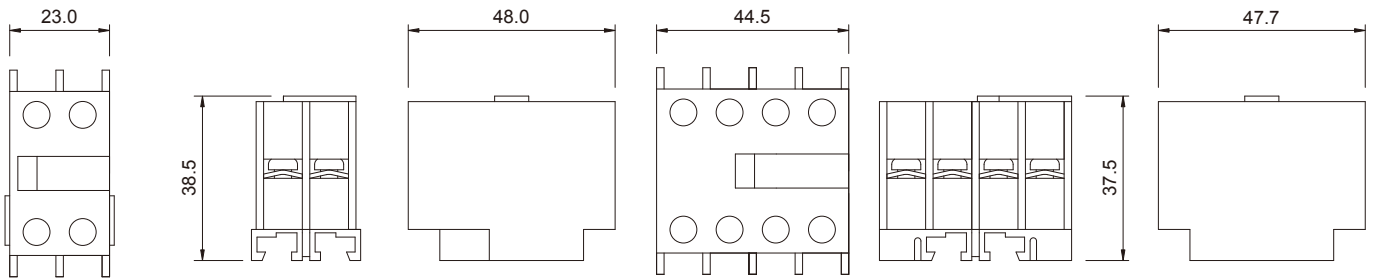
# CR2/CA1/CA6/CA8/CA9/45D-02C

## Dimensions(mm)



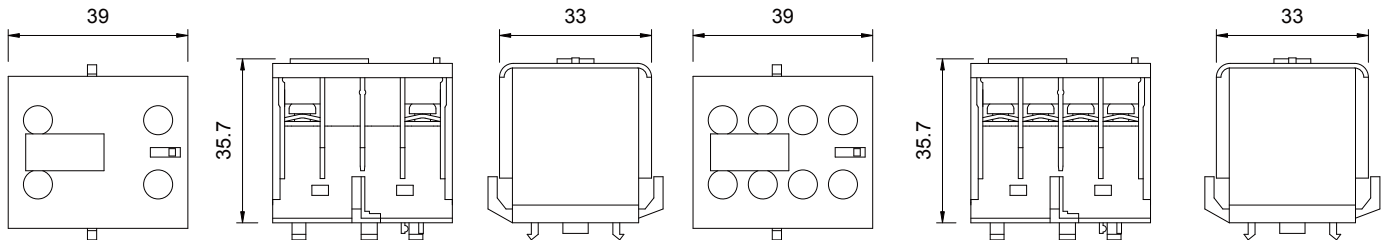
**CA1-DXX(2P)**

**CA1-DXX(4P)**



**CA6-DXX(2P)**

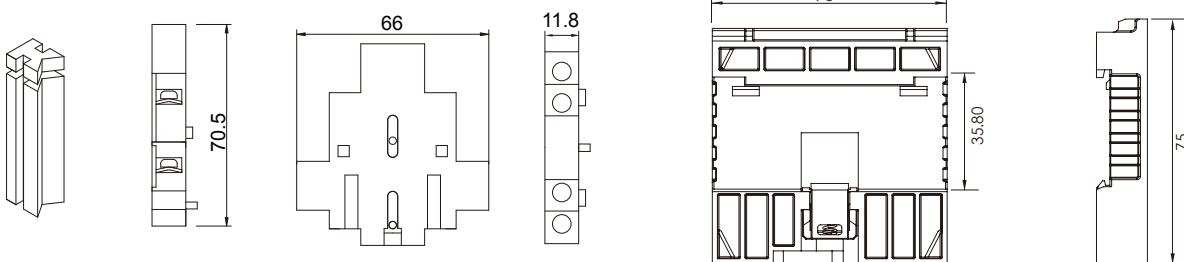
**CA6-DXX(4P)**



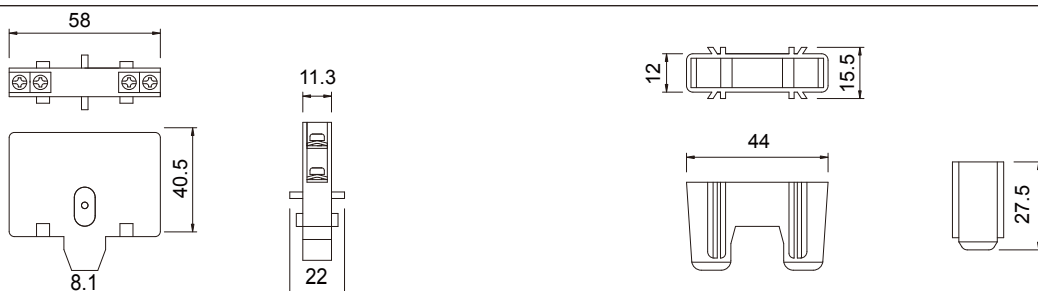
**CA8-DXX(2P)**

**45D-02C**

C-45D to C-100D



**CA9-D02**



# Accessories

## Coils for contactor

### Model Designation

CL—09DG7  
           1  2

### 1.Type

C	09D 25D 45D 80D 09DC 25DC 45DC 80DC
S	C11 C12 C21 C35 C50 C65 C100 C150 C220
AC	201 202 203 204
SMC	09 50 100

### 2.Coil Control Voltage

Detail Papg 1-1



CL-09D



CL-45D



CL-C11



CL-C100



CL-202

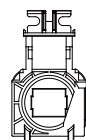


CL-203

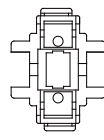


CL-S50

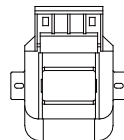
Model Name	Applicable Contactors	Weight Kg.
CL-06D	C-06D	0.035
CL-09D	C-09D~C-18D	0.060
CL-25D	C-25D~C-35D	0.070
CL-45D	C-45D~C-65D	0.100
CL-80D	C-80D~C-100D	0.105
CL-09DC	C-09DC~C-18DC	0.062
CL-25DC	C-25DC~C-35DC	0.072
CL-45DC	C-45DC~C-65DC	0.102
CL-80DC	C-80DC~C-100DC	0.102
CL-C11	S-C11	0.044
CL-C12	S-C12~S-C16	0.038
CL-C21	S-C21	0.082
CL-C35	S-C35	0.125
CL-C50	S-C50~S-C60	0.130
CL-C65	S-C65~S-C80	0.152
CL-C100	S-C100~S-C125	0.200
CL-C150	S-C150	0.440
CL-C220	S-C220	0.940
CL-201	AC201~AC501	0.047
CL-202	AC202~AC502	0.036
CL-203	AC203~AC503	0.042
CL-204	AC204~AC504	0.069
CL-S09	SMC09~SMC40	0.077
CL-S50	SMC50~SMC85	0.133
CL-S100	SMC75~SMC100 (100AF)	0.133



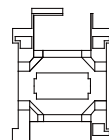
CL-S09



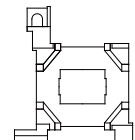
CL-202



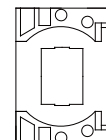
CL-204



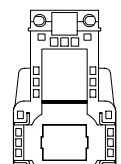
CL-09D



CL-25D



CL-45D



CL-S100

# Accessories

## Moulded Plastic Enclosure(MS1 IP65)

### Model Designation

$$\frac{\text{MS1}}{1} \frac{\text{09D}}{2} - \frac{\text{01G}}{3} - \frac{\text{C}}{4}$$

#### 1.Type

MS1	Enclosure with push button
MS	Enclosure without push button

#### 2.Item

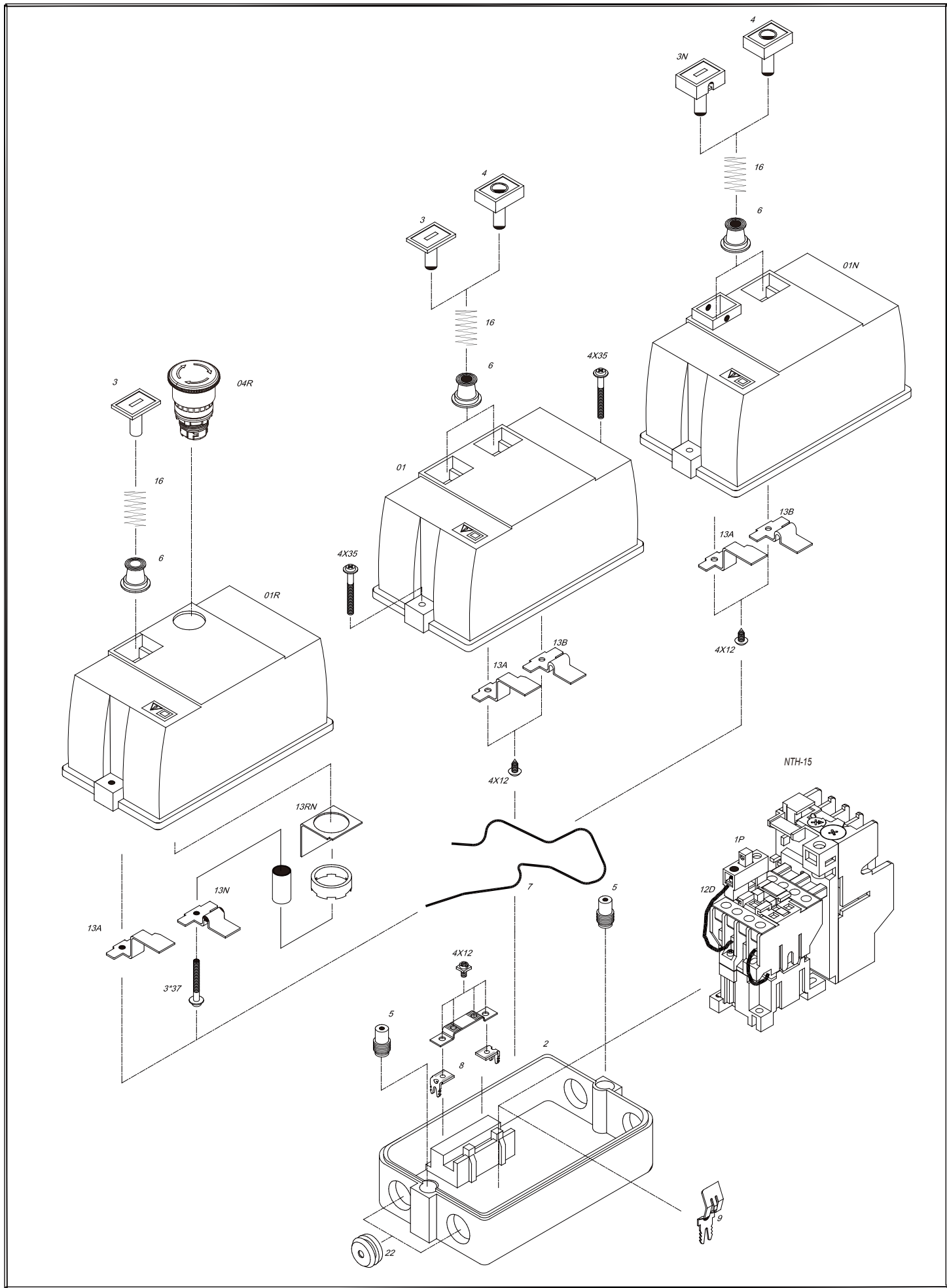
09D	09D 11D 12D
18D	18D
25D	25D
35D	35D

#### 4.Cover Model

none	Empty
C	Normal

#### 3.Part Number

1P	Starter contact	05	Plastic screw for sealing Enclosure
01	Cover	06	Waterproof rubber
01N	Cover with Lock	07	Seal packing
01G	Cover with "Start" only	08	Neutral/Protective conductor bar
01S	Cover with "Stop" only	09	Iron plate for fixing MSO
01R	Cover with "Reset" only	13A	Iron plate for start
02	Endousure base	13B	Iron plate for stop
03	Start push button	13N	Iron plate for stop(NTH)
03N	Lock start push button with Lock	13RN	Plate for 13N
04	Stop push button	16	Spring
04R	Reset push button	22	Rubber



# Definite Purpose Contactors

1 Pole 、 2 Pole 、 3 Pole and 4 Pole

## Model Designation

**AC203A5-S1A0**  
1 2 3 4 5 6 7 8

### 1-Air Conditioning

Air Conditioning, Heating, Lighting

### 2-Full Load Amps

20 = 20 FLA  
 25 = 25 FLA  
 30 = 30 FLA  
 40 = 40 FLA  
 50 = 50 FLA

### 3-Number of Poles:

1 = 1 Pole + 1 Shunt  
 2 = 2 Pole  
 3 = 3 Pole  
 4 = 4 Pole  
 5 = 1 Pole  
 6 = 3a→2Pole

### 4-Coil Voltage

Coil Voltage	24V	48V	110V	120V	190V	220V	230V	240V	380V	415V	440V	480V	277V	600V
50Hz	A5	C5	D5	E5	F5	G5	H5	I5	J5	L5	M5	N5	W5	Q5
60Hz	A6	C6	D6	E6	F6	G6	H6	I6	J6	L6	M6	N6	W6	Q6

### 5.-Mounting Plate:

R = Dine Rail  
 S = Standard Mounting

### 6.-Main Terminals:

1 = Screw  
 2 = Screw with quick connect  
 3 = Box Lug  
 4 = Box Lug with quick connect

### 7.-Coil Terminals:

A = 6.35 mm ( .250" ) quick connect on the same side in 3 and 4 pole models.  
 B = 6.35 mm ( .250" ) quick connect on the opposite side in 1,2 and 3 pole models.  
 C = Dual terminals with screw on the same side in 3 pole models.  
 D = Dual terminals with screw on the opposite side in 2 and 3 pole models.

### 8.-Power Quick Terminals

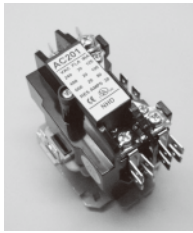
Blank = Qual terminals in 1 and 2 pole models. Dual terminals in 3 and 4 pole models.  
 0 = Without any terminals.  
 1 = Terminals on line side only.  
 2 = Terminals on load side only.  
 3 = Dual terminals in 1 and 2 poles.



# Definite Purpose Contactors

1 Pole 、 2 Pole 、 3 Pole and 4 Pole

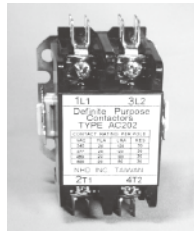
CONTROL CIRCUIT : AC



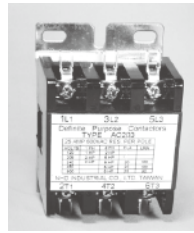
AC201



AC202



AC202



AC203



AC204



AC204

Definite purpose contactors are ideal for air conditioning,refrigeration ,Heating,Lighting,pools, spas and food service equipment.

Model Name	Line & Load Terminals	Number of Poles	Full Load Amps	Locked Rotor Amps			Resistive Amperes Per Pole	Weight Kg	Approval
				240V	480V	600V			
AC201	Screw/Box lug	1/+Shunt	20	120	100	80	30	0.265	
AC202		2						0.282	
AC203		3						0.440	
AC204		4						0.520	
AC251	Screw/Box lug	1/+Shunt	25	150	120	100	35	0.265	
AC252		2						0.282	
AC253		3						0.440	
AC254		4						0.520	
AC301	Screw/Box lug	1/+Shunt	30	180	150	120	40	0.265	
AC302		2						0.282	
AC303		3						0.440	
AC304		4						0.520	
AC401	Box lug/Screw	1/+Shunt	40	240	200	160	50	0.330	
AC402		2						0.347	
AC403		3						0.505	
AC404		4						0.585	
AC501	Box lug/Screw	1/+Shunt	50	300	250	200	60	0.330	
AC502		2						0.347	
AC503		3						0.505	
AC504		4						0.585	

## Coil Table

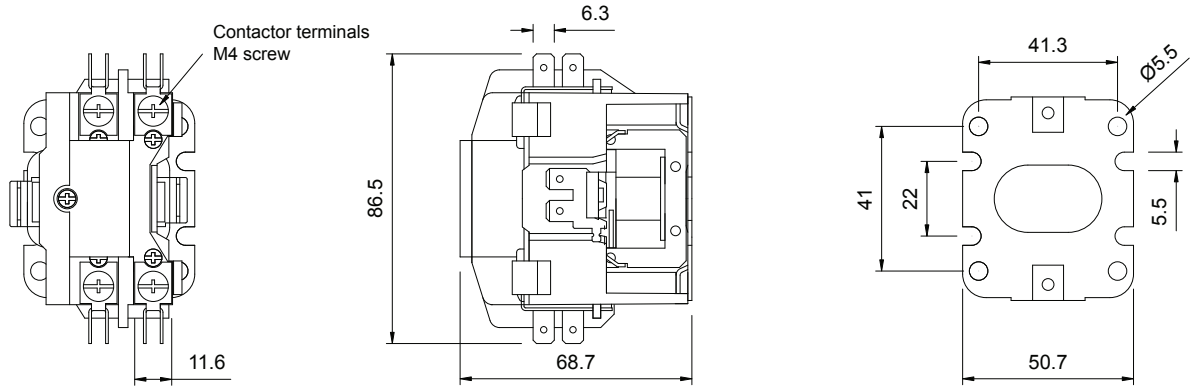
Coil Voltage	24V	48V	110V	120V	190V	220V	230V	240V	380V	415V	440V	480V	277V	600V
50Hz	A5	C5	D5	E5	F5	G5	H5	I5	J5	L5	M5	N5	W5	Q5
60Hz	A6	C6	D6	E6	F6	G6	H6	I6	J6	L6	M6	N6	W6	Q6

# Definite Purpose Contactors

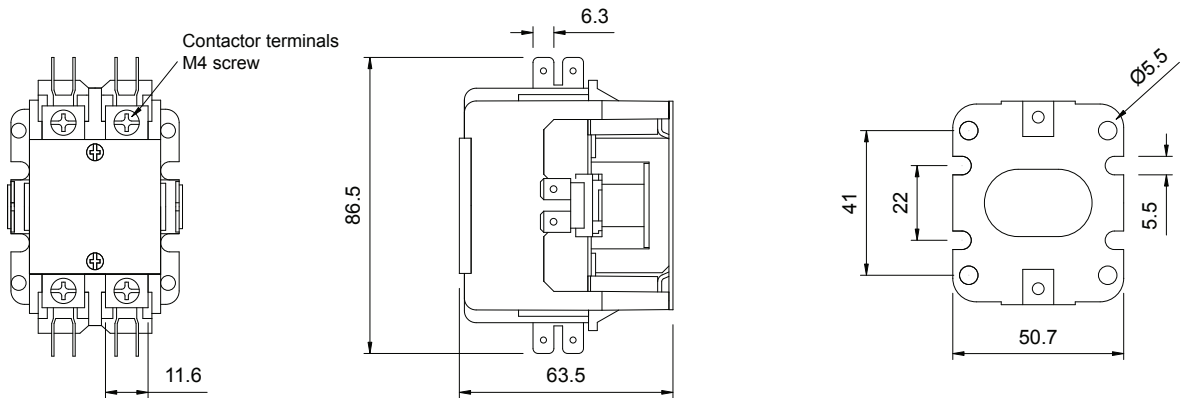
1 Pole 、 2 Pole 、 3 Pole and 4 Pole

## Dimensions(mm)

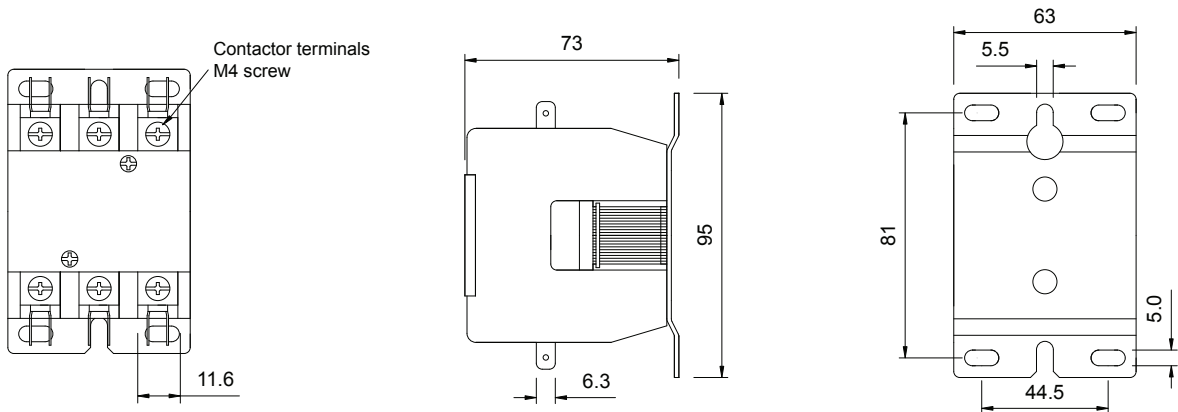
1 Pole



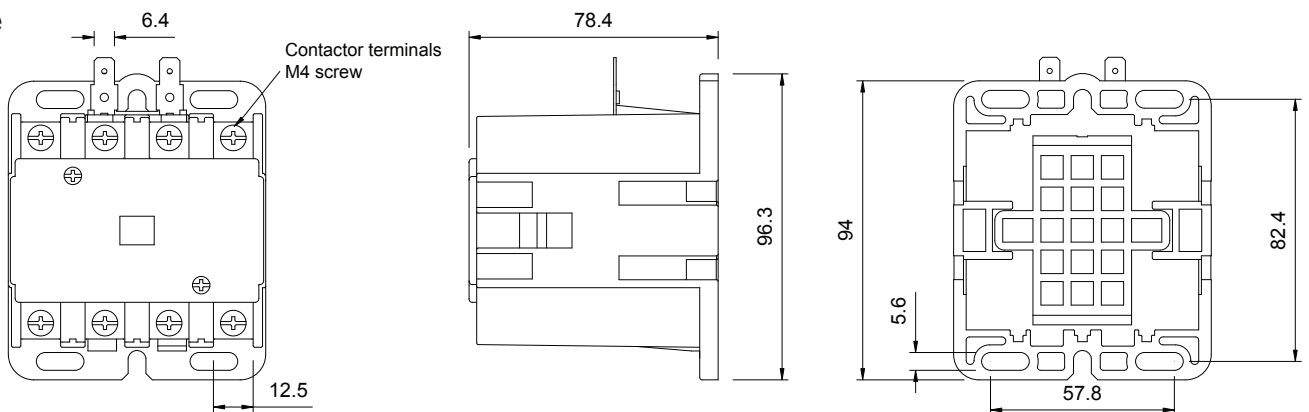
2 Pole

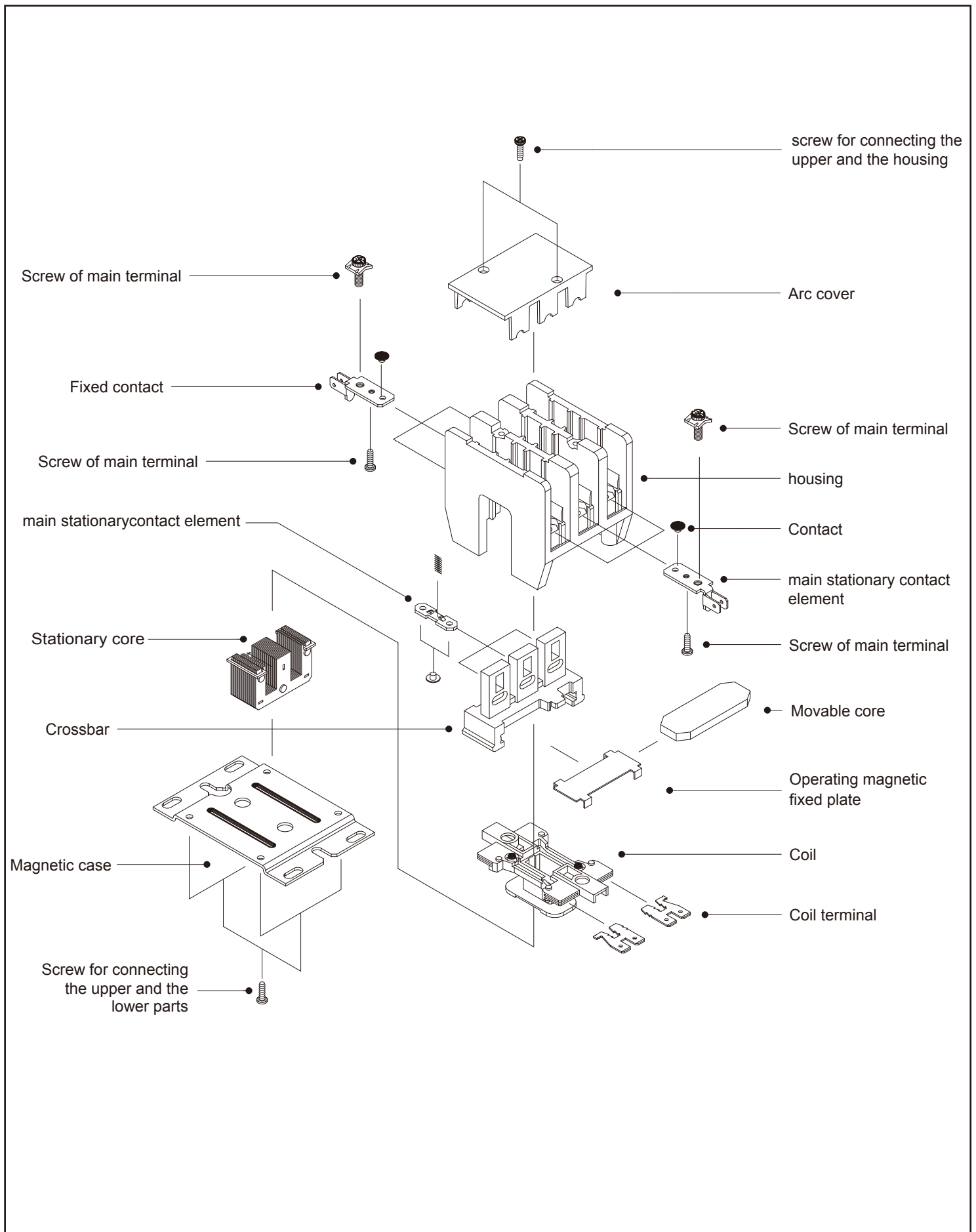


3 Pole



4 Pole







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