



**GLOBAL
RANGE**

**MOTOR
CONTROL**



CATALOGUE

Index

Motor Starting

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Magnetic Contactors & Overload Relay's

Magnetic Contactors coil control voltages

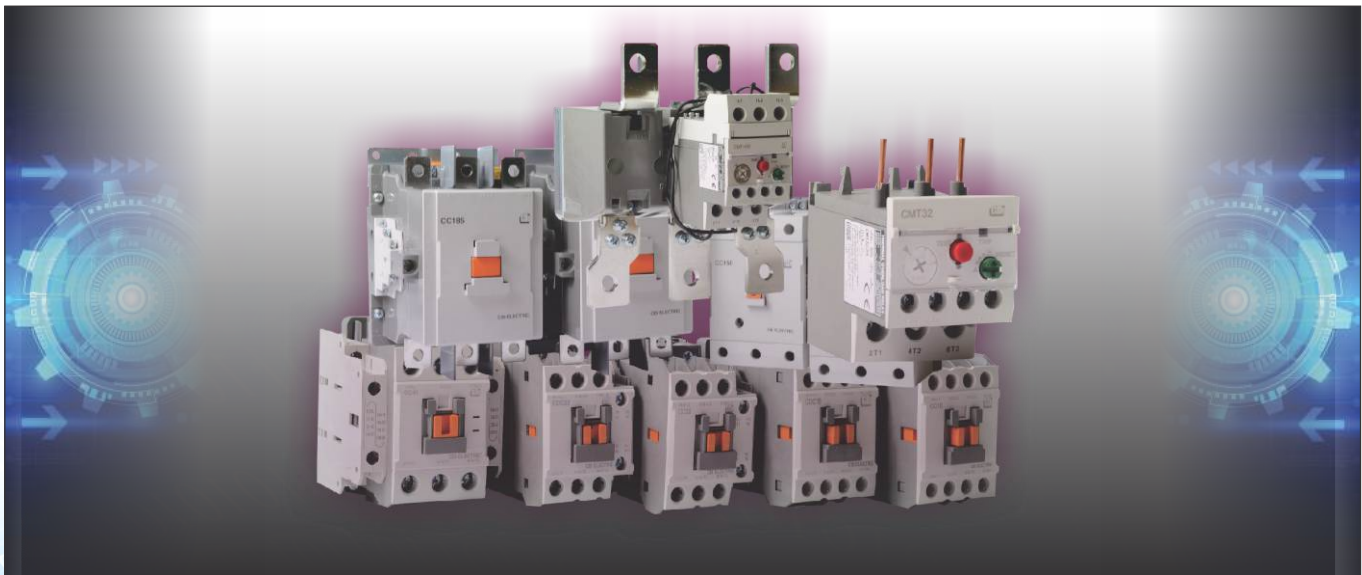
AC Contactor	CC18	CC22	CC40	CC50	CC65	CC85	CC100	CC130	CC150	CC185	CC225	CC265	CC330	CC400	CC630	CC800
24V	●	●	●	●	●	●	●	●	●	●	●					
48V	●	●	●	●	●	●	●	●	●	●	●					
110V	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
230V	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
415V	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
525V								●	●	●	●	●	●	●	●	●
550V	●	●	●	●	●	●	●									
DC Contactor	CDC18	CDC22	CDC40	CDC50	CDC65	CDC85	CDC100	CDC130	CDC150	CC185	CC225	CC265	CC330	CC400		
12DC	●	●	●	●	●	●	●									
24DC	●	●	●	●	●	●	●	●	●	●	●					
48DC	●	●	●	●	●	●	●	●	●	●	●					
110DC	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
220DC	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
230DC										●	●	●	●	●		
240DC											●					

Thermal Overload Relay's nominal amp rating

	0.14A	0.21A	0.33A	0.52A	0.82A	1.3A	2.1A	3.3A	5A	6.5A	7.5A	8.5A	11A	15A	19A	21.5A	27A	30A	34A	42A	55A				
CMT12	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●										
CMT32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
CMT63									●	●	●	●	●	●	●	●	●	●	●	●	●				
	8.5A	11A	15A	19A	21.5	27A	30A	34A	42A	55A	65A	74A	80A	83A	90A	93A	107A	113A	130A	153A	200A	265A	350A	515A	660A
CMT95	●	●	●	●	●	●	●	●	●	●	●	●		●	●										
CMT150									●	●	●	●				●		●							
CMT225													●				●	●	●	●					
CMT400																●		●	●	●	●	●	●	●	●
CMT800																						●	●	●	●

Contactors & Thermal Overload Relay's compatibility

Contactor	CC18	CC22	CC40	CC50 ~ 65	CC85 ~ 100	CC130 ~ 150	CC185 ~ 225	CC265 ~ 330 ~ 400	CC630 ~ 800
	CDC18	CDC22	CDC40	CDC50 ~ 65	CDC85 ~ 100	CDC130 ~ 150			
Thermal Overload Relay	CMT12	CMT32	CMT32	CMT63	CMT95	CMT150	CMT225	CMT400	CMT800



Overload Relay Setting Range

CMT-12	0.14	0.1~0.16
CMT-12	0.21	0.16~0.25
CMT-12	0.33	0.25~0.4
CMT-12	0.52	0.4~0.63
CMT-12	0.82	0.63~1
CMT-12	1.3	1~1.6
CMT-12	2.1	1.6~2.5
CMT-12	3.3	2.5~4
CMT-12	5	4~6
CMT-12	6.5	5~8
CMT-12	7.5	6~9
CMT-12	8.5	7~10
CMT-12	11	9~13
CMT-12	15	12~ 18

CMT-63	5	4~6
CMT-63	6.5	5~8
CMT-63	7.5	6~9
CMT-63	8.5	7~10
CMT-63	11	9~13
CMT-63	15	12~ 18
CMT-63	19	16~22
CMT-63	21.5	18~ 25
CMT-63	34	28~ 40
CMT-63	42	34~50
CMT-63	55	45~65

CMT-150	42	34~50
CMT-150	55	45~65
CMT-150	65	54~75
CMT-150	74	63~85
CMT-150	93	80~105
CMT-150	113	95~130
CMT-150	130	110~150

CMT-225	80	65~100
CMT-225	107	85~125
CMT-225	130	100~160
CMT-225	153	120~185
CMT-225	200	160~ 240

CMT-800	265	200~330
CMT-800	350	260~400
CMT-800	515	400~630
CMT-800	660	520~ 800

CMT-32	0.14	0.1~0.16
CMT-32	0.21	0.16~0.25
CMT-32	0.33	0.25~0.4
CMT-32	0.52	0.4~0.63
CMT-32	0.82	0.63~1
CMT-32	1.3	1~1.6
CMT-32	2.1	1.6~2.5
CMT-32	3.3	2.5~4
CMT-32	5	4~6
CMT-32	6.5	5~8
CMT-32	7.5	6~9
CMT-32	8.5	7~10
CMT-32	11	9~13
CMT-32	15	12~ 18
CMT-32	19	16~22
CMT-32	21.5	18~ 25
CMT-32	27	22~32
CMT-32	34	28~ 40
CMT-32	42	34~50
CMT-32	55	45~65

CMT-95	8.5	7~10
CMT-95	11	9~13
CMT-95	15	12~ 18
CMT-95	19	16~22
CMT-95	21.5	18~ 25
CMT-95	34	28~ 40
CMT-95	42	34~50
CMT-95	55	45~65
CMT-95	65	54~75
CMT-95	74	63~85
CMT-95	83	70~95
CMT-95	90	80~100

CMT-400	107	85~125
CMT-400	130	100~160
CMT-400	153	120~185
CMT-400	200	160~ 240
CMT-400	265	200~330
CMT-400	350	260~400

Magnetic Contactors & Overload Relay's



Frame size / Type				CC/CDC18	CC/CDC22	CC/CDC40
screws clamp terminals				●	●	●
Number of poles				3 pole	3 pole	3 pole
Rated operational voltage, Ue				690V	690V	690V
Rated insulation voltage, Ui				690V	690V	1000V
Rated frequency				50/60Hz	50/60Hz	50/60Hz
Rated impulse withstand voltage, Uimp				6kV	6kV	8kV
Maximum operating rate in operating cycles per hour(AC3)				1800 operations per hour	1800 operations per hour	1800 operations per hour
Durability		Mechanical		15 mil. operations	15 mil. operations	12 mil. operations
		Electrical		2.5 mil. operations	2.5 mil. operations	2 mil. operations
Current and power	AC-1, Thermal		A	32	40	60
	AC-3	200/240V	kW	4.5	5.5	11
			A	18	22	40
		380/440V	kW	7.5	11	18.5
			A	18	22	40
		500/550V	kW	7.5	15	22
			A	13	20	32
		690V	kW	7.5	15	22
			A	9	18	23
		1000V	kW	-	-	22
			A	-	-	17
UL rating (50/60Hz)	Continuous current		A	32	40	60
	Single phase	110 ~ 120V	HP	1	2	3
		220 ~ 240V	HP	3	3	7.5
		200 ~ 208V	HP	5	7.5	15
	Three phase	220 ~ 240V	HP	7.5	10	15
		440 ~ 480V	HP	10	15	30
	550 ~ 600V	HP	15	20	30	
NEMA size				0	1	1
Size and weight	AC control	Weight	kg	0.33	0.34	0.44
		Size (W x H x D)	mm	45 x 73.5 x 80.4	45 x 73.5 x 87.4	45 x 83 x 90
	DC control	Weight	kg	0.5	0.51	0.6
		Size (W x H x D)	mm	45 x 73.5 x 110.7	45 x 73.5 x 117.7	45 x 83 x 117.1
Auxiliary (standard)				1a	1a	2a + 2b
Auxiliary	Side mount			CCUA-1	CCUA-1	CCUA-1
	Front mount			CCUA-2, CCUA-4	CCUA-2, CCUA-4	CCUA-2, CCUA-4

Type				CMT12	CMT32	CMT32
screws clamp terminals				●	●	●
Rated operational voltage, Ue				690V	690V	690V
Rated insulation voltage, Ui				690V	690V	690V
Rated impulse withstand voltage, Uimp				6kV	6kV	6kV
Trip class				10A, 20	10A, 20	10A, 20
Setting range				0.1 ~ 18A	0.1 ~ 65A	0.1 ~ 65A
Size and weight	Weight		kg	0.1	0.17	0.17
	Size (W x H x D)		mm	45 x 73.2 x 63.7	45 x 75 x 90	45 x 75 x 90
Auxiliary (standard)				1a1b	1a1b	1a1b



Frame size / Type			
screws clamp terminals			
Number of poles			
Rated operational voltage, Ue			
Rated insulation voltage, Ui			
Rated frequency			
Rated impulse withstand voltage, Uimp			
Maximum operating rate in operating cycles per hour(AC3)			
Durability	Mechanical		
	Electrical		
Current and power	AC-I,Thermal		A
	AC-3	200/240V	kW
			A
		380/440V	kW
			A
		500/550V	kW
			A
		690V	kW
			A
		1000V	kW
			A
	UL rating (50/60Hz)	Continuous current	
Single		110 ~ 120V	HP
phase		220 ~ 240V	HP
		200 ~ 208V	HP
Three		220 ~ 240V	HP
phase		440 ~ 480V	HP
		550 ~ 600V	HP
NEMA size			
Size and weight	AC control Weight		kg
	Size (W x H x D)		mm
	DC control Weight		kg
	Size (W x H x D)		mm
Auxiliary (standard)			
Auxiliary	Side mount		
	Front mount		

Type		
screws clamp terminals		
Rated operational voltage, Ue		
Rated insulation voltage, Ui		
Rated impulse withstand voltage, Uimp		
Trip class		
Setting range		
Size and weight	Weight	kg
	Size (W x H x D)	mm
Auxiliary (standard)		

CC/CDC50	
●	
3 pole	
690V	
690V	
50/60Hz	
6kV	
1800 operations per hour	
12 mil. operations	
2 mil. operations	
70	
15	
55	
22	
50	
30	
43	
30	
28	
30	
23	
70	
3	
10	
20	
25	
40	
50	
2	
0.9	
55 x 106 x 119	
1.2	
55 x 106 x 146.4	
2a + 2b	
CCUA-1	
CCUA-2, CCUA-4	

CC/CDC65	
●	
3 pole	
690V	
1000V	
50/60Hz	
8kV	
1800 operations per hour	
12 mil. operations	
2 mil. operations	
100	
18.5	
65	
30	
65	
33	
60	
33	
35	
33	
26	
100	
5	
15	
25	
30	
50	
60	
2	
0.9	
55 x 106 x 119	
1.2	
55 x 106 x 146.4	
2a + 2b	
CCUA-1	
CCUA-2, CCUA-4	

CC/CDC85	
●	
3 pole	
690V	
1000V	
50/60Hz	
8kV	
1800 operations per hour	
12 mil. operations	
2 mil. operations	
135	
25	
85	
45	
85	
45	
75	
45	
45	
33	
135	
7.5	
15	
30	
40	
60	
75	
3	
1.6	
70 x 106 x 135.8	
2.6	
70 x 40 x 172.3	
2a + 2b	
CCUA-1	
CCUA-2, CCUA-4	

CMT63	
●	
690V	
690V	
6kV	
10A, 20	
4 ~ 65A	
0.31/0.33	
55 x 81 x 100	
1a1b	

CMT95	
●	
690V	
690V	
6kV	
10A, 20	
7 ~ 100A	
0.48 / 0.5	
70 x 97 x 110	
1a1b	

Magnetic Contactors & Overload Relay's



Frame size / Type				CC/CDC100	CC/CDC130	CC/CDC150
screws clamp terminals				●	●	●
Number of poles				3 pole	3 pole	3 pole
Rated operational voltage, Ue				690V	690V	690V
Rated insulation voltage, Ui				1000V	1000V	1000V
Rated frequency				50/60Hz	50/60Hz	50/60Hz
Rated impulse withstand voltage, Uimp				8kV	8kV	8kV
Maximum operating rate in operating cycles per hour(AC3)				1800 operations per hour	1200 operations per hour	1200 operations per hour
Durability	Mechanical			12 mil. operations	15 mil. operations	5 mil. operations
	Electrical			2 mil. operations	1 mil. operations	1 mil. operations
Current and power	AC-1, Thermal		A	160	160	210
	AC-3	200/240V	kW	30	37	45
			A	105	130	150
		380/440V	kW	55	60	75
			A	105	130	150
		500/550V	kW	55	60	70
			A	85	90	100
		690V	kW	55	55	45
			A	65	60	60
		1000V	kW	45	75	90
			A	33	53	65
UL rating (50/60Hz)	Continuous current		A	160	160	210
	Single phase	110 ~ 120V	HP	10	10	15
		220 ~ 240V	HP	20	20	25
		200 ~ 208V	HP	30	40	40
	Three phase	220 ~ 240V	HP	40	40	50
		440 ~ 480V	HP	75	75	100
		550 ~ 600V	HP	75	75	75
NEMA size				3	3	4
Size and weight	AC control	Weight	kg	1.6	2.4	2.4
		Size (W x H x D)	mm	70 x 106 x 135.8	95 x 158 x 132	95 x 158 x.132
	DC control	Weight	kg	2.6	2.3	2.3
		Size (W x H x D)	mm	70 x 140 x 172.3	95 x 158 x 132	95 x 158 x.132
Auxiliary (standard)				2a + 2b	2a + 2b	2a + 2b
Auxiliary	Side mount			CCUA-100	CCUA-100	CCUA-100
	Front mount			-	-	-

Type		
screws clamp terminals		
Rated operational voltage, Ue		
Rated insulation voltage, Ui		
Rated impulse withstand voltage, Uimp		
Trip class		
Setting range		
Size and weight	Weight	kg
	Size (W x H x D)	mm
Auxiliary (standard)		

CMT95			
●			
690V			
690V			
6kV			
10A, 20			
7 ~ 100A			
0.31/0.33			
55 x 81 x 100			
1a1b			

CMT150			
●			
690V			
690V			
6kV			
10A, 20			
34 ~ 150A			
0.67			
95 x 109 x 113			
1a1b			



Frame size / Type				
screws clamp terminals				
Number of poles				
Rated operational voltage, Ue				
Rated insulation voltage, Ui				
Rated frequency				
Rated impulse withstand voltage, Uimp				
Maximum operating rate in operating cycles per hour(AC3)				
Durability	Mechanical			
	Electrical			
Current and power	AC-1, Thermal		A	
	AC-3	200/240V	kW	
			A	
		380/440V	kW	
			A	
		500/550V	kW	
			A	
		690V	kW	
			A	
		1000V	kW	
			A	
	UL rating (50/60Hz)	Continuous current		A
		Single phase	110 ~ 120V	HP
			220 ~ 240V	HP
200 ~ 208V			HP	
Three phase		220 ~ 240V	HP	
		440 ~ 480V	HP	
		550 ~ 600V	HP	
NEMA size				
Size and weight	AC/DC control	Weight	kg	
	Size (W x H x D)		mm	
Auxiliary (standard)				
Auxiliary	Side mount			
	Front mount			

CC185	
●	
3 pole	
690V	
1000V	
50/60Hz	
8kV	
1200 operations per hour	
5 mil. operations	
1 mil. operations	
230	
55	
185	
90	
185	
110	
180	
110	
120	
132	
90	
230	
15	
30	
60	
60	
125	
125	
4	
5.4	
138 x 203 x 181	
2a + 2b	
CCUA-100 (Max.4NO4NC)	
-	

CC225	
●	
3 pole	
690V	
1000V	
50/60Hz	
8kV	
1200 operations per hour	
5 mil. operations	
1 mil. operations	
275	
75	
225	
132	
225	
132	
200	
140	
150	
140	
100	
275	
15	
40	
60	
75	
150	
150	
4	
5.4	
138 x 203 x 181	
2a + 2b	
CCUA-100 (Max.4NO4NC)	
-	

CC265	
●	
3 pole	
690V	
1000V	
50/60Hz	
8kV	
1200 operations per hour	
5 mil. operations	
1 mil. operations	
300	
80	
265	
147	
265	
147	
225	
160	
185	
147	
105	
300	
-	
-	
75	
100	
200	
200	
5	
9.2	
163 x 243 x 198	
2a + 2b	
CCUA-100 (Max.4NO4NC)	
-	

Type		
screws clamp terminals		
Rated operational voltage, Ue		
Rated insulation voltage, Ui		
Rated impulse withstand voltage, Uimp		
Trip class		
Setting range		
Size and weight	Weight	kg
	Size (W x H x D)	mm
Auxiliary (standard)		

CMT225	
●	
690V	
690V	
6kV	
10A, 20	
65 ~ 240A	
2.5	
147 x 141 x 184	
1a1b	

CMT400	
●	
690V	
690V	
6kV	
10A, 20	
85 ~ 400A	
2.6	
151 x 171 x 198	
1a1b	

Magnetic Contactors & Overload Relay's



Frame size / Type			
screws clamp terminals			
Number of poles			
Rated operational voltage, Ue			
Rated insulation voltage, Ui			
Rated frequency			
Rated impulse withstand voltage, Uimp			
Maximum operating rate in operating cycles per hour(AC3)			
Durability	Mechanical		
	Electrical		
Current and power	AC-1, Thermal		A
	AC-3	200/240V	kW
			A
	380/440V		kW
			A
	500/550V		kW
			A
	690V		kW
			A
	1000V		kW
		A	
UL rating (50/60Hz)	Continuous current		A
	Single phase	110 ~ 120V	HP
		220 ~ 240V	HP
		200 ~ 208V	HP
	Three phase	220 ~ 240V	HP
		440 ~ 480V	HP
		550 ~ 600V	HP
NEMA size			
Size and weight	AC/DC control Weight		kg
	Size (W x H x D)		mm
Auxiliary (standard)			
Auxiliary	Side mount		
	Front mount		

CC330			
●			
3 pole			
690V			
1000V			
50/60Hz			
8kV			
1200 operations per hour			
5 mil. operations			
1 mil. operations			
350			
90			
330			
160			
330			
160			
180			
200			
225			
160			
115			
350			
-			
-			
100			
125			
250			
250			
5			
9.2			
163 x 243 x 198			
2a + 2b			
CCUA-100 (Max.4NO4NC)			
-			

CC400			
●			
3 pole			
690V			
1000V			
50/60Hz			
8kV			
1200 operations per hour			
5 mil. operations			
1 mil. operations			
450			
125			
400			
200			
400			
225			
350			
250			
300			
185			
140			
450			
-			
-			
125			
150			
300			
300			
5			
9.2			
163 x 243 x 198			
2a + 2b			
CCUA-100 (Max.4NO4NC)			
-			

CC630			
●			
3 pole			
690V			
1000V			
50/60Hz			
8kV			
1200 operations per hour			
2.5 mil. operations			
0.5 mil. operations			
660			
190			
660			
330			
630			
330			
500			
400			
420			
355			
262			
660			
-			
-			
200			
250			
500			
500			
6			
22.4			
285 x 312 x 242			
2a + 2b			
CCUA-100 (Max.4NO4NC)			
-			

Type		
screws clamp terminals		
Rated operational voltage, Ue		
Rated insulation voltage, Ui		
Rated impulse withstand voltage, Uimp		
Trip class		
Setting range		
Size and weight	Weight	kg
	Size (W x H x D)	mm
Auxiliary (standard)		

CMT400	
●	
690V	
690V	
6kV	
10A, 20	
85 ~ 400A	
2.6	
151 x 171 x 198	
1a1b	

CMT800	
●	
690V	
690V	
6kV	
10A, 20	
200 ~ 800A	
11.5	
360 x 530 x 212	
1a1b	



Frame size / Type				
screws clamp terminals				
Number of poles				
Rated operational voltage, Ue				
Rated insulation voltage, Ui				
Rated frequency				
Rated impulse withstand voltage, Uimp				
Maximum operating rate in operating cycles per hour(AC3)				
Durability	Mechanical			
	Electrical			
Current and power	AC-1, Thermal		A	
	AC-3	200/240V	kW	
			A	
		380/440V	kW	
			A	
		500/550V	kW	
			A	
		690V	kW	
			A	
		1000V	kW	
			A	
		UL rating (50/60Hz) Continuous current		A
		Single phase	110 ~ 120V	HP
			220 ~ 240V	HP
200 ~ 208V	HP			
220 ~ 240V	HP			
440 ~ 480V	HP			
550 ~ 600V	HP			
NEMA size				
Size and weight	AC/DC control	Weight	kg	
	Size (W x H x D)		mm	
Auxiliary (standard)				
Auxiliary	Side mount			
	Front mount			

Type		
screws clamp terminals		
Rated operational voltage, Ue		
Rated insulation voltage, Ui		
Rated impulse withstand voltage, Uimp		
Trip class		
Setting range		
Size and weight	Weight	kg
	Size (W x H x D)	mm
Auxiliary (standard)		

CC800	
●	
3 pole	
690V	
1000V	
50/60Hz	
8kV	
1200 operations per hour	
2.5 mil. operations	
0.5 mil. operations	
900	
220	
800	
440	
800	
500	
720	
500	
630	
400	
288	
900	
-	
-	
200	
300	
600	
600	
7	
22.4	
285 x 312 x 242	
2a + 2b	
CCUA-100 (Max.4NO4NC)	
-	

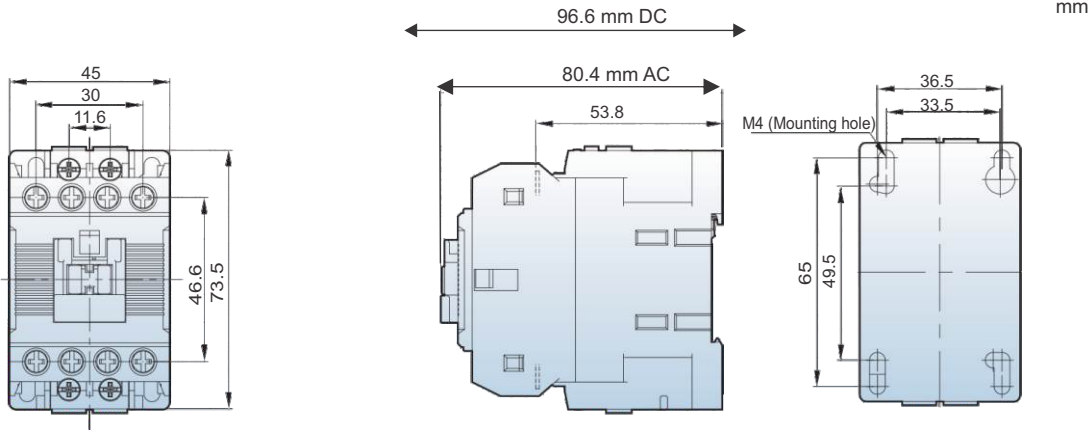
CMT800	
●	
690V	
690V	
6kV	
10A, 20	
200 ~ 800A	
11.5	
360 x 530 x 212	
1a1b	



Contactor Dimensions

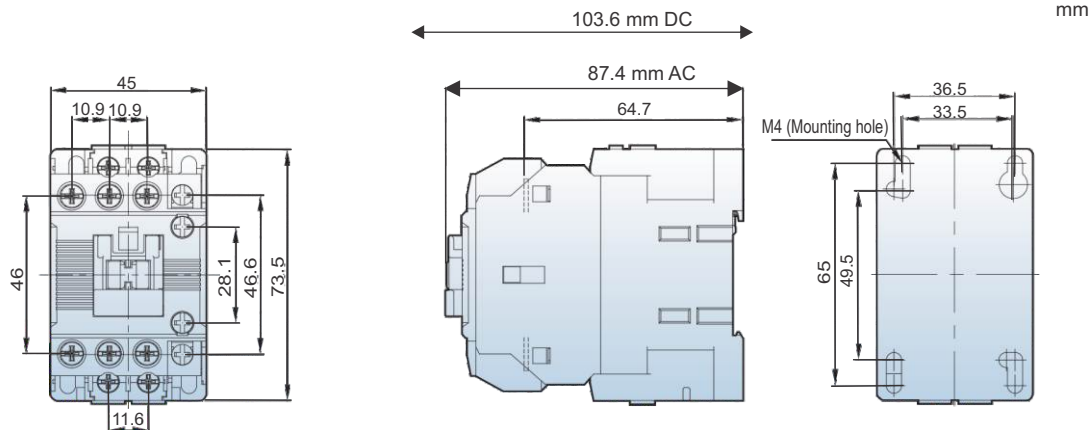
CC18 CDC18

Please Note: Difference in dimension for AC and DC Contactors



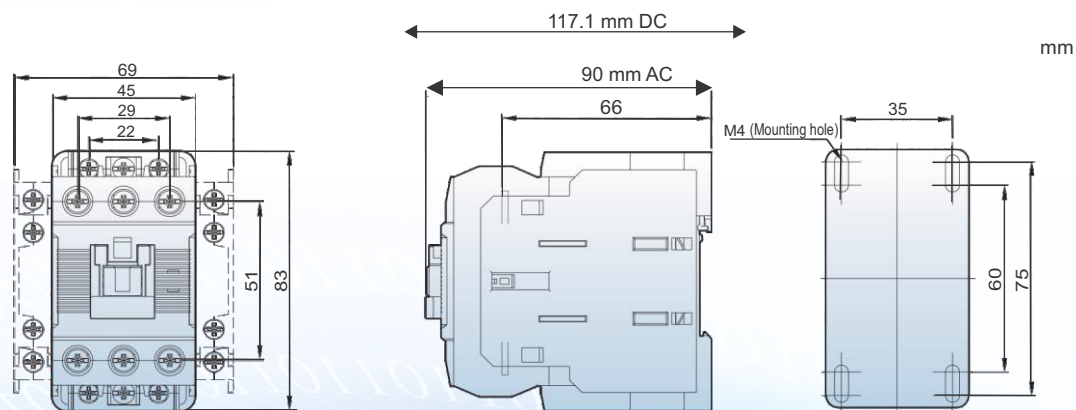
CC22 CDC22

Please Note: Difference in dimension for AC and DC Contactors



CC40 CDC40

Please Note: Difference in dimension for AC and DC Contactors



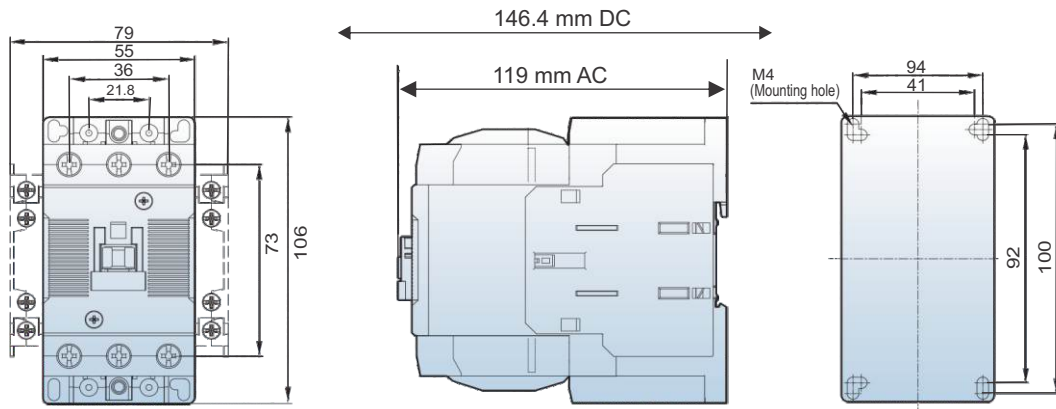
Dimensions: mm

CC50 ~ CC65

CDC50 ~ CDC65

Please Note: Difference in dimension for AC and DC Contactors

mm

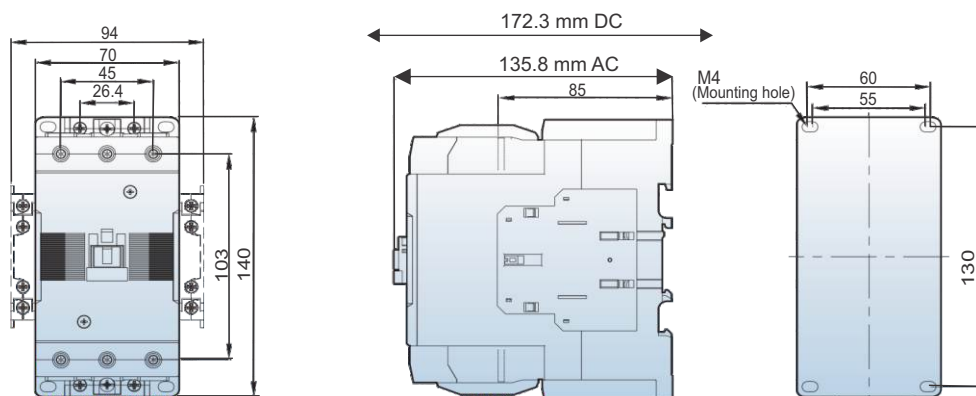


CC85~CC100

CDC85~CDC100

Please Note: Difference in dimension for AC and DC Contactors

mm

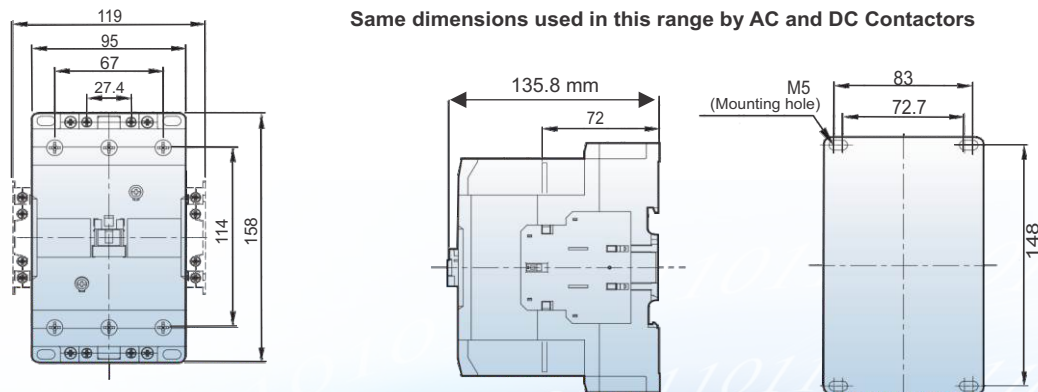


CC130~CC150

CDC130~CDC150

Same dimensions used in this range by AC and DC Contactors

mm

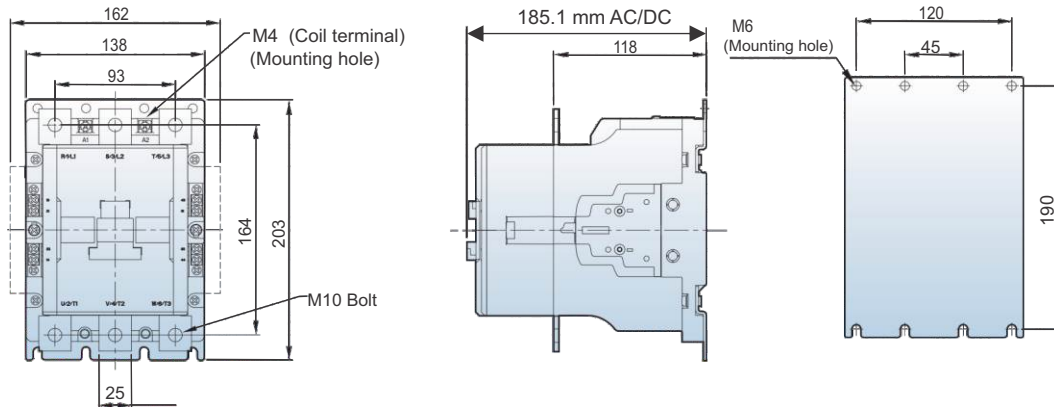


Dimensions: mm

Contactor Dimensions

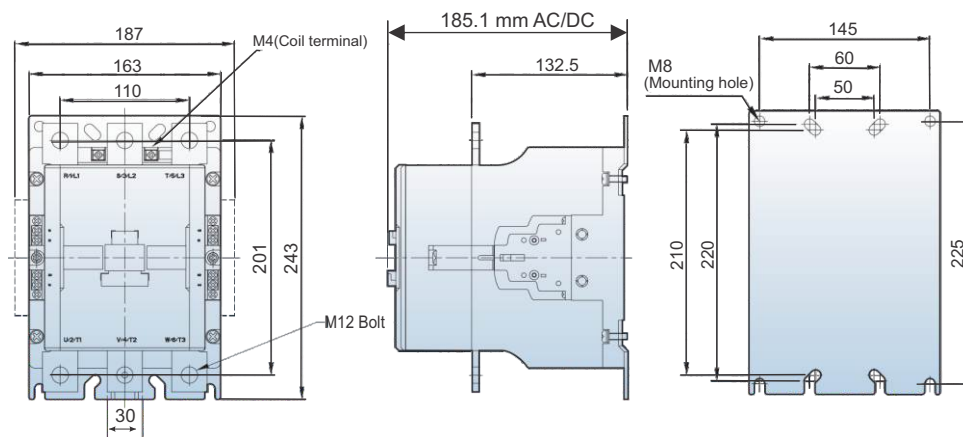
CC185 ~ CC225

mm



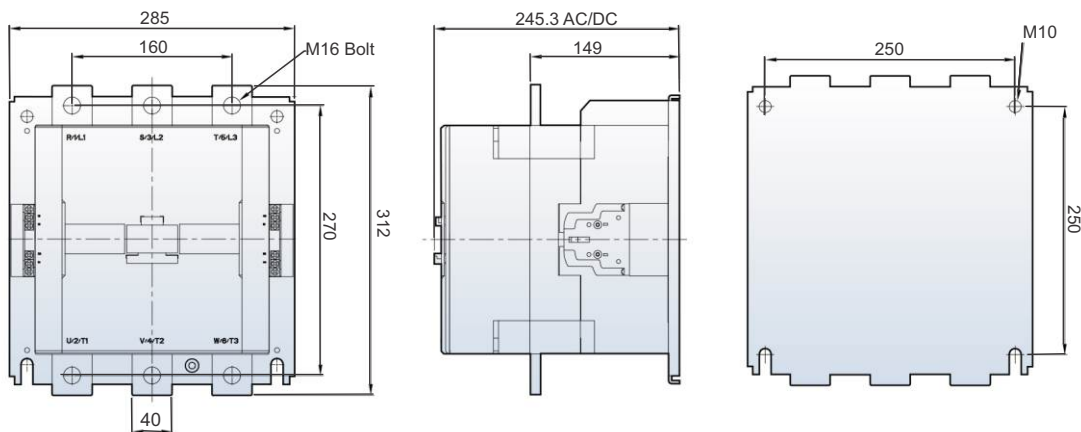
CC265~CDC400

mm



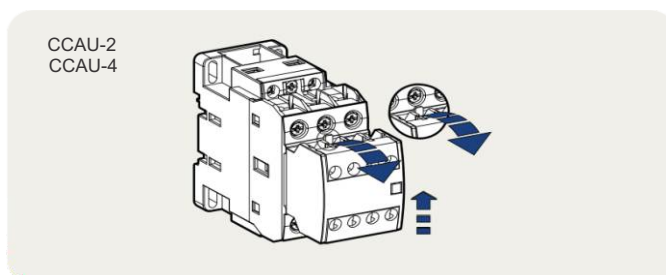
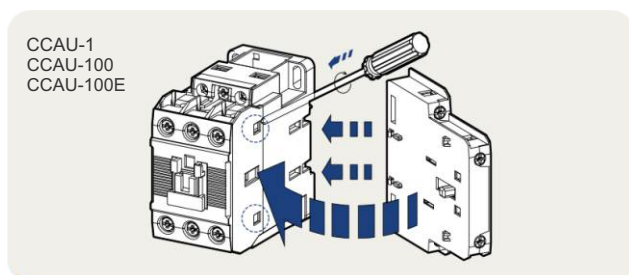
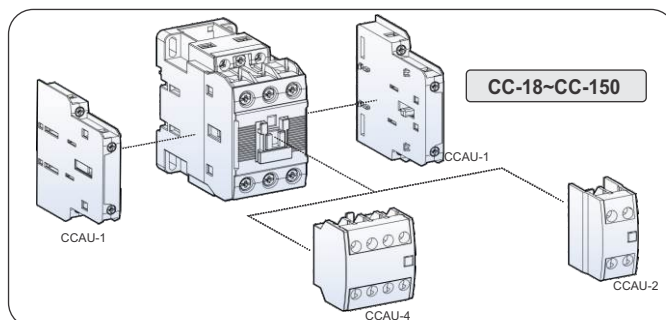
CC630~CC800

mm



Dimensions: mm

Auxiliary Contact Units



To install the side mounting unit, remove the indicated part in the circle first. Fit each part as shown. To separate push forward and pull.

To install front mounting unit fit it on the upper part of the front of the contactor and push it down. To separate pull the lever of the unit and push the unit upward.

Type	Appearance	Pole	NO	NC	Contact Arrangement	Mount	Weight
CCUA-1 CCAU-100 CCAU-100E		2	1	1	13(43) 21(31) 14(44) 22(32)	Side	53g
CCUA-2		2	2 1 -	- 1 2	53 63 54 64 2a 51 63 52 64 1a1b 51 61 52 62 2b	Front	28g
CCUA-4		4	4 3 2 1 -	- 1 2 3 4	53 63 73 83 54 64 74 84 4a 53 61 73 83 54 62 74 84 3a1b 53 61 71 83 54 62 72 84 2a2b 51 63 71 81 52 64 72 82 1a3b 51 61 71 81 52 62 72 82 4b	Front	50g

Control Coil Characteristics



Frame size Type	CC-18	CC-22	CC-40	CC-50 CC-65	CC-85 CC-100
AC Coil					
Control Voltage [Uc]					
50 Hz [V]	24, 32, 36, 42, 48, 80, 100, 110, 220, 230, 240, 380, 400, 415, 440, 500, 550V				
60Hz [V]	24, 48, 100, 110, 120, 200, 208, 220, 230, 240, 277, 380, 380, 440, 480, 600V				
Voltage limit [Uc]	85 - 110%				
Coil consumption at 20°C					
AC 220V Inrush [VA]	70	70	90	110	240
60Hz Holding [VA]	9	9	9	13	17
Heat dissipation [W]	2.3	2.3	2.7	2.8	5.4
Operating time Close [ms]	15....30	15....30	15...30	15...30	15...30
Opening [ms]	4....30	4.....19	4....19	4....19	10...30
DC coil					
Control voltage [Uc]					
	12, 20, 24, 48, 60, 80, 80, 100, 110, 125, 200, 220, 250V				
Voltage Limit [Uc]	85~110%				
Coil consumption at 20°C					
DC 110V Inrush [W]	5	5	9	9	18
Holding [W]	5	5	9	9	18
Time constant (L/R) [ms]	28	28	28	65	75
Operating Time					
Closing [ms]	40....60	40.....60	50.....65	50..... 65	100.....120
Opening [ms]	40....60	40.....60	4....19	4....19	10....25

*Contact CBI-electric for availability



Frame size Type	CC-130 CC-150	CC-185 CC-225	CC-265 CC-330 CC-400	CC-500 CC-630 CC-800
Control volts (Uc) AC/DC	24			
AC/DC	48			
AC/DC	70 - 110	100 - 220 - 240	100 - 220 - 240	100 / 200
AC/DC	100 - 220/110/220			
50/60Hz AC	24/48/100 - 240 110 - 120 220 - 240	300/400 - 440 500	300 450 500	300 400 500
Voltage limit [Uc]	85 - 110%			
Coil consumption at 20°C				
220V Inrush AC/DC [VA]	110/213	380	571	1000
60Hz Holding AC/DC [VA]	18/7.5	11.6	14	29
Heat dissipation [W]	2.7	4.7	5	7.8
Operating time Close AC/DC [ms]	20.....40/70.....80	70	55	75
Opening AC/DC [ms]	60.....70	70	55	75

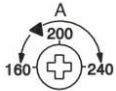
*Contact CBI-electric for availability

Thermal Overload Relay Specifications

Thermal Overload Relay

Type CMT, bimetal-style, overload relays are designed to protect AC circuits & motors against overloads, phase failure, long starting times and prolonged starting of the motor.

① Adjustment dial



Before adjusting the dial open the protection cover. Current setting can be done by using (+) or (-) screw driver. Do not rotate the dial out of the setting range.

② Stop, Test button



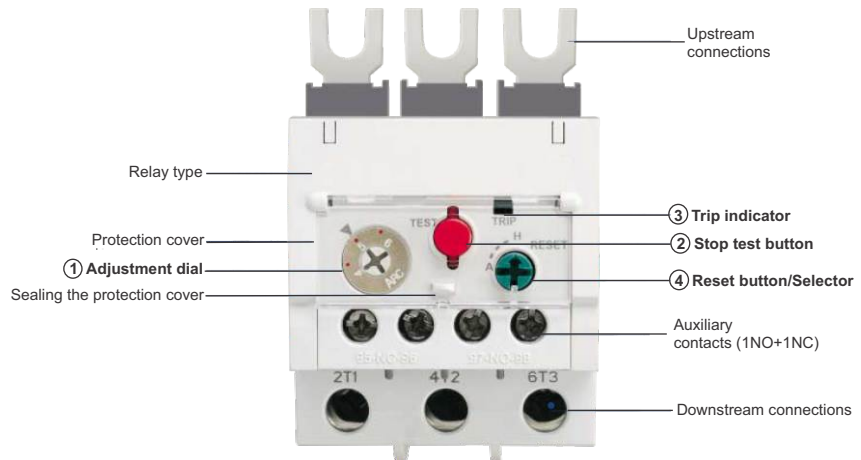
STOP function is executed by pushing the button which causes the next sequence. In case of operation test, pull this button.

Auxiliary contact operation

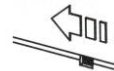
Terminal no	Normal	STOP	TEST/TRIP	RESET
NC 95-96				
NC 97-98				

Environment and auxiliary circuit

Environment			CMT-12~800	
Standards			IEC/EN 60947-1, IEC/EN 60947-4-1	
Certifications			CE, CSA, UL, CCC	
Rated operation voltage			Max. 690V	
Rated insulation voltage			690V	
Rated frequency			50/60Hz	
Degree of protection (Conforming to IEC 60 529)			IP 20	
Ambient air temperature		Storage	-30 ~ +65°C	
		Operation	-5 ~ +55°C (AC Type), -5 ~ +40° C	
Mounting position			Vertical plane	
Shock resistance (Conforming to IEC 68-2-7)			15gn - 11ms	
Vibration resistance (Conforming to IEC 68-2-6)			6G	
Insulation strength (Conforming to IEC 801-5)			6kV	
Rated impulse withstand voltage (Conforming to IEC 801-5)			6kV	
Auxiliary contacts characteristics				
Composition			1NO + 1NC	
Rated thermal current		Max	5A	
Rated operation current		UL 508	C600, R300	
AC15 duty		120V	1.5A	
(C600)		240V	0.75A	
		380V	0.47A	
		480V	0.375A	
		500V	0.35A	
		600V	0.3A	
DC13 duty		120V	0.22A	
(R300)		240V	0.1A	
Connector		Size	1mm ² /18AWG	
Connection to screw clamp terminals		Type	65/75°C Cu-Wire	

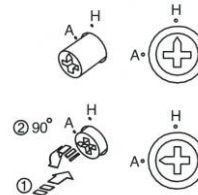


③ Trip indicator



If relay is tripped it comes out.

④ Reset button/Selector

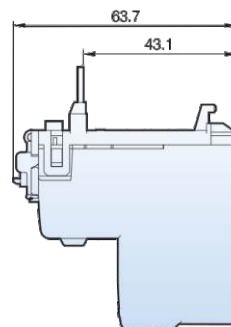
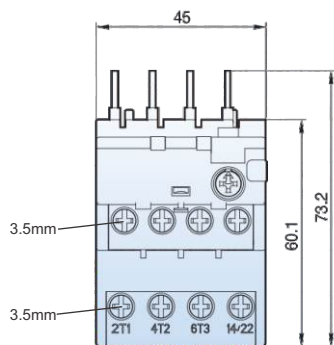


Using a screw driver the reset mode can be set. In case of Manual mode (H) push the button to reset the relay. To change the Automatic mode (A) from manual mode push the button and rotate as shown in the fig (left).

Overload Relay Dimensions

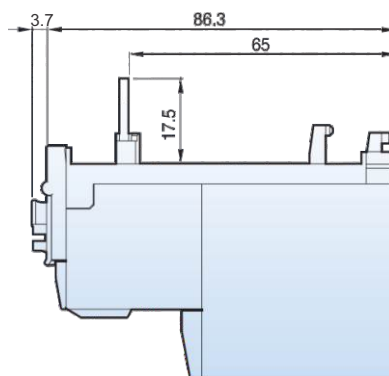
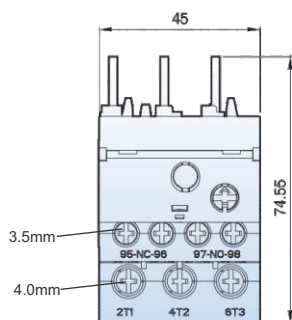
CMT12

mm



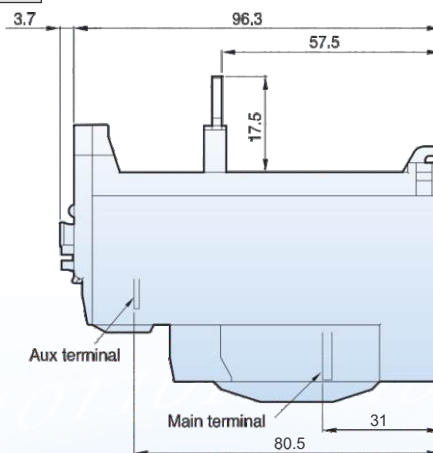
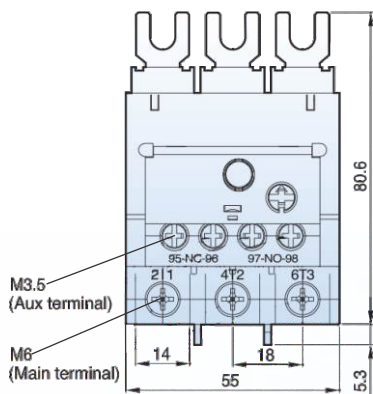
CMT32

mm



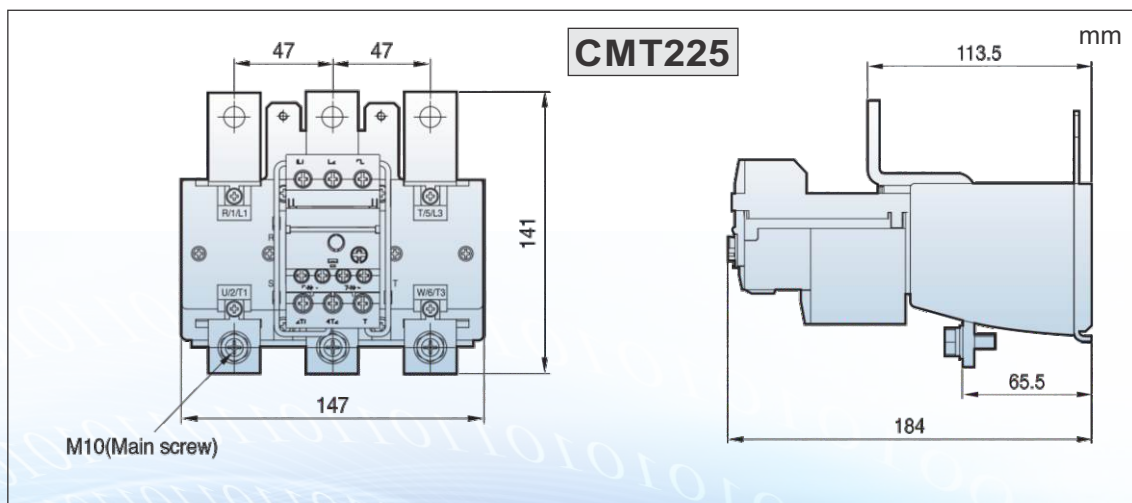
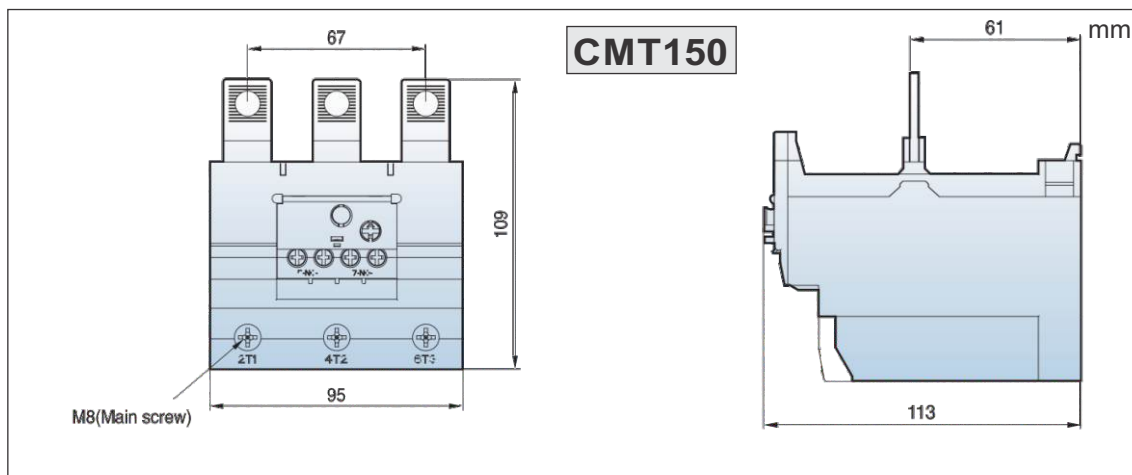
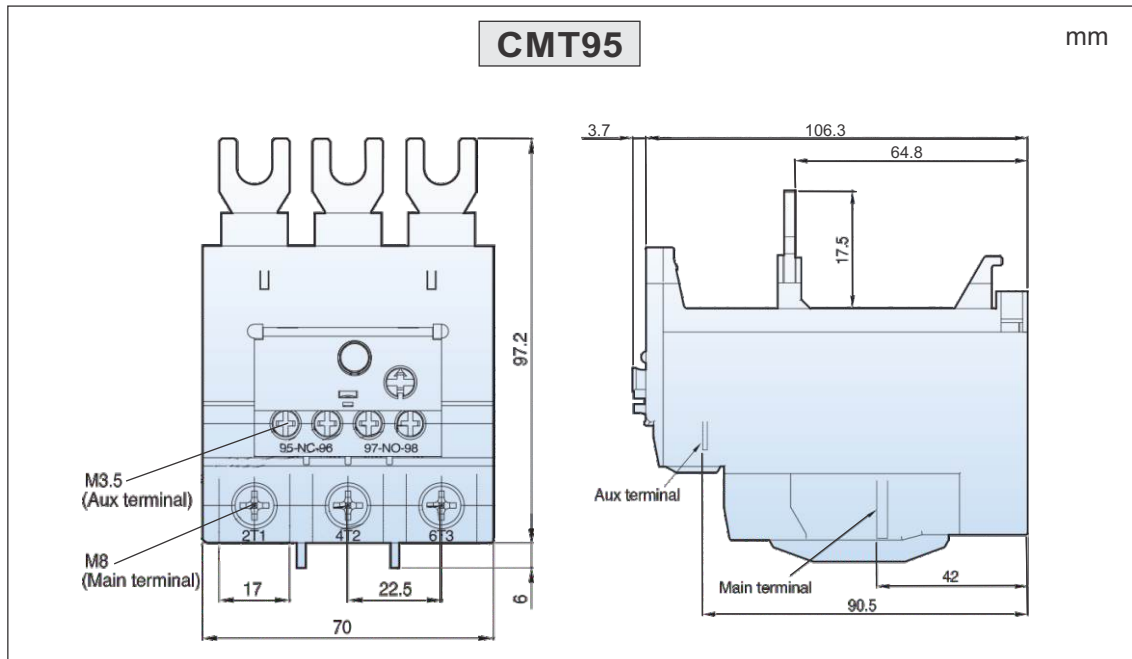
CMT63

mm



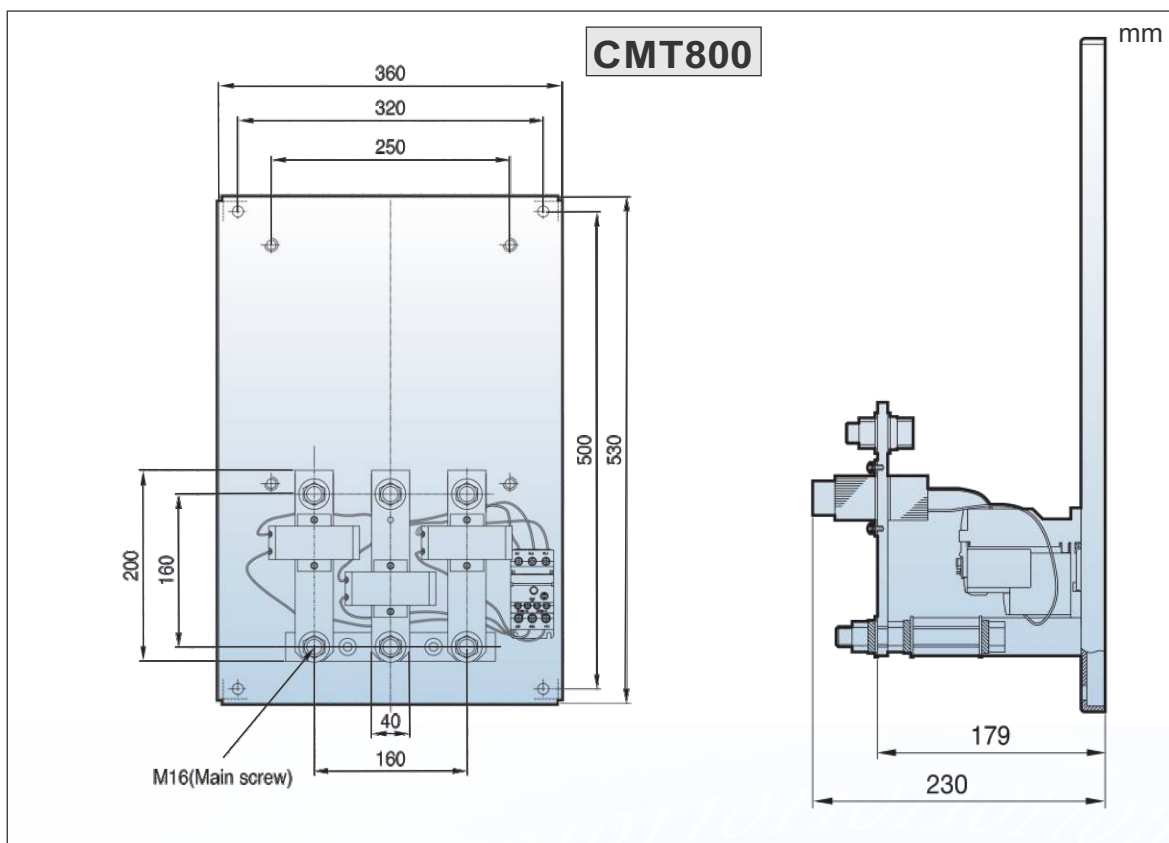
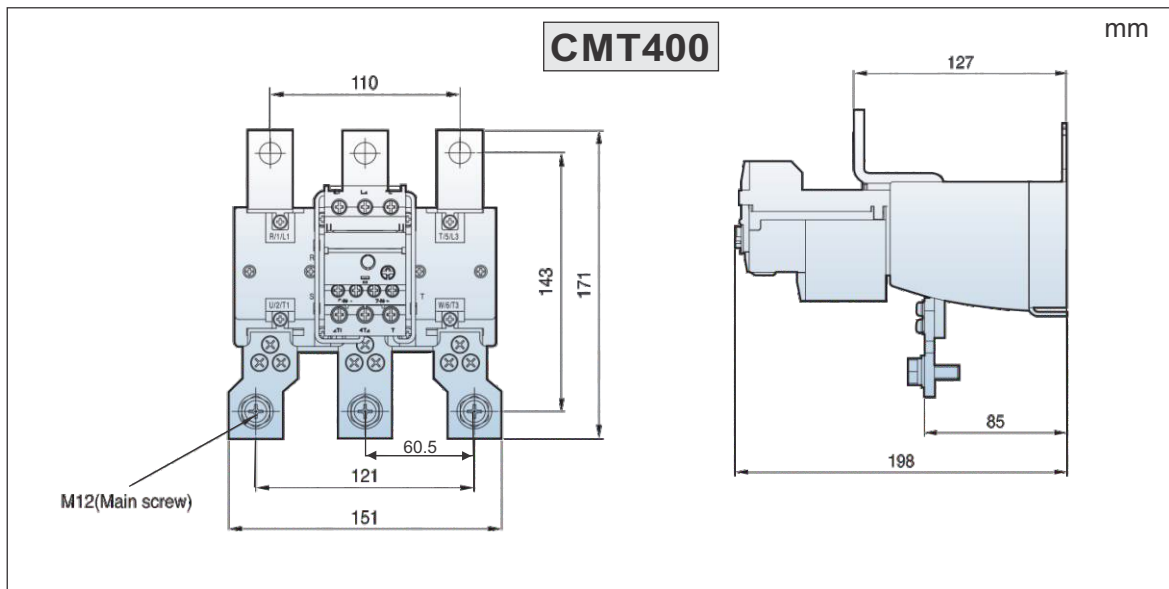
Dimensions: mm

Overload Relay Dimensions



Dimensions: mm

Overload Relay Dimensions



Dimensions: mm

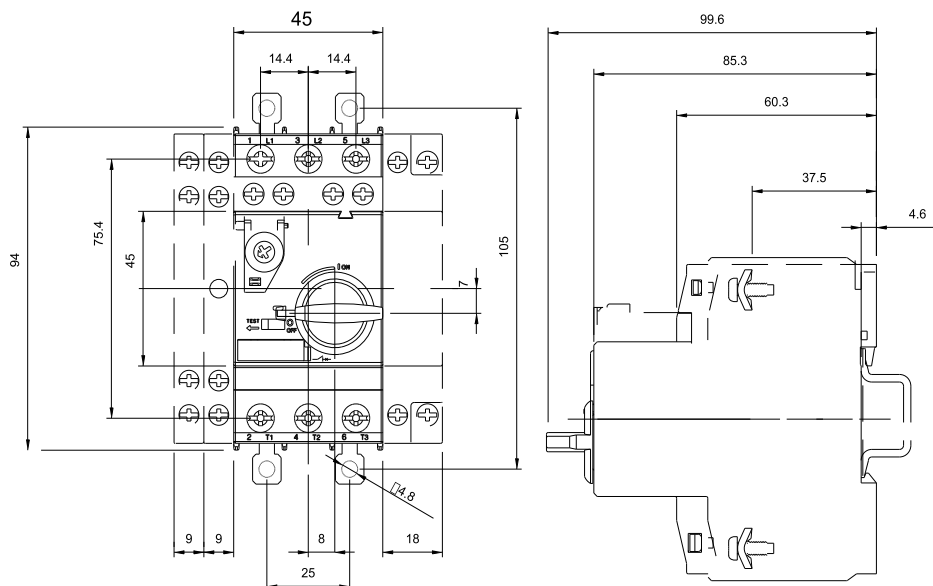
Manual Motor Starters Specifications



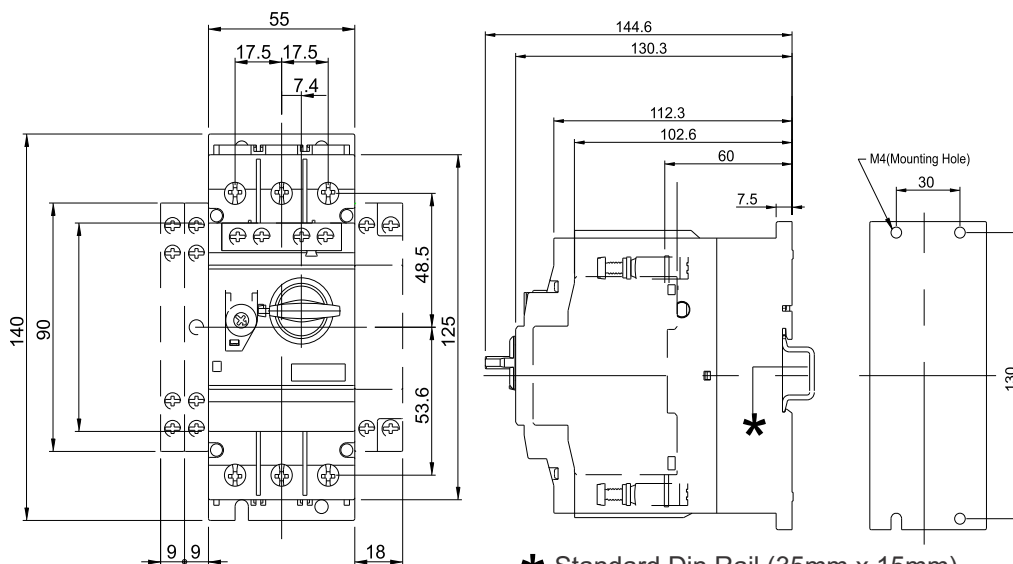
Current Adjustable type		CMS-32H	CMS-63H
Breaking Capacity		High	High
Handle Type		Rotary (lockable)	Rotary (lockable)
Number of Poles		3	3
Rated operational voltage (Ue)		Up to 690V	Up to 690V
Rated frequency		50/60Hz	50/60Hz
Rated Insulation voltage (Ui)		690V	1000V
Rated Impulse voltage (Uimp)		6kV	8kV
Utilization category	IEC 60 947-2 (Breaker)	Cat. A	Cat. A
	IEC 60 947-4 (Motor starter)	AC3	AC3
Mechanical endurance (Operating)		100,000	50,000
Electrical endurance (Cycles)		100,000	25,000
Max operating frequency per hour (Ope.h)		25	25
Temperature compensation (Operation)		-20 ~ +60°C	-20 ~ +60°C
Instantaneous short circuit release		13 x Ie max.	13 x Ie max.
Overload protection		●	●
Phase failure function		●	●
Trip indicating function (trips to off)		X	X
Test function (push button)		●	●
Dimension (W x H x D)		45 x 105 x 54.4 x 60.3	55 x 125 x 112.3
Weight (g)		320	1000

Rated breaking capacity (kA)	Rated operational current (Ie)	Thermal release Adjustment range (A)	220V 240V 230V		415V 400V		460V 440V		525V 500V		690V 600V		220V 240V 230V		415V 400V		460V 440V		525V 500V		690V 600V	
			Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics
0.16	0.1 ~ 0.16		100	100	100	100	100	100	100	100	100	100	—	—	—	—	—	—	—	—	—	—
0.25	0.16 ~ 0.25		100	100	100	100	100	100	100	100	100	100	—	—	—	—	—	—	—	—	—	—
0.4	0.25 ~ 0.4		100	100	100	100	100	100	100	100	100	100	—	—	—	—	—	—	—	—	—	—
0.63	0.4 ~ 0.63		100	100	100	100	100	100	100	100	100	100	—	—	—	—	—	—	—	—	—	—
1	0.63 ~ 1		100	100	100	100	100	100	100	100	100	100	—	—	—	—	—	—	—	—	—	—
1.6	1 ~ 1.6		100	100	100	100	100	100	100	100	100	100	—	—	—	—	—	—	—	—	—	—
2.5	1.6 ~ 2.5		100	100	100	100	100	100	100	100	8	8	—	—	—	—	—	—	—	—	—	—
4	2.5 ~ 4		100	100	100	100	100	100	100	100	8	8	—	—	—	—	—	—	—	—	—	—
6	4 ~ 6		100	100	100	100	100	100	100	100	6	6	—	—	—	—	—	—	—	—	—	—
8	5 ~ 8		100	100	100	100	50	38	50	38	6	6	—	—	—	—	—	—	—	—	—	—
10	6 ~ 10		100	100	100	100	50	38	50	38	6	6	100	100	100	100	50	38	50	38	6	5
13	9 ~ 13		100	100	100	100	50	38	42	32	6	6	100	100	100	100	50	38	42	32	6	5
17	11 ~ 17		100	100	50	38	20	15	10	8	4	4	100	100	50	50	50	38	12	9	5	5
22	14 ~ 22		100	100	50	38	20	15	10	8	4	4	100	100	50	50	50	38	12	9	5	5
26	18 ~ 26		100	100	50	38	20	15	10	8	4	4	100	100	50	50	35	27	12	9	5	5
32	22 ~ 32		100	100	50	38	20	15	10	8	4	4	100	100	50	50	35	27	10	8	5	5
40	28 ~ 40		—	—	—	—	—	—	—	—	—	—	100	100	50	50	35	27	10	8	5	5
50	34 ~ 50		—	—	—	—	—	—	—	—	—	—	100	100	50	50	35	27	10	8	5	5
63	45 ~ 63		—	—	—	—	—	—	—	—	—	—	100	100	50	50	35	27	10	8	5	5

TYPE	CMS-32H
[A]	(RANGE)
0.16 A	0.1~0.16A
0.25 A	0.16~0.25A
0.4 A	0.25~0.4A
0.63 A	0.4~0.63A
1 A	0.63~1A
1.6 A	1~1.6A
2.5 A	1.6~2.5A
4 A	2.5~4A
6 A	4~6A
8 A	5~8A
10 A	6~10A
13 A	9~13A
17 A	11~17A
22 A	14~22A
26 A	18~26A
32 A	22~32A



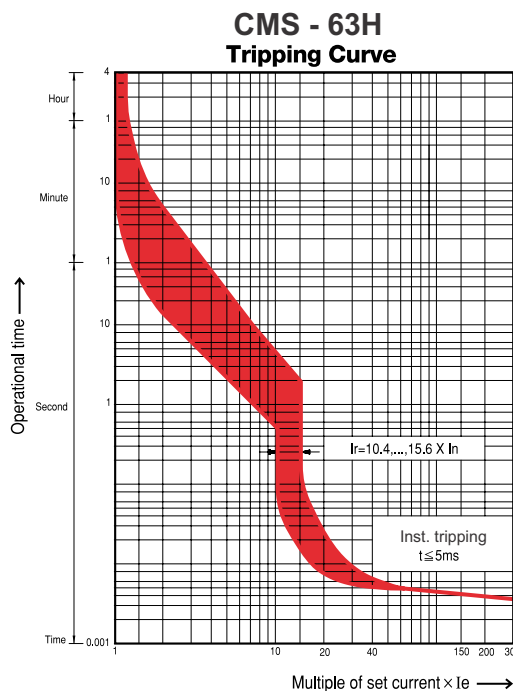
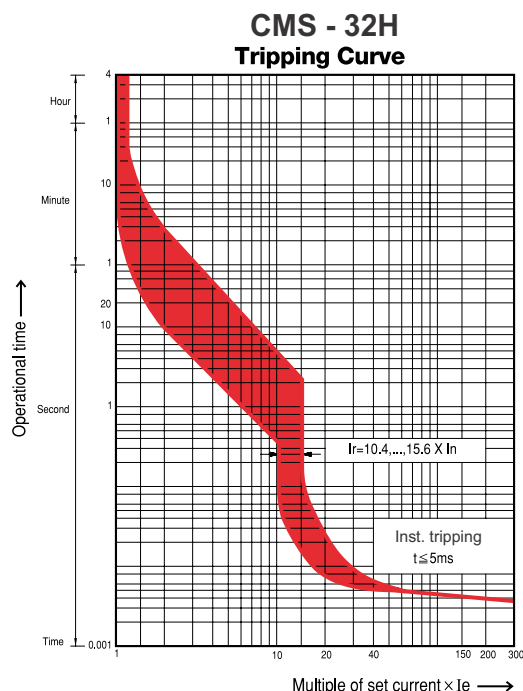
TYPE	CMS-63H
[A]	(RANGE)
10A	6~10A
13A	9~13A
17A	11~17A
22A	14~22A
26A	18~26A
32A	22~32A
40A	28~40A
50A	34~50A
63A	45~63A



* Standard Din Rail (35mm x 15mm)

Dimensions: mm

Manual Motor Starters - Tripping Curve



I) Thermal release trip current :

The adjustable inverse bimetal trip reliability protects motors against overloads.

The curve shows the mean operating current at an ambient temperature of 20°C starting from cold. Careful testing and setting ensures effective motor protection even in the case of single-phasing.

II) Magnetic release trip current :

The instantaneous magnetic trip has a fixed operating current setting.

This corresponds to 13 times the maximum value of setting range,

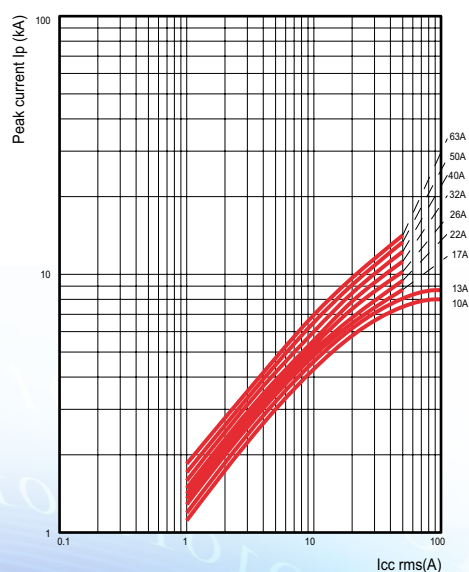
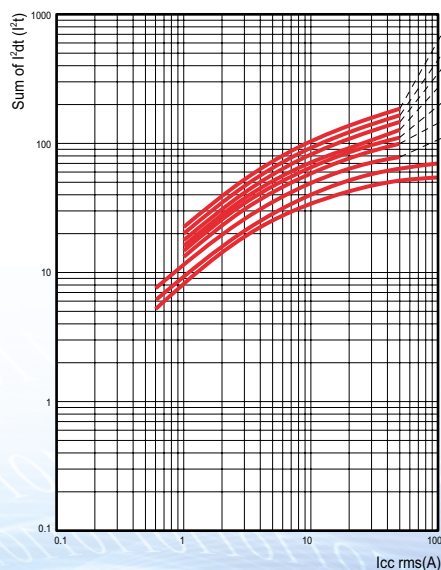
Current setting I_e :

The overload trip corresponds to a thermal overload relay in a motor starter conforming to IEC 947-4-1.

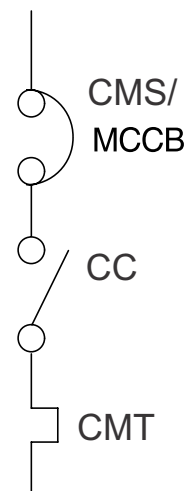
If a different value is prescribed (e.g. reduced I_e for cooling medium having a temperature higher than 40°C or a place of installation higher than 2000m above sea level), the setting current is equal to the reduced rated current I_e of the motor.

Thermal limit in kA^2s in the magnetic operating zone ($U_e=415\text{V}$)

◆ CMS - 32H



Rated Operational Power		Circuit Breaker		Contactor	Thermal Overload Relays	
kW	Current [A]	Type	Rating [A]	Type	Type	Setting Range
	415V					
0.06	0.19	CMS 32H	0.25	CC18	CMT 12	0.16~0.25
0.09	0.29	CMS 32H	0.4	CC18	CMT 12	0.25~0.4
0.12	0.42	CMS 32H	0.63	CC18	CMT 12	0.4~0.63
0.18	0.58	CMS 32H	0.63	CC18	CMT 12	0.4~0.63
0.25	0.82	CMS 32H	1	CC18	CMT 12	0.63~1
0.37	1.06	CMS 32H	1.6	CC18	CMT 12	1~1.6
0.55	1.4	CMS 32H	1.6	CC18	CMT 12	1~1.6
0.75	1.8	CMS 32H	2.5	CC18	CMT 12	1.6~2.5
1.1	2.6	CMS 32H	4	CC22	CMT 32	2.5~4
1.5	3.5	CMS 32H	4	CC22	CMT 32	2.5~4
2.2	4.7	CMS 32H	6	CC22	CMT 32	4~6
3.0	6.3	CMS 32H	8	CC40	CMT 32	5~8
4.0	8.2	CMS 32H	10	CC40	CMT 32	6~9
5.5	11.1	CMS 32H	13	CC40	CMT 32	9~13
7.5	14.9	CMS 32H	17	CC40	CMT 32	12~18
11.0	21.2	G37D	25	CC50	CMT 63	18~25
15.0	28	G37D	32	CC50	CMT 63	24~36
18.5	34	G37D	40	CC50	CMT 63	28~40
22	40	G37D	50	CC50	CMT 63	34~50
30	53	G37D	63	CC65	CMT 63	45~65
37	64	G37D	80	CC75	CMT 95	54~75
45	77	G37D	100	CC85	CMT 95	63~85
55	93	G37D	100	CC100	CMT 95	70~95



Type 2 Co-ordination

Under short circuit conditions, the contactor or starter shall cause no danger to persons or the installation and shall be suitable for further use. The risk of contact welding is recognised, in which case the manufacturer shall indicate the measures to be taken with regard to equipment maintenance.

The key to Type 2 co-ordinated protection is to use a protective device that limits the peak current and clears in less than 8 milliseconds, or the first half cycle.

Benefits of Type 2 Co-ordination

There are 3 key benefits of Type 2 co-ordination:

- 1. Safety:** Type 2 co-ordination is intended to provide safety for operating personnel, facility and installed equipment.
- 2. Reduced Costs:** When a starter is properly protected from short circuits, all components of the branch circuit remain intact and operational. Only fuses may need to be replaced. Savings result from a reduction in labor required to perform maintenance after a short circuit and in the amount of replacement parts and required equipment. Savings are also realized by minimising spoiled or lost production in a continuous process environment, such as may occur in some food and chemical process plants.
- 3. Increased productivity:** The manufacturing process relies on continuous motor operation. If starters are damaged and must be repaired or replaced, the motors are shut down and the manufacturing process stops. By implementing Type 2 co-ordination, manufacturing processes should function with minimum disruption from short circuits on the motor circuits.

Contactor Mounting Consideration

Installation Minimum Safety Clearance Distances

Please maintain safety clearance distances as seen in the table below in order to protect lives and equipment.

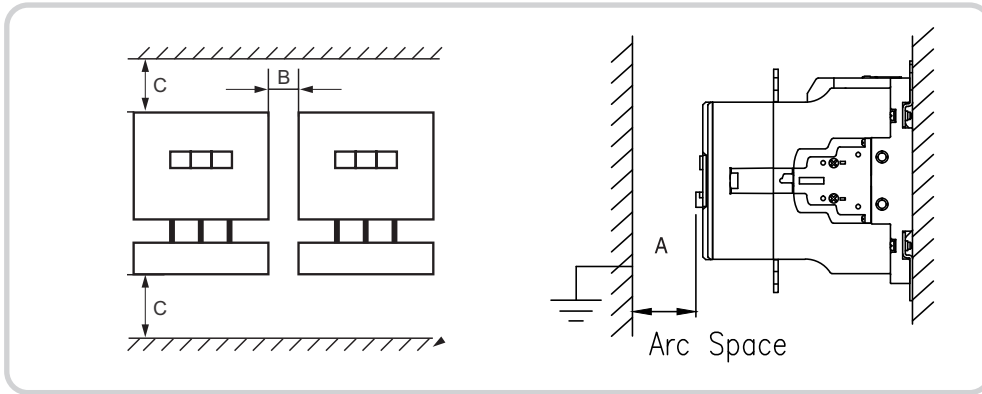


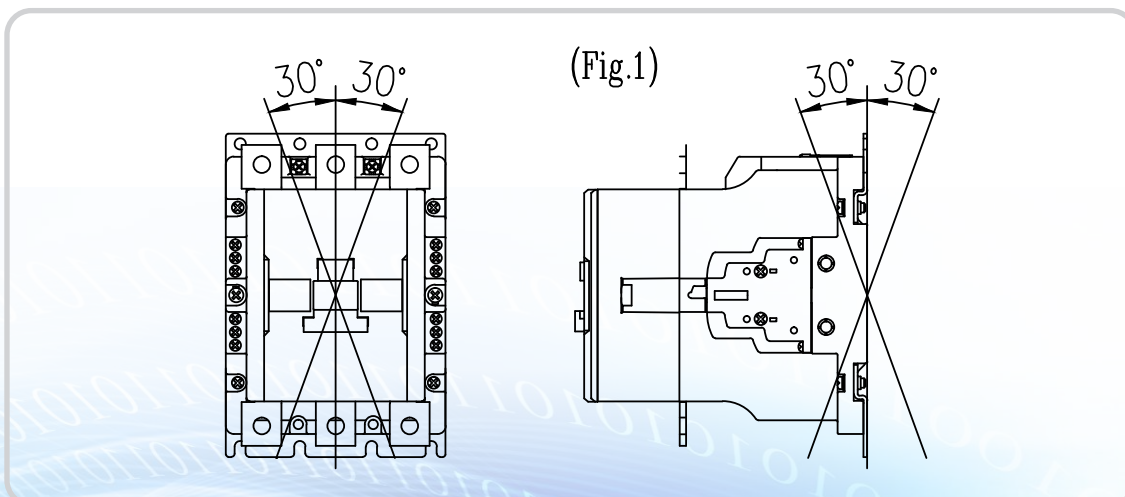
Table 1. Installation minimum clearance dimensions

(unit: mm)

Contactor	A	B	C
CC18	5	2	15
CC22	5	2	15
CC40 - CC65	5	4	15
CC85 - CC100	10	6	25
CC130 - CC150	20	10	30
CC185 - CC225	30	10	50
CC265 - CC400	50	10	50
CC630 - CC800	50	10	80

Please note: it is not recommended to install contactors in close dimension to each other if used continuously.

Maximum deviation from normal mounting



Wire Type Frame		Main Terminal Size								Torque		
				(AWG / mm²)						mm(max)	[lb-in]	[Nm]
CC18		M4	16~18 / 1.5~10	16~8 / 1.5~10	16~8 / 1.5~10		8,3		10	1,13	12	
CC22			18~10 / 1~6	14~8 / 2.5~10	14~8 / 2.5~10		9,6		20	2,25	23	
CC40		M5	18~10 / 1~6	8~6 / 10~16	8~6 / 10~16		12,8		35	4	41	
CC50		M6	-	10~4 / 6~25	10~4 / 6~25		14		35	4	41	
CC65			-	8~3 / 10~35	8~3 / 10~35							
CC85		M8	-	8~1/0 / 10~50	8~1/0 / 10~50		17		45	5,1	52	
CC100			-	8~2/0 / 10~70	8~2/0 / 10~70							
CC130		M8	-	3~2/0 / 35~70	3~2/0 / 35~70		24,5		80	9,1	93	
CC150			-	3~4/0 / 35/95	3~4/0 / 35~95							
CC185		M10	-	1~4/0 / 50~95	1~4/0 / 50~95		7,6			14,7	150	
CC225			-	1/0~300 / 50~150	1/0~300 / 50~150							
CC265		M12	-	3/0~500 / 95~240	3/0~500 / 95~240		30		200	22,6	230	
CC330			-	4/0~500 / 95~240	4/0~500 / 95~240							
CC400			-	350~700 / 185~185 x 2	350~700 / 185~185 x 2							
CC630		M16	-	600~2000	-		40		500	26,5	270	
CC800			-	1700~Busbar	-							

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