



M -SERIES

Technical catalogue

AC Contactors

Thermal Overload Relays

B T B
ELECTRIC



BTB Electric aims to provide the best solutions for a safe environment and customer satisfaction through superior quality and service.



MC3
MT3 | Series

AC Contactors

Thermal Overload Relays

Reliable Quality

- More than 40 years of electrical experience and contactor development have accumulated valuable knowledge, ensuring that we can provide products of the highest quality.
- In order to guarantee the utmost reliability and safety, comprehensive verification and testing have been conducted, resulting in excellent performance under AC-3, AC-4, and AC-1 conditions.
- Our MC3 series contactors are Tested by IECEE laboratory – IEC system of conformity assessment programs for Electrical engineering equipment and components



Product Features

- Designed under several patents.
- Optimized structure to be compatible with other industrial control contactors.
- Materials with excellent ability to withstand abnormal heat conditions.
- Optimized arc extinguishing system for extended product life.
- Diversity of auxiliary blocks, which can be combined freely.
- Reliable performance even in harsh environments.

Environmental Protection

Energy efficient

In line with the high emphasis on protecting the environment, the newly designed MC3 series contactors fully meet international energy efficiency standards.

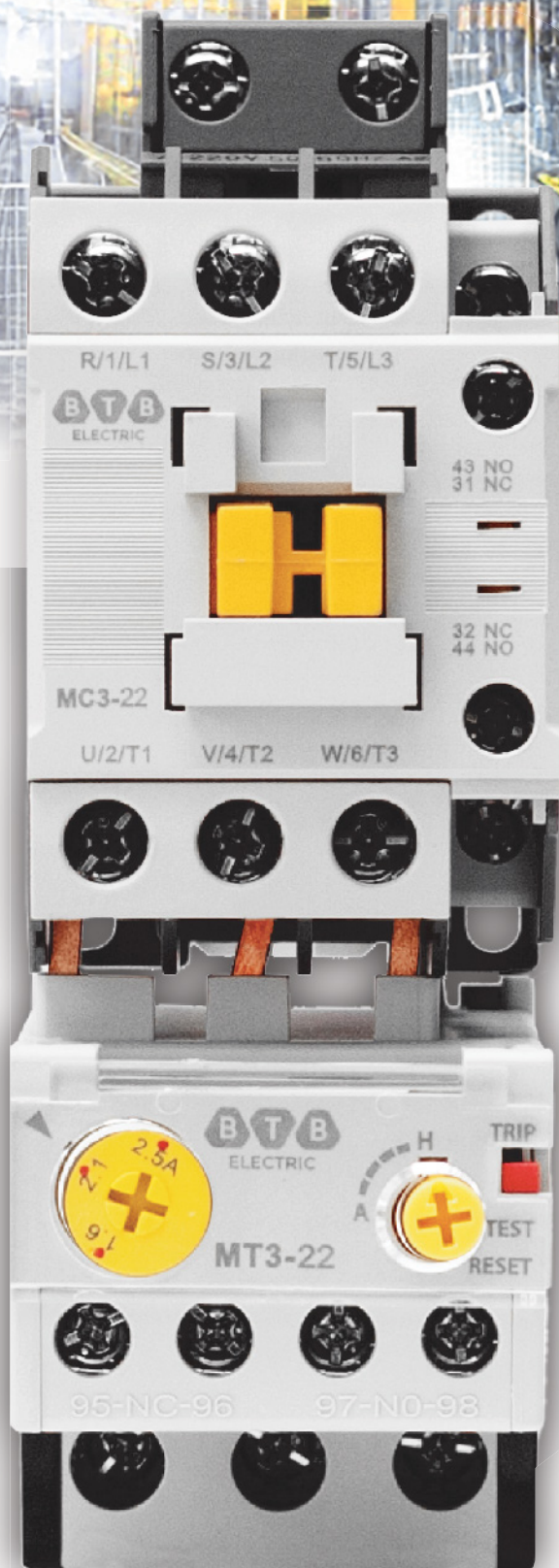
Material

In order to minimize our impact on the environment, we select product materials that comply with the RoHS directive and relevant international regulations.



Standard and Environment

Standard	IEC 60947-4-1, IEC 60947-5-1, UL 508	
Certificate	CB, 2014/35/EU	
Rated Operational Voltage (Ue)	690V	
Rated Insulation Voltage (Ui)	up to 1000V	
Rated Impulse Withstand Voltage (Uimp)	up to 8kV	
Ambient Air Temperature	Storage:	-30°C ~ +65°C
	Operation:	-5°C ~ +55°C (BMC) -5°C ~ +40°C (BTH)
Operating Altitude	2000m	



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Thermal Overload Relays

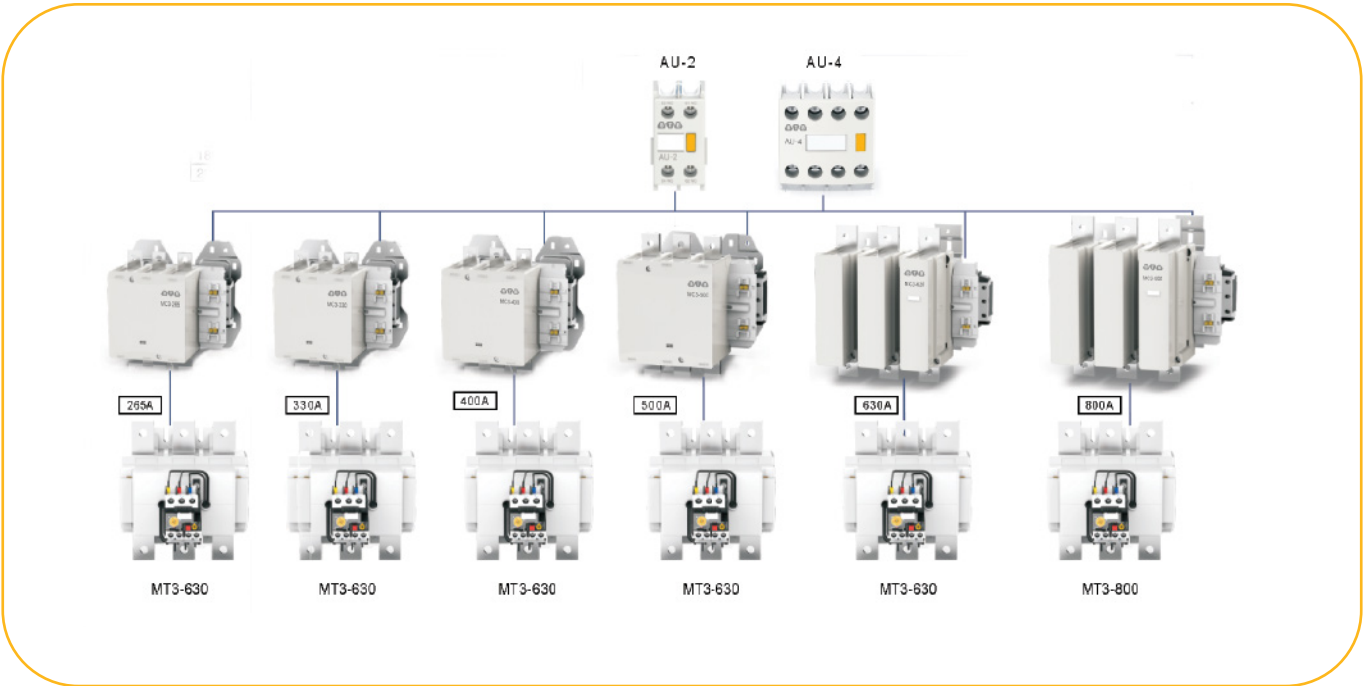
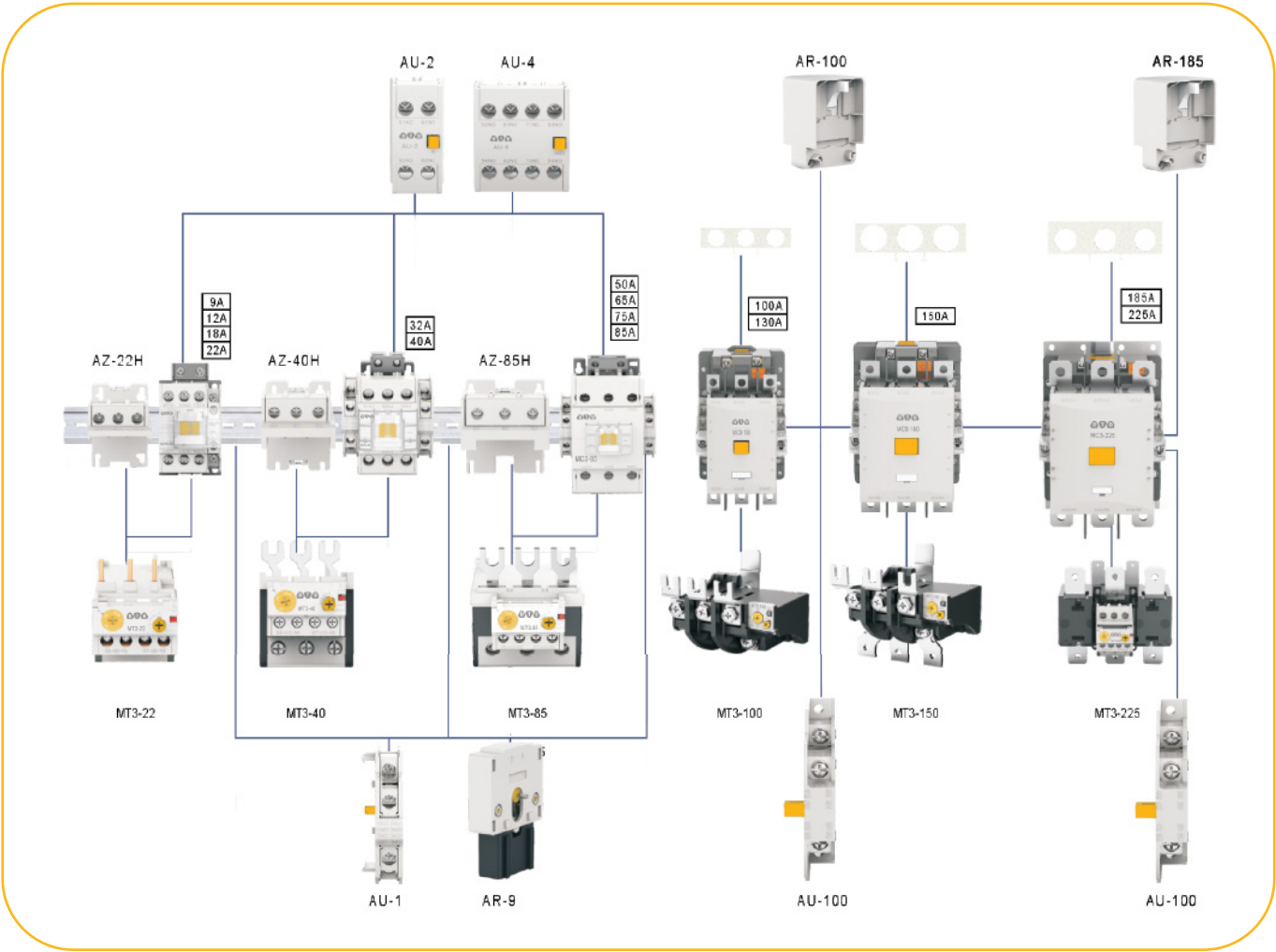
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Technical Overview

Composition



Enhanced safety

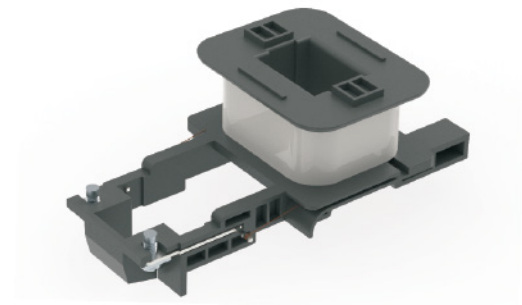
Front Protection Cover

- Minimize foreign input.
- Prevents unexpected operation due to user error.



Improved Quality and Decreased Noise.

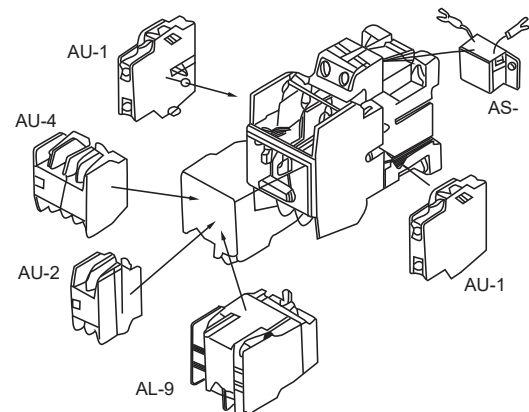
- Extended life is achieved through new contact technology.
- Suitable for severe duty operations such as inch driving and phase reversal by improving arc resistance, abrasion resistance, electrical life expectancy, etc.
- Reliability is enhanced by using a special coil for each voltage.



Utility

Convenient and Safe structure

- Various mounting options available using DIN rail and screw types.
- Easy maintenance and replacement while attached to switchgear.
- Convenient to use with a reasonable structure.

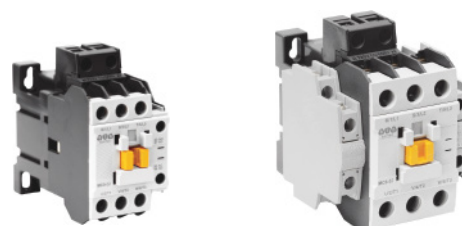


Removable Terminal Cover

- Applicable for main contacts, auxiliary contacts, and coil contacts.
- IP20 rated.
- Changing the coil assembly is easy with the ergonomic design of the 'A' in the Coil Assembly locker.
- It is easy to replace the coil using a drawout-type coil structure, eliminating the need to dismantle the contactor (for models 100~800A).



Table of Specifications



Model			MC3-9	MC3-12	MC3-18	MC3-22	MC3-32	MC3-40
Rated Operational Voltage, Ue			690V					
Rated Insulation Voltage, Ui			690V					
Rated Impulse Withstand Voltage, Uimp			6kV				8kV	
Rated Frequency			50/60Hz				50/60Hz	
IEC/EN 60947	AC-1 Thermal Current		25A	25A	40A	40A	50A	60A
	AC-3 Current and power	200/240V	2.5kW 11A	3.5kW 13A	4.5kW 18A	5.5kW 22A	7.5kW 32A	11kW 40A
		380/440V	4kW 9A	5.5kW 12A	7.5kW 18A	11kW 22A	15kW 32A	18.5kW 40A
		500/550V	4kW 7A	7.5kW 12A	7.5kW 13A	15kW 22A	18.5kW 28A	22kW 32A
		660/690V	4kW 5A	7.5kW 9A	7.5kW 9A	15kW 18A	18.5kW 20A	22kW 23A
UL508	Continuous current		20A	25A	30A	32A	45A	50A
	Single phase	115V	0.5HP	0.5HP	1HP	2HP	2HP	3HP
		230V	1HP	2HP	3HP	3HP	5HP	5HP
	Three phase	200V	2HP	3HP	5HP	7.5HP	7.5HP	10HP
		230V	2HP	3HP	5HP	7.5HP	10HP	10HP
		460V	5HP	7.5HP	10HP	10HP	20HP	25HP
		575V	7.5HP	10HP	15HP	15HP	20HP	25HP
Frequency of operation (AC-3)		times/hour	1800					
Electrical life (AC-3)		10000 times	250				200	
Mechanical life			2500				1500	
Mounting Method			Screw & DIN-Rail					
Dimensions (W×H×D) 3P			44x80x86.8			68x82x94.5		
Weight 3P			0.33kg		0.37kg		0.45kg	
Auxiliary	Standard		1NO1NC (1a1b)				2NO2NC (2a2b)	
	Side mount		AU-1				AU-1	
	Front mount		AU-2, AU-4, AC-9				AU-2, AU-4, AC-9	
Coil voltage (AC50/60Hz)			24, 48, 100, 110, 220, 240, 380, 415V					
Thermal Overload Relays			MT3-22				MT3-40	

Table of Specifications



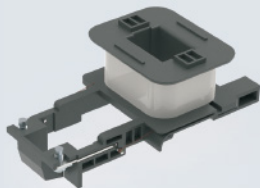
MC3-50	MC3-65	MC3-75	MC3-85	MC3-100	MC3-130	MC3-150	MC3-185	MC3-225
690V				690V				
1000V				690V				
8kV				8kV				
50/60Hz				50/60Hz				
80A	100A	110A	135A	150A	150A	200A	230A	260A
15kW	18.5kW	22kW	25kW	30kW	37kW	45kW	55kW	75kW
55A	65A	75A	85A	105A	130A	150A	185A	225A
22kW	30kW	37kW	45kW	55kW	60kW	75kW	90kW	132kW
50A	65A	75A	85A	105A	130A	150A	185A	225A
30kW	33kW	37kW	45kW	55kW	60kW	90kW	110kW	132kW
43A	60A	64A	75A	85A	90A	140A	180A	200A
30kW	33kW	37kW	45kW	55kW	60kW	90kW	110kW	132kW
28A	35A	42A	45A	65A	70A	100A	120A	150A
70A	80A	90A	100A	160A	160A	210A	230A	275A
3HP	5HP	5HP	7.5HP	7.5HP	10HP	15HP	15HP	15HP
7.5HP	10HP	15HP	15HP	15HP	20HP	25HP	30HP	40HP
10HP	15HP	20HP	25HP	30HP	40HP	40HP	60HP	60HP
15HP	20HP	25HP	30HP	30HP	40HP	50HP	60HP	75HP
30HP	40HP	50HP	50HP	60HP	75HP	100HP	125HP	150HP
30HP	40HP	50HP	50HP	60HP	75HP	100HP	125HP	150HP
1200				1200				
200				100				
1000				500				
Screw & DIN-Rail				Screw				
94x123.5x117.4				126x165.8x146.5		144x175.8x157	162x203x181	
1.0kg				2.9kg		3.4kg	5.4kg	
2NO2NC (2a2b)				2NO2NC (2a2b)				
AU-1				AU-100				
AU-2, AU-4, AC-50				-				
24, 48, 100, 110, 220, 240, 380, 415V				24, 48, 110, 220V (AC/DC), 400V				
MT3-85				MT3-100 & MT3-150			MT3-225	

Table of Specifications



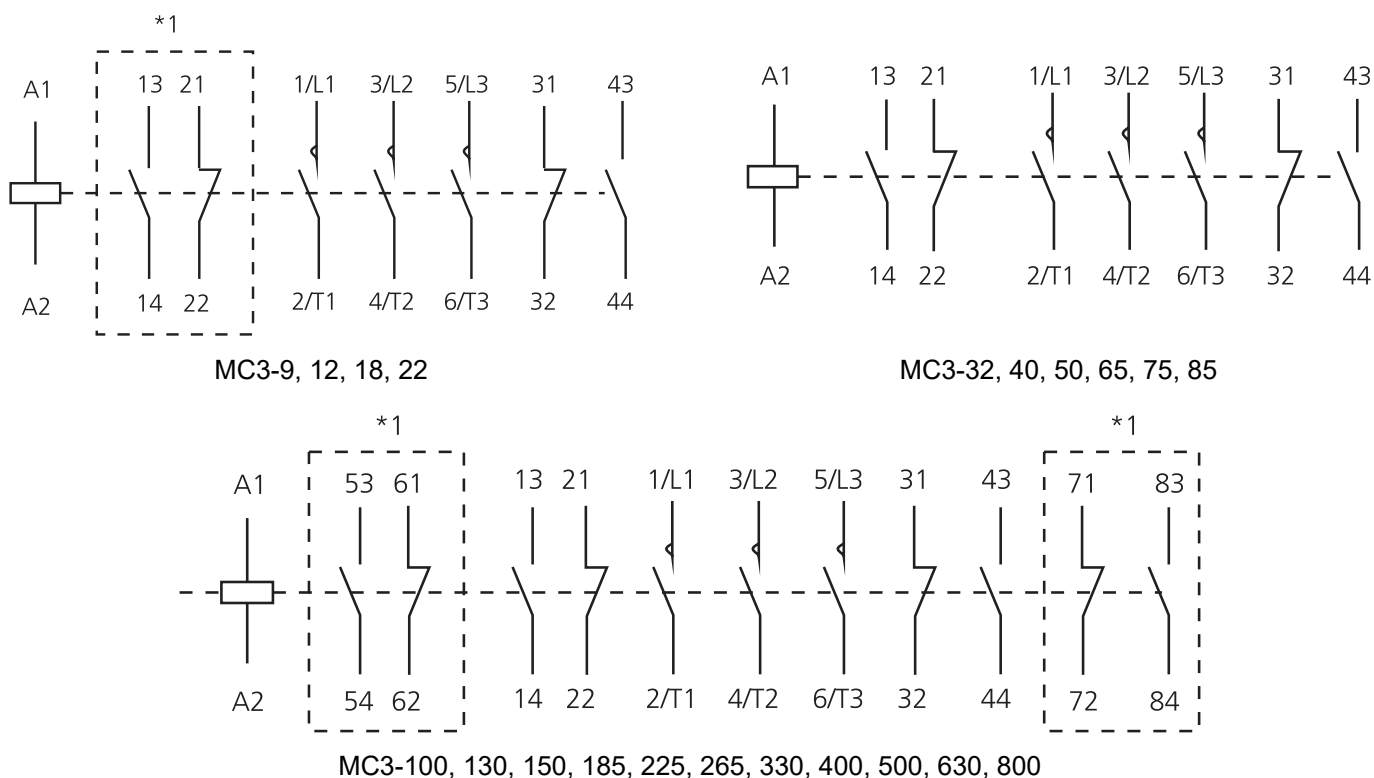
Model			MC3-265	MC3-330	MC3-400	MC3-500	MC3-630	MC3-800
Rated Operational Voltage, Ue			1000V					
Rated Insulation Voltage, Ui			1000V					
Rated Impulse Withstand Voltage, Uimp			8kV					
Rated Frequency			50/60Hz					
IEC/EN 60947	AC-1 Thermal Current		350A	400A	500A	700A	1000A	1600A
	AC-3 Current and power	200/240V	75kW 265A	100kW 330A	110kW 400A	147kW 500A	200kW 630A	250kW 800A
		380/440V	140kW 265A	180kW 330A	220kW 400A	280kW 500A	375kW 630A	450kW 800A
		500/550V	160kW 245A	200kW 310A	257kW 400A	355kW 450A	400kW 600A	450kW 650A
		660/690V	160kW 185A	220kW 200A	280kW 305A	355kW 355A	450kW 460A	470kW 500A
		1000V	147kW 105A	160kW 115A	185kW 130A	335kW 260A	450kW 355A	450kW 355A
UL508	Continuous current		350A	400A	500A	700A	1000A	1600A
	Single phase	115V	-	-	-	-	-	-
		230V	-	-	-	-	-	-
	Three phase	200V	75HP	100HP	125HP	140HP	150HP	200HP
		230V	100HP	100HP	150HP	170HP	200HP	250HP
		460V	200HP	200HP	300HP	350HP	400HP	500HP
		575V	200HP	200HP	300HP	350HP	400HP	500HP
Frequency of operation (AC-3)		times/hour	600					
Electrical life (AC-3)		10000	30				20	
Mechanical life		times	300				100	
Mounting Method			Screw					
Dimensions (W×H×D) 3P			213x206x219			233x238x232	309x304x255	
Weight 3P			7.1kg	8.2kg	8.5kg	10.8kg	17.4kg	19.0kg
Auxiliary	Standard		-					
	Side mount		-					
	Front mount		AU-2, AU-4					
Coil voltage (AC50/60Hz)			24, 48, 110, 220V (AC/DC), 400V					
Thermal Overload Relays			MT3-630					

Coil Characteristics

Model		CC**F40	CC**F85	CC**F150	CC**F225	CC**F500	CC**F800
AC Coil (50/60Hz)		24, 48, 110, 220, 240, 380, 415V		24, 48, 110, 220, 380V			
DC Coil		24, 48, 110, 220, 240V		-			
AC/DC Coil		-		24, 48, 100/240V AC/DC; 400V AC			
Voltage limit (Uc)		85 ~ 110%		85 ~ 110%			
Drop-out (Uc)		20 ~ 75%		20 ~ 75%			
Coil consumption (220V/60 Hz)	Inrush	100VA	220VA	310VA	360VA	750AV	1200VA
	Holding	12VA	15VA	14VA	15VA	22VA	32VA
Coil consumption (110VDC)	Inrush	10W	16W	220W	230W	250W	370W
	Holding	10W	16W	7W	8W	10W	11W
Used for contactors		MC3-9, 12, 18, 22, 32, 40	MC3-50, 65, 75, 85	MC3-100, 130, 150	MC3-185, 225	MC3-265, 330, 400 500	MC3-630, 800
Coil voltage code for contactors	V	24	48	110	220	240	380
	50/60Hz	B7	E7	F7	M7	U7	Q7
	DC	BD	ED	FD	MD	UD	-
Description							

(**) Coil voltage code

Contact Conguration

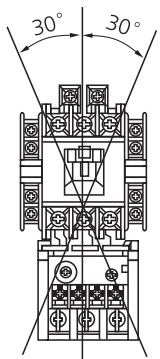


*1: Possibility of further expansion

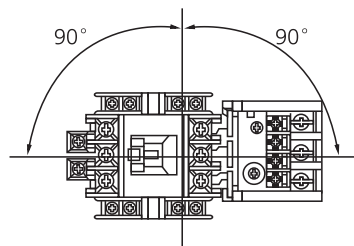
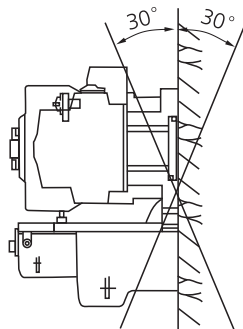
Connections

Model	Main Terminal Size		Applicable Wire Size (mm ²) 	Ring Tongue Terminal (mm) 	Screwing Torque	
					(Nm)	(kgf.cm)
MC3-9		M4	1~6	9.6	2.25	23
MC3-12			1~6			
MC3-18			1.5~10			
MC3-22			1.5~10			
MC3-32		M5	2.5~10	12.8	4	41
MC3-40			10~16			
MC3-50		M6	6~25	14	4	41
MC3-65		M8	6~35	17	5.1	52
MC3-75			10~35			
MC3-85			10~50			
MC3-100			10~70	24.5	9.1	93
MC3-130			35~70			
MC3-150		M10	50~95	25	14.7	150
MC3-185			50~120			
MC3-225			50~150			
MC3-265		M12	95~185	30	22.6	230
MC3-330			95~240			
MC3-400			185~185X2			
MC3-500		M16	185~240X2	40	56.5	576
MC3-630			-			
MC3-800			-			

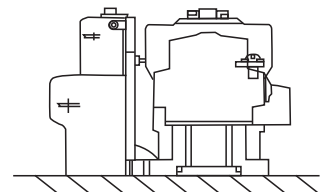
Mounting



Standard mounting



Vertical mounting or level mounting

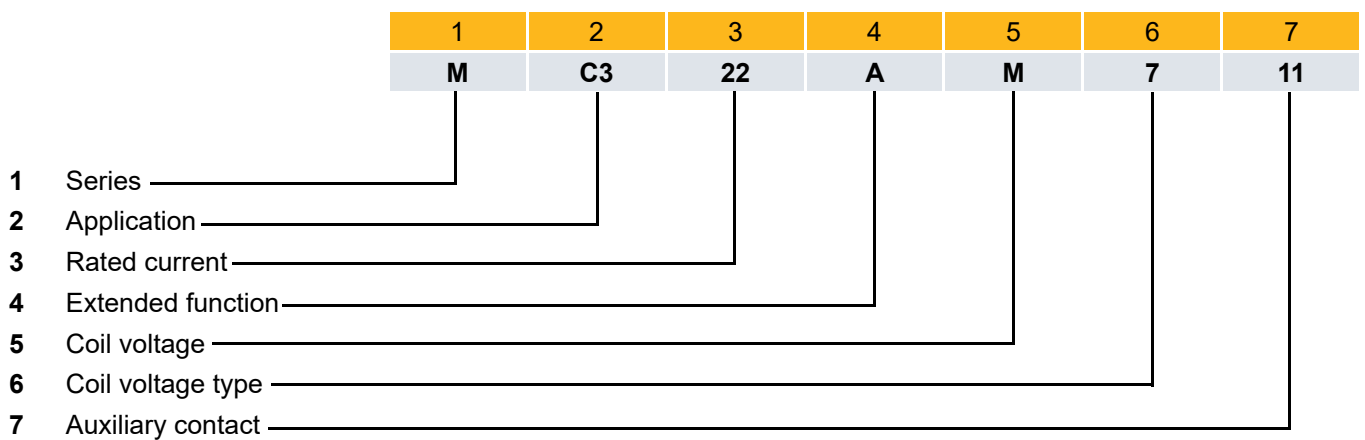


Specification for Tranformer and Condenser Load

Model	Load is Transformer (kVA)				Load is Condenser (kVAR)	
	Single Phase		Three Phase		Three Phase	
	220VAC	440VAC	220VAC	440VAC	220VAC	440VAC
MC3-9	1	1.5	2	2.5	2	3
MC3-12	1.5	2	3	4	3	4
MC3-18	2	3	3.5	5	4	6
MC3-22	2.5	3.5	4	7	5	9
MC3-32	3	5	5	10	9	16
MC3-40	4	7.5	6.5	12	11	20
MC3-50	5	10	10	18	13	24
MC3-65	7	15	12	25	17	34
MC3-75	8	17	13	27	20	40
MC3-85	9	18	15	30	22	45
MC3-100	10	20	18	35	24	48
MC3-130	15	25	25	42	29	58
MC3-150	17	33	30	60	35	70
MC3-185	20	40	35	70	42	84
MC3-225	25	50	42	85	58	115
MC3-265	30	57	48	95	63	125
MC3-330	33	66	57	100	69	139
MC3-400	44	90	75	150	92	185
MC3-500	55	110	90	180	115	230
MC3-630	65	130	110	220	145	291
MC3-800	90	175	150	300	185	369



Model Definition



2. Application

C1	Relay contactor
C2	DC Contactor
C3	AC Contactor 3P
C4	AC Contactor 4P

4. Extended function

A	Basic Contactor
C	Capacitor Switching Contactor

6. Coil Voltage Type

5	50Hz
6	60Hz
7	50/60Hz
D	DC
AD	AC/DC

3. Rated current

6	6A	100	100A
9	9A	130	130A
12	12A	150	150A
18	18A	185	185A
22	22A	225	225A
32	32A	265	265A
40	40A	330	330A
50	50A	400	400A
65	65A	500	500A
75	75A	630	630A
85	85A	800	800A

5. Coil Voltage

B	24V
E	48V
F	110V
M	220V
P	230V
U	240V
Q	380V
V	400V
N	415V

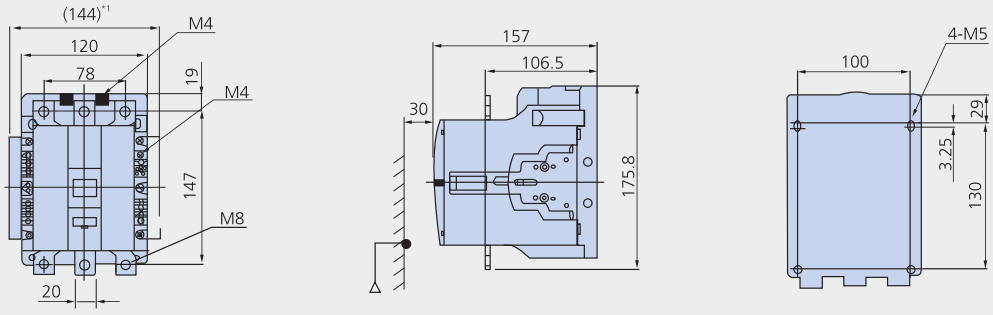
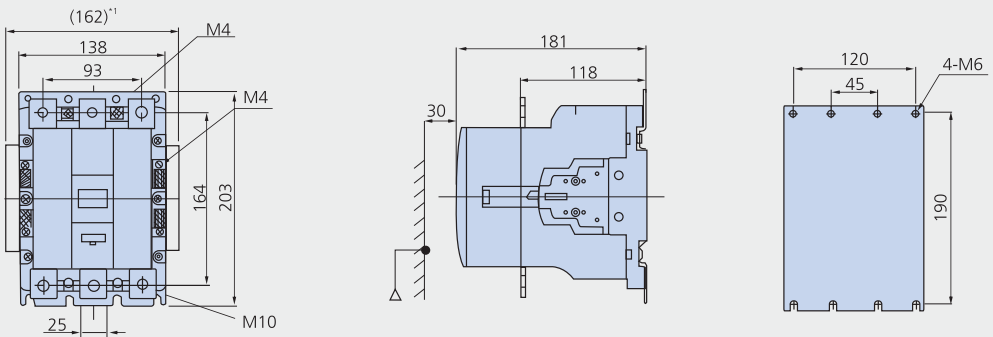
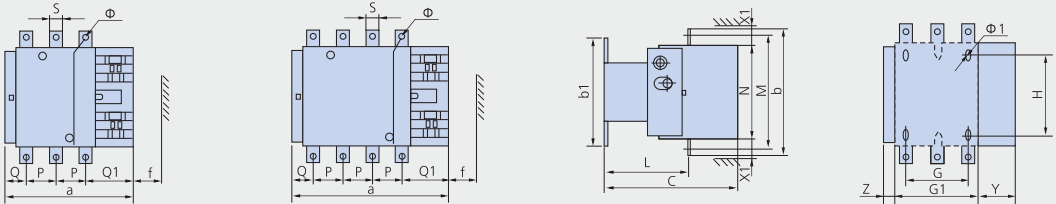
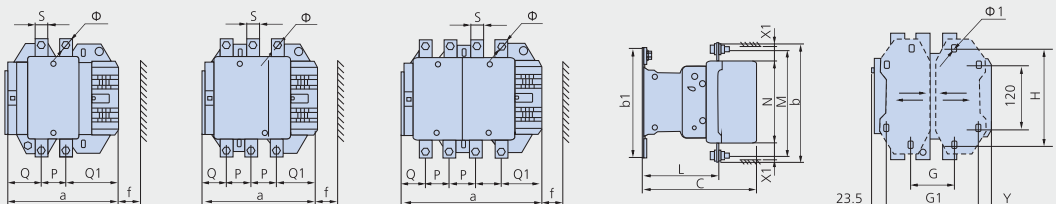
7. Auxiliary contact

10	1NO
01	1NC
11	1NO+1NC
21	2NO+1NC
12	1NO+2NC
22	2NO+2NC

Dimensions

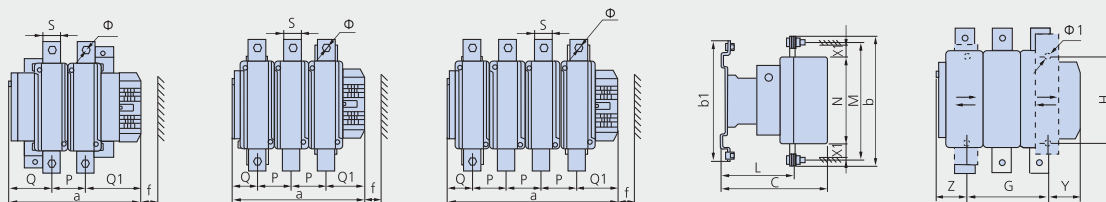
MC3-9 MC3-12 MC3-18 MC3-22	Front view dimensions: (56)^{±1}, 44, 4.65, 16.5, 80, 46, 26.3, 44.3, 9.7, 1.1, 1.1, 8. Dimensions for mounting holes: M3.5, M4, M3.5. Side view dimensions: 10, 86.8, 64.1. Top view dimensions: 35, 30, 2.5, 5, 50, 5.4, 3. Mounting hole: M4. 35mm Rail. MC3-9,12:0.33kg, MC3-18,22:0.37kg
MC3-32 MC3-40	Front view dimensions: 68, 56, 28, 8, 82, 51, 26.3, 44.3, 12.4, 1.4, 1.4, 8. Dimensions for mounting holes: M3.5, M5, M3.5. Side view dimensions: 10, 94.5, 64.6. Top view dimensions: 35, 30, 2.5, 5, 50, 5.4, 3. Mounting hole: M4. 35mm Rail. 0.45kg
MC3-50 MC3-65 MC3-75 MC3-85	Front view dimensions: 94, 82, 44, 8, 123.5, 78, 26.3, 44.3, 17.5, 22, 22, 8. Dimensions for mounting holes: M3.5, M6(50), M8(65,75,85), M3.5. Side view dimensions: 10, 117.4, 82.4. Top view dimensions: 60, 50, 100, 35mm Rail. 1kg
MC3-100 MC3-130	Front view dimensions: (126)^{±1}, 100, 64, 27.4, 130, 15, 8. Dimensions for mounting holes: M4, M4, M8. Side view dimensions: 30, 146.5, 102.5, 165.8. Top view dimensions: 90, 88.5, 16.5, 125, 35mm Rail. 2.9kg

Dimensions

MC3-150	 Technical drawing of the MC3-150 AC contactor. It includes three views: a front view showing a width of 120mm and a height of 147mm, with mounting holes of M4 and M8; a side view showing a depth of 157mm and a height of 175.8mm; and a top view showing a width of 100mm and a height of 130mm. The weight is 3.4kg.
MC3-185 MC3-225	 Technical drawing of the MC3-185 and MC3-225 AC contactors. It includes three views: a front view showing a width of 138mm and a height of 203mm, with mounting holes of M4 and M10; a side view showing a depth of 181mm and a height of 118mm; and a top view showing a width of 120mm and a height of 190mm. The weight is 5.4kg.
MC3-265 MC3-330	 Technical drawing of the MC3-265 and MC3-330 AC contactors. It includes four views: two front views showing different terminal configurations with dimensions S, Φ, Q, P, Q1, a, and f; a side view showing dimensions b1, L, C, N, M, b, and X1; and a top view showing dimensions Z, G, Y, and H.
MC3-400 MC3-500	 Technical drawing of the MC3-400 and MC3-500 AC contactors. It includes five views: three front views showing different terminal configurations with dimensions S, Φ, Q, P, Q1, a, and f; a side view showing dimensions b1, L, C, N, M, b, and X1; and a top view showing dimensions 23.5, G1, Y, and H.

Dimensions

MC3-630
MC3-800

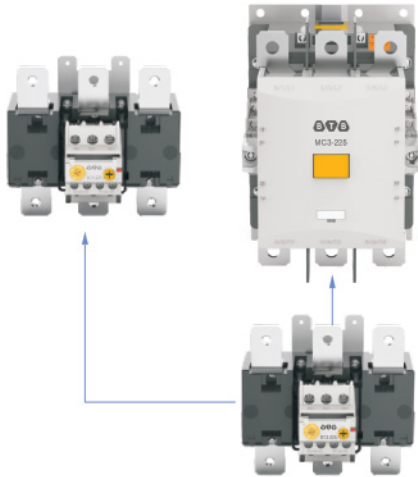


mm				
Model	MC3-265 MC3-330	MC3-400	MC3-500	MC3-630 MC3-800
a	204	213	233	309
P	48	48	55	80
Q	39	43	46	60
Q1	69	74	77	89
s	25	25	30	40
Φ	M10	M10	M10	M12
f	147	151	169	201
b	205/210	206	238	304
b1	145	209	209	280
M	179/184	181	208	264
N	149	158	172	202
C	204/214	219	232	255
L	134/139	145	146	155
G	96	80 (66-102)	80 (66-102)	180 (100-195)
H	106/120	180	180	180
Φ1	6.5	8.5	8.5	10.5
G1	141/154	170 (156-192)	170 (156-210)	-
Z	20.5	-	-	60.5
Y	38	19.5	39.5	68.5
X1	≤500V	10	15	20
	>500V	15	20	30
Weight (kg)		7.1/8.2	8.5	10.8
				17.4/19.0

Technical Overview

Type MT3, bimetal-style overload relays are designed to protect AC circuits and motors against overloads, phase failure, extended starting times, and prolonged stalling of the motor.

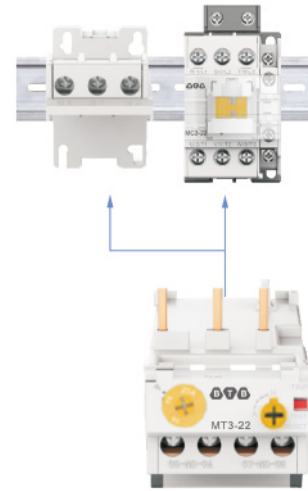
The thermal (bimetal element) type overload relay, with a maximum rating of 225A, can be directly connected with a contactor or independently installed with the assistance of additional mounting support.



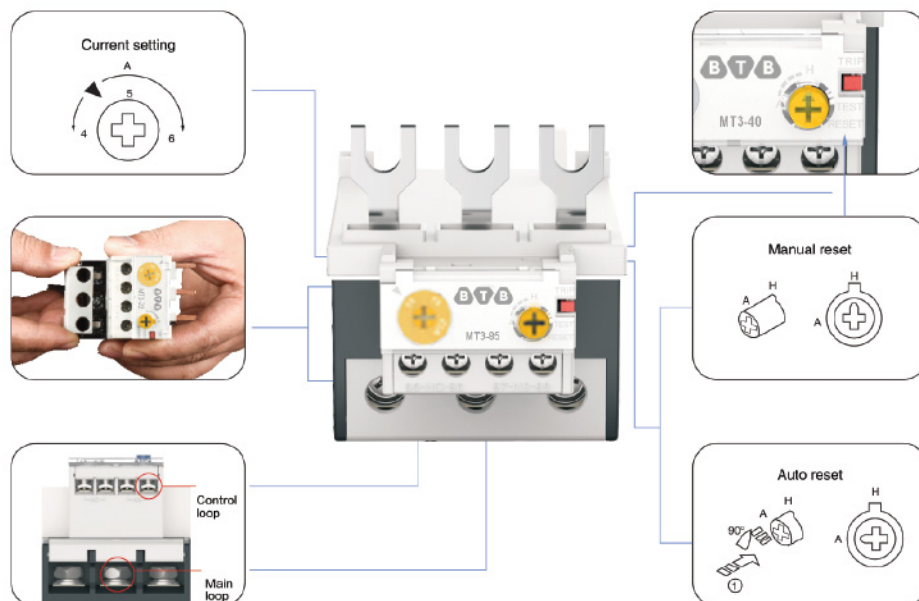
Thermal overload relays characteristics

If it is necessary to mount the thermal overload relay separately, use a single seat and secure it with screws or a guide track.

(Application types: UKH-22, 40, 85)



When released, the thermal overload relay will protrude approximately 2-3mm, indicating its status.



The main loop terminal is distinctly different from the control loop terminal, making it difficult to make incorrect connections.

To set the automatic reset function, press down the reset button and rotate it anticlockwise by 90 degrees.

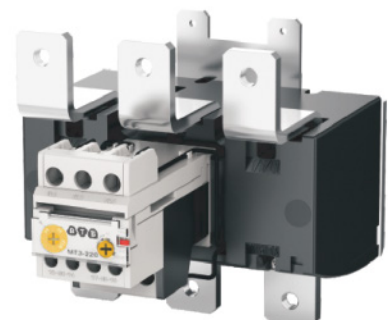
Table of Specifications

Model		MT3 - 22	MT3 - 40	MT3 - 85
Rated Operational Voltage, Ue		690V		
Rated Insulation Voltage, Ui		690V		
Rated Impulse Withstand Voltage, Uimp		6kV		
Rated Frequency		50/60Hz		
Poles		3P		
Temperature compensation		-5~+40°C		
Trip class		10A (20A)		
Functions		Trip, Test, Reset A/H		
Auxiliary contacts	Composition	1NO+1NC		
	Rated thermal current, AC12	5A		
	Rated operation current, AC15	0.75A at 240V		
Terminals	Main-upstream	Screw clamp	Screw/Lug clamp	
	Main-downstream	Screw clamp	Screw/Lug clamp	
	Auxiliary	Screw clamp		
Setting range		1A ~ 22A	4A ~ 40A	7A ~ 85A
		0.25-0.4A (0D3)	4-6A (5D0)	7-10A (8D5)
		0.4-0.63A (0D5)	5-8A (6D5)	9-13A (11)
		0.63-1A (0D8)	6-9A (7D5)	12-18A (15)
		1-1.6A (1D3)	7-10A (8D5)	16-22A (19)
		1.6-2.5A (2D1)	9-13A (11)	18-26A (22)
		2.5-4A (3D3)	12-18A (15)	24-36A (30)
		4-6A (5D0)	16-22A (19)	28-40A (34)
		5-8A (6D5)	18-26A (22)	34-50A (42)
		6-9A (7D5)	24-36A (30)	45-65A (55)
		7-10A (8D5)	28-40A (34)	54-75A (65)
		9-13A (11)		63-85A (74)
		12-18A (15)		
		16-22A (19)		
Weight		0.11kg	0.17kg	0.3kg
Connection	Main terminal	1.25 ~ 5.5mm² (M4)	4 ~ 10mm² (M4)	6 ~ 16mm² (M6) 16 ~ 35mm² (M8)
	Aux. contact	1 ~ 5 mm² (M3.5)		
Applied contactors		MC3-9	MC3-32	MC3-50
		MC3-12	MC3-40	MC3-65
		MC3-18		MC3-75
		MC3-22		MC3-85
Separate mounting unit		AZ-22H	AZ-40H	AZ-85H

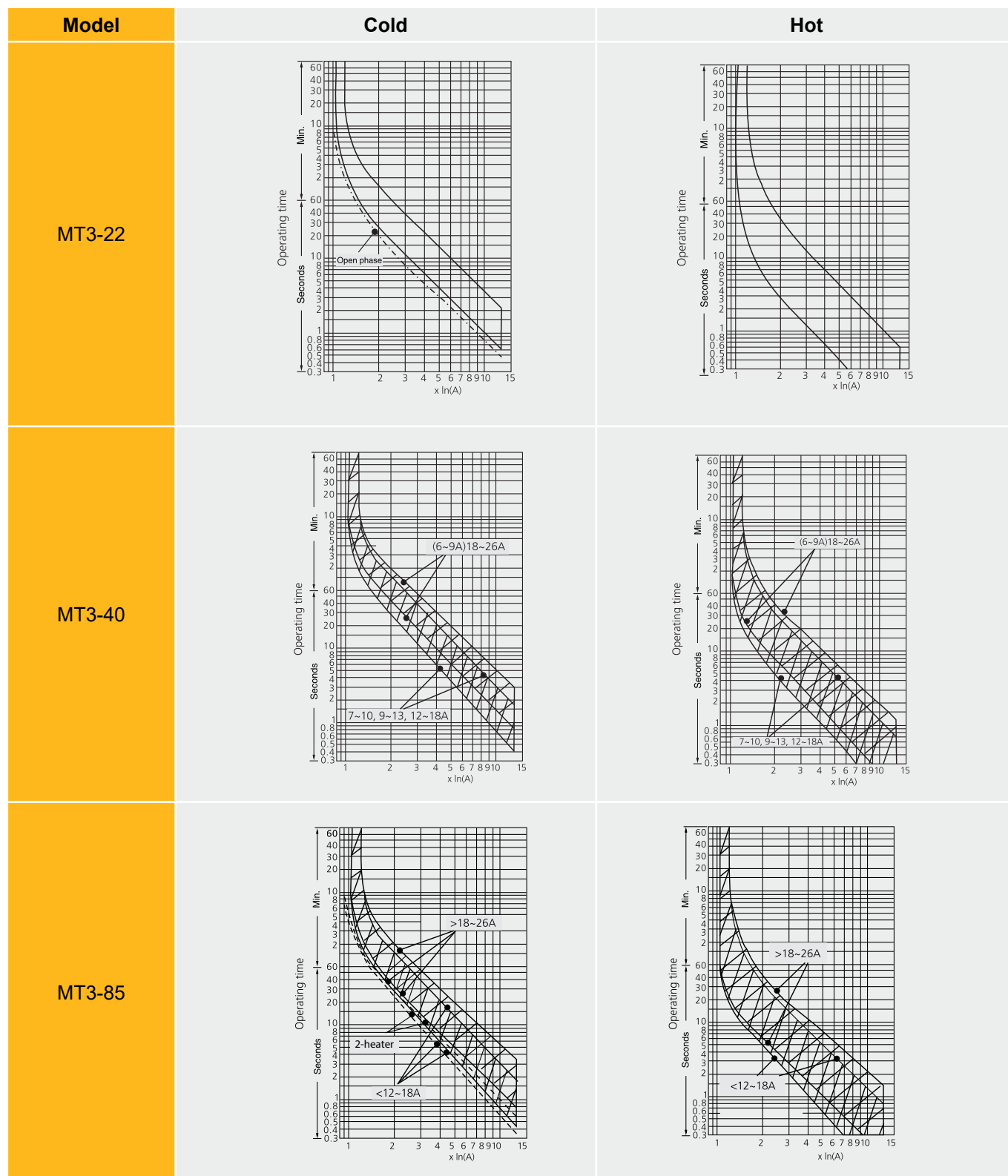


Table of Specifications

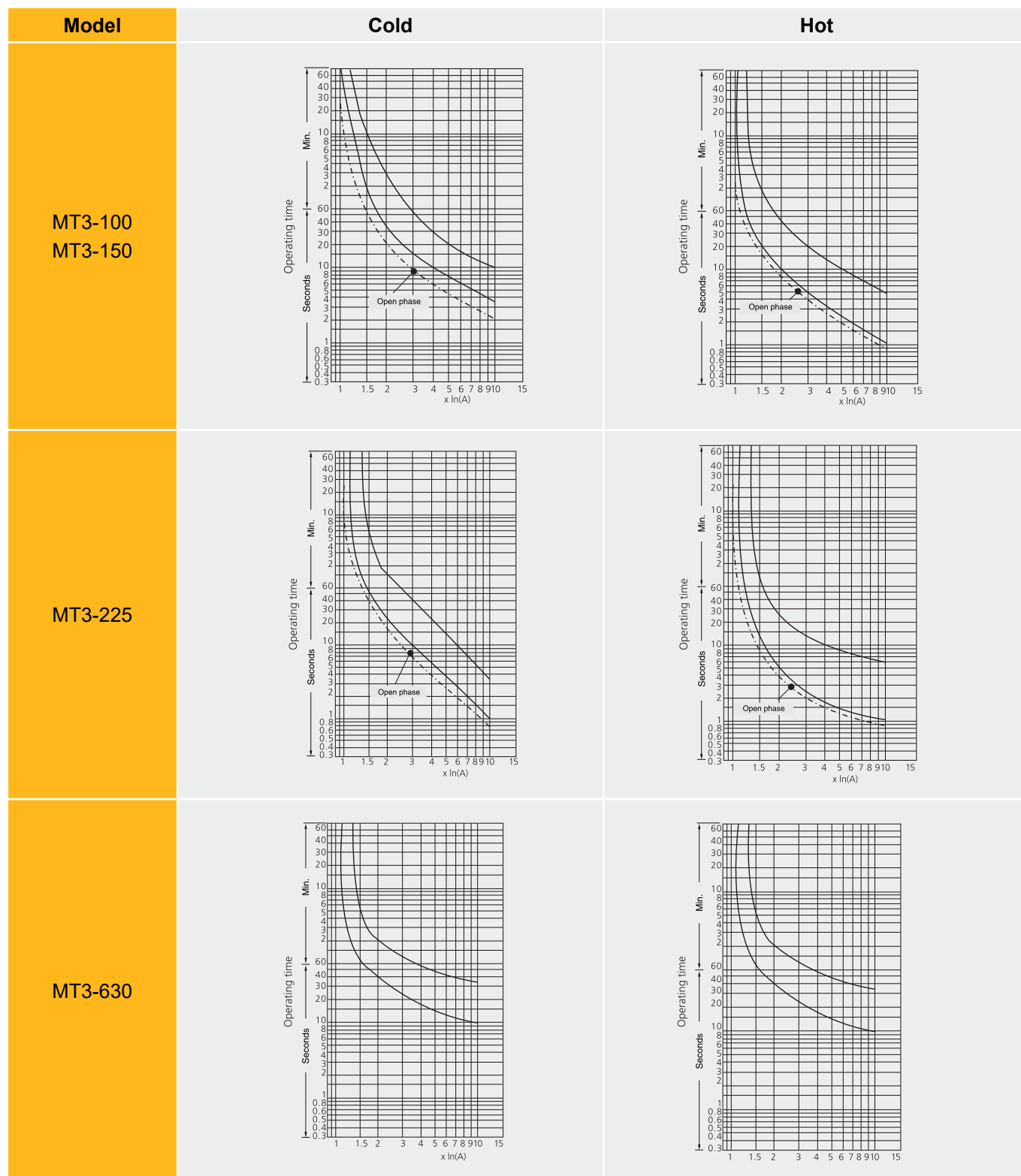
Model		MT3 – 100 MT3 - 150	MT3 - 225	MT3 - 630
Rated Operational Voltage, Ue		690V		
Rated Insulation Voltage, Ui		690V		
Rated Impulse Withstand Voltage, Uimp		6kV		
Rated Frequency		50/60Hz		
Poles		3P		
Temperature compensation		-5~+40°C		
Trip class		10A (20A)		
Functions		Trip, Reset A/H		
Auxiliary contacts	Composition	1NO+1NC		
	Rated thermal current, AC12	5A		
	Rated operation current, AC15	0.75A at 240V		
Terminals	Main-upstream	Screw clamp		
	Main-downstream	Screw clamp		
	Auxiliary	Screw clamp		
Setting range		34A ~ 150A 34-50A (41) 39-57A (48) 43-65A (56) 54-80A (67) 65-100A (80) 85-125A (107) 100-160A (130) 100-160 only at MC3-150	65A ~ 240A 65-100A (80) 85-125A (107) 100-160A (130) 120-180A (150) 160-240A (200)	220A ~ 630A 220-300A (260) 300-500A (400) 380-630A (505)
Weight		0.5/0.6kg	2.5kg	3.1kg
Connection	Main terminal	16 ~ 95mm ² (M8)	35 ~ 150mm ² (M10)	95 ~ 325mm ² (M16)
	Aux. contact	1 ~ 6 mm ² (M4)		
Applied contactors		MC3-100 MC3-130 MC3-150	MC3-185 MC3-225	MC3-265 MC3-330 MC3-400 MC3-500 MC3-630
Separate mounting unit		-	-	-



Characteristics Curve

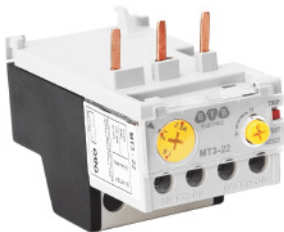


Characteristics Curve

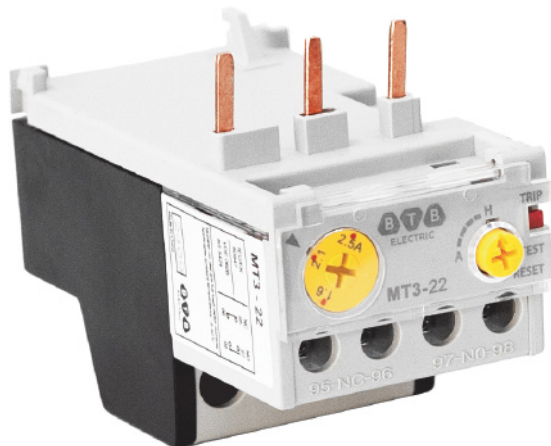


Quick Option for Thermal Overload Relays

Rated Operational Power		Thermal Overload Relays		AC Contactor
kW	Current at 400V (A)	Model	Setting Range	Model
0.37	1.1	MT3-22	1~1.6	MC3-9
0.55	1.5	MT3-22	1~1.6	MC3-9
0.75	1.9	MT3-22	1.6~2.5	MC3-9
1.1	2.7	MT3-22	2.5~4	MC3-9
1.5	3.6	MT3-22	2.5~4	MC3-9
2.2	4.9	MT3-22	4~6	MC3-9
3.0	6.5	MT3-22	5~8	MC3-12
4.0	8.5	MT3-22	7~10	MC3-12
5.5	11.5	MT3-22	9~13	MC3-18
7.5	15.5	MT3-22	12~18	MC3-22
11	22	MT3-40	18~25	MC3-32
15	29	MT3-40	24~36	MC3-40
18.5	35	MT3-40	28~40	MC3-40
22	41	MT3-85	34~50	MC3-50
30	55	MT3-85	45~65	MC3-65
37	66	MT3-85	54~75	MC3-75
45	80	MT3-85	63~85	MC3-85
55	90	MT3-150	70~95	MC3-100
59	97	MT3-150	80~105	MC3-130
75	125	MT3-150	110~150	MC3-150
90	146	MT3-225	120~185	MC3-185
110	178	MT3-225	160~240	MC3-225
132	215	MT3-225	160~240	MC3-225
160	256	MT3-630	220~300	MC3-330
200	330	MT3-630	300~500	MC3-400
220	353	MT3-630	300~500	MC3-400
250	401	MT3-630	300~500	MC3-500
300	481	MT3-630	380~630	MC3-630



Model Definition



1	2	3	4	5	6
M	T3	85	A	6D5	-

- 1 Series _____
- 2 Application _____
- 3 Ampere frame _____
- 4 Number of Terminal _____
- 5 Relay setting current _____
- 6 Mounting _____

2. Application

T1	Electronic thermal overload relay
T2	Relay thermal overload and phase loss
T3	Standard thermal overload relay

3. Ampere frame

22	1~22A
40	4~40A
85	9~85A
100	34~125A
150	34~160A
225	65~240A
630	220~630A

4. Number of Terminal

A	3-heater
B	2-heater

5. Relay setting current

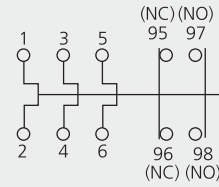
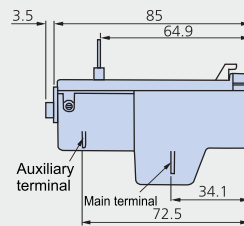
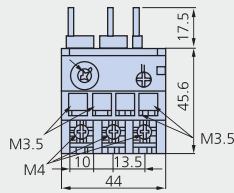
0D3	0.25-0.4A	42	34-50A
0D5	0.4-0.63A	55	45-65A
0D8	0.63-1A	65	54-75A
1D3	1-1.6A	74	63-85A
2D1	1.6-2.5A	41	34-50A
3D3	2.5-4A	48	39-57A
5D0	4-6A	56	43-65A
6D5	5-8A	67	54-80A
7D5	6-9A	80	65-100A
8D5	7-10A	107	85-125A
11	9-13A	130	100-160A
15	12-18A	150	120-180A
19	16-22A	200	160-240A
22	18-26A	280	200-300A
30	24-36A	400	300-500A
34	28-40A	505	380-630A

6. Mounting

-	On Contactor
M	Separate mounting

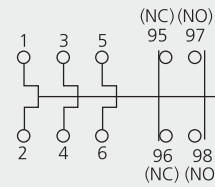
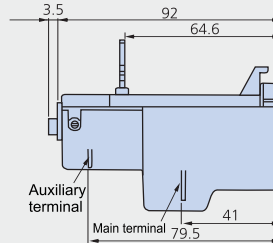
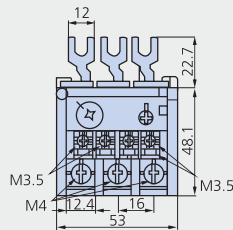
Dimensions

MT3-22



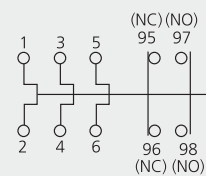
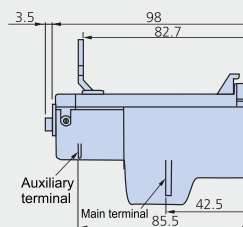
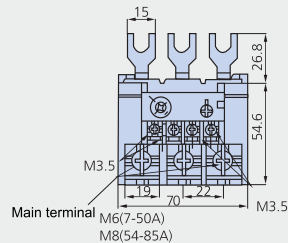
0.11kg

MT3-40



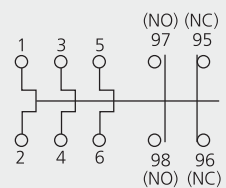
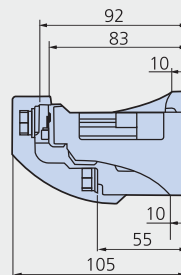
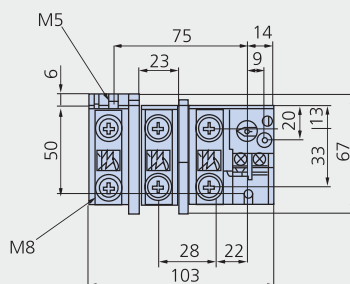
0.17kg

MT3-85



0.3kg

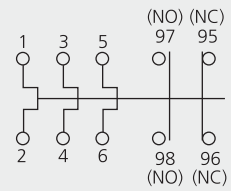
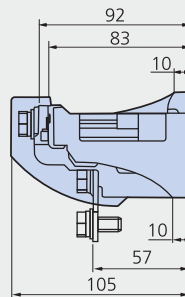
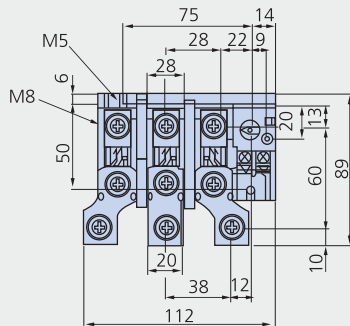
MT3-100



0.48kg

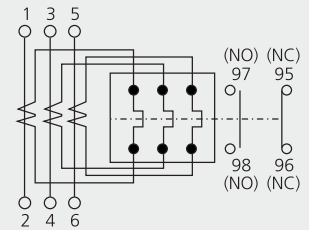
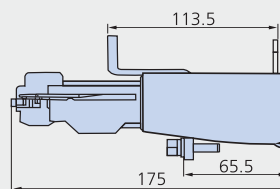
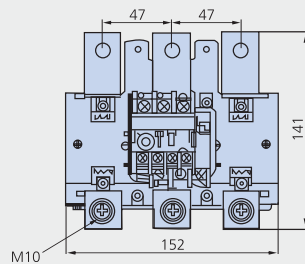
Dimensions

MT3-150



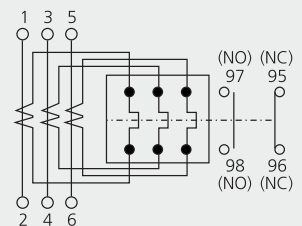
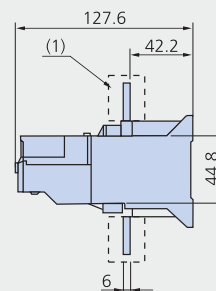
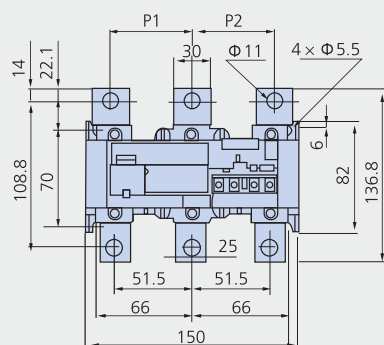
0.6kg

MT3-225



2.5kg

MT3-630



Characteristics

Contactor is assembled with damping resistors which limit the high in-rush current when the capacitors are switched on (AC-6b). They are assembled with early-make contact block, which is switched on before the main contacts, thus, limiting the in-rush current.

- Eliminate the switching surge
- Improving the performance of the capacitor system
- Prospective peak current at switch-on $200I_n$
- In conformity with IEC-69047-4-1, UL and CSA.



Operation & Electrical Life

Operations / hours	MC3-9C ~ 40C	240 cycles
	MC3-50C ~ 85C	100 cycles
Electrical Lifetime (AC-6b)	400 ~ 440VAC	250000
	550 ~ 690VAC	100000

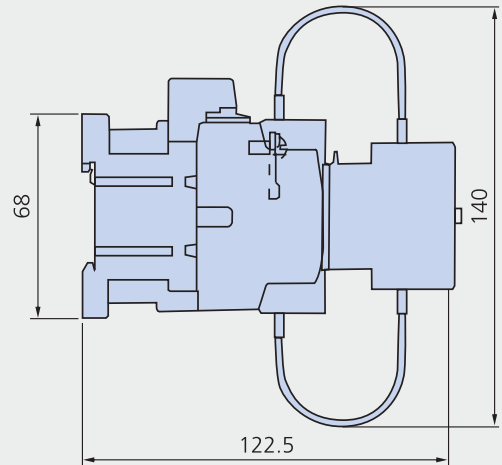
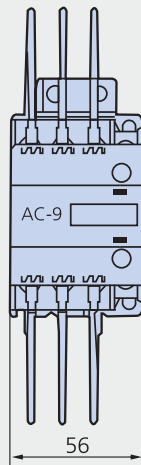
Table of Specifications

Model		Capacitor capacity			Rated current (at 400-440V)	Instantaneous auxiliary contacts *	
		220-240V	400-440V	660-690V		NO (a)	NC (b)
MC3-9 with AC-9	MC3-9C	5kVAr	9.7kVAr	14kVAr	14A	1	2
MC3-12 with AC-9	MC3-12C	6.5kVAr	12.5kVAr	18kVAr	18A	1	2
MC3-18 with AC-9	MC3-18C	8.5kVAr	16.7kVAr	24kVAr	24A	1	2
MC3-22 with AC-9	MC3-22C	10kVAr	18kVAr	26kVAr	26A	1	2
MC3-32 with AC-9	MC3-32C	15kVAr	25kVAr	36kVAr	36A	2	3
MC3-40 with AC-9	MC3-40C	20kVAr	33.3kVAr	48kVAr	48A	2	3
MC3-50 with AC-50	MC3-50C	22kVAr	40kVAr	58kVAr	58A	2	3
MC3-65 with AC-50	MC3-65C	25kVAr	45.7kVAr	66kVAr	66A	2	3
MC3-75 with AC-50	MC3-75C	29.7kVAr	54kVAr	78kVAr	78A	2	3
MC3-85 with AC-50	MC3-85C	35kVAr	60kVAr	92kVAr	87A	2	3

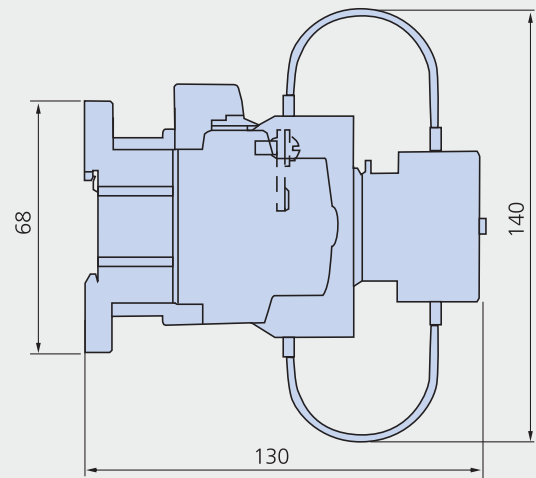
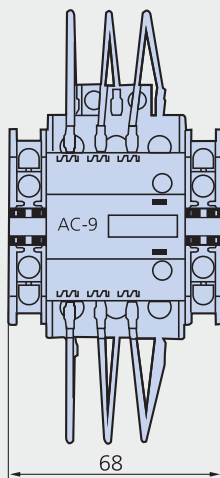
* Maximum instantaneous auxiliary contact option 2NO+3NC

Dimensions

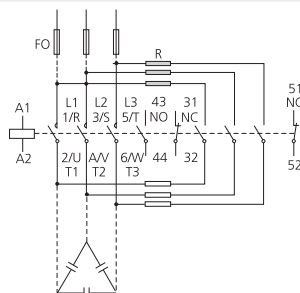
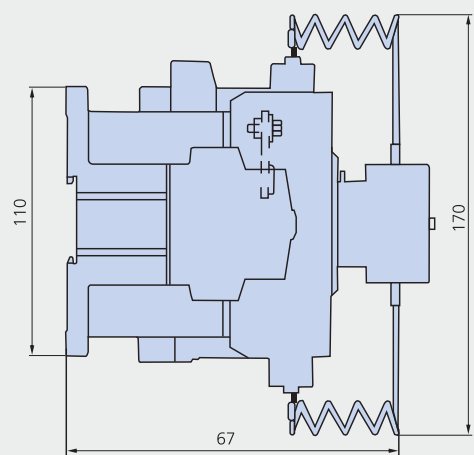
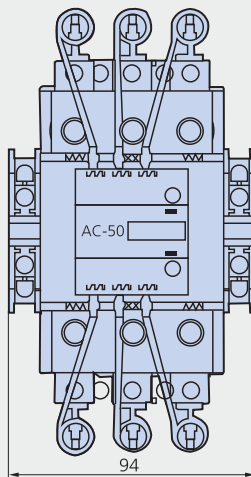
MC3-9C
MC3-12C
MC3-18C
MC3-22C



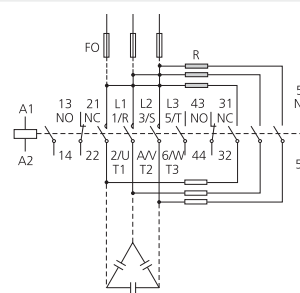
MC3-32C
MC3-40C



MC3-50C
MC3-65C
MC3-75C
MC3-85C



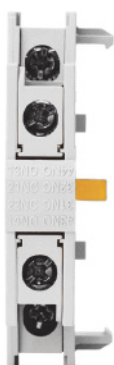
MC3-9C, MC3-12C
MC3-18C, MC3-22C



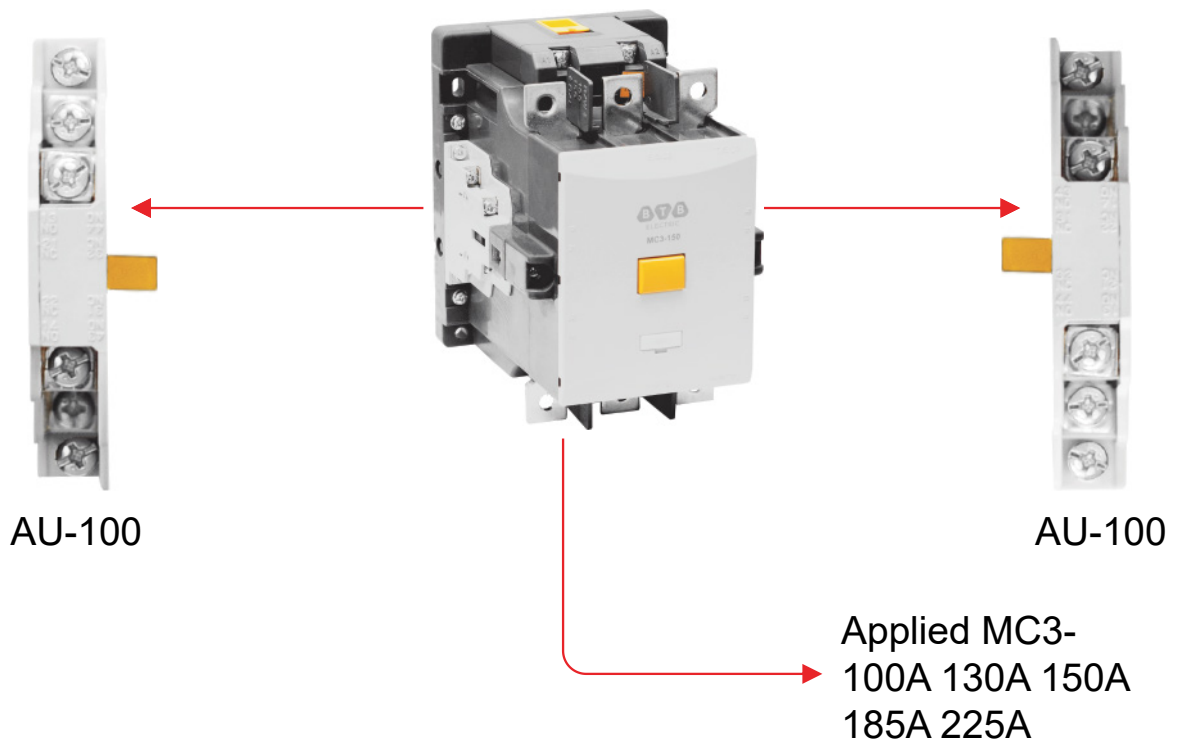
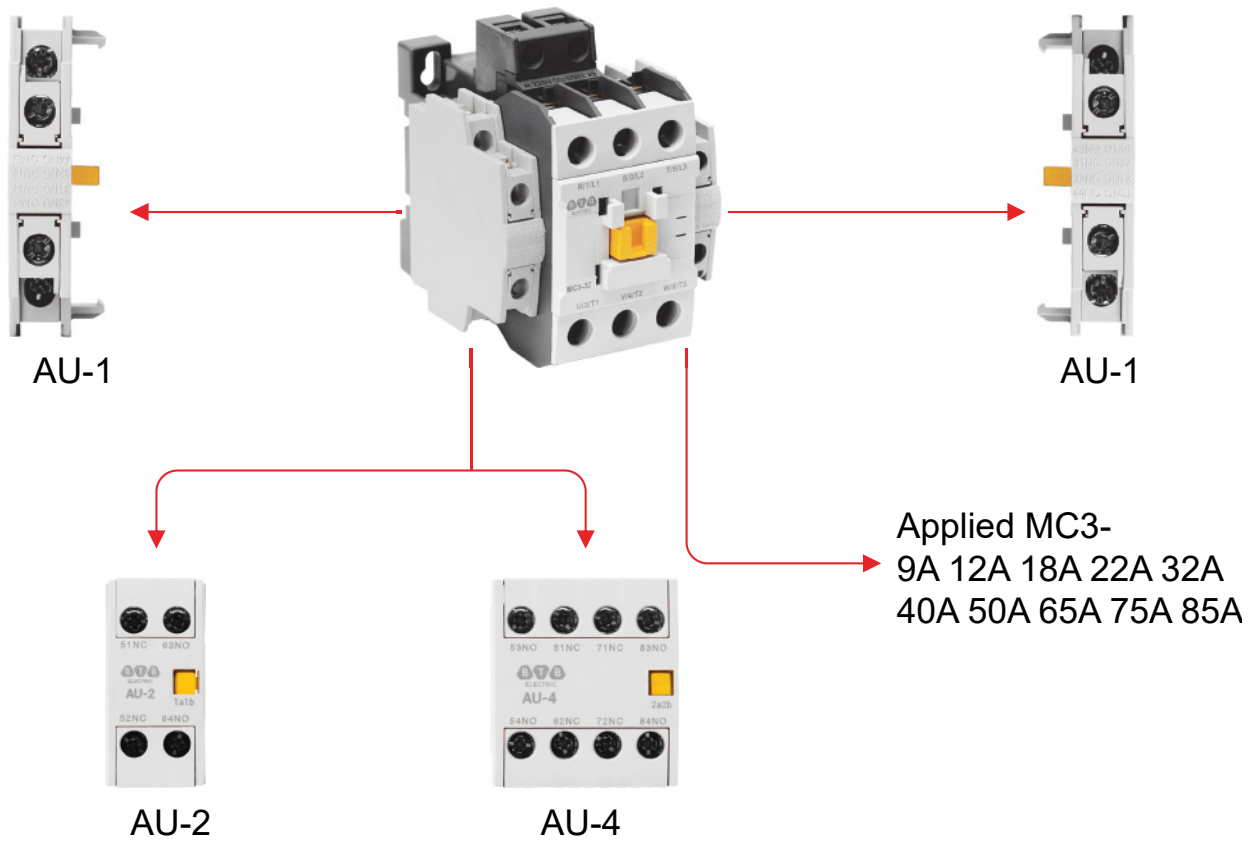
MC3-32C, MC3-40C, MC3-50C
MC3-65C, MC3-75C, MC3-85C

Table of Specifications

Model			AU-1	AU-2 AU-4	AU-100
Rated Operational Voltage, Ue			550V		
Rated Insulation Voltage, Ui			690V		
Rated Impulse Withstand Voltage, Uimp			6kV		
Rated Frequency			50/60Hz		
Contact sensibility	Voltage		17V DC	24V DC	
	Current		5mA DC	10mA DC	
Rated operation current	AC15 duty	120V	6A	6A	6A
		240V	3A	3A	5A
		440V	0.95A	1.5A	3A
		550V	0.7A	1.2A	3A
	DC13 duty	24V	3A	3A	6A
		48V	1.2A	1.5A	3A
		110V	0.5A	0.55A	1.2A
		220V	0.2A	0.27A	0.2A
Rated thermal current, Ith (AC12)			10A	16A	16A
Frequency (times/hour)			1800		
Electrical life (10000 times)	AC15		50		
	AC12		25		
	DC13		50		
Mechanical (10000 times)			2500	20000	1000
Contact arrangement			1NO1NC	1NO1NC 2NO2NC	1NO1NC
Weight			41g	26g 50g	54g
Connection (Conductor size)			1~2.5 mm2		
Applied contactors			MC3-9, 12, 18, 22, 32, 40, 50, 65, 75, 85	MC3-9, 12, 18, 22, 32, 40, 50, 65, 75, 85 and MC3-265, 330, 400, 500, 630, 800	MC3-100, 130, 150, 185, 225



Installation



Order code for accessories

Switching of capacitor banks

- Switching of capacitor banks (AC-6b type according to IEC 60947-4-1) is combined with a contactor for switching 3-phase capacitor banks. It is exclusively intended for this purpose and must not be used in other applications.
- Switching of capacitor banks requires the correct combination of contactors, as outlined in the table instructions below. Contactor selection should be based on the kVAR rating and not the operating current.

Applied contactors	Model
MC3-9, 12, 18, 22, 32, 40	AC-9F40MC3
MC3-50, 65, 75, 85	AC-50F85MC3



Top-mounted auxiliary contact unit

- Standard model: 1NO+1NC / 2NO+2NC

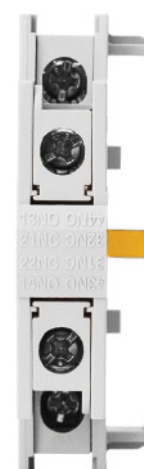
Number of poles	Auxiliary contact	Model
2-pole	1NO+1NC	AU-2K11MC3
	2NO	AU-2K20MC3
	2NC	AU-2K02MC3
4-pole	2NO+2NC	AU-4K22MC3
	3NO+1NC	AU-4K31MC3
	1NO+3NC	AU-4K13MC3
	4NO	AU-4K40MC3
	4NC	AU-4K04MC3



Side-mounted auxiliary contact unit

- Standard model: 1NO+1NC

Applied contactors	Auxiliary contact	Model
MC3-9, 12, 18, 22, 32, 40, 50, 65, 75, 85	1NO+1NC	AU-1K11MC3
	2NO	AU-1K20MC3
	2NC	AU-1K02MC3
MC3-100, 130, 150, 185, 225	1NO+1NC	AU-100K11MC3
	2NO	AU-100K20MC3
	2NC	AU-100K02MC3



Delay operation unit

- Standard model: 1NO+1NC

Delay type	Time	Model
Off delay	0.1 ~ 3 sec	UT-0FK11MC3
	0.1 ~ 30 sec	UT-1FK11MC3
	10 ~ 180 sec	UT-2FK11MC3
On delay	0.1 ~ 3 sec	UT-0NK11MC3
	0.1 ~ 30 sec	UT-1NK11MC3
	10 ~ 180 sec	UT-2NK11MC3

**Mechanical interlock unit**

Applied contactors	Model
MC3-9, 12, 18, 22, 32, 40, 50, 65, 75, 85	AR-9T85MC3
MC3-100, 130, 150	AR-100T150MC3
MC3-185, 225	AR-185T225MC3
MC3-265, 330, 400, 500	AR-265T500MC3

**Surge suppressing unit**

Model: AS-MC3





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