



Metasol
Meta Solution

Contactors and Overload relays



Metasol Contactors and Overload Relays

*New generation of Contactors
from LS Industrial Systems*



Metasol Contactors

Metasol Contactors

■ Designed to show superior technology: The Metasol series

Sealed structure has improved its safety features so that no arc flash is exposed. In order to emphasize its durability as an industrial device, Metasol series adopt simple design form and sophisticated shape applying diamond cut concepts on product surface.



LSIS META SOLUTION CONTACTORS

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Metasol MC (3pole)

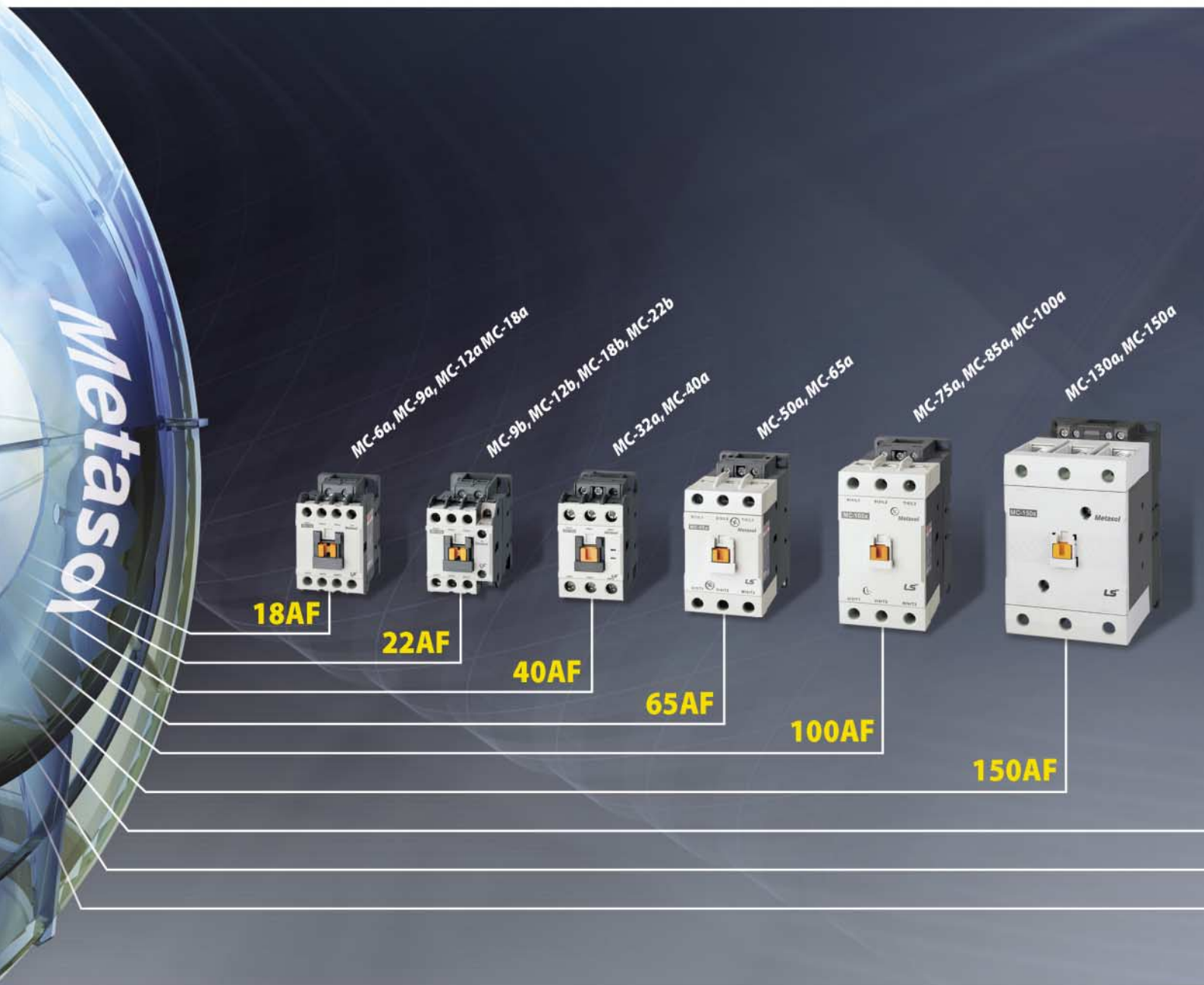
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Metasol MC (4pole)

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Metasol Series completion



More Safe,
More Valuable



Contactors & Overload Relays



- *Advanced technology & Expert solution*
- *Offering economical solution with compact size & easy connection*
- *Ensure reliability in the system: Type II Coordination*
- *Perfect system with peripheral devices.*
- *Environment friendly product: complies with International environment standard RoHS.*
- *25 Models in 9 Frames*



MC/TOR

25 Models in 9 Frames

High reliability from optimum design

Metasol

Meta solution

- Compact design for space saving
- DIN rail and screw mountable
- Directly mountable overload relays provided separately
- Easy to combine with manual motor starters by using adapter and wiring kit
- Finger-proof design
- Broad range of accessories
- World class products conforming to IEC and UL standards

18AF

Contactor MC-6a, 9a, 12a, 18a

Rated current: 6, 9, 12, 18A
Rated insulation voltage: 690V
Type II : 30kA @415V Max.

Overload relay MT-12

Current range: 0.1~18A
Trip class: Class10A, 20



22AF

Contactor MC-9b, 12b, 18b, 22b

Rated current: 9, 12, 18, 22A
Rated insulation voltage: 690V
Type II : 30kA @415V Max.

Overload relay MT-32

Current range: 0.1~40A
Trip class: Class10A, 20



800AF

Contactor

MC-500a, 630a, 800a

Rated current: 500, 630, 800A
Rated insulation voltage: 1000V
Type II : 150kA @415V Max.

Overload relay MT-800

Current range: 200~800A
Trip class: Class10A, 20



400AF

Contactor

MC-265a, 330a, 400a

Rated current: 265, 330, 400A
Rated insulation voltage: 1000V
Type II : 150kA @415V Max.

Overload relay MT-400

Current range: 85~400A
Trip class: Class10A, 20



225AF

Contactor

MC-185a, 225a

Rated current: 185, 225A
Rated insulation voltage: 1000V
Type II : 150kA @415V Max.

Overload relay MT-225

Current range: 65~240A
Trip class: Class10A, 20



40AF

Contactor

MC-32a, 40a

Rated current: 32, 40A
Rated insulation voltage: 1000V
Type II : 50kA @415V Max.

Overload relay MT-32

Current range: 0.1~40A
Trip class: Class10A, 20



65AF

Contactor

MC-50a, 65a

Rated current: 50, 65A
Rated insulation voltage: 1000V
Type II : 100kA @415V Max.

Overload relay MT-63

Current range: 4~65A
Trip class: Class10A, 20



100AF

Contactor

MC-75a, 85a, 100a

Rated current: 75, 85, 100A
Rated insulation voltage: 1000V
Type II : 100kA @415V Max.

Overload relay MT-95

Current range: 7~100A
Trip class: Class10A, 20



150AF

Contactor

MC-130a, 150a

Rated current: 120, 150A
Rated insulation voltage: 1000V
Type II : 150kA @415V Max.

Overload relay MT-150

Current range: 34~150A
Trip class: Class10A, 20





MC/TOR Accessories

Perfect combination of peripheral
devices and various accessories

Offering economical solution with compact size & easy connection



Perfect system with other devices and accessories

■ One-touch connection

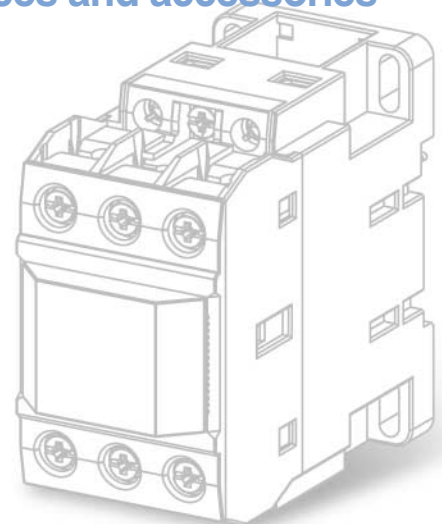
- Din Rail connection without any special tools
- Direct combine a surge unit

■ Simple wiring

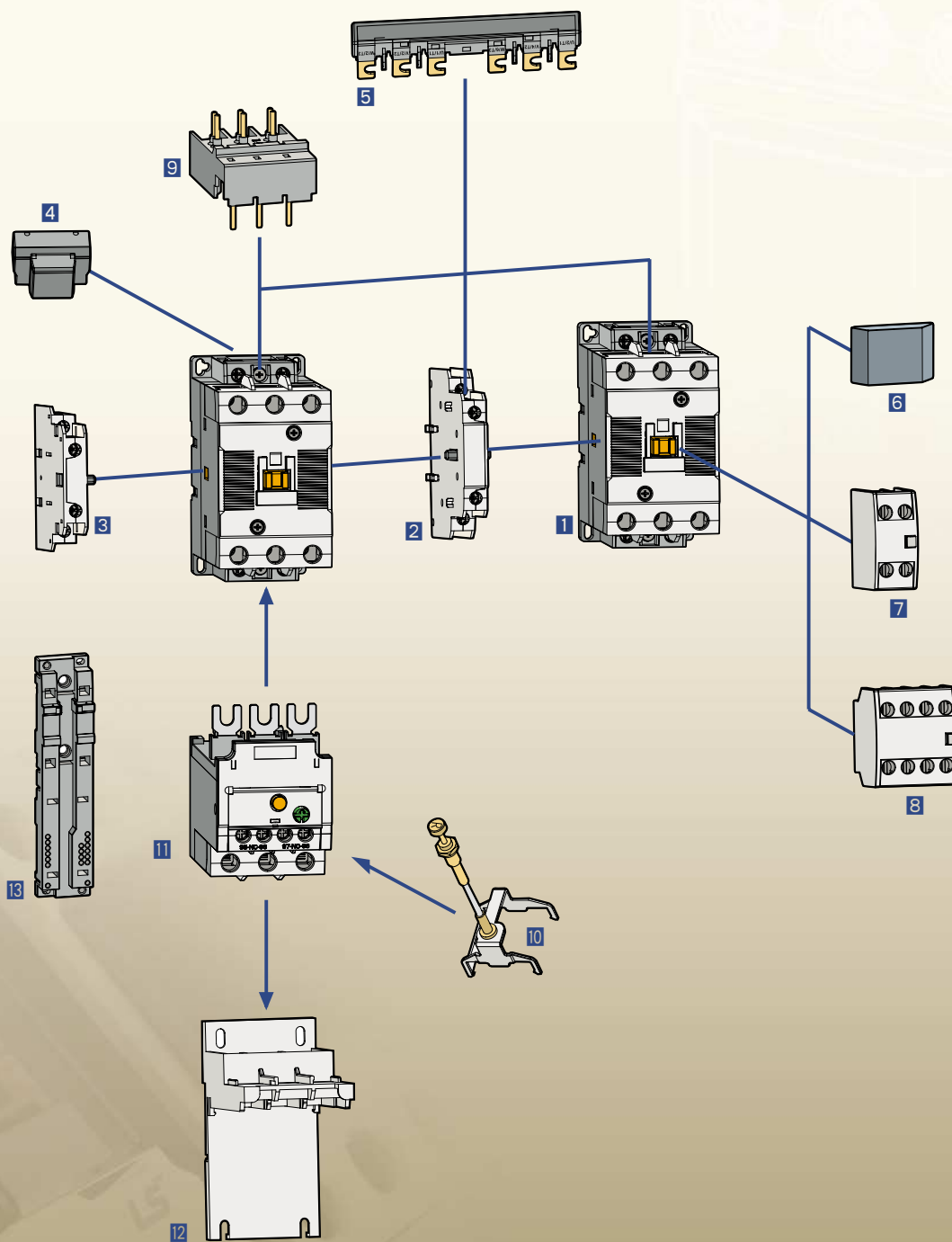
- Mounting unit, Adapter
- Reversing wire set

■ Easy Maintenance

- 4-terminal type: Easy wiring of operation coil
- Module type of Screw terminal
- Interlock unit with built-in auxiliary contacts(2NO built-in)



Advanced accessories for Metasol contactors



Accessory layout upto 150AF

- | | | |
|--|---|-----------------------------------|
| 1 Contactor | 6 Safety cover (Option) | 10 Remote reset unit |
| 2 Interlock unit | 7 Auxiliary contact unit
- front mount(2p) | 11 Overload relay |
| 3 Auxiliary contact unit
- side mount | 8 Auxiliary contact unit
- front mount(4p) | 12 Separate mounting unit |
| 4 Surge unit | | 13 Mounting unit for use with MMS |
| 5 Wire kit | | |

Table of specifications

MC type Magnetic Contactors



Frame size				18AF				22AF			
Type				MC-6a	MC-9a	MC-12a	MC-18a	MC-9b	MC-12b	MC-18b	MC-22b [*]
screws clamp terminals				●	●	●	●	●	●	●	●
Number of poles				3pole				3pole			
Rated operational voltage, Ue				690V				690V			
Rated insulation voltage, Ui				690V				690V			
Rated frequency				50/60Hz				50/60Hz			
Rated impulse withstand voltage, Uimp				6kV				6kV			
Maximum operating rate in operating cycles per hour(AC3)				1800 operations per hour				1800 operations per hour			
Durability		Mechanical		15 mil. operations				15 mil. operations			
		Electrical		2.5 mil. operations				2.5 mil. operations			
Current and power	AC-1, Thermal current	A	25	25	25	32	25	25	32	40	
	AC-3	200/240V	kW	2.2	2.5	3.5	4.5	2.5	3.5	4.5	5.5
			A	9	11	13	18	11	13	18	22
	380/440V	kW	3	4	5.5	7.5	4	5.5	7.5	11	
			A	7	9	12	18	9	12	18	22
	500/550V	kW	3	4	7.5	7.5	4	7.5	7.5	15	
			A	6	7	12	13	7	12	13	20
	690V	kW	3	4	7.5	7.5	4	7.5	7.5	15	
			A	4	5	9	9	6	9	9	18
	UL rating (50/60Hz)	Continuous current	A	25	25	25	32	25	25	40	40
Single phase		110~120V	HP	0.5	0.5	0.75	1	0.5	0.75	1	2
		220~240V	HP	1.5	1.5	2	3	1.5	2	3	3
		200~208V	HP	2	2	3	5	2	3	5	7.5
Three phase		220~240V	HP	3	3	5	7.5	3	5	7.5	10
		440~480V	HP	5	5	7.5	10	5	7.5	10	15
		550~600V	HP	7.5	7.5	10	15	7.5	10	15	20
NEMA size			00	00	0	0	00	00	0	1	
Size and weight	AC control	Weight	kg	0.33				0.34			
		Size(W×H×D)	mm	45×73.5×79				45×73.5×86			
	DC control	Weight	kg	0.5				0.51			
		Size(W×H×D)	mm	45×73.5×113.7				45×73.5×117.7			
Auxiliary(standard)				1a or 1b				1a1b			
Auxiliary	Side mount			UA-1				UA-1			
	Front mount			UA-2, UA-4				UA-2, UA-4			

Note) Minimum conduct current of Auxiliary contactor is DC 17V 5mA.

MT type Thermal Overload Relays



Type				MT-12/□		MT-32/□	
Screws clamp terminals				●		●	
Rated operational voltage, Ue				690V		690V	
Rated insulation voltage, Ui				690V		690V	
Rated impulse withstand voltage, Uimp				6kV		6kV	
Trip class				10A, 20		10A, 20	
Setting range				0.1~18A		0.1~40A	
Size and weight		Weight	kg	0.1		0.17	
		Size(W × H × D) mm		45 × 73.2 × 63.7		45 × 75 × 90	

* The safety cover of magnetic contactor and thermal overload relay is optional.

**40AF**

MC-32a	MC-40a
●	●
3pole	
690V	
1000V	
50/60Hz	
8kV	
1800 operations per hour	
12 mil. operations	
2 mil. operations	
50	60
7.5	11
32	40
15	18.5
32	40
18.5	22
28	32
18.5	22
20	23
50	60
2	3
5	7.5
7.5	15
10	15
20	30
25	30
1	1
0.55	
69 × 83 × 93	
0.77	
69 × 83 × 120	
UA-1	
UA-2, UA-4	

**MT-32/□**

●
690V
690V
6kV
10A, 20
0.1~40A
0.17
45 × 75 × 90

**65AF**

MC-50a	MC-65a
●	●
3pole	
690V	
1000V	
50/60Hz	
8kV	
1800 operations per hour	
12 mil. operations	
2 mil. operations	
70	100
15	18.5
55	65
22	30
50	65
30	33
43	60
30	33
28	35
70	100
3	5
10	15
20	25
25	30
40	50
50	60
2	2
1.05	
79 × 106 × 122	
1.3	
79 × 106 × 149	
UA-1	
UA-2, UA-4	

**MT-63/□**

●
690V
690V
6kV
10A, 20
4~65A
0.31/0.33
55 × 81 × 100

**100AF**

MC-75a	MC-85a	MC-100a
●	●	●
3pole		
690V		
1000V		
50/60Hz		
8kV		
1800 operations per hour		
12 mil. operations		
2 mil. operations		
110	135	160
22	25	30
75	85	105
37	45	55
75	85	105
37	45	55
64	75	85
37	45	45
42	45	65
110	135	160
5	7.5	10
15	15	20
25	30	30
30	40	40
50	60	75
60	75	75
2	3	3
1.93		
94 × 140 × 137		
2.8		
94 × 140 × 174		
UA-1		
UA-2, UA-4		

**MT-95/□**

●
690V
690V
6kV
10A, 20
7~100A
0.48/0.5
70 × 97 × 110

Table of specifications

MC type Magnetic Contactors



Frame size				150AF		225AF		
Type				MC-130a	MC-150a	MC-185a	MC-225a	
screws clamp terminals				●	●	●	●	
Number of poles				3pole		3pole		
Rated operational voltage, Ue				690V		690V		
Rated insulation voltage, Ui				1000V		1000V		
Rated frequency				50/60Hz		50/60Hz		
Rated impulse withstand voltage, Uimp				8kV		8kV		
Maximum operating rate in operating cycles per hour(AC3)				1200 operations per hour		1200 operations per hour		
Durability		Mechanical		5 mil. operations		5 mil. operations		
		Electrical		1 mil. operations		1 mil. operations		
Current and power	AC-1, Thermal current		A	160	210	230	275	
	AC-3	200/240V	kW	37	45	55	75	
			A	130	150	185	225	
		380/440V	kW	60	75	90	132	
			A	130	150	185	225	
		500/550V	kW	60	70	110	132	
			A	90	100	180	200	
		690V	kW	55	55	110	140	
			A	60	60	120	150	
				160	210	230	275	
UL rating (50/60Hz)	Continuous current		A	160	210	230	275	
	Single phase	110~120V	HP	10	15	15	15	
		220~240V	HP	20	25	30	40	
		200~208V	HP	40	40	60	60	
	Three phase	220~240V	HP	40	50	60	75	
		440~480V	HP	75	100	125	150	
		550~600V	HP	75	75	125	150	
		NEMA size		3	4	4	4	
Size and weight		AC control	Weight	kg	2.4		5.4	
			Size(W × H × D)	mm	95 × 158 × 132		138 × 203 × 181	
		DC control	Weight	kg	2.3			
			Size(W × H × D)	mm	95 × 158 × 132			
Auxiliary(standard)						2a2b		
Auxiliary	Side mount			UA-1		AU-100 (Max.4NO4NC)		
	Front mount			UA-2, UA-4		-		

MT type Thermal Overload Relays



Type				MT-150/□		MT-225/□	
Screws clamp terminals				●		●	
Rated operational voltage, Ue				690V		690V	
Rated insulation voltage, Ui				690V		690V	
Rated impulse withstand voltage, Uimp				6kV		6kV	
Trip class				10A, 20		10A, 20	
Setting range				34~150A		65~240A	
Size and weight	Weight	kg		0.67		2.5	
				95 × 109 × 113		147 × 141 × 184	

* The safety cover of magnetic contactor and thermal overload relay is optional.

**400AF**

MC-265a	MC-330a	MC-400a
●	●	●
3pole		
690V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
5 mil. operations		2.5 mil. operations
1 mil. operations		0.5 mil. operations
300	350	450
80	90	125
265	330	400
147	160	200
265	330	400
147	160	225
225	280	350
160	200	250
185	225	300
300	350	450
-	-	-
-	-	-
75	100	125
100	125	150
200	250	300
200	250	300
5	5	5

9.2
163 × 243 × 198

2a2b

AU-100 (Max.4NO4NC)

-

**MT-400/□**

●

690V

690V

6kV

10A, 20

85~400A

2.6

151 × 171 × 198

**800AF**

MC-500a	MC-630a	MC-800a
●	●	●
3pole		
690V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
2.5 mil. operations		0.5 mil. operations
0.5 mil. operations		
580	660	900
147	190	220
500	630	800
265	330	440
500	630	800
265	330	500
400	500	720
300	400	500
380	420	630
580	660	900
-	-	-
-	-	-
150	200	200
200	250	300
400	500	600
400	500	600
6	6	7

22.4
285 × 312 × 242

2a2b

AU-100 (Max.4NO4NC)

-

**MT-800/□**

●

690V

690V

6kV

10A, 20

200~800A

11.5

360 × 530 × 212

Type numbering system

Contactors

MC-6a	/	R	/	AC220	60Hz	1a1b	3Pole
Rated current		Version		Coil voltage	Frequency	Auxiliary contact	No. of pole
6a 6A		- Standard		AC 220 AC 220V	60 60Hz	00 None	None 3Pole
⋮		R Reversing		⋮	50 50Hz	11 1a1b	4P 4Pole *
800a 800A				DC 24 DC 24V		22 2a2b	Note) See page 107 for details.
						10 1a(1NO)	
						01 1b(1NC)	

Starters

MS-6a	/	R	2H	/	AC220	60Hz	10	/	0.1
Rated current		Contactor version	Relay version		Coil voltage	Frequency	Auxiliary contact		Relay setting current
6a 6A		- Standard	2H Non-differential (2-heater)		AC 220 AC 220V	60 60Hz	00 None		0.1 0.1A
⋮		R Reversing	3H Non-differential (3-heater)		⋮	50 50Hz	11 1a1b		⋮
800a 800A			3K Differential		DC 24 DC 24V		22 2a2b		800 800A
			3D Class 20				10 1a(1NO)		
							01 1b(1NC)		

Thermal Overload Relay

MT-12	/	2H	0.1
Frame size		Relay version	Relay setting current
12 12AF		2H Non-differential (2-heater)	0.1 0.1A
32 32AF			⋮
63 63AF		3H Non-differential (3-heater)	⋮
95 95AF			800 800A
⋮		3K Differential	
800 800AF		3D Class 20	

Contactor relays

MR	/	4
		Poles
		4 4 Pole
		6 6 Pole
		8 8 Pole

Optional Accessories

Auxiliary contact unit

UA1

Version	
UA-1	Side mount
AU-100	
UA-2	Front mount(2P)
UA-4	Front mount(4P)

11

Contact composition	
11	1NO+1NC
20	2NO
02	2NC
40	4NO
31	3NO+1NC
22	2NO+2NC
13	1NO+3NC
04	4NC

Surge absorber

US11

Composition and voltage		
1	Varistor+RC	AC/DC 24~48V
2	Varistor+RC	AC/DC 100~125V
3	Varistor+RC	AC/DC 200~240V
4	Varistor+RC	AC 380~440V
5	Varistor+RC	AC 24~48V
6	Varistor+RC	AC 100~125V
11	Varistor	AC 200~240V
12	Varistor	DC 24~48V
13	Varistor	DC 100~125V
14	Varistor	DC 200~220V
22	RC	AC 100~125V

Note) See page 52 for details.

Interlock unit

UR02

Contact composition	
02	2NC
00	None

Wire kit for Interlocking

UW32

Frame size	
18	18AF
22	22AF
32	32AF
63	63AF
95	95AF

Interlock set (UR+UW)

RK32

Frame size	
32	32AF
63	63AF
95	95AF

Separate mounting unit (For relay)

UZ32

Frame size	
32	32AF
63	63AF
95	95AF
150	150AF

Remote reset unit (For relay)

UM

Cable length	
4R	400
5R	500
6R	600

Environment



Standards	IEC/EN 60947-1, IEC/EN 60947-4-1, UL508, K60947
Certifications	CE, UL
Rated insulation voltage (Ui)	1000V
Rated impulse withstand voltage (Uimp)	8kV
Degree of protection	IP20 (Conforming to IEC60529)
Ambient air temperature	Storage: -50° C ~ +80° C Operation: -5° C ~ +60° C
Operating altitude	3000m (8900ft)
Operating positions	
Shock resistance	Opened: 8G
(1/2 sine wave =11ms)	Closed: 10G
Vibration resistance (Conforming to IEC68-2-6)	Opened: 2G
(5...300 Hz)	Closed: 4G
Flame resistance	Conforming to UL 94: Vo
	Conforming to IEC 695-2-1: 960° C

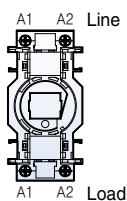
Connections

Frame	Wire type	Main Terminal Size								Torque	
			(AWG / mm²)						mm(max)	[lb-in]	[Nm]
MC-6a/9a		M3.5	18~10 / 1~6	18~10 / 1~6	18~10 / 1~6				8.3	10	1.13
MC-12a			16~10 / 1.5~10	16~10 / 1.5~10	16~10 / 1.5~10						
MC-18a			16~8 / 1.5~10	16~8 / 1.5~10	16~8 / 1.5~10						
MC-9b		M4	18~10 / 1~6	18~10 / 1~6	18~10 / 1~6				9.6	20	2.25
MC-12b			18~10 / 1~6	16~10 / 1~6	16~10 / 1~6						
MC-18b			18~10 / 1~6	16~8 / 1.5~10	16~8 / 1.5~10						
MC-22b			18~10 / 1~6	14~8 / 2.5~10	14~8 / 2.5~10						
MC-32a		M5	18~10 / 1~6	12~8 / 2.5~10	12~8 / 2.5~10				12.8	20	2.25
MC-40a			18~10 / 1~6	8~6 / 10~16	8~6 / 10~16					35	4
MC-50a		M6	-	10~4 / 6~25	10~4 / 6~25				14	35	4
MC-65a			-	8~3 / 10~35	8~3 / 10~35						
MC-75a		M8	-	8~2 / 10~35	8~2 / 10~35				17	45	5.1
MC-85a			-	8~1/0 / 10~50	8~1/0 / 10~50						
MC-100a			-	8~2/0 / 10~70	8~2/0 / 10~70						
MC-130a		M8	-	3~2/0 / 35~70	3~2/0 / 35~70				24.5	80	9.1
MC-150a			-	3~4/0 / 35~95	3~4/0 / 35~95						
MC-6~150a		M4	20~14 / 0.5~2.5	18~12 / 0.75~2.5	18~12 / 0.75~2.5				7.6	15	1.75
MC-185a		M10	-	1~4/0 / 50~95	1~4/0 / 50~95				25	130	14.7
MC-225a			-	1/0~300 / 50~150	1/0~300 / 50~150						
MC-265a		M12	-	3/0~500 / 95~240	3/0~500 / 95~240				30	200	22.6
MC-330a			-	4/0~500 / 95~240	4/0~500 / 95~240						
MC-400a			-	350~700 / 185-185×2	350~700 / 185-185×2						
MC-500a		M16	-	350~800 / 185-240×2	350~800 / 185-240×2				40	500	26.5
MC-630a			-	600~2000	-						
MC-800a			-	1700~Busbar	-						
MC-185~800a		M3.5	16~10 / 1.25~5.5	16~10 / 1.25~5.5	16~10 / 1.25~5.5				7.6	15	1.75

Control coil characteristics



Frame size			18AF	22AF	40AF	65AF	100AF	150AF	
Type			MC-6a	MC-9b	MC-32a	MC-50a	MC-75a	MC-130a	
			MC-9a	MC-12b	MC-40a	MC-65a	MC-85a	MC-150a	
			MC-12a	MC-18b			MC-100a		
			MC-18a	MC-22b					
AC coil									
Control voltage	[Uc]								24, 48, 110, 220, 300, 400, 500
	50Hz	[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, 440, 480, 600V						
	50/60Hz	[V]	24, 48, 100, 110, 120, 200, 220, 230, 240, 380, 415, 440, 500, 550V						
Voltage limit	[Uc]								
	Pick-up		85 ~110% (50Hz)						
			85 ~110% (60Hz)						
Drop-out		30 ~ 60%							
Coil consumption at 20°C									
AC 220V	Inrush	[VA]	58/56	58/56	53/50	110/104	229/216	108/104	
50/60Hz	Holding	[VA]	9.0/6.0	9.0/6.0	12.0/9.0	13.0/10.0	17.0/13.0	18.0/21.0	
Heat dissipation		[W]	2.1/1.5	2.1/1.5	2.7/2.2	2.8/2.4	5.4/4.7	2.7/3.6	
Operating time									
	Closing	[ms]	12 ... 22	12 ... 22	12 ... 22	12 ... 22	15 ... 30	20 ... 40	
	Opening	[ms]	4 ... 19	4 ... 19	4 ... 19	4 ... 19	10 ... 30	60 ... 70	
DC coil									
Control voltage		[Uc]	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250						24, 48, 110, 220
Voltage limit			[Uc]						
	Pick-up		70 ~ 110%						
	Drop-out		10 ~ 30%						
Coil consumption at 20°C									
DC 110V	Inrush	[W]	9	9	7	9	18	213	
	Holding	[W]	9	9	7	9	18	7.5	
Time constant (L/R)		[ms]	28	28	28	65	75		
Operating time									
	Closing	[ms]	35 ... 50	35 ... 50	50 ... 65	50 ... 65	100 ... 120	70 ... 80	
	Opening	[ms]	4 ... 19	4 ... 19	4 ... 19	4 ... 19	10 ... 25	60 ... 70	

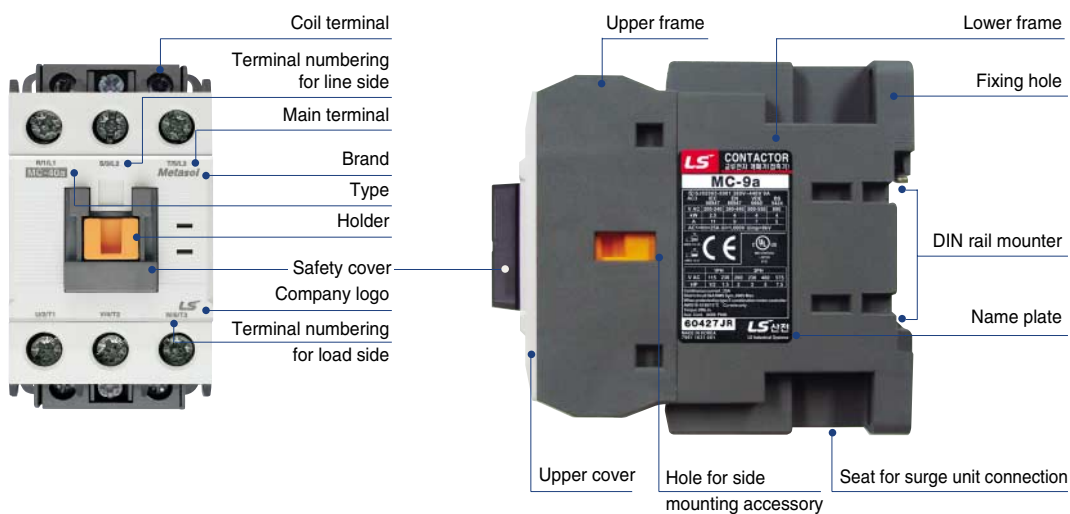


Note) A1(A2) in line side is internally connected to A1(A2) in load side.

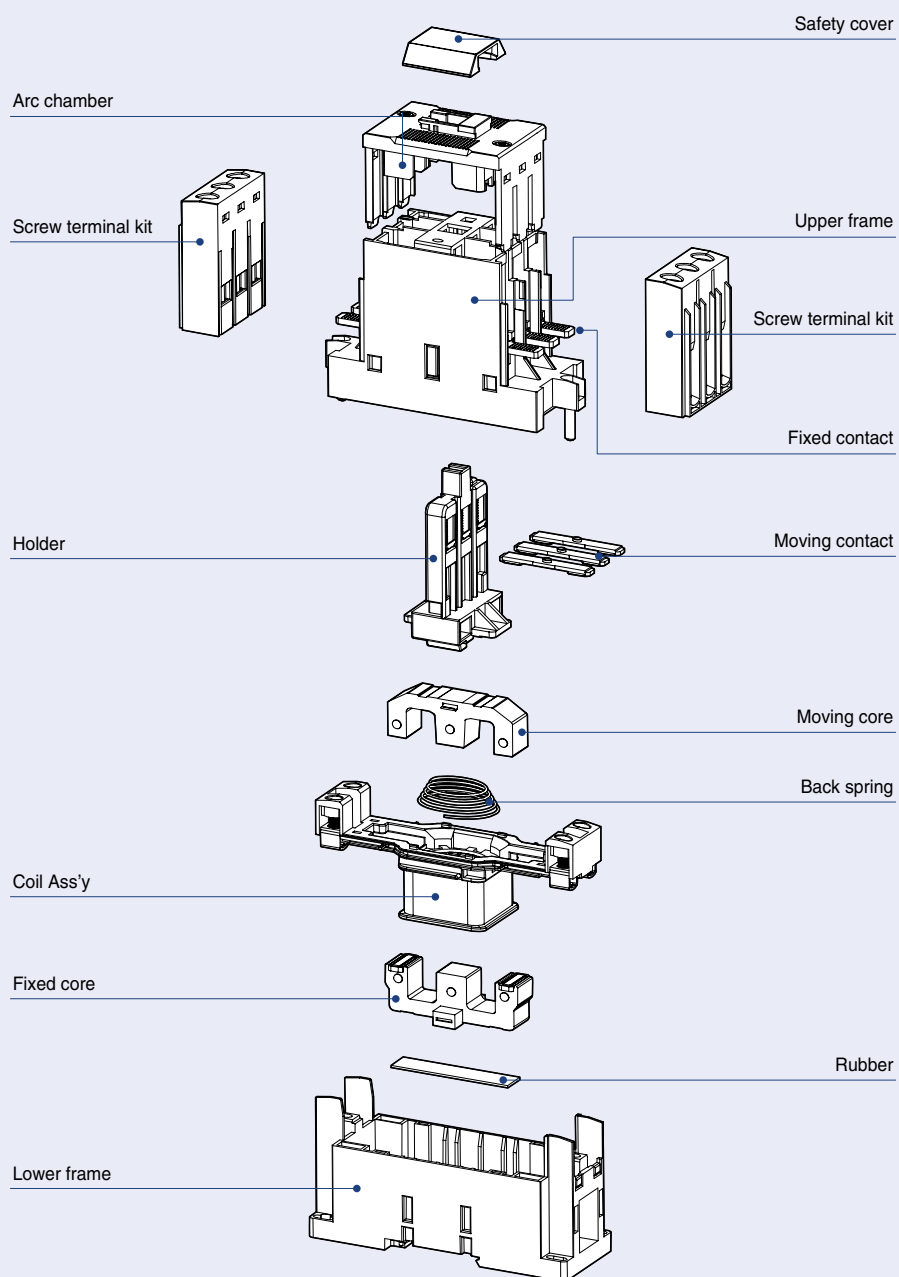


Frame size			225AF	400AF	800AF
Type			MC-185a	MC-265a	MC-500a
			MC-225a	MC-330a	MC-630a
				MC-400a	MC-800a
AC/DC common coil					
Control voltage	[Uc]				
	AC/DC		24/24	-	-
	AC/DC		48/48	-	100/100
	AC/DC		100~240/100~220	100~240/100~220	200/200
	AC		300	300	300
	AC		400	400	400
	AC		500	500	500
Voltage limit	[Uc]				
	Pick-up		86~110%		
	Drop-out		30~60%		
Coil consumption at 20°C					
AC 220V	Inrush	[VA]	380	571	1000
50/60Hz	Holding	[VA]	11.6	14	29
Heat dissipation			4.7	5	7.8
Operating time					
	Closing	[ms]	70	55	75
	Opening	[ms]	70	55	75

Marking



Internal structure



Contactors (18AF)

Description

- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable
- AC or DC control in different physical size
- Front/side mountable accessories available
- Direct mountable overload relay available Rating
- 1NO or 1NC Auxiliary contact built-in as standard.



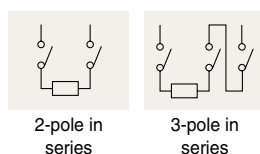
MC-18a

Rating

Contactor type			MC-6a		MC-9a		MC-12a		MC-18a		
			kW	A	kW	A	kW	A	kW	A	
AC duty	AC3	200/240V	2.2	9	2.5	11	3.5	13	4.5	18	
		380/440V	3	7	4	9	5.5	12	7.5	18	
		500/550V	3	6	4	7	7.5	12	7.5	13	
		690V	3	4	4	5	7.5	9	7.5	9	
	AC4	200/240V	1.5	7	1.5	8	2.2	11	3.7	16	
		380/440V	2.2	5	2.2	6	4	9	4	11	
	AC1		-	25	-	25	-	25	-	32	
DC1 duty (L/R=1ms)	2-pole	24V	-	18	-	18	-	18	-	18	
		in series	48V	-	17	-	17	-	17	-	17
			110V	-	12	-	12	-	12	-	12
	3-pole	24V	-	20	-	20	-	20	-	20	
		in series	48V	-	20	-	20	-	20	-	20
			110V	-	15	-	15	-	15	-	15
DC2, 4 duty (L/R=15ms)	2-pole	24V	-	15	-	15	-	15	-	15	
		in series	48V	-	12	-	12	-	12	-	12
			110V	-	8	-	8	-	8	-	8
	3-pole	24V	-	18	-	18	-	18	-	18	
		in series	48V	-	15	-	15	-	15	-	15
			110V	-	12	-	12	-	12	-	12
Directly mountable Overload relay			MT-12								
Conductor size (solid, stranded)		AWG	18~10		16~10		16~8		14~8		
(the max. number of conducts: 2)		mm²	1~4		1.5~4		1.5~10		2.5~10		
Conductor type			65/75°C Cu-wire only								



Coil voltage

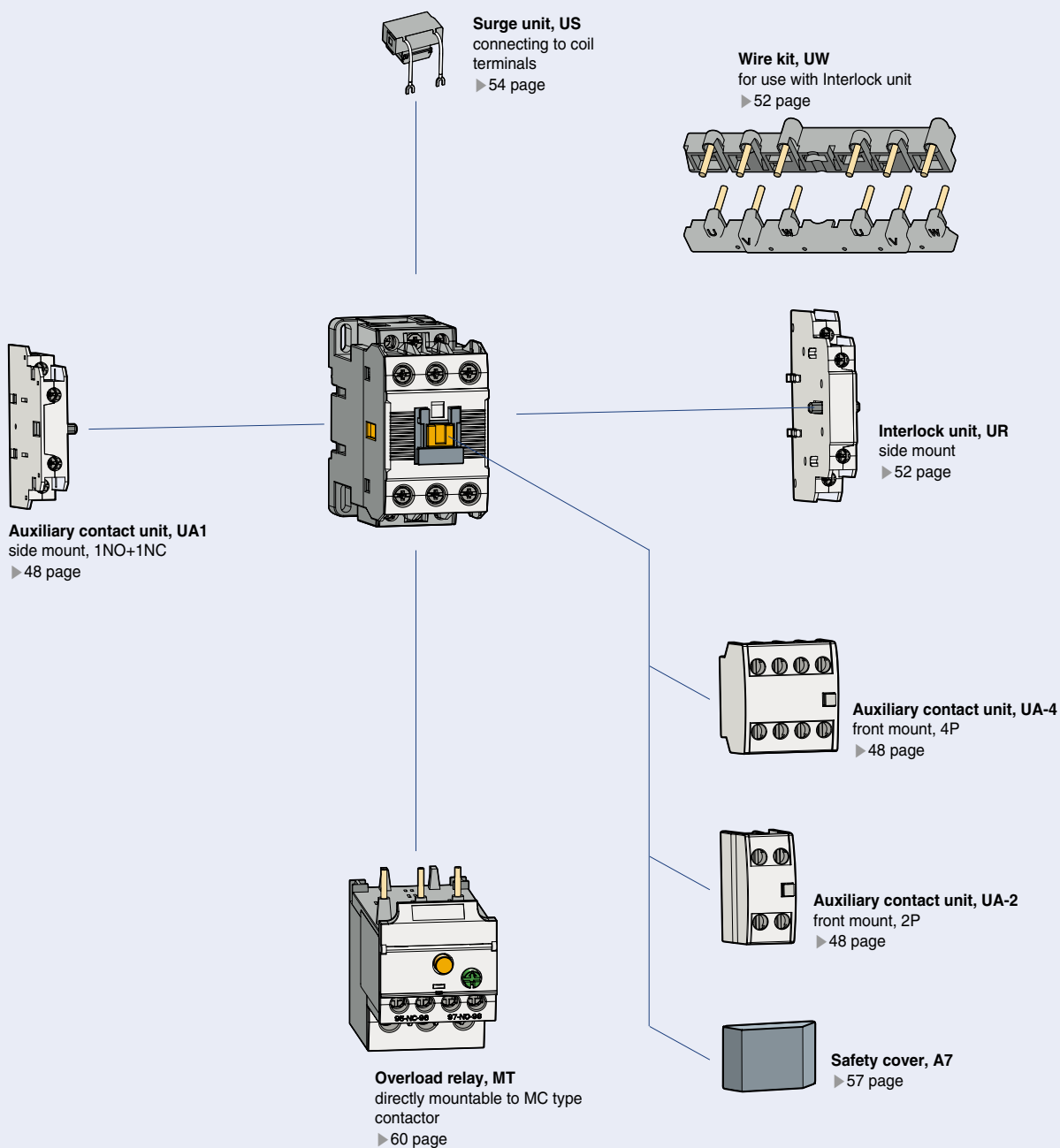


AC	50Hz	24, 32, 42, 48, 80, 100, 110, 220, 230, 240, 380, 400, 500, 550V
	60Hz	24, 48, 110, 110, 12, 200, 208, 220, 230, 240, 277, 380, 480, 600V
	50/60Hz	24, 48, 100, 110, 120, 200, 220, 230, 240, 380, 415, 440, 500, 550V
DC	DC	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

Certification

- CE(IEC)
- UL508

Accessories



Contactors (22AF)

Description

- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable
- AC or DC control in different physical size
- Front/side mountable accessories available
- Direct mountable overload relay available Rating
- 1NO or 1NC Auxiliary contact built-in as standard.



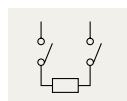
MC-22b

Rating

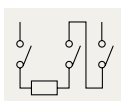
Contactor type			MC-9b		MC-12b		MC-18b		MC-22b		
			kW	A	kW	A	kW	A	kW	A	
AC duty	AC3	200/240V	2.5	11	3.5	13	4.5	18	5.5	22	
		380/440V	4	9	5.5	12	7.5	18	11	22	
		500/550V	4	7	7.5	12	7.5	13	15	20	
		690V	4	5	7.5	9	7.5	9	15	18	
	AC4	200/240V	1.5	8	2.2	11	3.7	16	3.7	18	
		380/440V	2.2	6	4	9	4	11	5.5	13	
	AC1		-	25	-	25	-	32	-	40	
DC1 duty (L/R=1ms)	2-pole	24V	-	18	-	18	-	18	-	32	
		in series	48V	-	17	-	17	-	17	-	30
			110V	-	12	-	12	-	12	-	23
	3-pole	24V	-	20	-	20	-	20	-	32	
		in series	48V	-	20	-	20	-	20	-	32
			110V	-	15	-	15	-	15	-	27
DC 2,4 duty (L/R=15ms)	2-pole	24V	-	15	-	15	-	15	-	25	
		in series	48V	-	12	-	12	-	12	-	20
			110V	-	8	-	8	-	8	-	15
	3-pole	24V	-	18	-	18	-	18	-	30	
		in series	48V	-	15	-	15	-	15	-	30
			110V	-	12	-	12		12	-	20
Directly mountable Overload relay			MT-32								
Conductor size (solid, stranded)		AWG	16~10		16~8		14~8		14~8		
(the max. number of conducts: 2)		mm²	1.5~4		1.5~10		2.5~10		2.5~10		
Conductor type			65/75°C Cu-wire only								



Coil voltage



2-pole in series



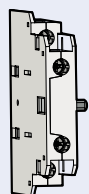
3-pole in series

AC	50Hz	24, 32, 42, 48, 80, 100, 110, 220, 230, 240, 380, 400, 500, 550V
	60Hz	24, 48, 110, 110, 12, 200, 208, 220, 230, 240, 277, 380, 480, 600V
	50/60Hz	24, 48, 100, 110, 120, 200, 220, 230, 240, 380, 415, 440, 500, 550V
DC	DC	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

Certification

- CE(IEC)
- UL508

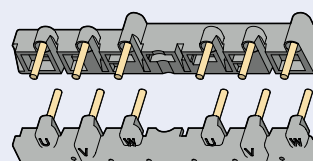
Accessories



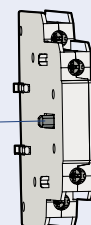
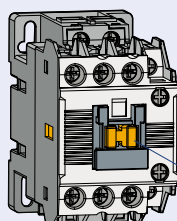
Auxiliary contact unit, UA1
side mount, 1NO+1NC
► 48 page



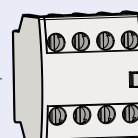
Surge unit, US
connecting to coil
terminals
► 54 page



Wire kit, UW
for use with Interlock unit
► 52 page



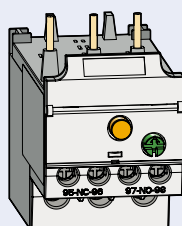
Interlock unit, UR
side mount
► 52 page



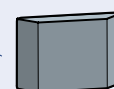
Auxiliary contact unit, UA-4
front mount, 4P
► 48 page



Auxiliary contact unit, UA-2
front mount, 2P
► 48 page



Overload relay, MT
directly mountable to MC type
contactor
► 61 page



Safety cover, A7
► 57 page

Contactors (40AF)

Description

- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable
- AC or DC control in different physical size
- Front/side mountable accessories available
- Direct mountable overload relay available Rating



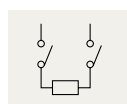
MC-40a

Rating

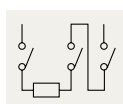
Contactor type			MC-32a		MC-40a		
			kW	A	kW	A	
AC duty	AC3	200/240V	7.5	32	11	40	
		380/440V	15	32	18.5	40	
		500/550V	18.5	28	22	32	
		690V	18.5	20	22	23	
	AC4	200/240V	4.5	20	5.5	25	
		380/440V	7.5	17	11	24	
	AC1	-	50	-	60		
DC1 (L/R=1ms)	2-pole	24V	-	32	-	55	
		in series	48V	-	30	-	55
		110V	-	25	-	40	
	3-pole	24V	-	32	-	55	
		in series	48V	-	32	-	55
		110V	-	27	-	45	
		DC2,4 (L/R=15ms)	2-pole	24V	-	25	-
in series	48V			-	20	-	25
110V	-			15	-	20	
3-pole	24V		-	30	-	45	
	in series		48V	-	30	-	40
	110V		-	20	-	30	
Directly mountable Overload relay			MT-32				
Conductor size (solid, stranded)		AWG	12~8		10~6		
(the max. number of conducts: 2)		mm²	2.5~10		4~16		
Conductor type			65/75°C Cu-wire only				



Coil voltage



2-pole in series



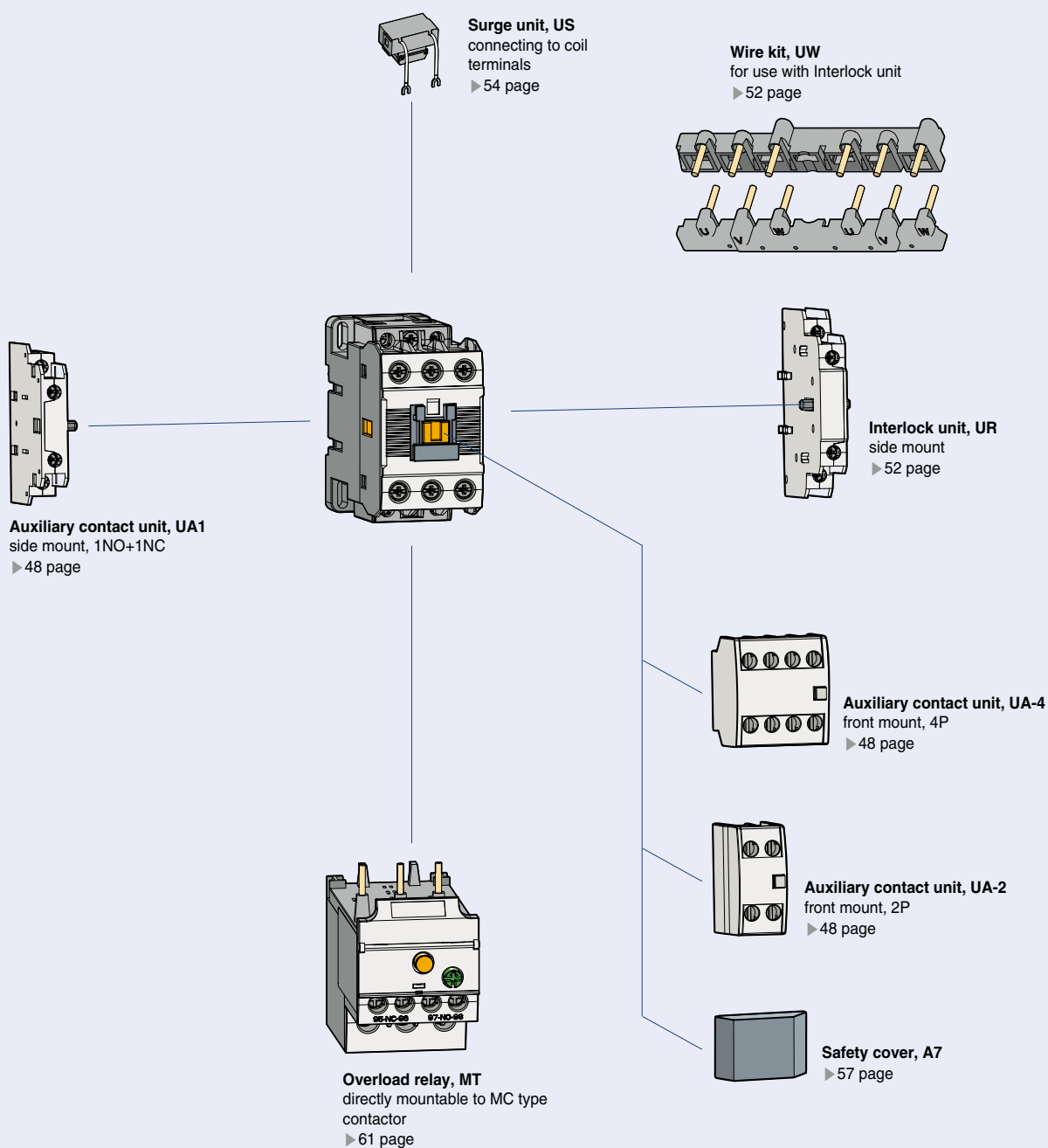
3-pole in series

AC	50Hz	24, 32, 42, 48, 80, 100, 110, 220, 230, 240, 380, 400, 500, 550V
	60Hz	24, 48, 110, 110, 12, 200, 208, 220, 230, 240, 277, 380, 480, 600V
	50/60Hz	24, 48, 100, 110, 120, 200, 220, 230, 240, 380, 415, 440, 500, 550V
DC	DC	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

Certification

- CE(IEC)
- UL508

Accessories



Contactors (65AF)

Description

- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable
- AC or DC control in different physical size
- Front/side mountable accessories available
- Direct mountable overload relay available Rating



MC-65a

Rating

Contactor type			MC-50a		MC-65a		
			kW	A	kW	A	
AC duty	AC3	200/240V	15	55	18.5	65	
		380/440V	22	50	30	65	
		500/550V	30	43	33	60	
		690V	30	28	33	35	
	AC4	200/240V	7.5	35	11	50	
		380/440V	15	32	22	47	
	AC1	-	70	-	100		
DC1 duty (L/R=1ms)	2-pole	24V	-	70	-	90	
		in series	48V	-	70	-	90
			110V	-	50	-	75
	3-pole	24V	-	70	-	90	
		in series	48V	-	70	-	90
			110V	-	60	-	80
DC2, 4 duty (L/R=15ms)	2-pole	24V	-	45	-	55	
		in series	48V	-	40	-	45
			110V	-	25	-	38
	3-pole	24V	-	55	-	75	
		in series	48V	-	50	-	65
			110V	-	35	-	55
Directly mountable Overload relay			MT-63				
Conductor size (solid, stranded)		AWG	10~4		8~3		
(the max. number of conducts: 2)		mm ²	6~25		10~35		
Conductor type			65/75°C Cu-wire only				



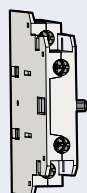
Coil voltage

AC	50Hz	24, 32, 42, 48, 80, 100, 110, 220, 230, 240, 380, 400, 500, 550V
	60Hz	24, 48, 110, 110, 12, 200, 208, 220, 230, 240, 277, 380, 480, 600V
	50/60Hz	24, 48, 100, 110, 120, 200, 220, 230, 240, 380, 415, 440, 500, 550V
DC		12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

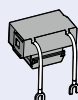
Certification

- CE(IEC)
- UL508

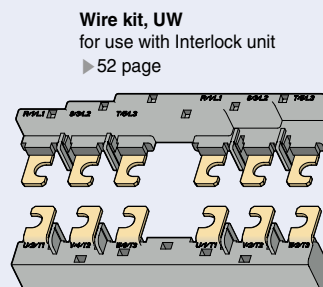
Accessories



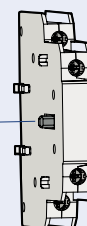
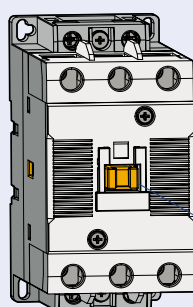
Auxiliary contact unit, UA1
side mount, 1NO+1NC
► 48 page



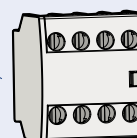
Surge unit, US
connecting to coil
terminals
► 54 page



Wire kit, UW
for use with Interlock unit
► 52 page



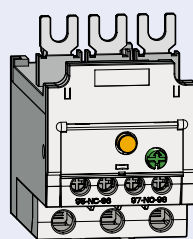
Interlock unit, UR
side mount
► 52 page



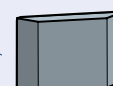
Auxiliary contact unit, UA-4
front mount, 4P
► 48 page



Auxiliary contact unit, UA-2
front mount, 2P
► 48 page



Overload relay, MT
directly mountable to MC type
contactor
► 61 page



Safety cover, A7
► 57 page

Contactors (100AF)

Description

- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable
- AC or DC control in different physical size
- Front/side mountable accessories available
- Direct mountable overload relay available Rating

Rating



MC-100a

Contactor type			MC-75a		MC-85a		MC-100a	
			kW	A	kW	A	kW	A
AC duty	AC3	200/240V	22	75	25	85	30	105
		380/440V	37	75	45	85	55	105
		500/550 V	37	64	45	75	55	85
		690V	37	42	45	45	45	65
	AC4	200/240V	13	55	15	65	19	80
		380/440V	25	52	30	62	37	75
	AC1		-	110	-	135	-	160
DC1 duty (L/R=1ms)	2-pole	24V	-	90	-	100	-	100
	in series	48V	-	90	-	100	-	100
		110V	-	75	-	80	-	80
	3-pole	24V	-	90	-	100	-	100
	in series	48V	-	90	-	100	-	100
		110V	-	80	-	85	-	85
DC2, 4 duty (L/R=15ms)	2-pole	24V	-	55	-	60	-	60
	in series	48V	-	45	-	50	-	50
		110V	-	38	-	40	-	40
	3-pole	24V	-	75	-	80	-	80
	in series	48V	-	65	-	70	-	70
		110V	-	55	-	60	-	60
Directly mountable Overload relay			MT-95					
Conductor size (solid, stranded)		AWG	8~2		8~0		8~00	
(the max. number of conducts: 2)		mm ²	10~35		10~50		10~70	
Conductor type			65/75°C Cu-wire only					



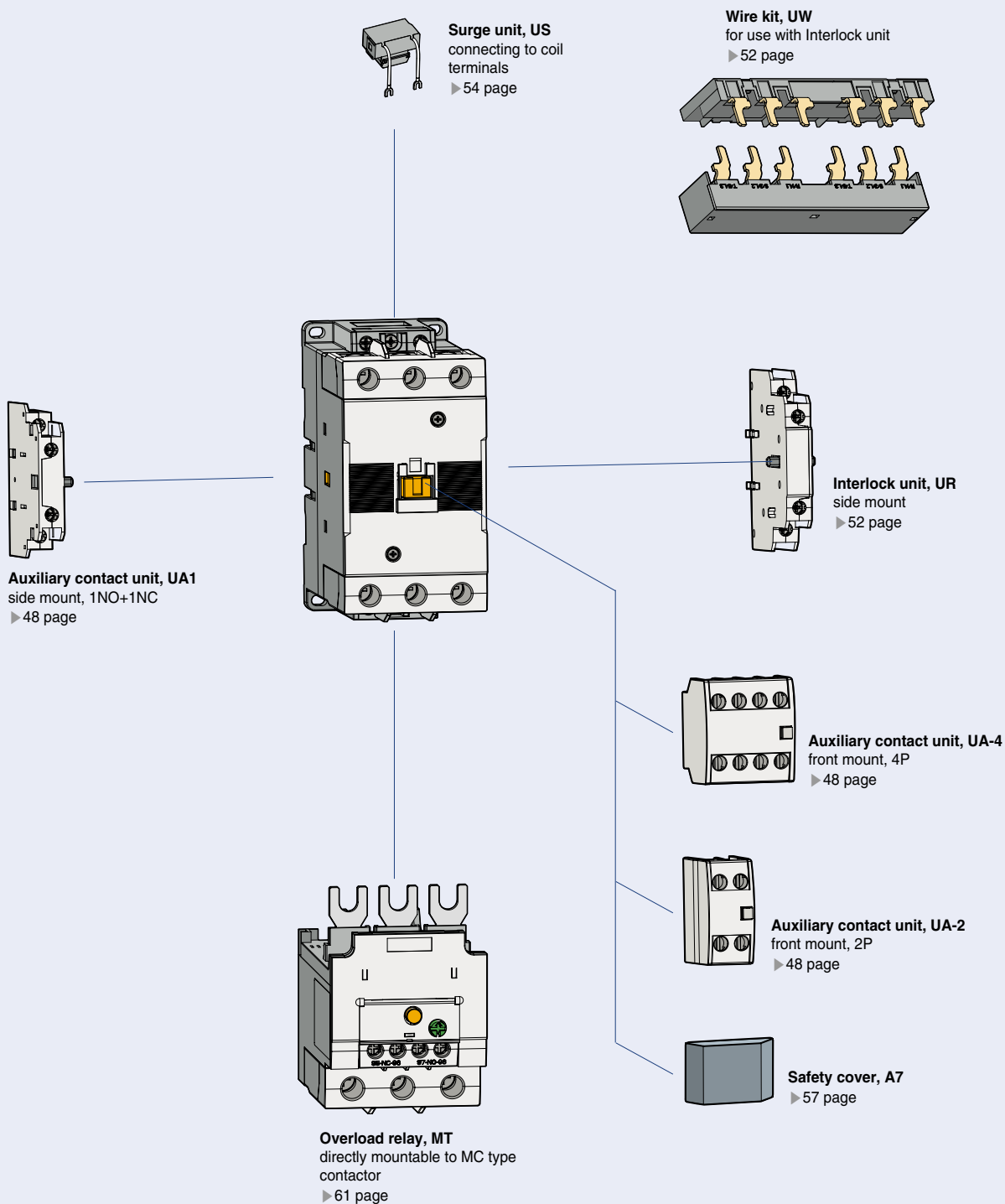
Coil voltage

AC	50Hz	24, 32, 42, 48, 80, 100, 110, 220, 230, 240, 380, 400, 500, 550V
	60Hz	24, 48, 110, 110, 12, 200, 208, 220, 230, 240, 277, 380, 480, 600V
	50/60Hz	24, 48, 100, 110, 120, 200, 220, 230, 240, 380, 415, 440, 500, 550V
DC	DC	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

Certification

- CE(IEC)
- UL508

Accessories



Contactors (150AF)

Description

- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable
- AC or DC control in the same physical size
- Front/side mountable accessories available
- Direct mountable overload relay available



MC-150a

Rating

Contactor type			MC-130a		MC-150a		
			kW	A	kW	A	
AC duty	AC3	200/240V	37	130	45	150	
		380/440V	60	130	75	150	
		500/550V	60	90	70	100	
		690V	55	60	55	60	
	AC4	200/240V	22	93	30	120	
		380/440V	45	90	55	110	
	AC1	-	160	-	210		
DC1 duty (L/R=1ms)	2-pole	24V	-	120	-	150	
		in series	48V	-	100	-	120
		110V	-	80	-	100	
	3-pole	24V	-	120	-	150	
		in series	48V	-	120	-	150
		110V	-	100	-	150	
DC2, 4 duty (L/R=15ms)	2-pole	24V	-	120	-	150	
		in series	48V	-	60	-	100
		110V	-	40	-	80	
	3-pole	24V	-	120	-	150	
		in series	48V	-	90	-	130
		110V	-	80	-	120	
Directly mountable Overload relay			MT-150				
Conductor size (solid, stranded)		AWG	3~00		3~4/0		
(the max. number of conducts: 2)		mm²	35~70		35~95		
Conductor type			65/75°C Cu-wire only				



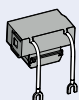
Coil voltage

AC	50/60Hz	24, 48, 110, 220, 300, 400, 500V
DC	DC	24, 48, 110, 220V

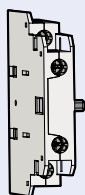
Certification

- CE(IEC)
- UL508

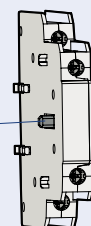
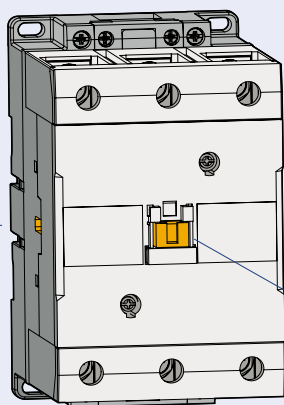
Accessories



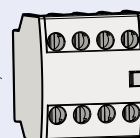
Surge unit, US
connecting to coil
terminals
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Auxiliary contact unit, UA1
side mount, 1NO+1NC
► 48 page



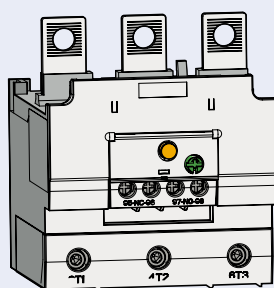
Interlock unit, UR
side mount
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Auxiliary contact unit, UA-4
front mount, 4P
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Auxiliary contact unit, UA-2
front mount, 2P
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Overload relay, MT
directly mountable to MC type
contactor
► 62 page



Safety cover, A7
► 57 page

Contactors (225AF)

Description

- 3-pole main contact
- AC/DC common use coil built
- Wide coil operation voltage
- Screw mountable
- 2NO+2NC Auxiliary contacts built-in as standard
- Top/side mountable accessories available
- Direct mountable overload relays available



MC-225a

Rating

Contactor type			MC-185a		MC-225a		
			kW	A	kW	A	
AC duty	AC3	200/240V	55	185	75	225	
		380/440V	90	185	132	225	
		500/550V	110	180	132	200	
		690V	110	120	140	150	
	AC4	200/240V	37	150	45	180	
		380/440V	75	150	90	180	
	AC1	-	230	-	275		
DC1 duty (L/R=1ms)	2-pole	24V	-	180	-	220	
		in series	48V	-	180	-	180
		110V	-	150	-	150	
	3-pole	24V	-	180	-	220	
		in series	48V	-	180	-	220
		110V	-	180	-	220	
		DC2, 4 duty (L/R=15ms)	2-pole	24V	-	180	-
in series	48V			-	150	-	150
110V	-			120	-	120	
3-pole	24V		-	180	-	220	
	in series		48V	-	180	-	220
	110V		-	150	-	150	
Directly mountable Overload relay			MT-225				
Conductor size (solid, stranded)		AWG	1~4/0		0~300		
(the max. number of conducts: 2)		mm²	50~95		50~150		
Conductor type			75°C Cu stranded wire				



Coil voltage, AC/DC common

Nominal(ordering) voltage	AC 50/60Hz	DC
24V	24 - 25V	24V
48V	48 - 50V	48V
100/200V	100 - 240V	100 - 220V
300V	265 - 347V	-
400V	380 - 450V	-
500V	440 - 575V	-

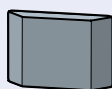
Certification

- CE(IEC)
- UL508

Accessories



AD-100
Delayed opening device
► 51 page



Safety cover, A7
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AP-220
Terminal cover
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AI-180
Insulation barrier
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AU-100, 100E
Auxiliary contact unit
side mount, 1NO+1NC
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AR-180
Interlock unit
side mount
► 53 page



MT-225
Overload relay
directly mountable to the contactor
Current range 65~240A
► 63 page

Contactors (400AF)

Description

- 3-pole main contact
- AC/DC common use coil built
- Wide coil operation voltage
- Screw mountable
- 2NO+2NC Auxiliary contacts built-in as standard
- Top/side mountable accessories available
- Direct mountable overload relays available



MC-400a

Rating

Contactor type			MC-265a		MC-330a		MC-400a		
			kW	A	kW	A	kW	A	
AC duty	AC3	200/240V	80	265	90	330	125	400	
		380/440V	147	265	160	330	200	400	
		500/550V	147	225	160	280	225	350	
		690V	160	185	200	225	250	300	
	AC4	200/240V	50	200	55	220	75	300	
		380/440V	102	200	110	220	150	300	
	AC1		-	300	-	350	-	450	
DC1 duty (L/R=1ms)	2-pole	24V	-	220	-	300	-	400	
		in series	48V	-	180	-	240	-	240
		110V	-	150	-	200	-	200	
	3-pole	24V	-	220	-	300	-	400	
		in series	48V	-	220	-	300	-	400
		110V	-	220	-	300	-	400	
DC2, 4 duty (L/R=15ms)	2-pole	24V	-	220	-	300	-	400	
		in series	48V	-	150	-	200	-	200
		110V	-	120	-	150	-	150	
	3-pole	24V	-	220	-	300	-	400	
		in series	48V	-	220	-	280	-	280
		110V	-	150	-	200	-	200	
Directly mountable Overload relay			MT-400						
Conductor size (solid, stranded)		AWG	3/0~500		4/0~500		350~700		
(the max. number of conducts: 2)		mm²	95~240		95~240		185~370		
Conductor type			75℃ Cu stranded wire						



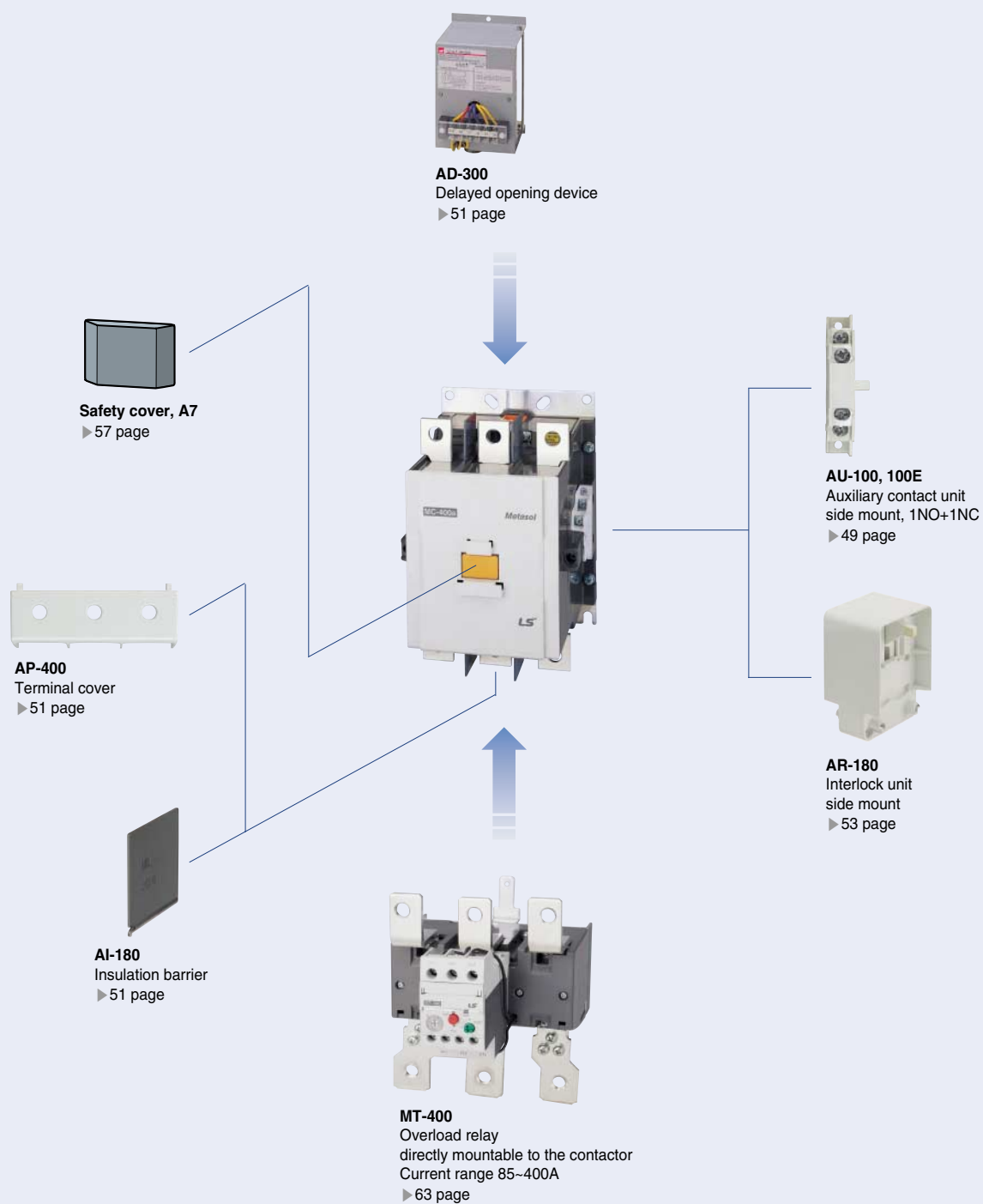
Coil voltage, AC/DC common

Nominal(ordering) voltage	AC 50/60Hz	DC
100/200V	100 - 240V	100 - 220V
300V	265 - 347V	-
400V	380 - 450V	-
500V	440 - 575V	-

Certification

- CE(IEC)
- UL508

Accessories



Contactors (800AF)

Description

- 3-pole main contact
- AC/DC common use coil built
- Wide coil operation voltage
- Screw mountable
- 2NO+2NC Auxiliary contacts built-in as standard
- Top/side mountable accessories available
- Overload relays available



MC-800a

Rating

Contactor type			MC-500a		MC-630a		MC-800a		
			kW	A	kW	A	kW	A	
AC duty	AC3	200/240V	147	500	190	630	220	800	
		380/440V	265	500	330	630	440	800	
		500/550V	265	400	330	500	500	720	
		690V	300	380	400	420	500	630	
	AC4	200/240V	90	350	110	400	160	630	
		380/440V	176	350	200	400	300	630	
	AC1		-	580	-	660	-	900	
DC1 duty (L/R=1ms)	2-pole	24V	-	400	-	630	-	800	
		in series	48V	-	240	-	630	-	800
		110V	-	200	-	630	-	630	
	3-pole	24V	-	400	-	630	-	800	
		in series	48V	-	400	-	630	-	800
		110V	-	400	-	630	-	800	
	DC2, 4 duty (L/R=15ms)	2-pole	24V	-	400	-	630	-	800
in series			48V	-	200	-	630	-	630
110V			-	150	-	630	-	630	
3-pole		24V	-	400	-	630	-	800	
		in series	48V	-	280	-	630	-	630
		110V	-	200	-	630	-	630	
Directly mountable Overload relay			MT-800						
Conductor size (solid, stranded)		AWG	350~800		600~2000		1700~Busbar		
(the max. number of conducts: 2)		mm²	185~480		-		-		
Conductor type			75°C Cu stranded wire						



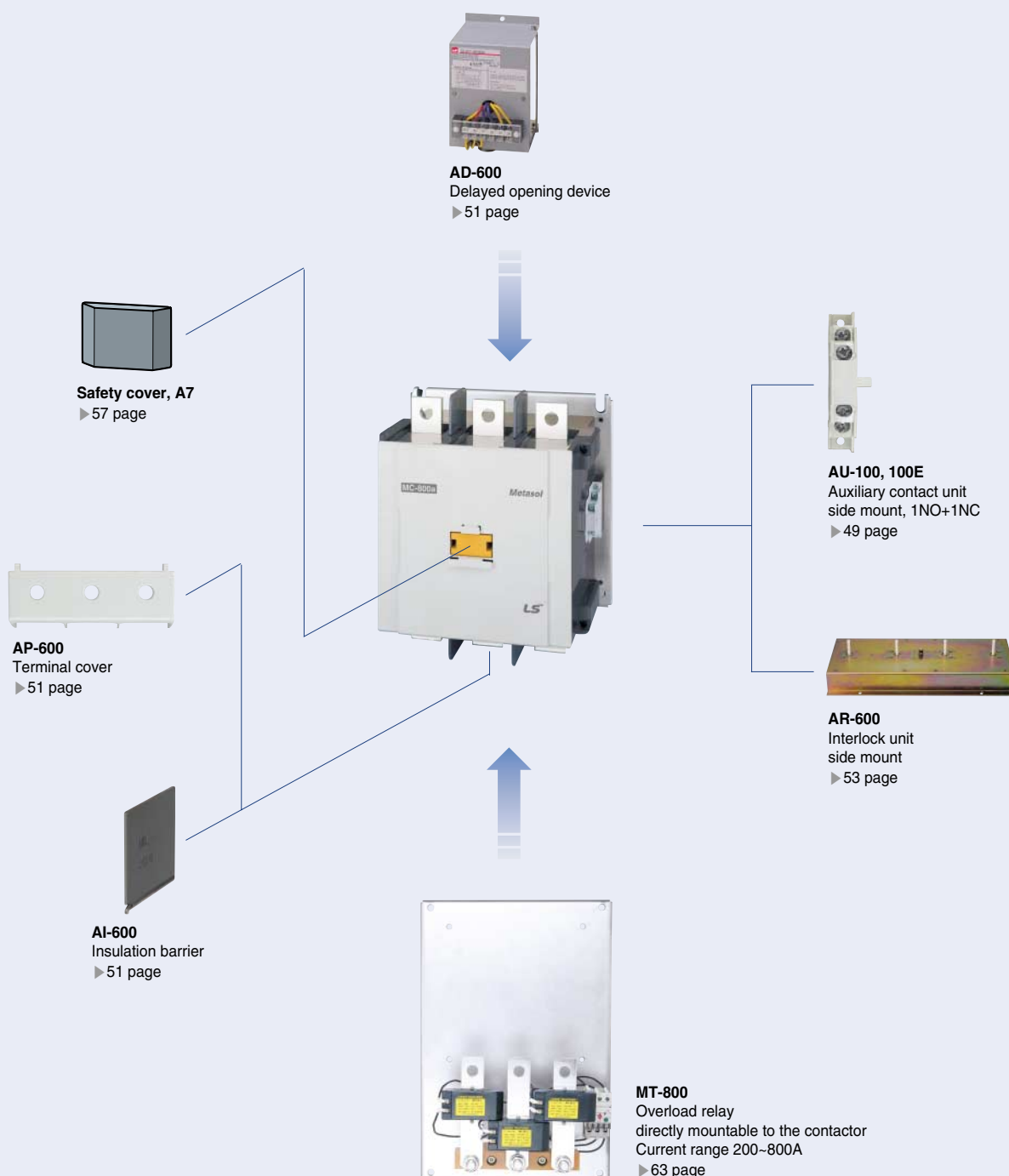
Coil voltage, AC/DC common

Nominal(ordering) voltage	AC 50/60Hz	DC
100V	100 - 127V	100 - 110V
200V	200 - 240V	200 - 220V
300V	265 - 347V	-
400V	380 - 450V	-
500V	440 - 575V	-

Certification

- CE(IEC)
- UL508

Accessories



Motor starters

Description

- Opened direct motor starter
- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable
- AC or DC control contactor selectable
- Front/side mountable accessories available
- Overload relay is directly mounted to the contactor



Rating

Starter type			18AF				22AF			
			MS-6a	MS-9a	MS-12a	MS-18a	MS-9b	MS-12b	MS-18b	MS-22b
Number of poles			3				3			
Rated operational voltage (Ue)			Up to 690V				Up to 690V			
Degree of pollution (IEC60529)			IP20				IP20			
Rated operational current Ie ($\theta \leq 40^\circ\text{C}$)										
AC-1	Ue max 690V	A	25	25	25	32	25	25	32	40
AC-3	200/240V	A	9	11	13	18	11	13	18	22
	380/400V	A	7	9	12	18	9	12	18	22
	415V	A	7	9	12	18	9	12	18	22
	440V	A	7	9	12	18	9	12	18	22
	500V	A	6	7	12	13	7	12	13	20
	690V	A	4	5	9	9	6	9	9	18
Rated operational power ($\theta \leq 40^\circ\text{C}$)										
AC-3	200/240V	kW	2.2	2.5	3.5	4.5	2.5	3.5	4.5	5.5
	380/400V	kW	3	4	5.5	7.5	4	5.5	7.5	11
	415V	kW	3	4	5.5	7.5	4	5.5	7.5	11
	440V	kW	3	4	5.5	7.5	4	5.5	7.5	11
	500V	kW	3	4	7.5	7.5	4	7.5	7.5	15
	690V	kW	3	4	7.5	7.5	4	7.5	7.5	15
According to IEC60947-4-1										
Rated making capacity AC-3			70	90	120	180	90	120	180	220
Rated breaking capacity AC-3			56	72	96	144	72	96	144	176
Electrical life for Ie/AC-3 Max										
in millions of operating cycles			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Maximum operating rate										
in operating cycles per hour			1800	1800	1800	1800	1800	1800	1800	1800

Devices usable in the starter combination

Contactors										
			MC-6a	MC-9a	MC-12a	MC-18a	MC-9b	MC-12b	MC-18b	MC-22b
with AC or DC control coil										
with coil in common use for AC and DC			-	-	-	-	-	-	-	-
Thermal Overload Relays										
Class 10A	Differential type		MT-12/3K				MT-32/3K			
	Non-differential type		MT-12/3H				MT-32/3H			
	Non-differential type(2-heater)		MT-12/2H				MT-32/2H			
Class 20	Differential type		MT-12/3D				MT-32/3D			
Setting range		A	0.1~18A				0.1~40A			



40AF	
MS-32a	MS-40a
3	
Up to 690V	
IP20	
50	60
32	40
32	40
32	40
32	40
28	32
20	23
7.5	11
15	18.5
15	18.5
15	18.5
18.5	22
18.5	22
320	400
256	320
2	2
1800	1800

MC-32a	MC-40a
-	-
MT-32/3K	
MT-32/3H	
MT-32/2H	
MT-32/3D	
0.1~40A	

65AF	
MS-50a	MS-65a
3	
Up to 690V	
IP20	
70	100
55	65
50	65
50	65
50	65
43	60
28	35
15	18.5
22	30
22	30
22	30
30	33
30	33
500	650
400	520
2	2
1800	1800

MC-50a	MC-65a
-	-
MT-63/3K	
MT-63/3H	
MT-63/2H	
MT-63/3D	
4~65A	

100AF		
MS-75a	MS-85a	MS-100a
3		
Up to 690V		
IP20		
110	135	160
75	85	105
75	85	105
75	85	105
75	85	105
64	75	85
42	45	65
22	25	30
37	45	55
37	45	55
37	45	55
37	45	55
37	45	45
750	850	1050
600	650	840
2	2	2
1800	1800	1800

MC-75a	MC-85a	MC-100a
-	-	-
MT-95/3K		
MT-95/3H		
MT-95/2H		
MT-95/3D		
7~100A		

Motor starters

Description

- Opened direct motor starter
- 3-pole(NO) main contacts
- Screw mountable
- AC/DC common use control contactor used (from 225AF)
- Additional accessories available
- Overload relay is directly mounted to the contactor



Rating

Starter type				150AF		225AF	
				MS-130a	MS-150a	MS-185a	MS-225a
Number of poles				3		3	
Rated operational voltage (Ue)				Up to 690V		Up to 690V	
Degree of pollution (IEC60529)				IP20		IP20	
Rated operational current Ie ($\theta \leq 40^\circ\text{C}$)							
AC-1	Ue max 690V	A		160	210	230	275
AC-3	200/240V	A		130	150	185	225
	380/400V	A		130	150	185	225
	415V	A		130	150	185	225
	440V	A		130	150	185	225
	500V	A		90	100	180	200
	690V	A		60	60	120	150
Rated operational power ($\theta \leq 40^\circ\text{C}$)							
AC-3	200/240V	kW		37	45	55	75
	380/400V	kW		60	75	90	132
	415V	kW		60	75	90	132
	440V	kW		60	75	90	132
	500V	kW		60	70	110	132
	690V	kW		55	55	110	140
According to IEC60947-4-1							
Rated making capacity AC-3				1200	1500	1850	2250
Rated breaking capacity AC-3				960	1200	1480	1800
Electrical life for Ie/AC-3 Max							
in millions of operating cycles				1	1	1	1
Maximum operating rate							
in operating cycles per hour				1200	1200	1200	1200

Devices usable in the starter combination

Contactors							
				MC-130a	MC-150a	-	-
with AC or DC control coil							
with coil in common use for AC and DC				-	-	MC-185a	MC-225a
Thermal Overload Relays							
Class 10A	Differential type			MT-150/3K		MT-225/3K	
	Non-differential type			MT-150/3H		MT-225/3H	
	Non-differential type(2-heater)			MT-150/2H		MT-225/2H	
Class 20	Differential type			MT-150/3D		MT-225/3D	
Setting range			A	34~150A		65~240A	



400AF		
MS-265a	MS-330a	MS-400a
3		
Up to 690V		
IP20		
300	350	450
265	330	400
265	330	400
265	330	400
265	330	400
225	280	350
185	225	300
80	90	125
147	160	200
147	160	200
147	160	200
147	160	225
160	200	250
2650	3300	4000
2120	2640	3200
1	1	1
1200	1200	1200

-	-	-
MC-265a	MC-330a	MC-400a
MT-400/3K		
MT-400/3H		
MT-400/2H		
MT-400/3D		
85~400A		

800AF		
MS-500a	MS-630a	MS-800a
3		
Up to 690V		
IP20		
580	660	900
500	630	800
500	630	800
500	630	800
500	630	800
400	500	720
380	420	630
147	190	220
265	330	440
265	330	440
265	330	440
265	330	500
300	400	500
5000	6300	8000
4000	5040	6400
0.5	0.5	0.5
1200	1200	1200

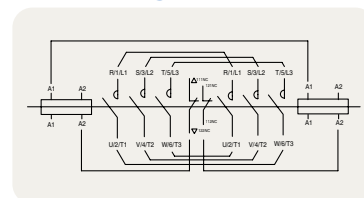
-	-	-
MC-500a	MC-630a	MC-800a
MT-800/3K		
MT-800/3H		
MT-800/2H		
MT-800/3D		
200~800A		

Reversing contactors

Description

- Two AC or DC control contactors are interlocked mechanically and electrically
- 3-pole(NO) main contact in each contactor
- Finger proof design
- DIN rail or screw mountable
- Front/side mountable accessories available
- Overload relay can be directly mounted to the contactor if necessary

Circuit diagram



Rating



MC-40a/R

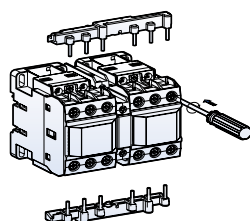


MC-65a/R



MC-100a/R

Type	AC-3 duty						Current (AC3)	Weight (AC control)
	200 ~ 240V	380 ~ 400V	415V	440V	500V	690V	440V	
	kW	kW	kW	kW	kW	kW	A	
MC-6a/R	2.2	3	3	3	3	3	7	0.63kg
MC-9a/R	2.5	4	4	4	4	4	9	0.63kg
MC-12a/R	3.5	5.5	5.5	5.5	7.5	7.5	12	0.63kg
MC-18a/R	4.5	7.5	7.5	7.5	7.5	7.5	18	0.63kg
MC-9b/R	2.5	4	4	4	4	4	9	0.75kg
MC-12b/R	3.5	5.5	5.5	5.5	7.5	7.5	12	0.75kg
MC-18b/R	4.5	7.5	7.5	7.5	7.5	7.5	18	0.75kg
MC-22b/R	5.5	11	11	11	15	15	25	0.75kg
MC-32a/R	11	18.5	18.5	18.5	22	22	32	0.95kg
MC-40a/R	11	18.5	18.5	18.5	22	22	40	0.95kg
MC-50a/R	15	22	22	22	30	30	50	1.7kg
MC-65a/R	18.5	30	30	30	33	33	65	1.7kg
MC-75a/R	22	37	37	37	37	37	75	3.3kg
MC-85a/R	25	45	45	45	45	45	85	3.3kg
MC-100a/R	30	55	55	55	55	45	100	3.3kg



Coil voltage

AC	50Hz	24, 32, 42, 48, 80, 100, 110, 220, 230, 240, 380, 400, 500, 550V
	60Hz	24, 48, 110, 110, 12, 200, 208, 220, 230, 240, 277, 380, 480, 600V
	50/60Hz	24, 48, 100, 110, 120, 200, 220, 230, 240, 380, 415, 440, 500, 550V
DC	DC	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

Certification

- CE(IEC)
- UL508

Description

- 3-pole main contact
- Mechanically interlocked
- AC/DC common use coil built (from MC-185a/R)
- Wide coil operation voltage
- Screw mountable
- 2NO+2NC Auxiliary contacts built-in as standard
- Top/side mountable accessories available



Rating

Type	AC-3 duty						Current (AC3)	Weight (AC control)
	200 ~ 240V	380 ~ 400V	415V	440V	500 ~ 550V	690V	440V	
	kW	kW	kW	kW	kW	kW	A	
MC-130a/R	37	60	60	60	60	55	120	4.3kg
MC-150a/R	45	75	75	75	75	55	150	4.3kg
MC-185/R	55	90	90	90	110	110	185	13kg
MC-225a/R	75	132	132	132	132	140	225	13kg
MC-265a/R	80	147	147	147	147	160	265	21.4kg
MC-330a/R	90	160	160	160	160	200	330	21.4kg
MC-400a/R	125	200	200	200	225	250	400	21.4kg
MC-500a/R	147	265	265	265	265	300	500	60kg
MC-630a/R	190	330	330	330	330	400	630	60kg
MC-800a/R	220	440	440	440	440	500	800	60kg



Coil voltage

For MC130/R and MC-150a/R

AC	50/60Hz	24, 48, 110, 220, 300, 400, 500V
DC	DC	24, 48, 110, 220V

For MC-185a/R and up

- 24, 48, 100/200, 300, 400, 500V for types MC-185a/R, 225/R
- 100/200, 300, 400, 500V for types MC-265a/R, 330/R, 400/R
- 100, 200, 300, 400, 500V for types MC-500a/R, 600/R, 800/R

Nominal(ordering) voltage	AC 50/60Hz	DC
24V	24 - 25V	24V
48V	48 - 50V	48V
100V	100 - 127V	100 - 110V
200V	200 - 240V	200 - 220V
100/200V	100 - 240V	100 - 220V
300V	265 - 347V	-
400V	380 - 450V	-
500V	440 - 575V	-

Capacitive contactors

Description

Capacitor unit(Pre-loading resistor) is connected to the terminals of the contactor to reduce the high inrush current exceeding $20 \times I_n$.

- AC or DC control coil on selection
- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable

Rating

Type	Maximum operating power (kvar)			Rated current (A)	Capacitor unit type
	220 ~ 240V	400 ~ 440V	500 ~ 550V		
MC-9a/9b(D)	5	9.7	14	14	AC-9
MC-12a/12b(D)	6.7	12.5	18	18	AC-9
MC-18a/18b(D)	8.5	16.7	24	24	AC-9
MC-22b(D)	10	18	26	26	AC-9
MC-32a(D)	15	25	36	36	AC-9
MC-40a(D)	20	33.3	48	48	AC-9
MC-50a(D)	20	40	58	58	AC-50
MC-65a(D)	25	45.7	66	66	AC-50
MC-75a(D)	29.7	54	78	78	AC-50
MC-85a(D)	35	60	92	92	AC-50
MC-100a(D)	37	62	94	94	AC-50

Note) - When the switch is closed condenser must be discharged before recharged. (Maximum residual voltage at terminals $\leq 50V$)
 - To prevent short current, gG type fuse must be 1.5~2 times than rated current.
 - AC-50 is including screw type and lug type.



Coil voltage

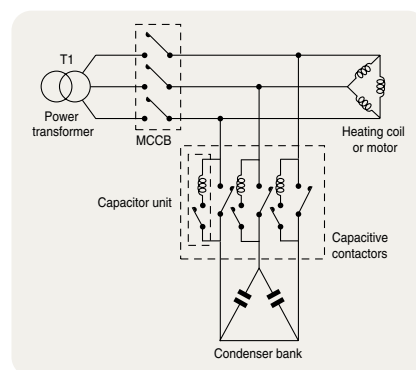
AC	50Hz	24, 32, 42, 48, 80, 100, 110, 220, 230, 240, 380, 400, 500, 550V
	60Hz	24, 48, 110, 110, 12, 200, 208, 220, 230, 240, 277, 380, 480, 600V
	50/60Hz	24, 48, 100, 110, 120, 200, 220, 230, 240, 380, 415, 440, 500, 550V
DC	DC	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

These capacitive contactors are suitable for switching single-step or multiple-step condenser bank.

It is standardized by IEC-60947-4941, UL and CSA.

Features of capacitor unit(Pre-loading resistor)

- Damping resistor that can limit the inrush current upto $60 \times I_n$ is connected to the mechanism that closed earlier than the main contact of the contactor
- No heat loss by the serial resistor
- Eliminate the switching surge
- Improving the performance of the capacitor system



Example

Contactor relays

Description

- 4,6,8 pole units
- AC/DC control voltage
- 16A continuous current, I_{th}
- DIN rail or screw mountable

Selection



MR-4



MR-6



MR-8

Poles	Composition	Types	Remarks
4 Pole	4NO 3NO1NC 2NO2NC 1NO3NC 4NC	MR-4	Additional auxiliary contacts can be mounted on the relays.
6 Pole	6NO 5NO1NC 4NO2NC 3NO3NC 2NO4NC	MR-6	UA-2 is mounted on the MR-4.
8 Pole	8NO 7NO1NC 6NO2NC 5NO3NC 4NO4NC	MR-8	UA-4 is mounted on the MR-4.

Rating

Rated insulation voltage (Ui)		AC 690V					
Continuous current (Ith)		16A					
Operating cycle		1800 operations/hour					
Endurance	Mechanical life time	10 mil. Operations					
	Electrical life time	0.25 mil. Operations					
Type			MR-4	MR-6		MR-8	
AC-15	Rated current (A)	120	6	6		6	
		240	3	3		3	
		380	1.9	1.9		1.9	
		480	1.5	1.5		1.5	
		500	1.4	1.4		1.4	
		600	1.2	1.2		1.2	
			MR-4	MR-4	UA-2	MR-4	UA-4
DC-13	Rated current (A)	125	1.1	1.1	0.55	1.1	0.55
		250	0.55	0.55	0.27	0.55	0.27
		400	0.31	0.31	0.15	0.31	0.15
		500	0.27	0.27	0.13	0.27	0.13
		600	0.2	0.2	0.1	0.2	0.1

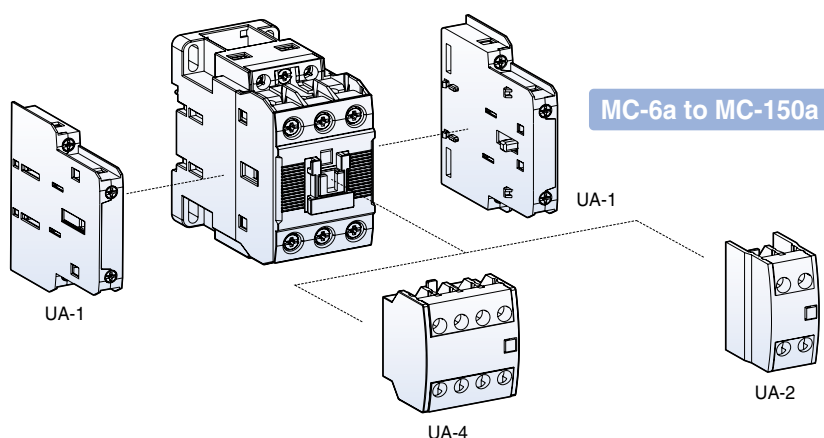


Coil voltage

AC	50Hz	24, 32, 36, 42, 48, 60, 80, 100, 110, 220, 230, 240, 380, 400, 415, 440, 500, 550V
	60Hz	24, 48, 100, 110, 120, 200, 208, 220, 230, 240, 277, 380, 440, 480, 600V
	50/60Hz	24, 48, 100, 110, 120, 200, 230, 240, 380, 415, 440, 500, 550V
DC	DC	12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250V

Auxiliary contact units

- 2 and 4 pole - Side or front mountable
- Common use for Metasol contactors from MC-6 to MC-150a
- Auxiliary contact meet the requirements for mirror contacts in IEC 60947-4-1. Annex F
(A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with a NO main contact)



Selection

Type	Appearance	Pole	Composition		Contact arrangement	Mount	Weight
			NO	NC			
UA-1		2	1	1		Side	53g
UA-2		2	2 1 -	- 1 2		Front	28g
UA-4		4	4 3 2 1 -	- 1 2 3 4		Front	50g

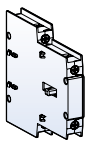
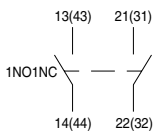
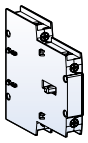
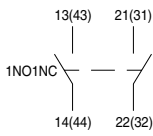
Maximum combination of contact units

For contactors with AC coils	For contactors with DC coils
UA-4(on front)+UA-1 × 4EA (2EA on both sides)	UA-4(on front)+UA-1 × 2EA (1EA on both sides)
UA-2(on front)+UA-1 × 4EA (2EA on both sides)	UA-2(on front)+UA-1 × 2EA (1EA on both sides)

- 2 pole - Side mountable
- Common use for Metasol contactors from MC-185a to MC-800a
- Auxiliary contact meet the requirements for mirror contacts in IEC 60947-4-1. Annex F
(A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with a NO main contact)



Selection

Type	Appearance	Pole	Composition		Contact arrangement	Mount	Weight
			NO	NC			
AU-100		2	1	1		Side	53g
AU-100E		2	1	1		Side	53g

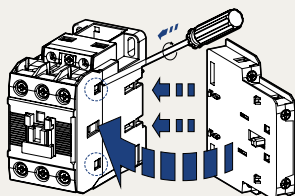
Auxiliary contact units

Rating

Type		UA-1	UA-2, 4	AU-100	AU-100E
Rated operation voltage (Ue)		600V	600V	600V	60V
Rated insulation voltage (Ui)		600V	600V	600V	600V
Rated impulse withstand voltage (Uimp)		6kV	6kV	6kV	6kV
Rated frequency		50/60Hz	50/60Hz	50/60Hz	50/60Hz
Contact sensibility					
Voltage		DC 17V	DC 24V	DC 24V	DC 7V
Current		DC 5mA	DC 10mA	DC 10mA	DC 5mA
Rated thermal current (Ith, AC12 duty)		10A	16A	16A	1A
Rated operation current					
AC15 duty (A600)	120V	6A	6A	6A	AC/DC 24V 0.1A AC/DC 50V 0.01A
	240V	3A	3A	3A	
	380V	1.9A	1.9A	1.9A	
	480V	1.5A	1.5A	1.5A	
	500V	1.4A	1.4A	1.4A	
	600V	1.2A	1.2A	1.2A	
	DC13 duty (P600)	1.1A	1.1A	1.1A	
	250V	0.55A	0.55A	0.55A	
	400V	0.31A	0.31A	0.31A	
	500V	0.27A	0.27A	0.27A	
	600V	0.2A	0.2A	0.2A	
Electrical lifetime (mil. operations)					
AC15 duty	220V	0.5	0.5	0.5	AC/DC 24V 1A AC/DC 50V 1A
	440V	0.5	0.5	0.5	
DC13 duty	220V	0.5	0.5	0.5	
	440V	0.5	0.5	0.5	
Maximum operating cycles per hour		1800	1800	1800	1200
Conductor size (Solid, stranded)	AWG	18~10	18~10	18~10	18~10
	(the max. number of conducts: 2) mm ²	1~2.5	1~2.5	1~2.5	1~2.5

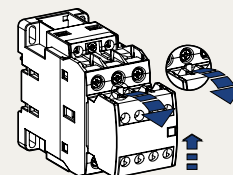
Installation

UA-1



To install side mounting unit remove the indicated part in the circle in the fig. first. And then fit each part as shown. To separate pull forward and pull.

UA-2, 4



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.

Delayed opening devices



Delayed opening device prevents the inadvertent opening of a contactor in the event of a wide voltage drop or brief supply voltage interruptions of control power for 1 to 4 seconds.

Applying contactors	Type	Control voltage	
MC-185a, 225a (225AF)	AD-100	Delayed opening device coil	Contactor device coil
MC-265a, 330a, 400a (400AF)	AD-300		AC100~110V
MC-500a, 630a, 800a (800AF)	AD-600		DC100/110V
		AC200~220V	DC200/220V

Terminal cover units for contactors



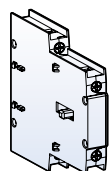
Applying contactors	Type	Remarks
MC-185a, 225a (225AF)	AP-220	2 pcs included
MC-265a, 330a, 400a (400AF)	AP-400	
MC-500a, 630a, 800a (800AF)	AP-800	

Insulation barrier units

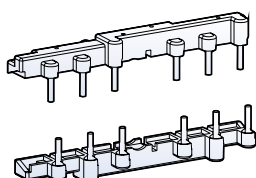


Applying contactors	Type	Remarks
MC-185a, 225a (225AF)	AI-180	4 pcs required per contactor
MC-265a, 330a, 400a (400AF)		
MC-500a, 630a, 800a (800AF)	AI-600	

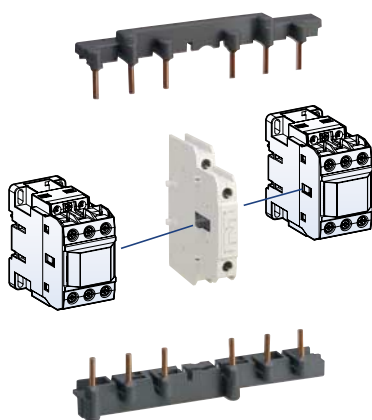
Accessory



Interlock unit



Wire kit



Interlocks

Component parts for assembling by customer

Interlock unit, UR-02

UR-02 is a mechanical interlock unit and provides 2NC contacts for use in electrical interlocking

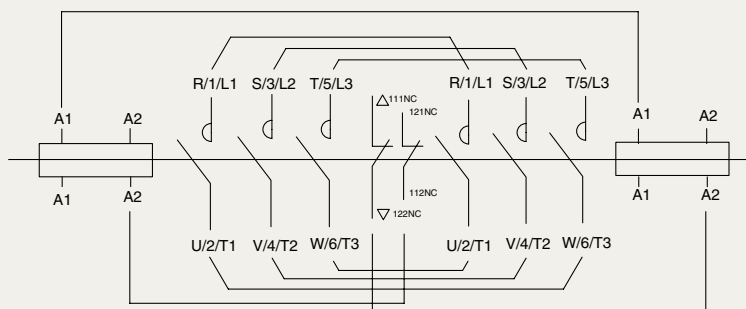
Wire kit, UW

UW is used for making reversing circuit between two contactors.

Contactor	Wire kit		Interlock unit	
	Type	Weight	Type	Weight
MC-6a~18a	UW-18	0.05kg	UR-02	0.06kg
MC-9b~22b	UW-22	0.04kg		
MC-32a~40a	UW-32	0.05kg		
MC-50a, 65a	UW-63	0.12kg		
MC-75a~100a	UW-95	0.33kg		

Rating of the contacts in the interlocks

Rated operation voltage		600V
Rated insulation voltage		600V
Rated frequency		50/60Hz
Rated thermal current		10A
Rated operation current		
AC15 duty (A600)	120V	6A
	240V	3A
	380V	1.9A
	480V	1.5A
	500V	1.4A
	600V	1.2A
DC13 duty (Q300)	125V	0.55A
	250V	0.27A



Typical circuit diagram for reversing contactor



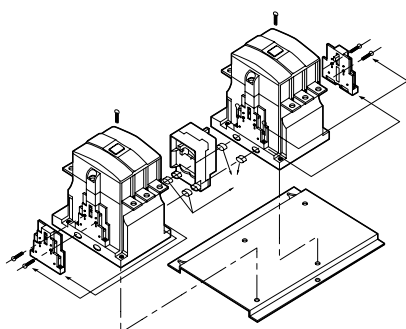
AR-180

Interlock unit, AR-180 and AR-600

AR-180 and AR-600 are mechanical interlock units in which electrical contacts for use in electrical interlocking are not included. Please use the auxiliary contacts on the sides of the contactors for that purpose.

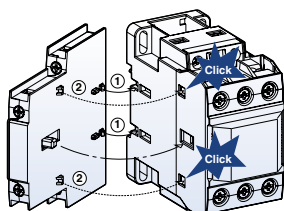


AR-600

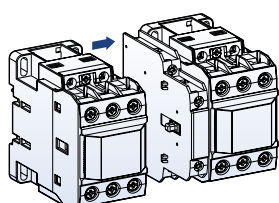


Contactor	Interlock unit	
	Type	Weight
MC-180a MC-225a MC-265a MC-330a MC-400a	AR-180	0.09kg
MC-500a MC-630a MC-800a	AR-600	15.2kg

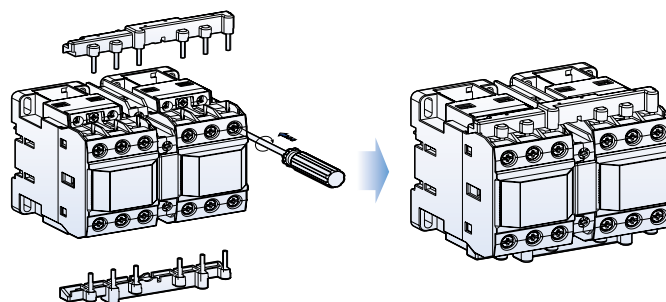
Installation of Interlock and Wire kits



Install the interlock unit on the side of a contactor first. Fit each part as indicated in the fig.



And then install the other contactor on the other side of the interlock unit as shown.



After installing interlock unit wiring kit can be assembled.

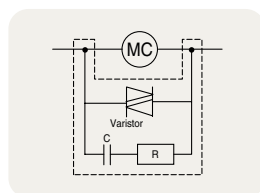
Wiring kit contains two molded wires - one for line side and the other for load side.

Accessory

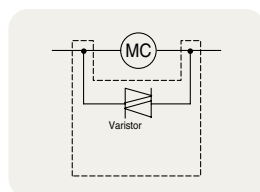
Surge unit

It absorbs the surge arisen out of the coil of the contactor.
It can be installed simply to the contactor.

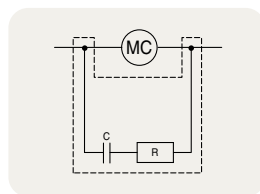
- Rated operation voltage (Ue): AC 24 ~ 440V
DC 24 ~ 125V
- Rated insulation voltage (Ui): 1000V
- Rated impulse withstand voltage (Uimp): 8kV
- Degree of protection: IP20



US-1~6



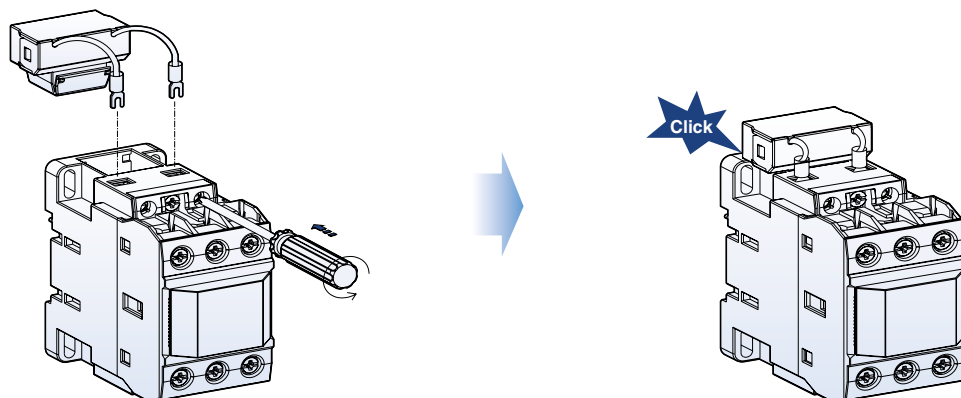
US-11~14



US-22

Surge unit		Rated voltage		Internal elements spec.			Weight
Type	Composition			V	R	C	
US-1	Varistor+RC	AC	24~48V	120V	100 Ω	0.1 μF	29g
US-2	Varistor+RC		100~125V	270V	100 Ω	0.1 μF	
US-3	Varistor+RC		200~240V	470V	100 Ω	0.1 μF	
US-4	Varistor+RC	DC	24~48V	120V	100 Ω	0.47 μF	
US-5	Varistor+RC		100~125V	270V	100 Ω	0.47 μF	
US-6	Varistor+RC		200~220V	470V	100 Ω	0.47 μF	
US-11	Varistor	AC/DC common	24~48V	120V	-	-	
US-12	Varistor		100~125V	270V	-	-	
US-13	Varistor		200~240V	470V	-	-	
US-14	Varistor		380~440V	1000V	-	-	
US-22	RC	AC	100~125V	-	56 Ω	1 μF	

Installation



Connect the lead wires to the coil terminals of the contactor first.
And then insert the body into the space of the contactor as shown above.

Capacitor unit

Capacitor unit is connected to the terminals of the contactor to reduce the high inrush current.



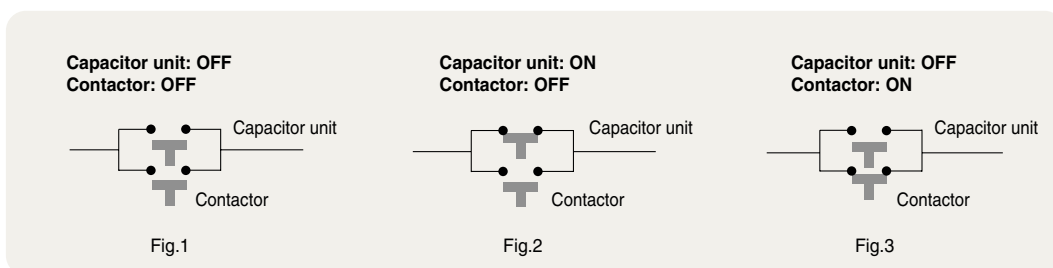
Type	Contactor	Maximum operating power (kvar)			Rated current (A)
		220 ~ 240V	400 ~ 440V	500 ~ 550V	
AC-9	MC-9a/9b(D)	5	9.7	14	14
	MC-12a/12b(D)	6.7	12.5	18	18
	MC-18a/18b(D)	8.5	16.7	24	24
	MC-22b(D)	10	18	26	26
	MC-32a(D)	15	25	36	36
	MC-40a(D)	20	33.3	48	48
AC-50	MC-50a(D)	20	40	58	58
	MC-65a(D)	25	45.7	66	66
	MC-75a(D)	29.7	54	78	78
	MC-85a(D)	35	60	92	92
	MC-100a(D)	37	62	94	94

Note) - When the switch is closed condenser must be discharged before recharged. (Maximum residual voltage at terminals $\leq 50V$)
 - To prevent short current, gG type fuse must be 1.5~2 times than rated current.

Features of capacitor unit (Pre-loading resistor)

- Damping resistor that can limit the inrush current upto $60 \times I_n$ is connected to the mechanism that closed earlier than the main contact of the contactor
- No heat loss by the serial resistor
- Eliminate the switching surge
- Improving the performance of the capacitor system

Operation sequence



Note) Closing sequence: Fig.1 => Fig.2 => Fig.3
 Opening sequence: Fig.3 => Fig.1

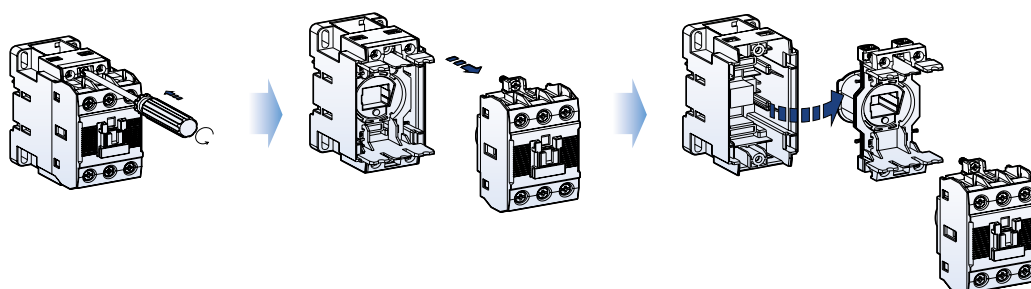
Replacement coils

To replace the existing coil to change voltage or repair.

Contactor	Coil voltage							
	AC coil						DC coil	
	AC 60Hz (V)		AC 50Hz (V)		AC 50/60Hz (V)		DC (V)	
MC-6a MC-9a MC-12a MC-18a	24	230	24	230	24	240	12	110
	48	240	36	240	48	380	20	125
	100	277	42	380	100	415	24	200
	110	380	48	400	110	440	48	220
	120	440	80	415	120	500	60	250
	200	480	100	440	200	550	80	
	208	600	110	500	220		100	
	220		220	550	230			
MC-9b MC-12b MC-18b MC-22b	24	230	24	230	24	240	12	110
	48	240	36	240	48	380	20	125
	100	277	42	380	100	415	24	200
	110	380	48	400	110	440	48	220
	120	440	80	415	120	500	60	250
	200	480	100	440	200	550	80	
	208	600	110	500	220		100	
	220		220	550	230			
MC-32a MC-40a	24	230	24	230	24	240	12	110
	48	240	36	240	48	380	20	125
	100	277	42	380	100	415	24	200
	110	380	48	400	110	440	48	220
	120	440	80	415	120	500	60	250
	200	480	100	440	200	550	80	
	208	600	110	500	220		100	
	220		220	550	230			
MC-50a MC-65a	24	230	24	230	24	240	12	110
	48	240	36	240	48	380	20	125
	100	277	42	380	100	415	24	200
	110	380	48	400	110	440	48	220
	120	440	80	415	120	500	60	250
	200	480	100	440	200	550	80	
	208	600	110	500	220		100	
	220		220	550	230			
MC-75a MC-85a MC-100a	24	230	24	230	24	240	12	110
	48	240	36	240	48	380	20	125
	100	277	42	380	100	415	24	200
	110	380	48	400	110	440	48	220
	120	440	80	415	120	500	60	250
	200	480	100	440	200	550	80	
	208	600	110	500	220		100	
	220		220	550	230			
MC-130a MC-150a					24	300	24	110
					48	400	48	220
					110	500		
					220			



Replacement process



To replace the existing coil to change voltage or repair.

Contactor	Coil voltage	
	AC/DC common coil	AC coil
MC-185a MC-225a	24 48 100~240/100~220	300 400 500
MC-265a MC-300a MC-400a	100~240/100~220	300 400 500
MC-500a MC-630a MC-800a	100/100 200/200	300 400 500



Safety cover (Option)

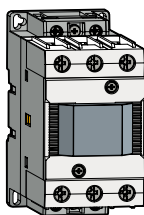
To prevent arc from coming out from the contactor

To protect from unintended manual operation

To prevent dust from entering into the inside of the contactor



Type	Contactor
AP-9	All types



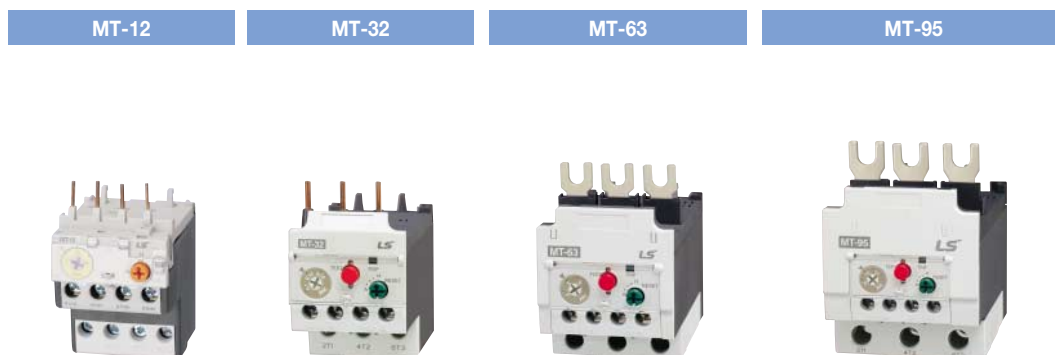
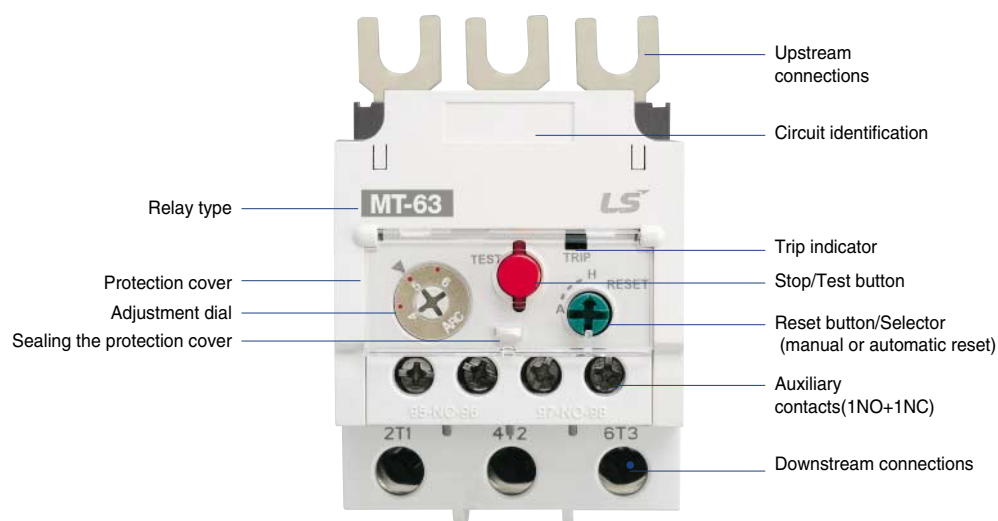
General descriptions

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

Four versions are available according to the protection function and trip class as below.

1. Non-differential: 3pole-2bimetal(heater) and trip class 10A
2. Non-differential: 3pole-3bimetal(heater) and trip class 10A
3. Differential: 3pole-3bimetal(heater) and trip class 10A
4. Differential: 3pole-3bimetal(heater) and trip class 20

Configuration of the front



Environment and auxiliary circuit

Environment			MT-12~150	MT-225~800
Standards			IEC/EN 60947-1, IEC/EN 60947-4-1	IEC/EN 60947-1, IEC/EN 60947-4-1
Certifications			CE, CSA, UL	CE, CSA, UL
Rated operation voltage			Max. 690V	Max. 690V
Rated insulation voltage			690V	690V
Rated frequency			50/60Hz	50/60Hz
Degree of protection (Conforming to IEC 60 529)			IP 20	IP 20
Ambient air temperature	Storage		-55 ~ +80° C	-55 ~ +80° C
	Operation		-5 ~ +60° C	-5 ~ +60° C
Mounting position			Vertical plane	Vertical plane
Shock resistance (Conforming to IEC 68-2-7)			15gn - 11ms	15gn - 11ms
Vibration resistance (Conforming to IEC68-2-6)			6G	6G
Insulation strength (Conforming to IEC 255-5)			6kV	6kV
Rated impulse withstand voltage (Conforming to IEC 801-5)			6kV	6kV
Auxiliary contacts characteristics				
Composition			1a1b (1NO +1NC)	1NO+1NC
Rated thermal current			5A	5A
Rated operation current			C600, R300	C600, R300
AC15 duty (C600)	120V		1.5A	2.5A
	240V		0.75A	2A
	380V		0.47A	0.47A
	480V		0.375A	0.375A
	500V		0.35A	0.35A
	600V		0.3A	1A
DC13 duty (R300)	120V		0.22A	0.28A
	240V		0.1A	0.14A
Connecting conductor	Size		18AWG /1 mm ²	18AWG /1 mm ²
Connection to screw clamp terminals	Type		65/75°C Cu-wire	65/75°C Cu-wire

MT-150



MT-225



MT-400



MT-800



MT type Thermal Overload Relays

MT-12/3K ☐

Frame size		
Trip class		
Type	Non-differential(3P-2 heater)	
	Non-differential(3P-3 heater)	
	Differential type	
Terminal type		
Number of poles		
Rated operational voltage (Ue)		
Rated insulation voltage (Ui)		
Rated impulse voltage (Uimp)		
Degree of protection (IEC 60 529)		
Temperature compensation (°C)		
Functions	Trip indicating	
	Stop	
	Test	
	Manual/Automatic Reset	
Setting range(A)		
Nominal current rating	Wire size	
	mm²	AWG
0.14	1	18
0.21		
0.33		
0.52		
0.82		
1.3		
2.1		
3.3		
5		
6.5		
7.5	1~1.5	18~16
8.5		
11	1.5~2.5	16~14
15	2.5	14~12
19	2.5~4	12~10
21.5		
27	4~6	10
30	4~10	10~8
34	6~10	10~8
42	10	8
54		
65	16~25	6~4
74		
83	25~35	4~3
90		
Applied contactors		
Separate mounting unit		

[illegible]



MT-32/3K□

40AF

10A	20
MT-32/2H□	-
MT-32/3H□	-
MT-32/3K□	MT-32/3D□
Screw clamp	
3	
690V	
Up to 690V	
6kV	
IP 20	
-5~+40°C	
■	
■	
■	
■	
0.1~40A	1~40A
0.1~0.16	
0.16~0.25	
0.25~0.4	
0.4~0.63	
0.63~1	
1~1.6	1~1.6
1.6~2.5	1.6~2.5
2.5~4	2.5~4
4~6	4~6
5~8	5~8
6~9	6~9
7~10	7~10
9~13	9~13
12~18	12~18
16~22	16~22
18~25	18~25
22~32	22~32
-	-
28~40	28~40
MC-9b, 12b, 18b, 22b, 32a, 40a	
UZ-32	



MT-63/3K□S

65AF

10A	20
MT-63/2H□S	-
MT-63/3H□S	-
MT-63/3K□S	MT-63/3D□S
Screw clamp	
3	
690V	
Up to 690V	
6kV	
IP 20	
-5~+40°C	
■	
■	
■	
■	
4~65A	
4~6	4~6
5~8	5~8
6~9	6~9
7~10	7~10
9~13	9~13
12~18	12~18
16~22	16~22
18~25	18~25
-	-
24~36	24~36
28~40	28~40
34~50	34~50
45~65	45~65
MC-50a, 65a	
UZ-63/S	



MT-95/3K□S

100AF

10A	20
MT-95/2H□S	-
MT-95/3H□S	-
MT-95/3K□S	MT-95/3D□S
Screw clamp	
3	
690V	
Up to 690V	
6kV	
IP 20	
-5~+40°C	
■	
■	
■	
■	
7~100A	
7~10	7~10
9~13	9~13
12~18	12~18
16~22	16~22
18~25	18~25
-	-
24~36	24~36
28~40	28~40
34~50	34~50
45~65	45~65
54~75	54~75
63~85	63~85
70~95	70~95
80~100	80~100
MC-75a, 85a, 100a	
UZ-95/S	

Overload relay specifications

MT type Thermal Overload Relays



Frame size		
Trip class		
Type	Non-differential(3P-2 heater)	
	Non-differential(3P-3 heater)	
	Differential type	
Terminal type		
Number of poles		
Rated operational voltage (Ue)		
Rated insulation voltage (Ui)		
Rated impulse voltage (Uimp)		
Degree of protection (IEC 60 529)		
Temperature compensation (° C)		
Functions	Trip indicating	
	Stop	
	Test	
	Manual/Automatic Reset	
Setting range(A)		
Nominal current rating	Wire size	
	mm²	AWG
42	10	8
55	16	6
65	25	4
74	25	4
80	35	3
93	35	2
107	50	1
113	50	1
130	50	0
130	70	00
153	95	000
200	120	250
265	185	350
350	240	500
515	185 × 2n	350 × 2n
660	240 × 2n	300 × 3n
Applied contactors		
Separate mounting unit		

150AF	
10A	20
MT-150/2H□	-
MT-150/3H□	-
MT-150/3K□	MT-150/3D□
Screw clamp	
3	
690V	
690V	
6kV	
IP 20	
-5~+40°C	
■	
■	
■	
■	
34~150A	34~150A
34~50	
45~65	
54~75	
63~85	
-	
80~105	
-	
95~130	
110~150	
MC-130a, 150a	
UZ-150/S	

**225AF**

10A	20
MT-225/2H□	-
MT-225/3H□	-
MT-225/3K□	MT-225/3D□

Screw clamp

3
690V
690V
6kV
IP 20
-5~+40°C
■
■
■
■

65~240A	65~240A
---------	---------

65~100
-
85~125
-
-
100~160
120~185
160~240

MC-185a, 225a
-

**400AF**

10A	20
MT-400/2H□S	-
MT-400/3H□S	-
MT-400/3K□S	MT-400/3D□S

Screw clamp

3
690V
690V
6kV
IP 20
-5~+40°C
■
■
■
■

85~400A	85~400A
---------	---------

85~125
-
-
100~160
120~185
160~240
200~330
260~400

MC-265a, 330a, 400a
-

**800AF**

10A	20
MT-800/2H□S	-
MT-800/3H□S	-
MT-800/3K□S	MT-800/3D□S

Screw clamp

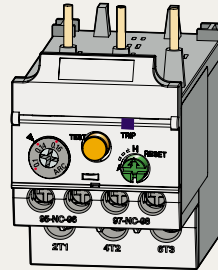
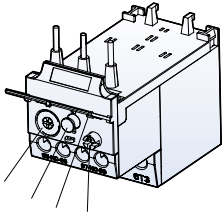
3
690V
690V
6kV
IP 20
-5~+40°C
■
■
■
■

200~800A	200~800A
----------	----------

200~300
260~400
400~600
520~800

MC-500a, 630a, 800a
-

Overload relay operation

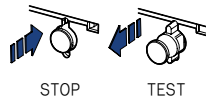


1. Adjustment dial



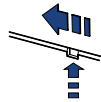
Before adjusting the dial open the protection cover.
Current setting can be done easily by using (+) or (-) driver.
Do not rotate the dial out of the setting range.

2. Stop/Test button



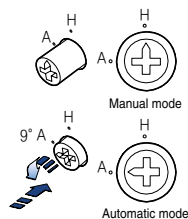
STOP function is executed by pushing the button, which causes the next sequence.
In case of operation test pull this button.

3. Trip indicator



If relay is tripped it comes out.

4. Reset button/Selector



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

5. Auxiliary contact operation

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

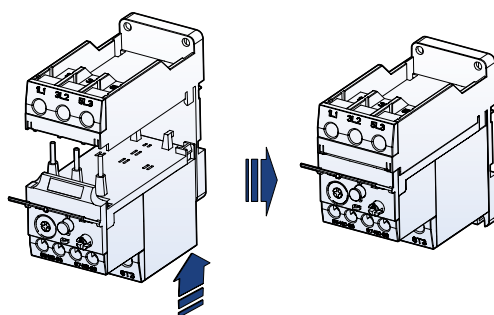
Accessories for overload relay

Separate mounting units

These accessories are used to mount the relays separately from contactors. If a relay is combined with a unit, it can be mounted on DIN rail or panel by fixing screws.



Relay	Unit	
	Type	Weight
MT-32/2H□ MT-32/3H□ MT-32/3K□ MT-32/3D□	UZ-32	38g
MT-63/2H□S MT-63/3H□S MT-63/3K□S MT-63/3D□S	UZ-63/S	134g
MT-95/2H□S MT-95/3H□S MT-95/3K□S MT-95/3D□S	UZ-95/S	230g
MT-150/2H□ MT-150/3H□ MT-150/3K□ MT-150/3D□	UZ-150/S	284g



Terminal cover units for overload relays



Relay	Unit type	Remarks
MT-225	APT-225	2 pcs included
MT-400	APT-400	
MT-800	APT-600	

Accessories for overload relay

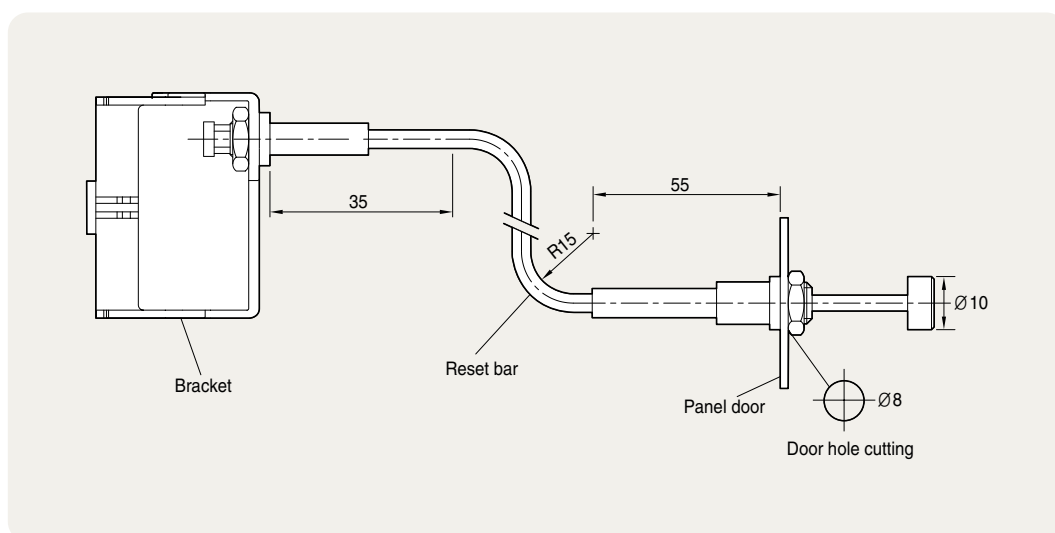
Remote reset units

These accessories are used to reset the relays on the panel door.



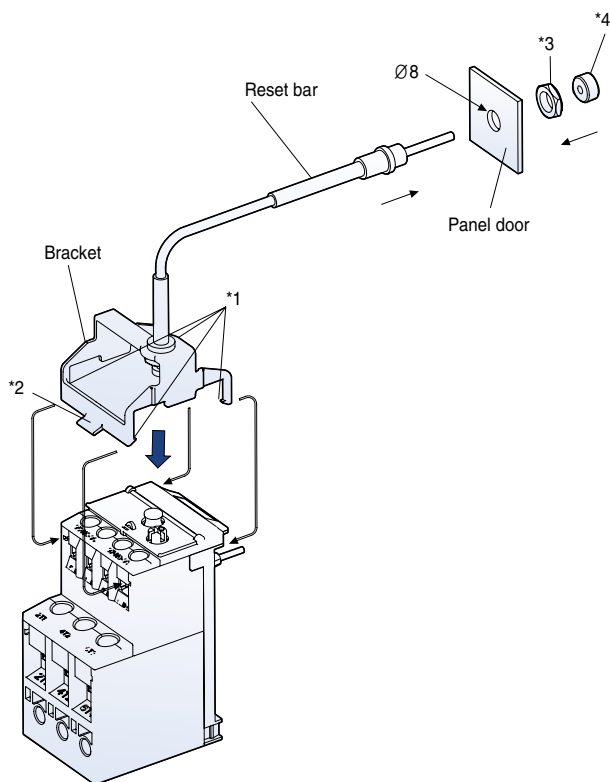
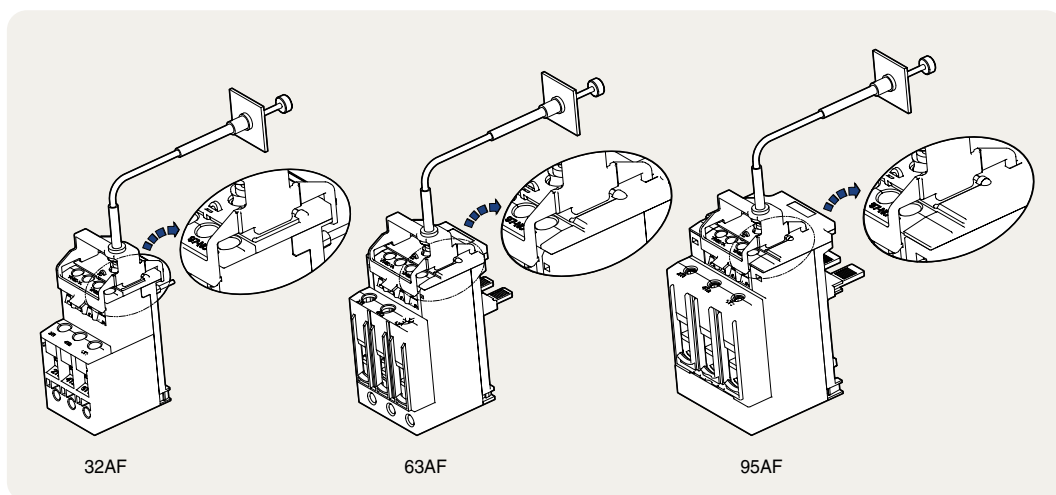
Type	Cable length (L)
UM-4R	400 mm
UM-5R	500 mm
UM-6R	600 mm

1. Make the reset bar straight at least 55mm from the panel door and 35mm from the bracket.
2. The bending radius of the flexible reset bar should not be less than 15mm.



Installation

1. Fit the bracket with the relay as indicated(*1) below.
2. Separate Nut(*3) and Head cap(*4) from the reset bar first.
Insert the reset bar into the panel hole and then fix it with the Nut and Head.
3. To separate the bracket from the relay lift the *2 part as shown in the fig.



Overload relay ordering types

Trip class 10A

Direct mounting type



MT-12/□

Setting range (A)	Ordering type			Contactor	Separate mounting unit
	Non-differential (3P-2 heater)	Non-differential (3P-3 heater)	Differential		
0.1~0.16	MT-12/2H0.14	MT-12/3H0.14	MT-12/3K0.14	MC-6a MC-9a MC-12a MC-18a	
0.16~0.25	MT-12/2H0.21	MT-12/3H0.21	MT-12/3K0.21		
0.25~0.4	MT-12/2H0.33	MT-12/3H0.33	MT-12/3K0.33		
0.4~0.63	MT-12/2H0.52	MT-12/3H0.52	MT-12/3K0.52		
0.63~1	MT-12/2H0.82	MT-12/3H0.82	MT-12/3K0.82		
1~1.6	MT-12/2H1.3	MT-12/3H1.3	MT-12/3K1.3		
1.6~2.5	MT-12/2H2.1	MT-12/3H2.1	MT-12/3K2.1		
2.5~4	MT-12/2H3.3	MT-12/3H3.3	MT-12/3K3.3		
4~6	MT-12/2H5	MT-12/3H5	MT-12/3K5		
5~8	MT-12/2H6.5	MT-12/3H6.5	MT-12/3K6.5		
6~9	MT-12/2H7.5	MT-12/3H7.5	MT-12/3K7.5		
7~10	MT-12/2H8.5	MT-12/3H8.5	MT-12/3K8.5		
9~13	MT-12/2H11	MT-12/3H11	MT-12/3K11		
12~18	MT-12/2H15	MT-12/3H15	MT-12/3K15		



MT-32/□

Setting range (A)	Ordering type			Contactor	Separate mounting unit
	Non-differential (3P-2 heater)	Non-differential (3P-3 heater)	Differential		
0.1~0.16	MT-32/2H0.14	MT-32/3H0.14	MT-32/3K0.14	MC-9b MC-12b MC-18b MC-22b MC-32a MC-40a	UZ-32
0.16~0.25	MT-32/2H0.21	MT-32/3H0.21	MT-32/3K0.21		
0.25~0.4	MT-32/2H0.33	MT-32/3H0.33	MT-32/3K0.33		
0.4~0.63	MT-32/2H0.52	MT-32/3H0.52	MT-32/3K0.52		
0.63~1	MT-32/2H0.82	MT-32/3H0.82	MT-32/3K0.82		
1~1.6	MT-32/2H1.3	MT-32/3H1.3	MT-32/3K1.3		
1.6~2.5	MT-32/2H2.1	MT-32/3H2.1	MT-32/3K2.1		
2.5~4	MT-32/2H3.3	MT-32/3H3.3	MT-32/3K3.3		
4~6	MT-32/2H5	MT-32/3H5	MT-32/3K5		
5~8	MT-32/2H6.5	MT-32/3H6.5	MT-32/3K6.5		
6~9	MT-32/2H7.5	MT-32/3H7.5	MT-32/3K7.5		
7~10	MT-32/2H8.5	MT-32/3H8.5	MT-32/3K8.5		
9~13	MT-32/2H11	MT-32/3H11	MT-32/3K11		
12~18	MT-32/2H15	MT-32/3H15	MT-32/3K15		
16~22	MT-32/2H19	MT-32/3H19	MT-32/3K19		
18~25	MT-32/2H21.5	MT-32/3H21.5	MT-32/3K21.5		
22~32	MT-32/2H27	MT-32/3H27	MT-32/3K27		
28~40	MT-32/2H34	MT-32/3H34	MT-32/3K34		
					UZ-32(34A)

Trip class 10A

Direct mounting type



MT-63/□

Setting range (A)	Ordering type			Contactor	Separate mounting unit
	Non-differential (3P-2 heater)	Non-differential (3P-3 heater)	Differential		
4~6	MT-63/2H5S	MT-63/3H5S	MT-63/3K5S	MC-50a MC-65a	UZ-63/S
5~8	MT-63/2H6.5S	MT-63/3H6.5S	MT-63/3K6.5S		
6~9	MT-63/2H7.5S	MT-63/3H7.5S	MT-63/3K7.5S		
7~10	MT-63/2H8.5S	MT-63/3H8.5S	MT-63/3K8.5S		
9~13	MT-63/2H11S	MT-63/3H11S	MT-63/3K11S		
12~18	MT-63/2H15S	MT-63/3H15S	MT-63/3K15S		
16~22	MT-63/2H19S	MT-63/3H19S	MT-63/3K19S		
18~25	MT-63/2H21.5S	MT-63/3H21.5S	MT-63/3K21.5S		
24~36	MT-63/2H30S	MT-63/3H30S	MT-63/3K30S		
28~40	MT-63/2H34S	MT-63/3H34S	MT-63/3K34S		
34~50	MT-63/2H42S	MT-63/3H42S	MT-63/3K42S		
45~65	MT-63/2H55S	MT-63/3H55S	MT-63/3K55S		



MT-95/□

Setting range (A)	Ordering type			Contactor	Separate mounting unit
	Non-differential (3P-2 heater)	Non-differential (3P-3 heater)	Differential		
7~10	MT-95/2H8.5S	MT-95/3H8.5S	MT-95/3K8.5S	MC-75a MC-85a MC-100a	UZ-95/S
9~13	MT-95/2H11S	MT-95/3H11S	MT-95/3K11S		
12~18	MT-95/2H15S	MT-95/3H15S	MT-95/3K15S		
16~22	MT-95/2H19S	MT-95/3H19S	MT-95/3K19S		
18~25	MT-95/2H21.5S	MT-95/3H21.5S	MT-95/3K21.5S		
24~36	MT-95/2H30S	MT-95/3H30S	MT-95/3K30S		
28~40	MT-95/2H34S	MT-95/3H34S	MT-95/3K34S		
34~50	MT-95/2H42S	MT-95/3H42S	MT-95/3K42S		
45~65	MT-95/2H55S	MT-95/3H55S	MT-95/3K55S		
54~75	MT-95/2H65S	MT-95/3H65S	MT-95/3K65S		
63~85	MT-95/2H74S	MT-95/3H74S	MT-95/3K74S		
70~95	MT-95/2H83S	MT-95/3H83S	MT-95/3K83S		
80~100	MT-95/2H90S	MT-95/3H90S	MT-95/3K90S		

Overload relay ordering types

Trip class 10A



MT-150



MT-150/□

Setting range (A)	Ordering type			Contactor	Separate mounting unit
	Non-differential		Differential		
	(3P-2 heater)	(3P-3 heater)			
34~50	MT-150/2H42	MT-150/3H42	MT-150/3K42	MC-130a MC-150a	UZ-150/S
45~65	MT-150/2H55	MT-150/3H55	MT-150/3K55		
54~75	MT-150/2H65	MT-150/3H65	MT-150/3K65		
63~85	MT-150/2H74	MT-150/3H74	MT-150/3K74		
80~105	MT-150/2H93	MT-150/3H93	MT-150/3K93		
95~130	MT-150/2H113	MT-150/3H113	MT-150/3K113		
110~150	MT-150/2H130	MT-150/3H130	MT-150/3K130		

MT-225



MT-225/□

Setting range (A)	Ordering type			Contactor	Remarks
	Non-differential		Differential		
	(3P-2 heater)	(3P-3 heater)			
65~100	MT-225/2H80	MT-225/3H80	MT-225/3K80	MC-185a MC-225a	-
85~125	MT-225/2H107	MT-225/3H107	MT-225/3K107		
100~160	MT-225/2H130	MT-225/3H130	MT-225/3K130		
120~185	MT-225/2H153	MT-225/3H153	MT-225/3K153		
160~240	MT-225/2H200	MT-225/3H200	MT-225/3K200		

MT-400



MT-400/□

Setting range (A)	Ordering type			Contactor	Remarks
	Non-differential		Differential		
	(3P-2 heater)	(3P-3 heater)			
85~125	MT-400/2H107	MT-400/3H107	MT-400/3K107	MC-265a MC-330a MC-400a	-
100~160	MT-400/2H130	MT-400/3H130	MT-400/3K130		
120~185	MT-400/2H153	MT-400/3H153	MT-400/3K153		
160~240	MT-400/2H200	MT-400/3H200	MT-400/3K200		
200~330	MT-400/2H265	MT-400/3H265	MT-400/3K265		
260~400	MT-400/2H350	MT-400/3H350	MT-400/3K350		

MT-800



MT-800/□

Setting range (A)	Ordering type			Contactor	Remarks
	Non-differential		Differential		
	(3P-2 heater)	(3P-3 heater)			
200~330	MT-800/2H265	MT-800/3H265	MT-800/3K265	MC-500a MC-630a MC-800a	-
260~400	MT-800/2H350	MT-800/3H350	MT-800/3K350		
400~630	MT-800/2H515	MT-800/3H515	MT-800/3K515		
520~800	MT-800/2H660	MT-800/3H660	MT-800/3K660		

Trip class 20

Direct mounting type



MT-12/3D□

Setting range (A)	Ordering type	Contactor	Separate mounting unit
	Differential		
1~1.6	MT-12/3D1.3	MC-6a MC-9a MC-12a MC-18a	-
1.6~2.5	MT-12/3D2.1		
2.5~4	MT-12/3D3.3		
4~6	MT-12/3D5		
5~8	MT-12/3D6.5		
6~9	MT-12/3D7.5		
7~10	MT-12/3D8.5		
9~13	MT-12/3D11		
12~18	MT-12/3D15		



MT-32/3D□

Setting range (A)	Ordering type	Contactor	Separate mounting unit
	Differential		
1~1.6	MT-32/3D1.3	MC-9b MC-12b MC-18b MC-22b MC-32a MC-40a	UZ-32
1.6~2.5	MT-32/3D2.1		
2.5~4	MT-32/3D3.3		
4~6	MT-32/3D5		
5~8	MT-32/3D6.5		
6~9	MT-32/3D7.5		
7~10	MT-32/3D8.5		
9~13	MT-32/3D11		
12~18	MT-32/3D15		
16~22	MT-32/3D19		
18~25	MT-32/3D21.5		
22~32	MT-32/3D27		
28~40	MT-32/3D34		
			UZ-32(34A)

Overload relay ordering types

Trip class 20

Direct mounting type



MT-63/3D□S

Setting range (A)	Ordering type	Contactor	Separate mounting unit
	Differential		
4~6	MT-63/3D5S	MC-50a MC-65a	UZ-63/S
5~8	MT-63/3D6.5S		
6~9	MT-63/3D7.5S		
7~10	MT-63/3D8.5S		
9~13	MT-63/3D11S		
12~18	MT-63/3D15S		
16~22	MT-63/3D19S		
18~25	MT-63/3D21.5S		
24~36	MT-63/3D30S		
28~40	MT-63/3D34S		
34~50	MT-63/3D42S		
45~65	MT-63/3D55S		



MT-95/3D□S

Setting range (A)	Ordering type	Contactor	Separate mounting unit
	Differential		
7~10	MT-95/3D8.5S	MC-75a MC-85a MC-100a	UZ-95/S
9~13	MT-95/3D11S		
12~18	MT-95/3DK15S		
16~22	MT-95/3D19S		
18~25	MT-95/3D21.5S		
24~36	MT-95/3D30S		
28~40	MT-95/3D34S		
34~50	MT-95/3D42S		
45~65	MT-95/3D55S		
54~75	MT-95/3D65S		
63~85	MT-95/3D74S		
70~95	MT-95/3D83S		
80~100	MT-95/3D90S		

Trip class 20



MT-150



MT-150/3D□

Setting range (A)	Ordering type	Contactor	Separate mounting unit
	Differential		
34~50	MT-150/3D42	MC-130a MC-150a	UZ-150/S
45~65	MT-150/3D55		
54~75	MT-150/3D65		
63~85	MT-150/3D74		
80~105	MT-150/3D93		
95~130	MT-150/3D113		
110~150	MT-150/3D130		

MT-225



MT-225/3D□

Setting range (A)	Ordering type	Contactor	Remarks
	Differential		
65~100	MT-225/3D80	MC-185a MC-225a	-
85~125	MT-225/3D107		
100~160	MT-225/3D130		
120~185	MT-225/3D153		
160~240	MT-225/3D200		

MT-400



MT-400/3D□

Setting range (A)	Ordering type	Contactor	Remarks
	Differential		
85~125	MT-400/3D107	MC-265a MC-330a MC-400a	-
100~160	MT-400/3D130		
120~185	MT-400/3D153		
160~240	MT-400/3D200		
200~330	MT-400/3D265		
260~400	MT-400/3D350		

MT-800



MT-800/3D□

Setting range (A)	Ordering type	Contactor	Remarks
	Differential		
200~330	MT-800/3D265	MC-500a MC-630a MC-800a	-
260~400	MT-800/3D350		
400~630	MT-800/3D515		
520~800	MT-800/3D660		

Overload relay trip curves

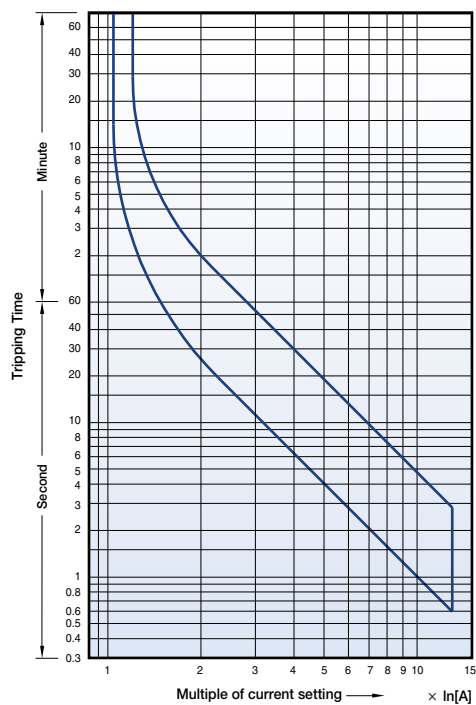
Class 10A, 18AF

MT-12/2H

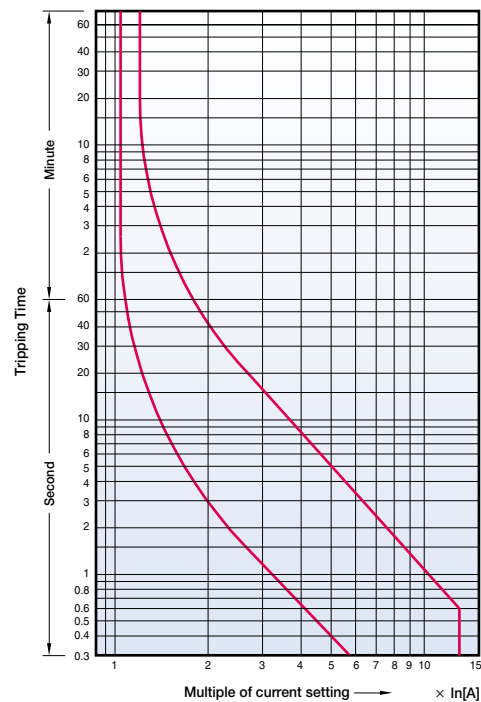
MT-12/3H

MT-12/3K

Cold starting



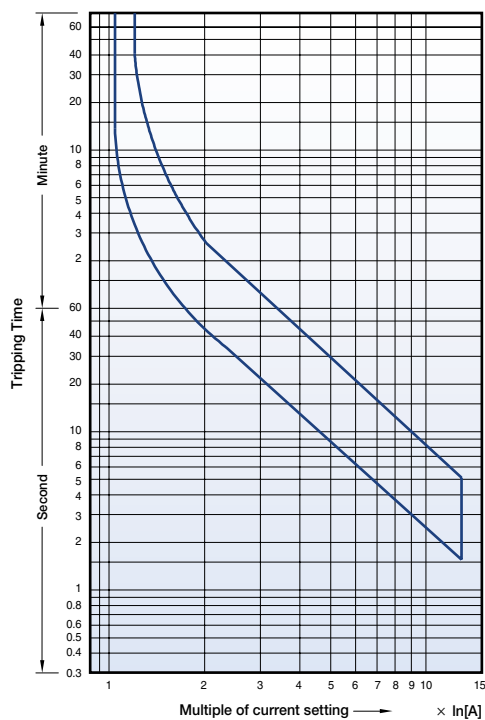
Hot starting



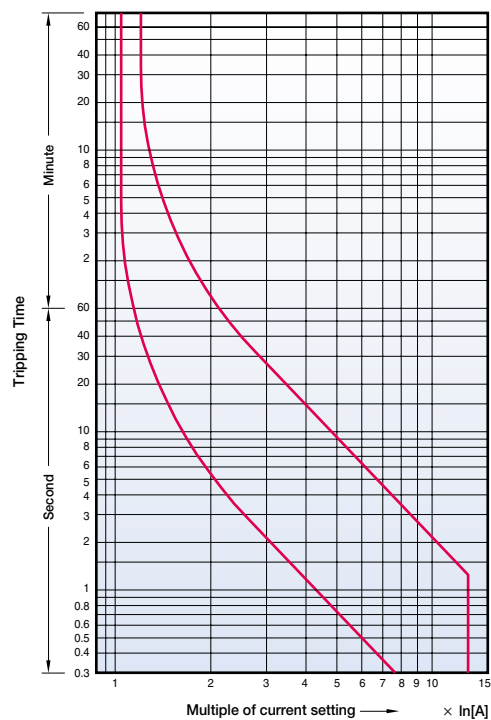
Class 20, 18AF

MT-12/3D

Cold starting



Hot starting



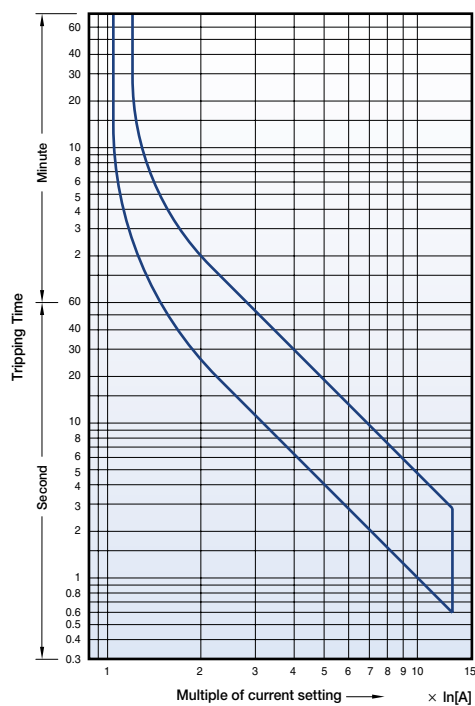
Class 10A, 40AF

MT-32/2H

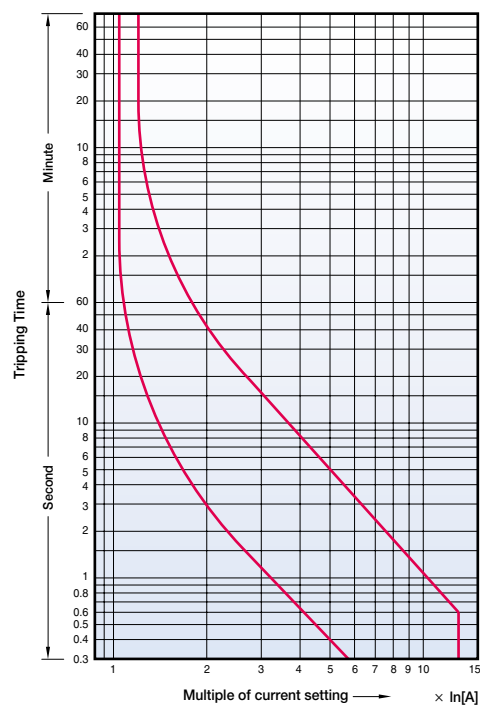
MT-32/3H

MT-32/3K

Cold starting



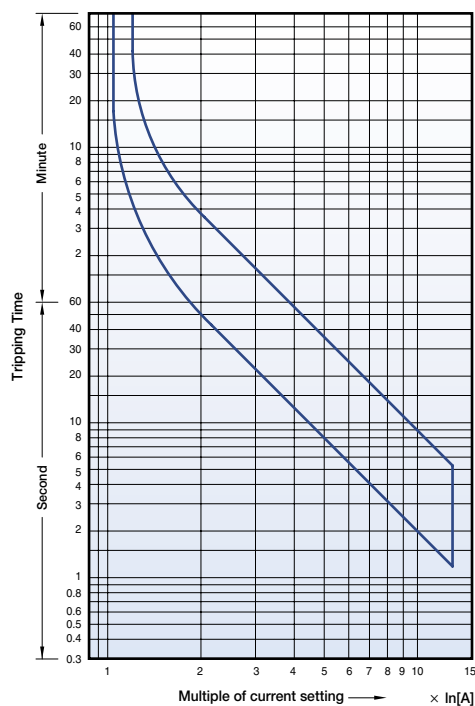
Hot starting



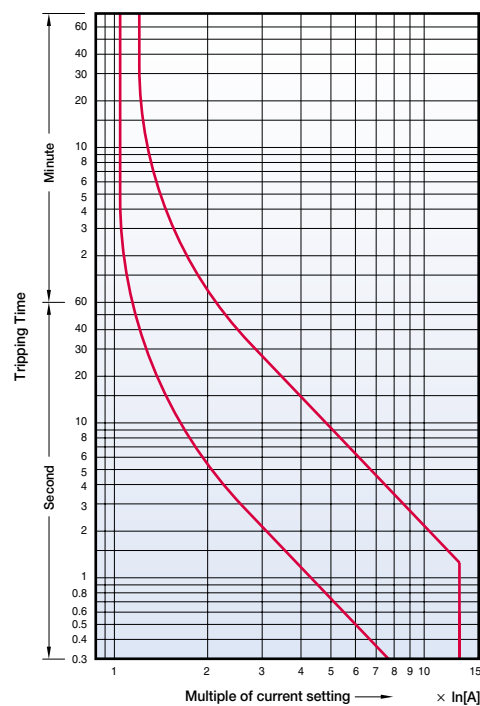
Class 20, 40AF

MT-32/3D

Cold starting



Hot starting



Overload relay trip curves

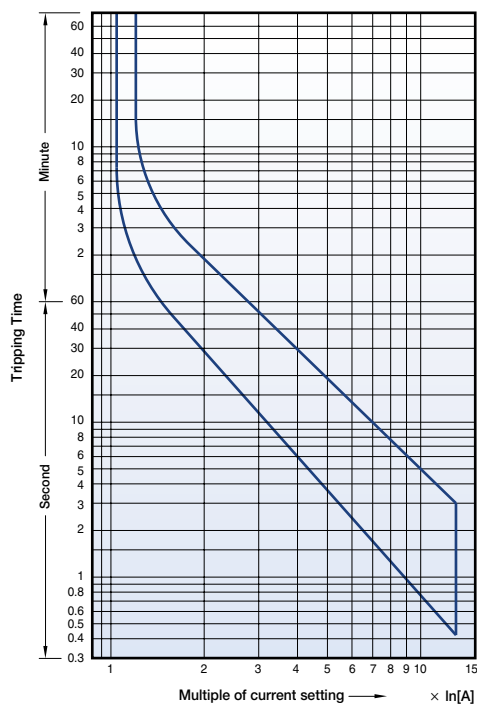
Class 10A, 65AF

MT-63/2H

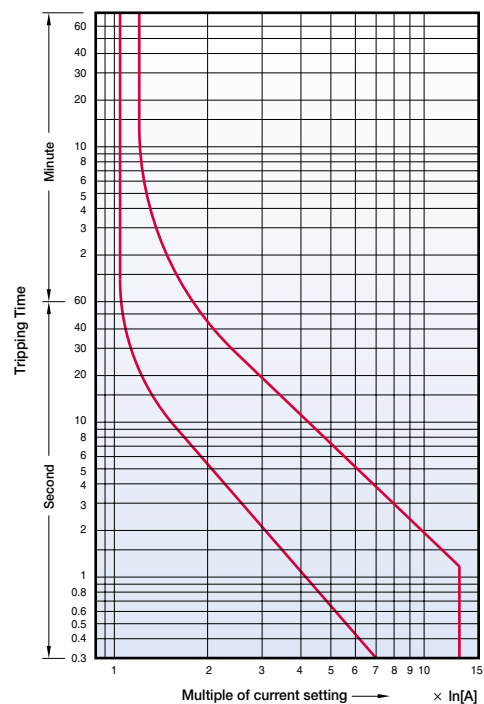
MT-63/3H

MT-63/3K

Cold starting



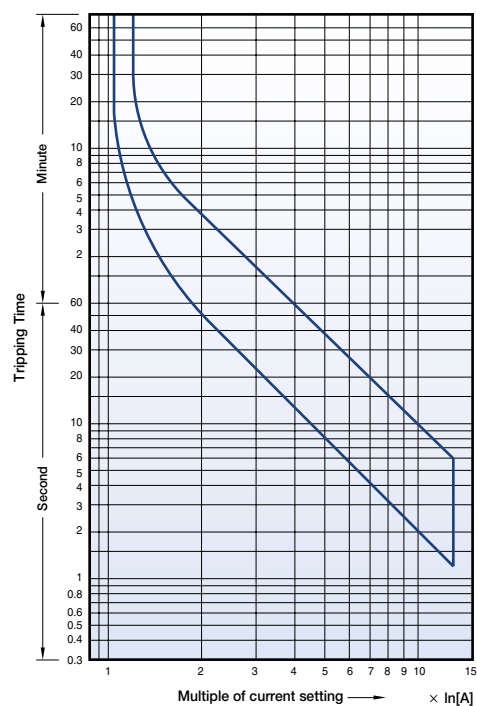
Hot starting



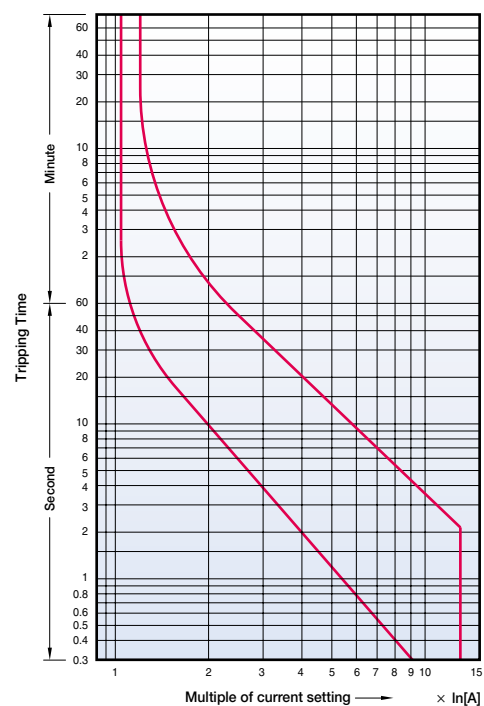
Class 20, 65AF

MT-63/3D

Cold starting



Hot starting



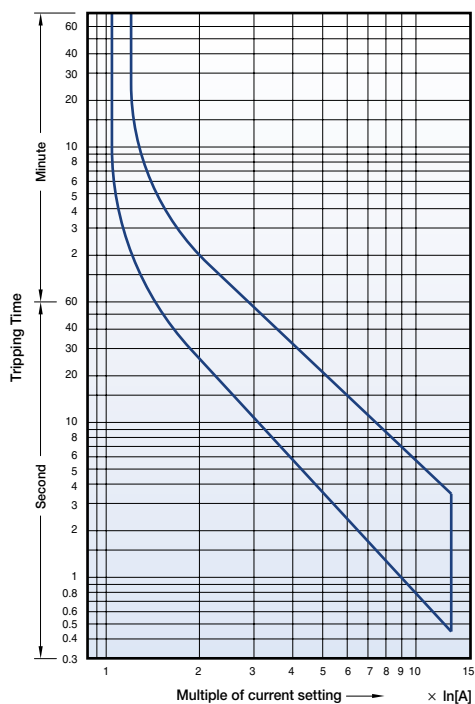
Class 10A, 100AF

MT-95/2H

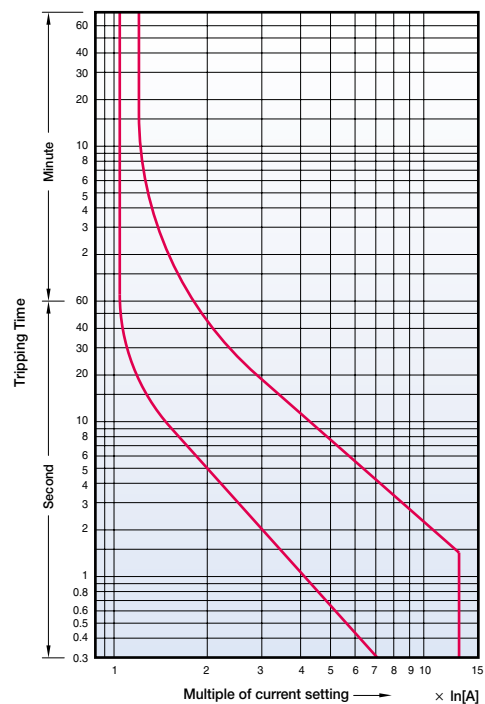
MT-95/3H

MT-95/3K

Cold starting



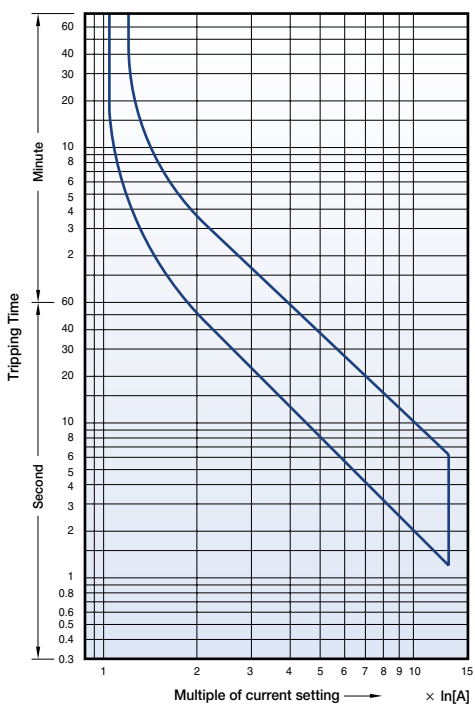
Hot starting



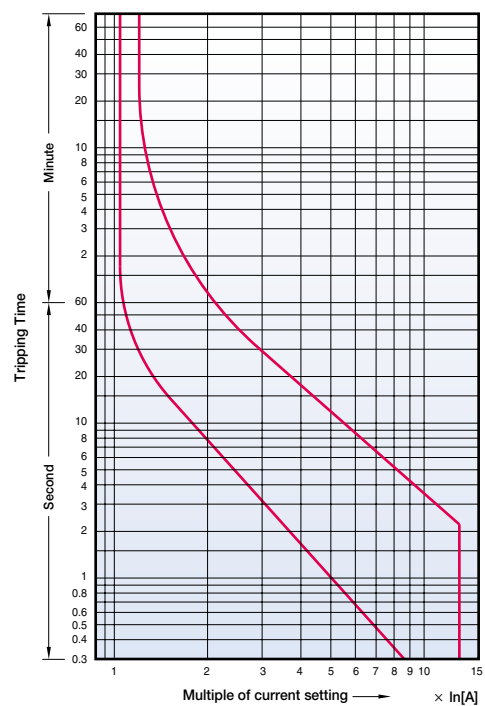
Class 20, 100AF

MT-95/3D

Cold starting



Hot starting



Overload relay trip curves

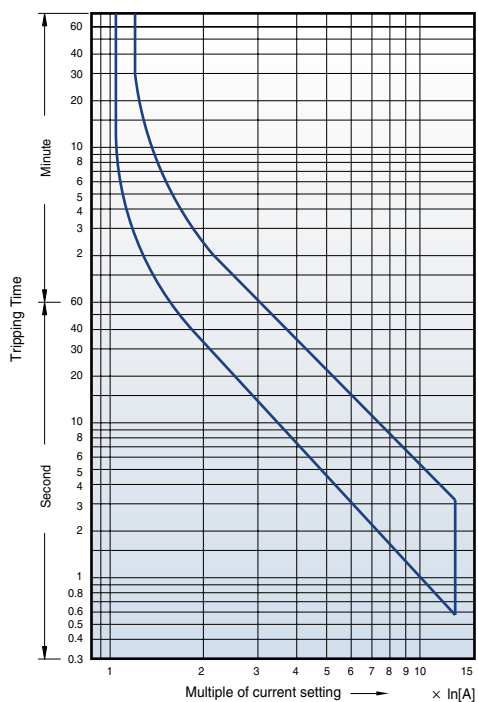
Class 10A, 150AF

MT-150/2H

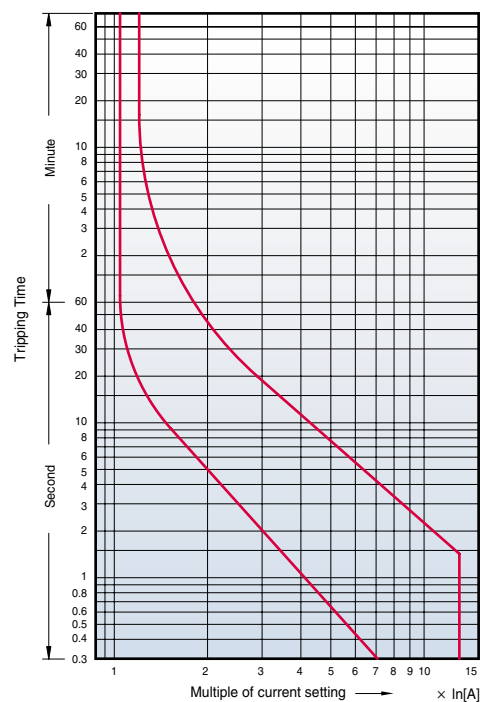
MT-150/3H

MT-150/3K

Cold starting



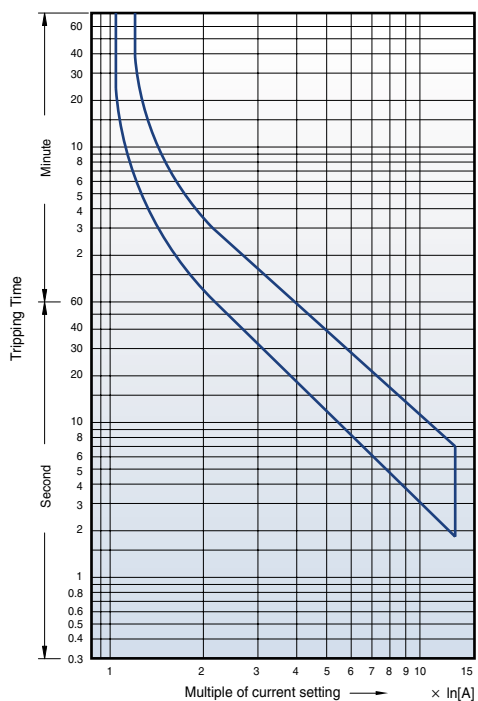
Hot starting



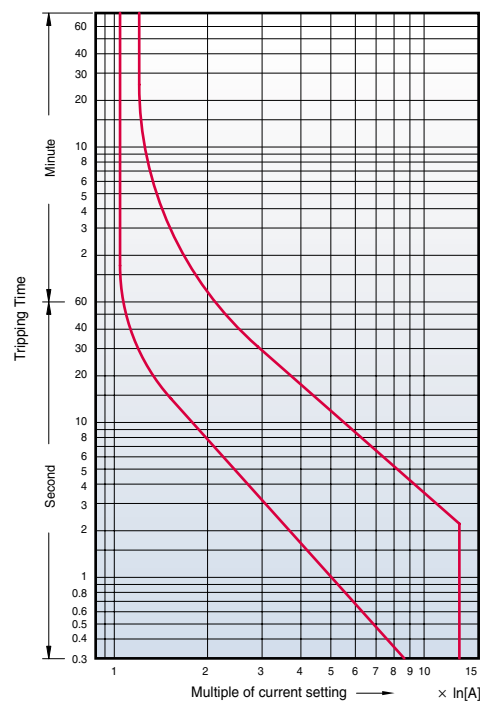
Class 20, 150AF

MT-150/3D

Cold starting



Hot starting



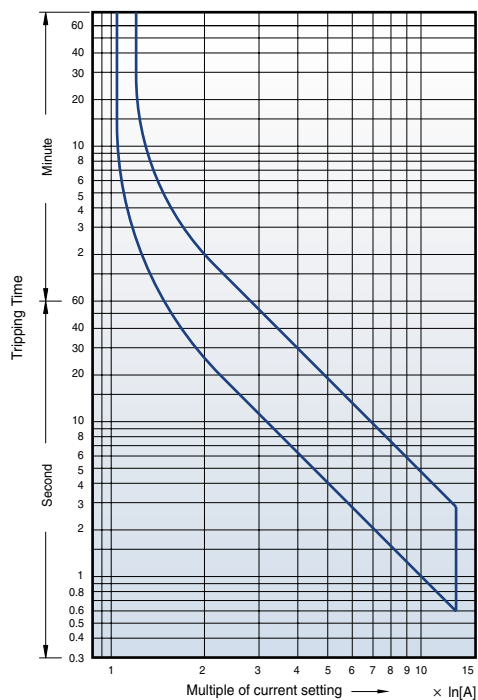
Class 10A, 225AF

MT-225/2H

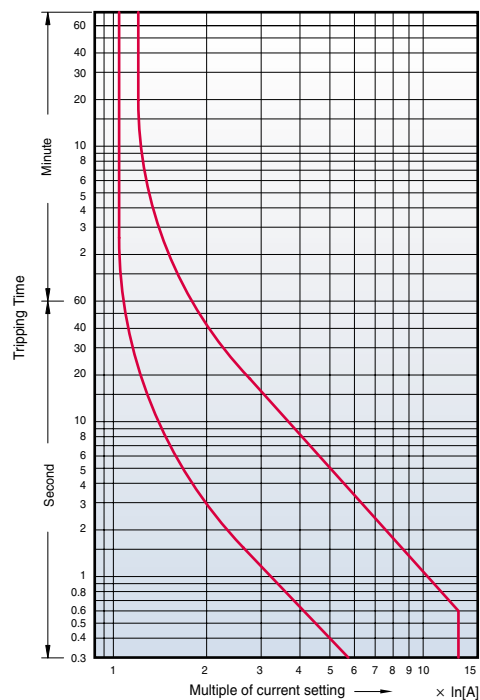
MT-225/3H

MT-225/3K

Cold starting



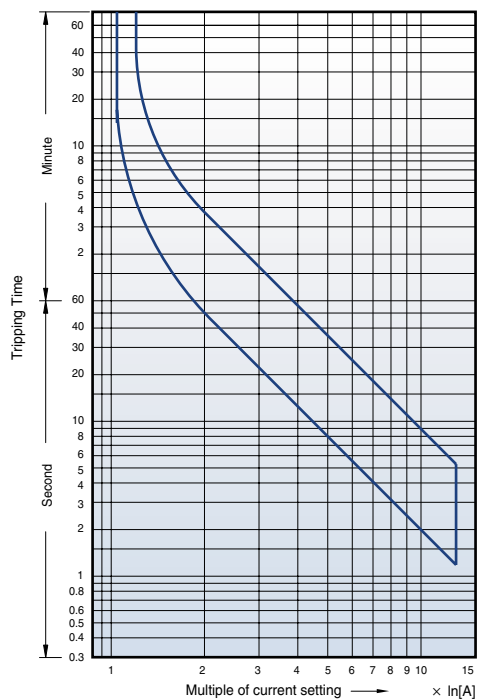
Hot starting



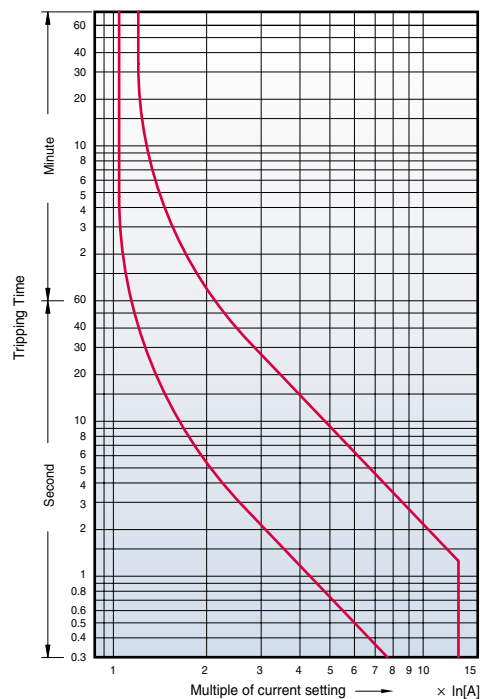
Class 20, 225AF

MT-225/3D

Cold starting



Hot starting



Overload relay trip curves

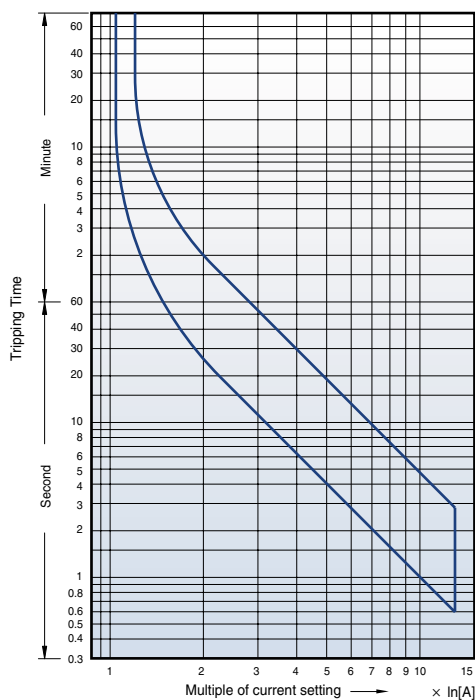
Class 10A, 400AF

MT-400/2H

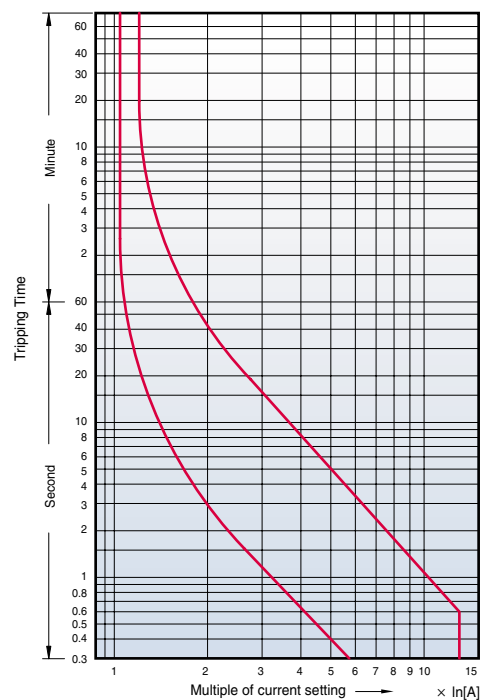
MT-400/3H

MT-400/3K

Cold starting



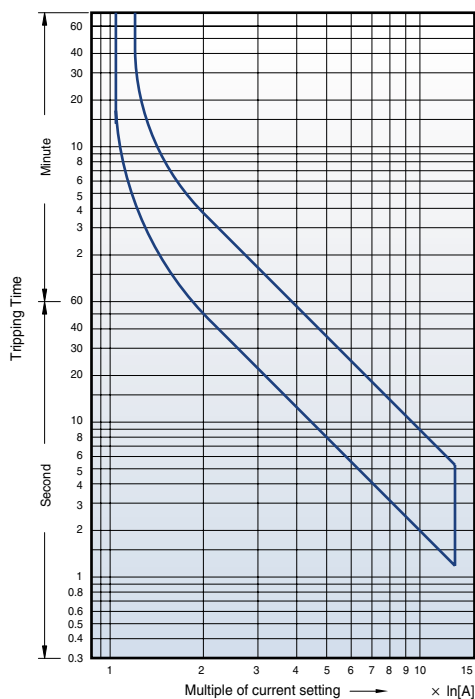
Hot starting



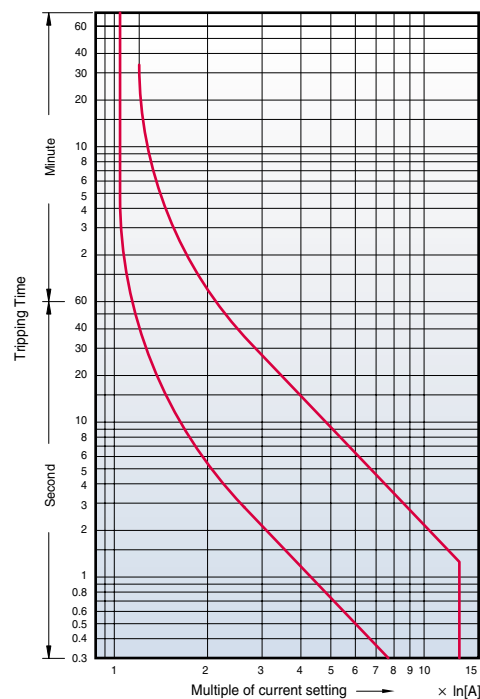
Class 20, 400AF

MT-400/3D

Cold starting



Hot starting



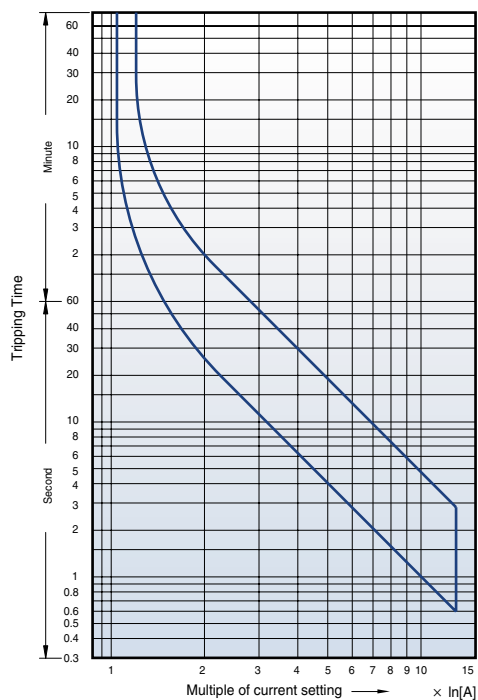
Class 10A, 800AF

MT-800/2H

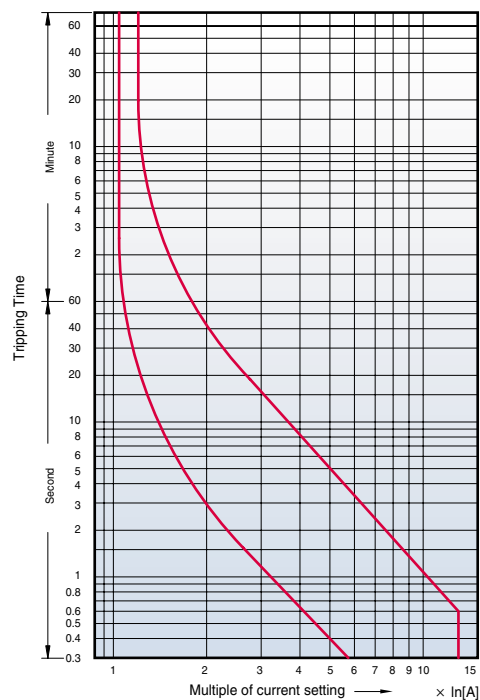
MT-800/3H

MT-800/3K

Cold starting



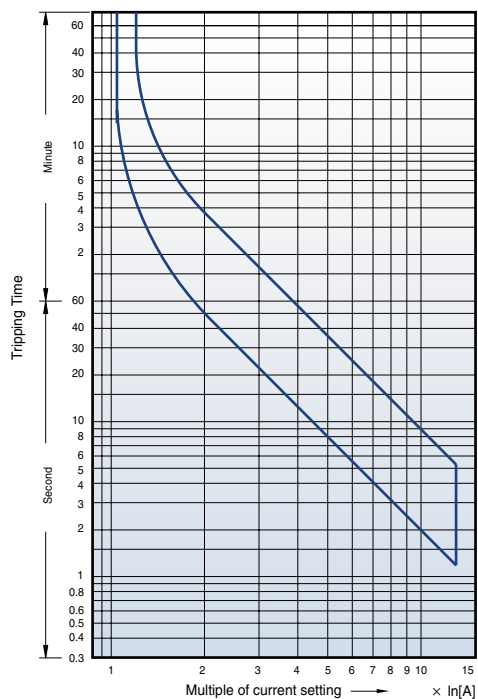
Hot starting



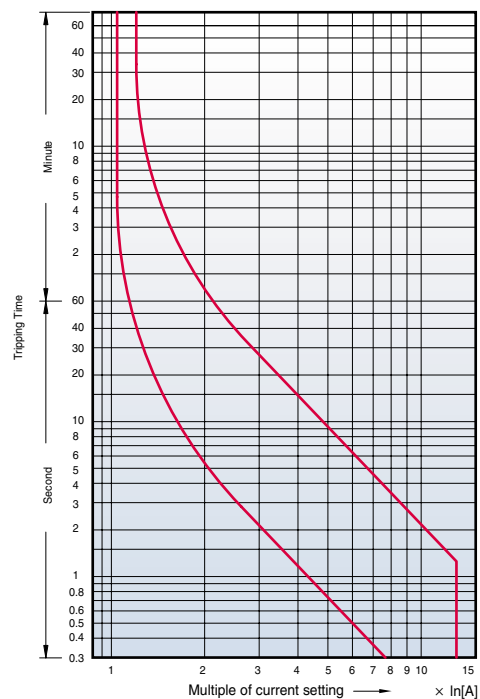
Class 20, 800AF

MT-800/3D

Cold starting



Hot starting



Type 2 Coordination (380/415V)

415V

HI type MMS + Susol MCCB

Rated Operational Power				Circuit Breaker		Contactor	Thermal Overload Relays		Short Circuit Breaking Capacity	
kW	Current [A]			Type	Rating [A]	Type	Type	Setting Range [A]	Ir [kA]	Iq [kA]
	380V	400V	415V							
0.06	0.21	0.20	0.19	MMS-32HI	0.25	MC-6a	MT-12	0.16~0.25	1	50
0.09	0.32	0.30	0.29	MMS-32HI	0.4	MC-6a	MT-12	0.25~0.4	1	50
0.12	0.46	0.44	0.42	MMS-32HI	0.63	MC-6a	MT-12	0.4~0.63	1	50
0.18	0.63	0.60	0.58	MMS-32HI	0.63	MC-6a	MT-12	0.4~0.63	1	50
0.25	0.89	0.85	0.82	MMS-32HI	1	MC-6a	MT-12	0.63~1	1	50
0.37	1.16	1.10	1.06	MMS-32HI	1.6	MC-12a,12b	MT-12	1~1.6	1	50
0.55	1.6	1.5	1.4	MMS-32HI	1.6	MC-12a,12b	MT-12	1~1.6	1	50
0.75	2.0	1.9	1.8	MMS-32HI	2.5	MC-12a,12b	MT-12	1.6~2.5	1	50
1.1	2.8	2.7	2.6	MMS-32HI	4	MC-22b	MT-32	2.5~4	1	50
1.5	3.8	3.6	3.5	MMS-32HI	4	MC-22b	MT-32	2.5~4	1	50
2.2	5.2	4.9	4.7	MMS-32HI	6	MC-22b	MT-32	4~6	1	50
3.0	6.8	6.5	6.3	MMS-32HI	8	MC-40a	MT-32	5~8	1	50
4.0	8.9	8.5	8.2	MMS-32HI	10	MC-40a	MT-32	6~9	1	50
5.5	12.1	11.5	11.1	MMS-32HI	13	MC-40a	MT-32	9~13	3	50
7.5	16.3	15.5	14.9	MMS-32HI	17	MC-40a	MT-32	12~18	3	50
11.0	23.2	22.0	21.2	TD100	25	MC-50a	MT-63	18~25	3	70
15.0	31	29	28	TD100	32	MC-50a	MT-63	24~36	3	70
18.5	37	35	34	TD100	40	MC-50a	MT-63	28~40	3	70
22	43	41	40	TD100	50	MC-50a	MT-63	34~50	3	70
30	58	55	53	TD100	63	MC-65a	MT-63	45~65	3	70
37	69	66	64	TD100	80	MC-75a	MT-95	54~75	5	70
45	84	80	77	TD100	100	MC-85a	MT-95	63~85	5	70
55	-	-	93	TD100	100	MC-100a	MT-95	70~95	5	70

415V

H type MMS + Susol MCCB

Rated Operational Power				Circuit Breaker		Contactor	Thermal Overload Relays		Short Circuit Breaking Capacity	
kW	Current [A]			Type	Rating [A]	Type	Type	Setting Range [A]	Ir [kA]	Iq [kA]
	380V	400V	415V							
0.06	0.21	0.20	0.19	MMS-32H	0.25	MC-6a			1	50
0.09	0.32	0.30	0.29	MMS-32H	0.4	MC-6a			1	50
0.12	0.46	0.44	0.42	MMS-32H	0.63	MC-6a			1	50
0.18	0.63	0.60	0.58	MMS-32H	0.63	MC-6a			1	50
0.25	0.89	0.85	0.82	MMS-32H	1	MC-6a			1	50
0.37	1.16	1.10	1.06	MMS-32H	1.6	MC-12a,12b			1	50
0.55	1.6	1.5	1.4	MMS-32H	1.6	MC-12a,12b			1	50
0.75	2.0	1.9	1.8	MMS-32H	2.5	MC-12a,12b			1	50
1.1	2.8	2.7	2.6	MMS-32H	4	MC-22b			1	50
1.5	3.8	3.6	3.5	MMS-32H	4	MC-22b			1	50
2.2	5.2	4.9	4.7	MMS-32H	6	MC-22b			1	50
3.0	6.8	6.5	6.3	MMS-32H	8	MC-40a			1	50
4.0	8.9	8.5	8.2	MMS-32H	10	MC-40a			1	50
5.5	12.1	11.5	11.1	MMS-32H	13	MC-40a			3	50
7.5	16.3	15.5	14.9	MMS-32H	17	MC-40a			3	50
11.0	23.2	22.0	21.2	TD100	25	MC-50a	MT-63	18-25	3	70
15.0	31	29	28	TD100	32	MC-50a	MT-63	24-36	3	70
18.5	37	35	34	TD100	40	MC-50a	MT-63	28-40	3	70
22	43	41	40	TD100	50	MC-50a	MT-63	34-50	3	70
30	58	55	53	TD100	63	MC-65a	MT-63	45-65	3	70
37	69	66	64	TD100	80	MC-75a	MT-95	54-75	5	70
45	84	80	77	TD100	100	MC-85a	MT-95	63-85	5	70
55	-	-	93	TD100	100	MC-100a	MT-95	70-95	5	70

Type 2 Coordination (380/415V)

415V

Susol MCCB

Rated Operational Power				Circuit Breaker		Contactor	Thermal Overload Relays		Short Circuit Breaking Capacity	
kW	Current [A]			Type	Rating [A]	Type	Type	Setting Range [A]	Ir [kA]	Iq [kA]
	380V	400V	415V							
0.06	0.21	0.20	0.19	TS100 ⁽¹⁾	1.6	MC-6a	MT-12	0.16~0.25	1	50
0.09	0.32	0.30	0.29	TS100 ⁽¹⁾	1.6	MC-6a	MT-12	0.25~0.4	1	50
0.12	0.46	0.44	0.42	TS100 ⁽¹⁾	1.6	MC-6a	MT-12	0.4~0.63	1	50
0.18	0.63	0.60	0.58	TS100 ⁽¹⁾	1.6	MC-6a	MT-12	0.4~0.63	1	50
0.25	0.89	0.85	0.82	TS100 ⁽¹⁾	1.6	MC-6a	MT-12	0.63~1	1	50
0.37	1.16	1.10	1.06	TS100 ⁽¹⁾	1.6	MC-12a,12b	MT-12	1~1.6	1	50
0.55	1.6	1.5	1.4	TS100 ⁽¹⁾	1.6	MC-12a,12b	MT-12	1~1.6	1	50
0.75	2.0	1.9	1.8	TS100 ⁽¹⁾	1.6	MC-12a,12b	MT-12	1.6~2.5	1	50
1.1	2.8	2.7	2.6	TS100 ⁽¹⁾	3.2	MC-22b	MT-32	2.5~4	1	50
1.5	3.8	3.6	3.5	TS100 ⁽¹⁾	3.2	MC-22b	MT-32	2.5~4	1	50
2.2	5.2	4.9	4.7	TS100 ⁽¹⁾	3.2	MC-22b	MT-32	4~6	1	50
3.0	6.8	6.5	6.3	TS100 ⁽¹⁾	6.3	MC-40a	MT-32	5~8	1	50
4.0	8.9	8.5	8.2	TS100 ⁽¹⁾	6.3	MC-40a	MT-32	6~9	1	50
5.5	12.1	11.5	11.1	TS100 ⁽¹⁾	12	MC-40a	MT-32	9~13	3	50
7.5	16.3	15.5	14.9	TS100 ⁽¹⁾	12	MC-40a	MT-32	12~18	3	50
11.0	23.2	22.0	21.2	TD100	25	MC-50a	MT-63	18~25	3	70
15.0	31	29	28	TD100	32	MC-50a	MT-63	24~36	3	70
18.5	37	35	34	TD100	40	MC-50a	MT-63	28~40	3	70
22	43	41	40	TD100	50	MC-50a	MT-63	34~50	3	70
30	58	55	53	TD100	63	MC-65a	MT-63	45~65	3	70
37	69	66	64	TD100	80	MC-75a	MT-95	54~75	5	70
45	84	80	77	TD100	100	MC-85a	MT-95	63~85	5	70
55	-	-	93	TD100	100	MC-100a	MT-95	70~95	5	70

Note) (1) This marks admit for motor protection MTU trip unit only.

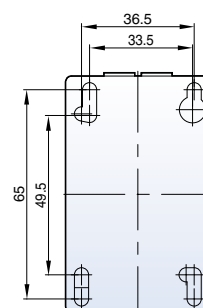
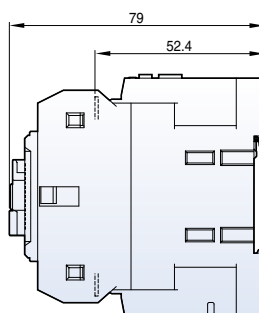
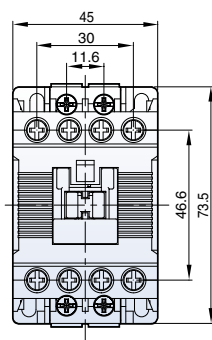
Rated short circuit breaking capacity of installation

Manual Motor Starter	Adjustment Range (A)	Manual Motor Controller Group Installation			Applied Contactor (Susol MC)	Applied Contactor (Metasol MC)	Applied Contactor (Meta-MEC GMC)
		Short Circuit Rating(KAIC)					
		240V	480Y/277V	600Y/347V			
32AF Rotary operation, standard interruption							
MMS-32H-0.16	0.1~0.16	100	65	25	MC-9	MC-6a/MC-9a/MC-9b	GMC-6M/GMC-9
MMS-32H-0.25	0.16~0.25	100	65	25	MC-9	MC-6a/MC-9a/MC-9b	GMC-6M/GMC-9
MMS-32H-0.4	0.25~0.4	100	65	25	MC-9	MC-6a/MC-9a/MC-9b	GMC-6M/GMC-9
MMS-32H-0.63	0.4~0.63	100	65	25	MC-9	MC-6a/MC-9a/MC-9b	GMC-6M/GMC-9
MMS-32H-1	0.63~1	100	65	25	MC-9	MC-6a/MC-9a/MC-9b	GMC-6M/GMC-9
MMS-32H-1.6	1~1.6	100	65	25	MC-9	MC-6a/MC-9a/MC-9b	GMC-9M/GMC-9
MMS-32H-2.5	1.6~2.5	100	65	25	MC-12	MC-12a/MC-12b	GMC-12M/GMC-12
MMS-32H-4	2.5~4	100	65	25	MC-12	MC-12a/MC-12b	GMC-12M/GMC-12
MMS-32H-6	4~6	100	65	25	MC-18	MC-18a/MC-18b	GMC-18
MMS-32H-8	5~8	100	65	10	MC-18	MC-18a/MC-18b	GMC-18
MMS-32H-10	6~10	100	65	10	MC-18	MC-18a/MC-18b	GMC-18
MMS-32H-13	9~13	100	65	10	MC-25	MC-22b/MC-25a	GMC-22
MMS-32H-17	11~17	100	30	10	MC-25	MC-22b/MC-25a	GMC-22
MMS-32H-22	14~22	100	30	10	MC-25	MC-22b/MC-25a	GMC-32
MMS-32H-26	18~26	100	30	10	MC-32	MC-32a	GMC-32
MMS-32H-32	22~32	100	30	10	MC-32	MC-32a	GMC-32
MMS-32H-40	28~40	100	30	10	-	MC-35a/MC-40a	-
63AF Rotary operation, standard interruption							
MMS-63S-10	6~10	100	50	10	MC-35	MC-50a	GMC-32
MMS-63S-13	9~13	100	50	10	MC-35	MC-50a	GMC-32
MMS-63S-17	11~17	100	40	10	MC-35	MC-50a	GMC-32
MMS-63S-22	14~22	100	40	10	MC-35	MC-50a	GMC-32
MMS-63S-26	18~26	100	40	10	MC-35	MC-50a	GMC-32
MMS-63S-32	22~32	100	40	10	MC-35	MC-50a	GMC-32
MMS-63S-40	28~40	100	40	10	MC-40	MC-50a	GMC-40
MMS-63S-50	34~50	100	40	10	MC-50	MC-50a	GMC-50
MMS-63S-63	45~63	100	40	10	MC-63	MC-65a	GMC-65
MMS-63S-65	47~65	100	40	10	-	MC-65a	-
63AF Rotary operation, High interruption							
MMS-63H-10	6~10	100	65	25	MC-35	MC-50a	GMC-32
MMS-63H-13	9~13	100	65	25	MC-35	MC-50a	GMC-32
MMS-63H-17	11~17	100	50	10	MC-35	MC-50a	GMC-32
MMS-63H-22	14~22	100	50	10	MC-35	MC-50a	GMC-32
MMS-63H-26	18~26	100	50	10	MC-35	MC-50a	GMC-32
MMS-63H-32	22~32	100	50	10	MC-35	MC-50a	GMC-32
MMS-63H-40	28~40	100	50	10	MC-40	MC-50a	GMC-40
MMS-63H-50	34~50	100	50	10	MC-50	MC-50a	GMC-50
MMS-63H-63	45~63	100	50	10	MC-63	MC-65a	GMC-65
MMS-63H-65	47~65	100	40	10	-	MC-65a	-
100AF Rotary operation, Standard interruption							
MMS-100S-17	11~17	100	50	10	MC-65	MC-75a	GMC-50
MMS-100S-22	14~22	100	50	10	MC-65	MC-75a	GMC-50
MMS-100S-26	18~26	100	50	10	MC-65	MC-75a	GMC-50
MMS-100S-32	22~32	100	50	10	MC-65	MC-75a	GMC-50
MMS-100S-40	28~40	100	50	10	MC-65	MC-75a	GMC-50
MMS-100S-50	34~50	100	50	10	MC-65	MC-75a	GMC-50
MMS-100S-63	45~63	100	40	10	MC-65	MC-75a	GMC-65
MMS-100S-75	55~75	100	40	10	MC-75	MC-75a	GMC-75
MMS-100S-90	70~90	100	40	10	MC-85	MC-85a	GMC-85
MMS-100S-100	80~100	100	40	10	MC-95	MC-100a	GMC-85
100AF Rotary operation, High interruption							
MMS-100H-17	11~17	100	65	25	MC-65	MC-75a	GMC-50
MMS-100H-22	14~22	100	65	20	MC-65	MC-75a	GMC-50
MMS-100H-26	18~26	100	65	20	MC-65	MC-75a	GMC-50
MMS-100H-32	22~32	100	65	20	MC-65	MC-75a	GMC-50
MMS-100H-40	28~40	100	65	20	MC-65	MC-75a	GMC-50
MMS-100H-50	34~50	100	65	20	MC-65	MC-75a	GMC-50
MMS-100H-63	45~63	100	50	10	MC-65	MC-75a	GMC-65
MMS-100H-75	55~75	100	50	10	MC-75	MC-75a	GMC-75
MMS-100H-90	70~90	100	50	10	MC-85	MC-85a	GMC-85
MMS-100H-100	80~100	100	50	10	MC-95	MC-100a	GMC-85

Contactors (18AF/22AF)

MC-6a-18a AC

1a or 1b

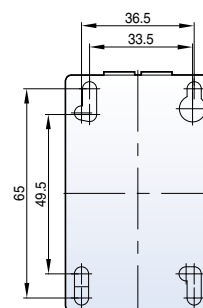
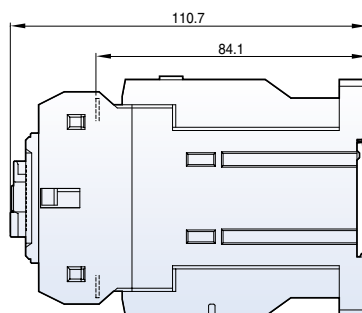
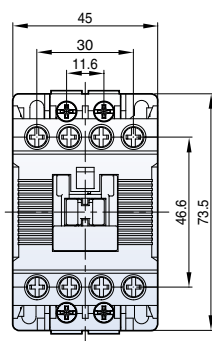


[mm]

0.3kg

MC-6a-18a DC

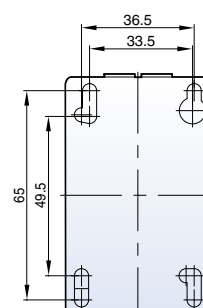
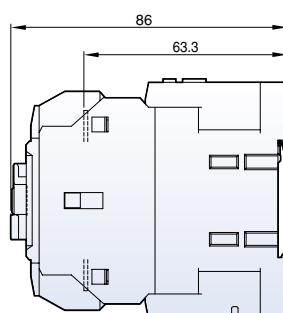
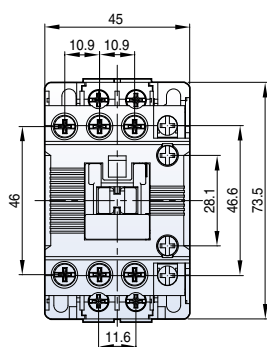
1a or 1b



0.5kg

MC-9b-22b AC

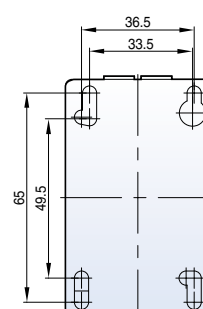
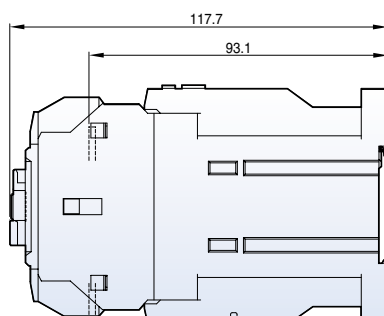
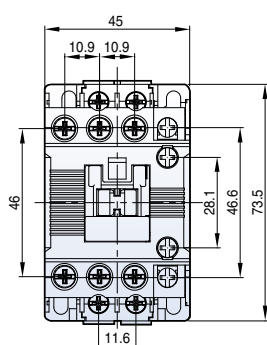
1a1b



0.3kg

MC-9b-22b DC

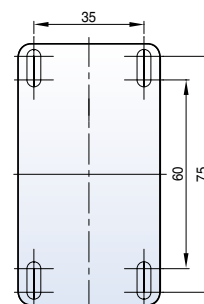
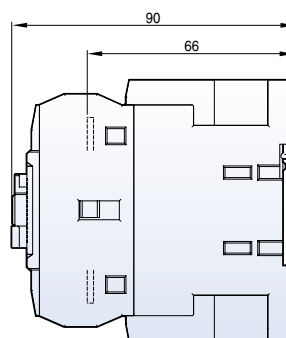
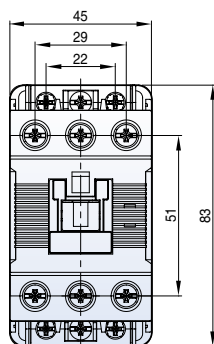
1a1b



0.5kg

Contactors (40AF)

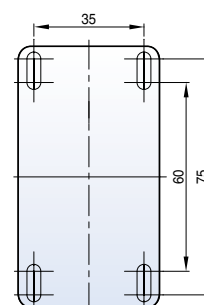
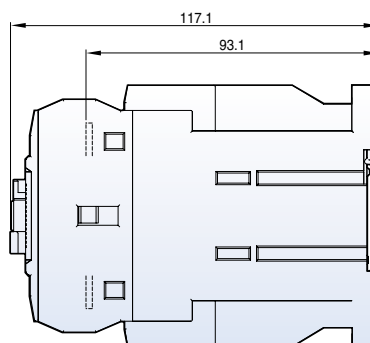
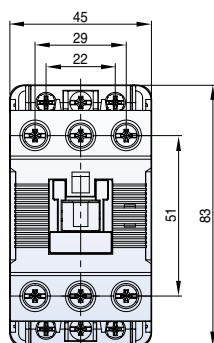
MC-32a~40a AC



[mm]

0.4kg

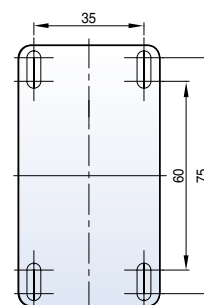
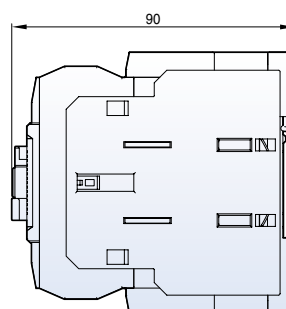
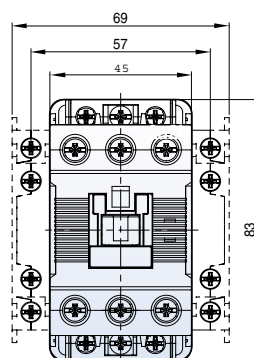
MC-32a~40a DC



0.6kg

MC-32a~40a AC

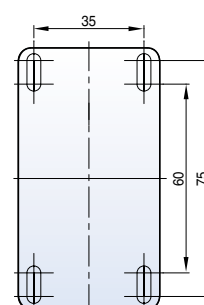
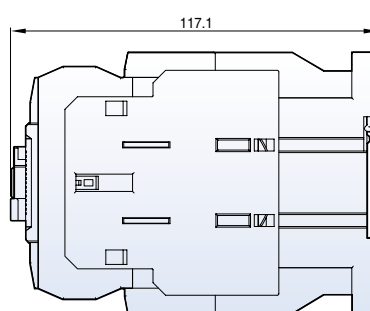
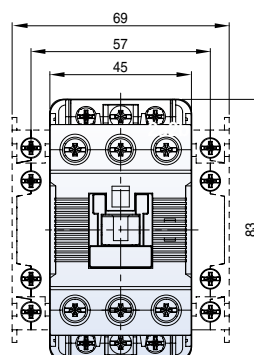
2a2b



0.5kg

MC-32a~40a DC

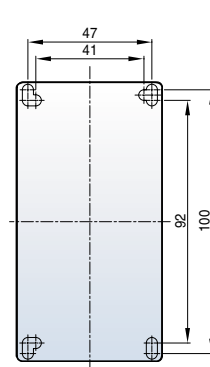
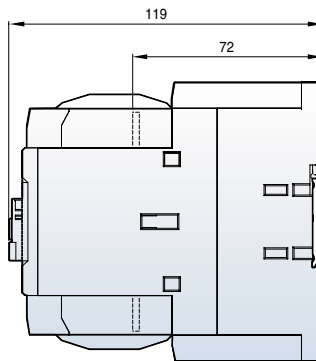
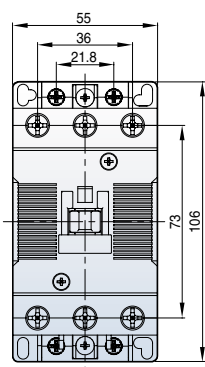
2a2b



0.8kg

Contactors (65AF)

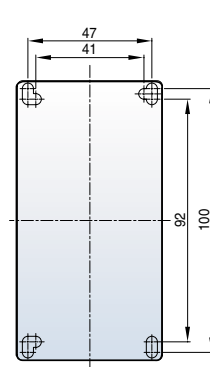
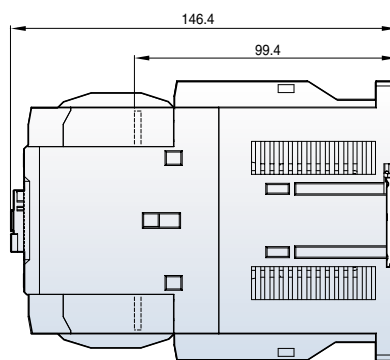
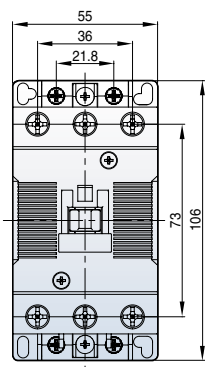
MC-50a-65a AC



[mm]

0.9kg

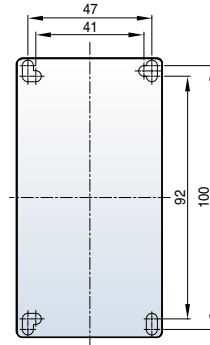
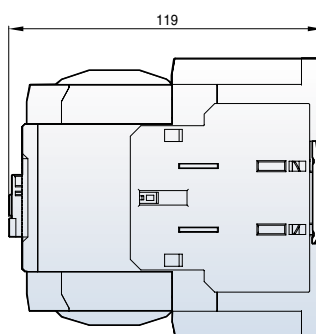
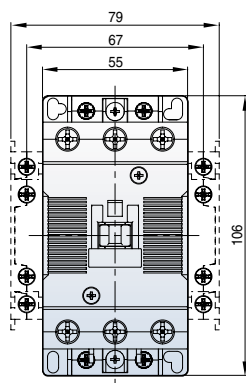
MC-50a-65a DC



1.2kg

MC-50a-65a AC

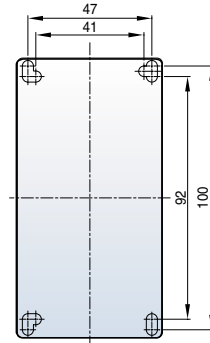
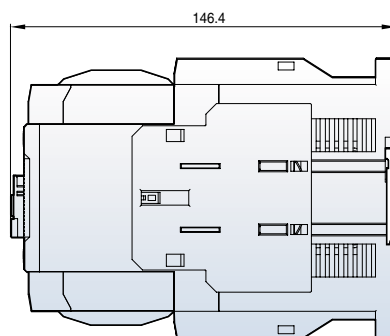
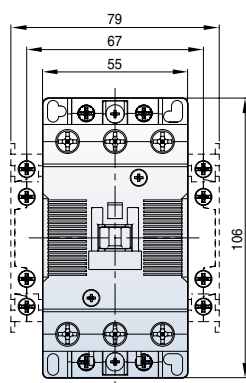
2a2b



1kg

MC-50a-65a DC

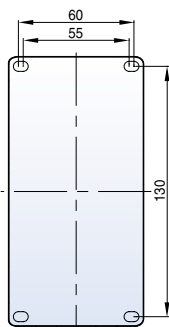
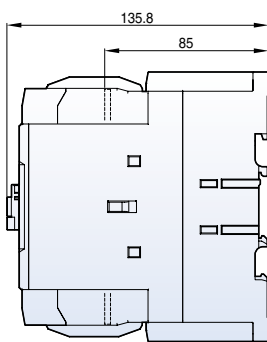
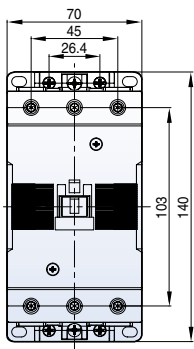
2a2b



1.3kg

Contactors (100AF)

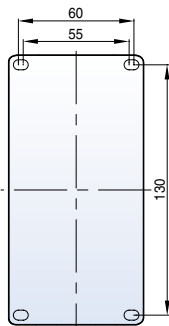
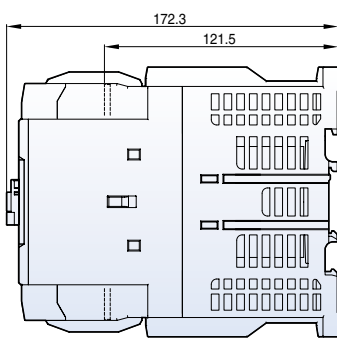
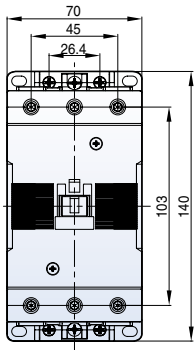
MC-75a~100a AC



[mm]

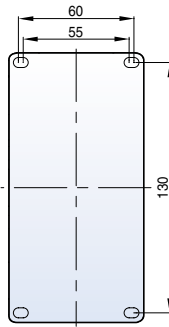
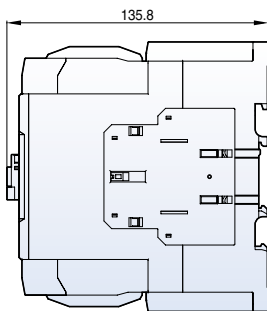
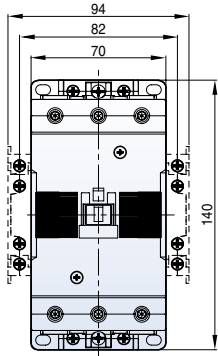
1.8kg

MC-75a~100a DC



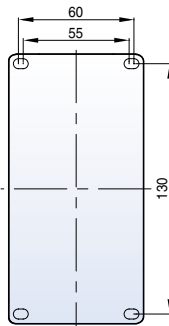
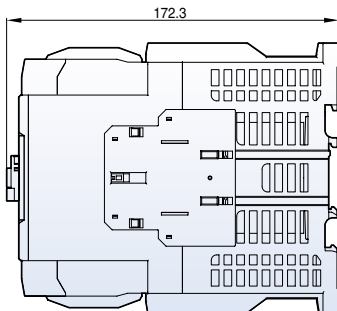
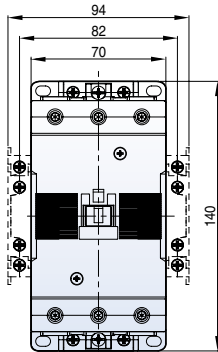
2.7kg

MC-75a~100a AC
2a2b



1.9kg

MC-75a~100a DC
2a2b

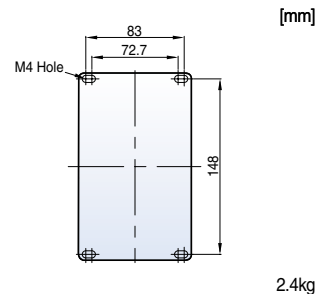
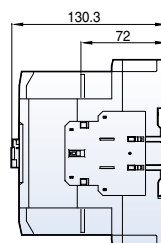
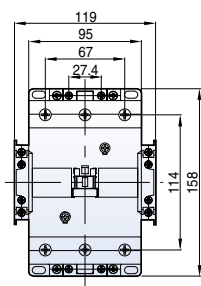


2.8kg

Contactors (150AF~800AF)

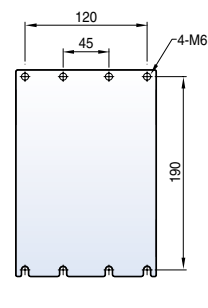
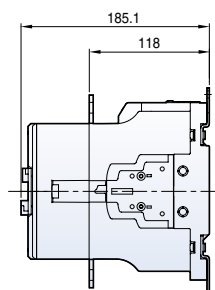
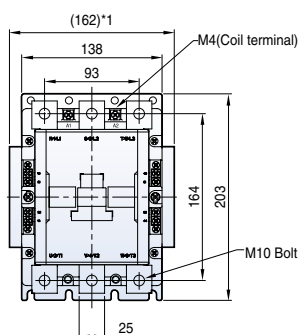
MC-130a

MC-150a



MC-185a

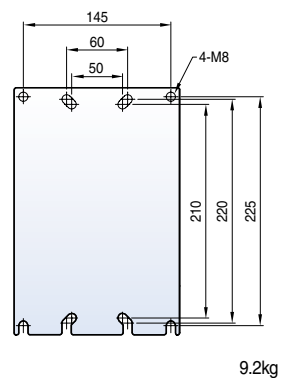
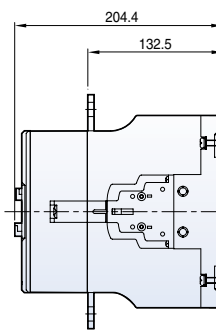
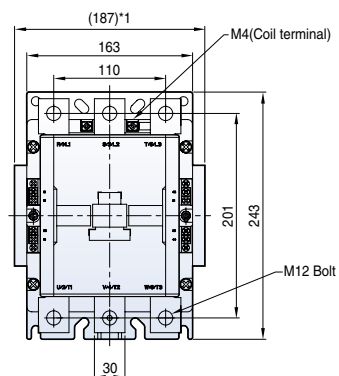
MC-225a



MC-265a

MC-330a

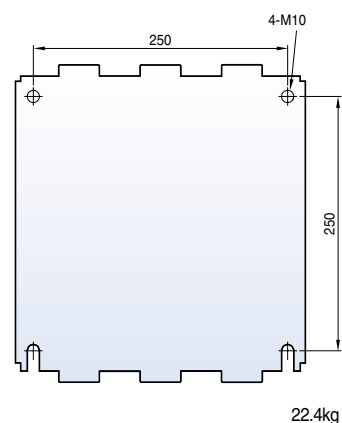
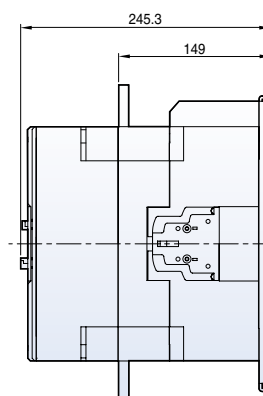
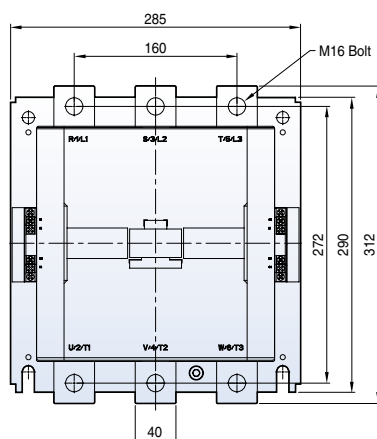
MC-400a



MC-500a

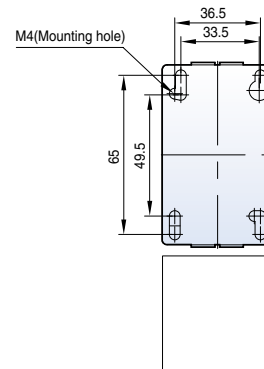
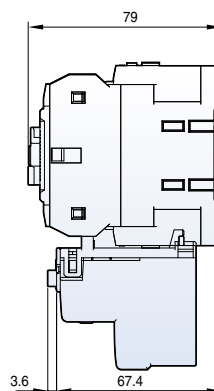
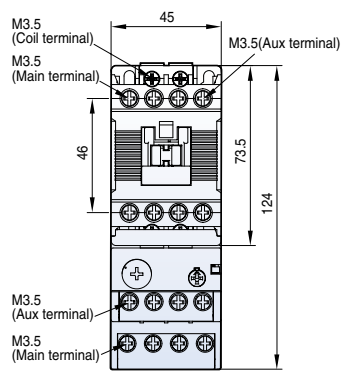
MC-630a

MC-800a



Motor starters (18AF~40AF)

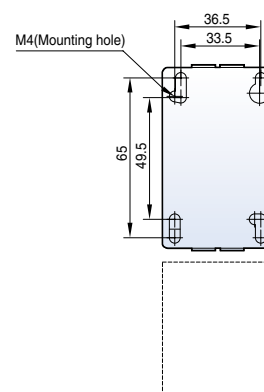
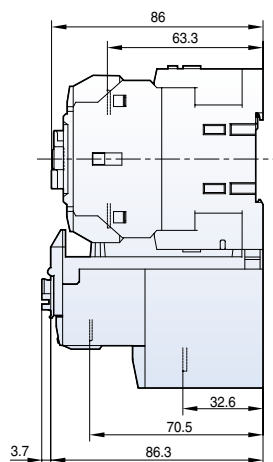
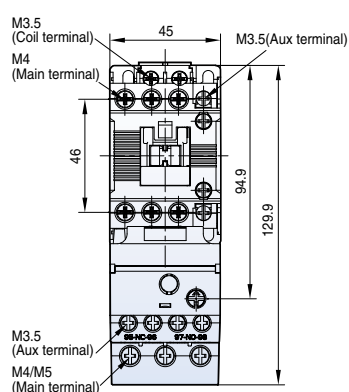
MS-6a~18a



[mm]

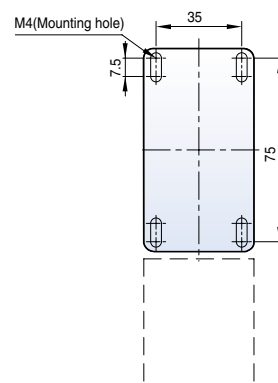
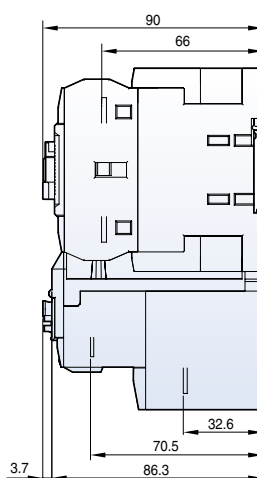
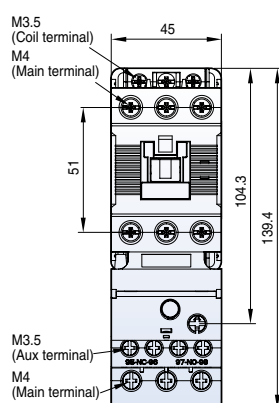
0.5kg

MS-9b~22b



0.5kg

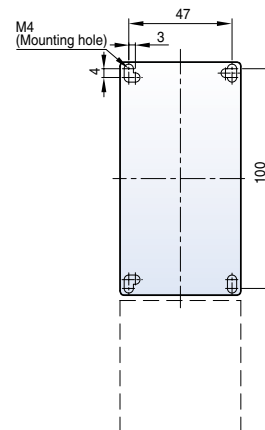
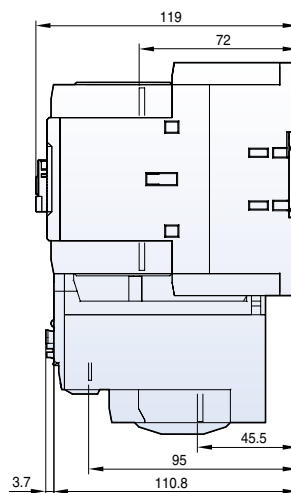
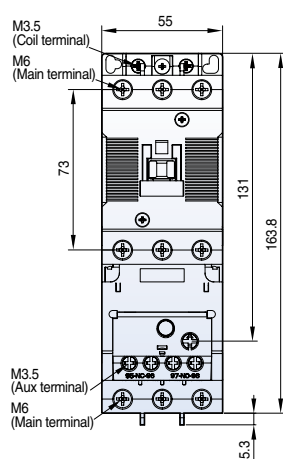
MS-32a~40a



0.6kg

Motor starters (65AF~150AF)

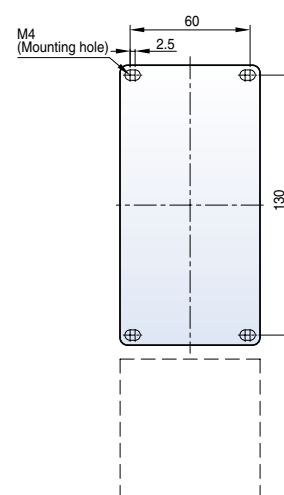
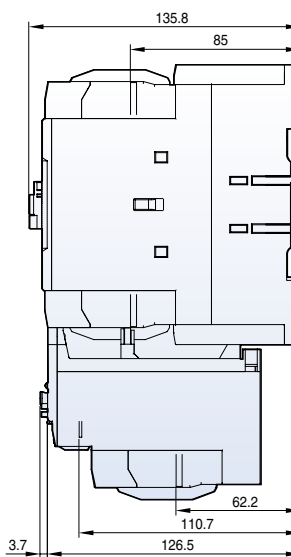
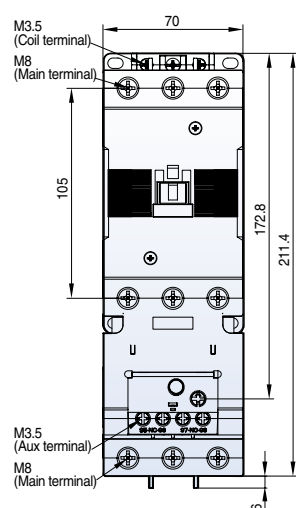
MS-50a~65a



[mm]

1.3kg

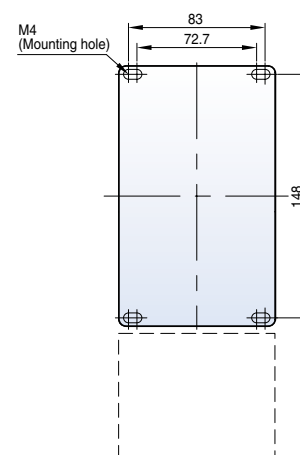
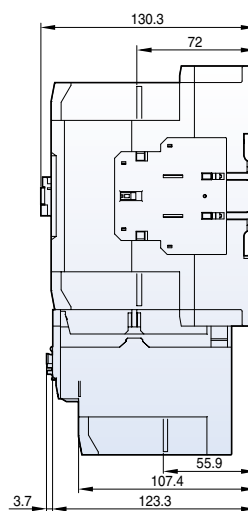
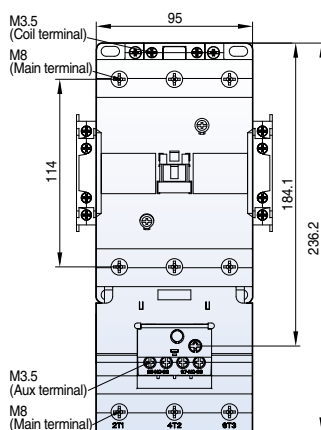
MS-75a~100a



2.3kg

MS-130a

MS-150a

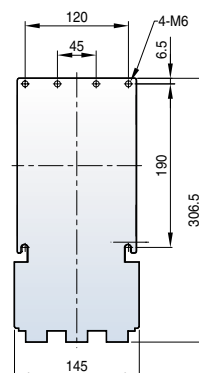
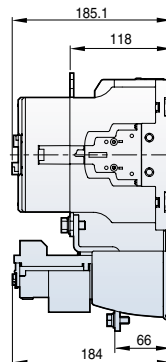
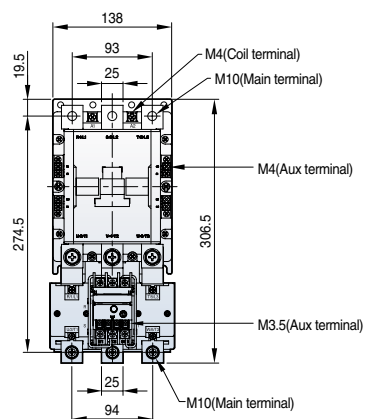


2.9kg

Motor starters (185AF~800AF)

MS-185a

MS-225a



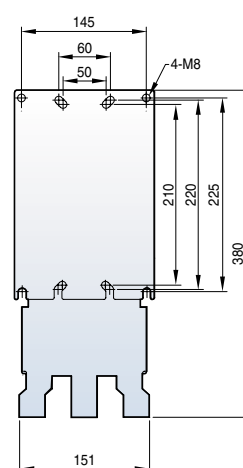
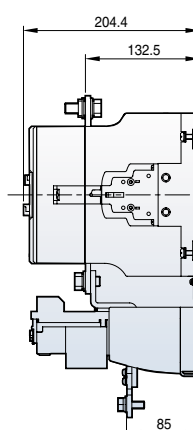
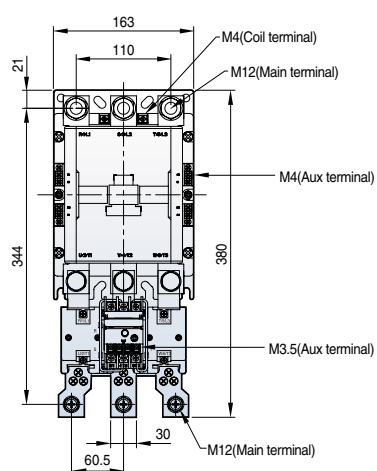
[mm]

7.9kg

MS-265a

MS-330a

MS-400a

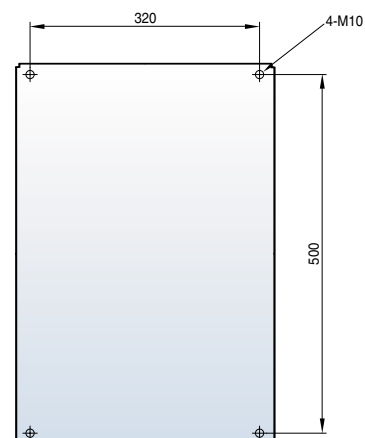
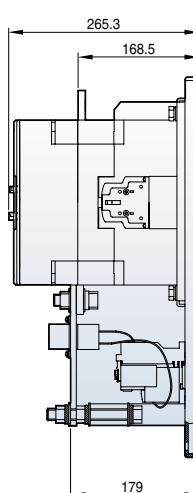
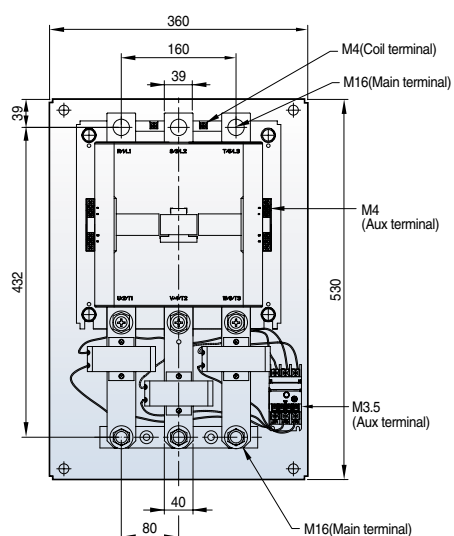


11.8kg

MS-500a

MS-630a

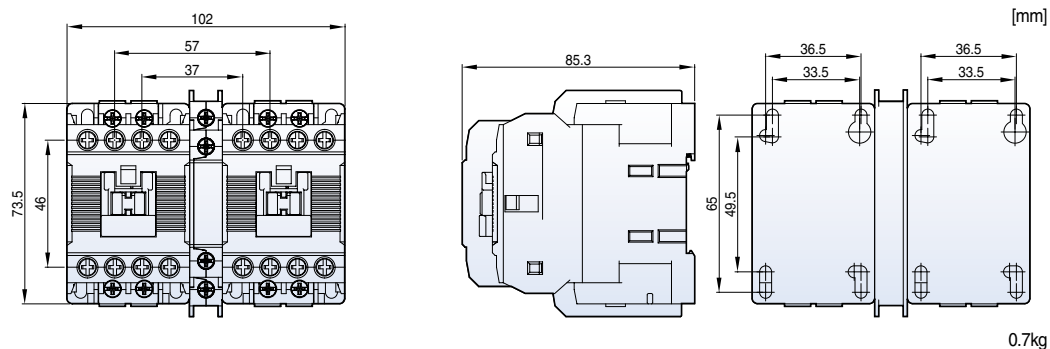
MS-800a



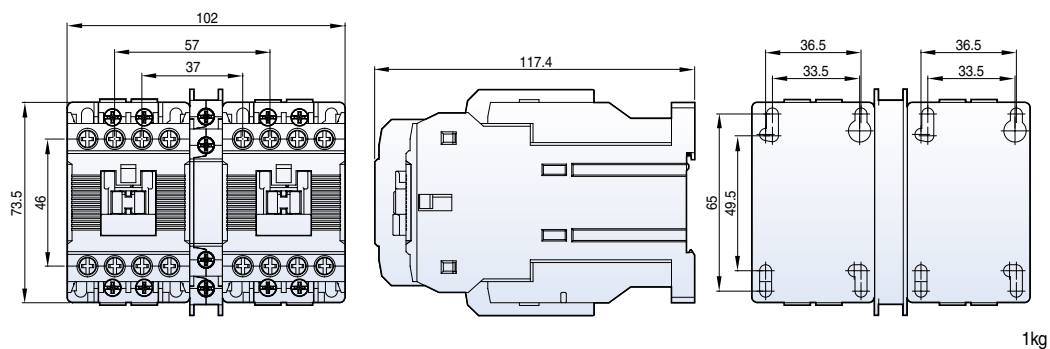
28kg

Reversing contactors and starters (18AF)

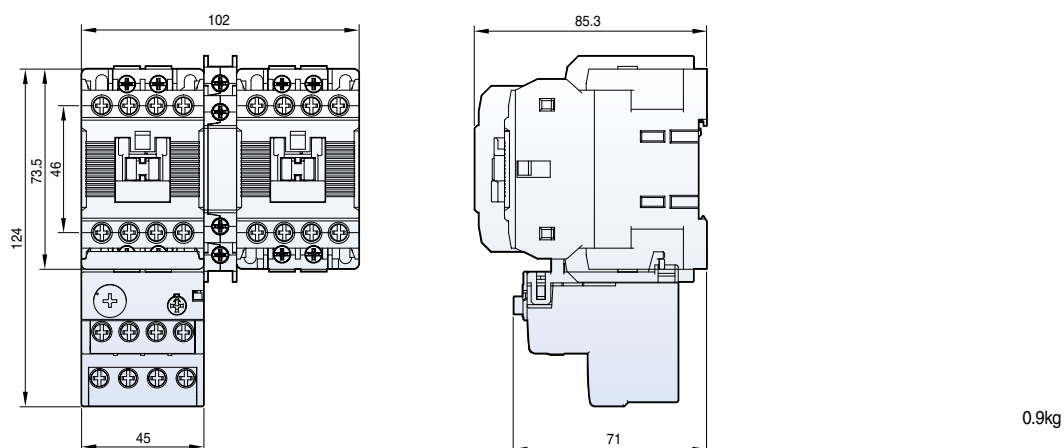
MC-6aR-18aR AC



MC-6aR-18aR DC

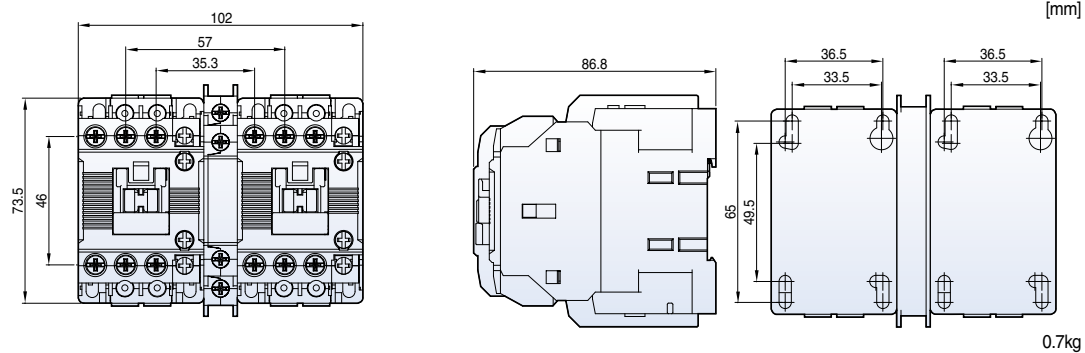


MS-6aR-18aR AC

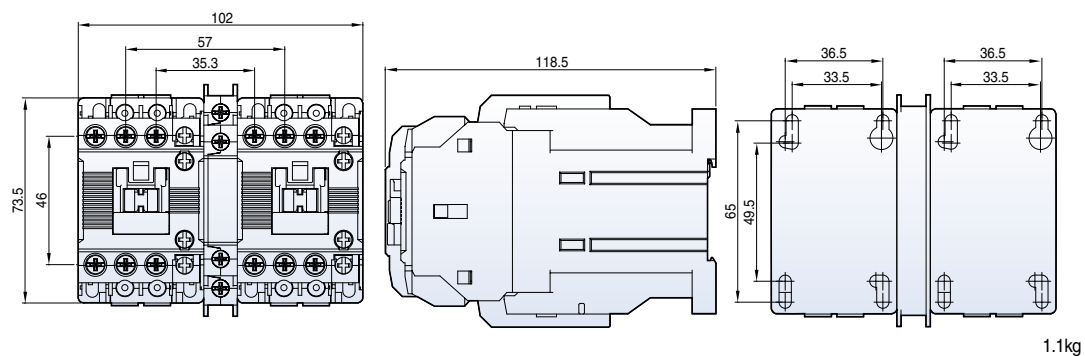


Reversing contactors and starters (22AF)

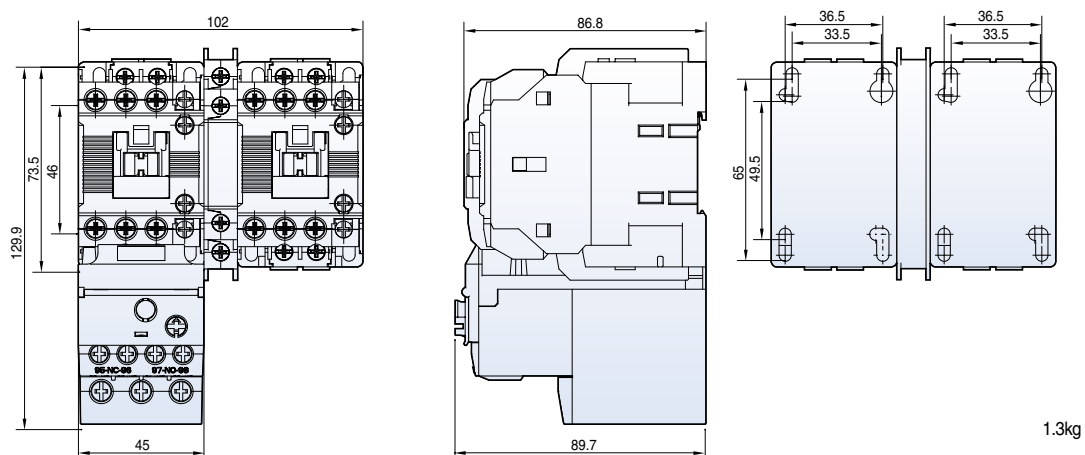
MC-9bR-22bR AC



MC-9bR-22bR DC

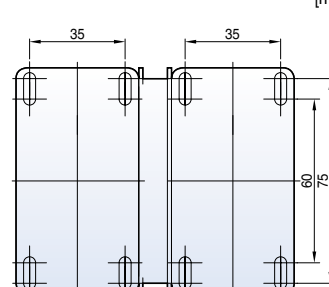
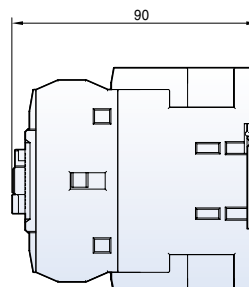
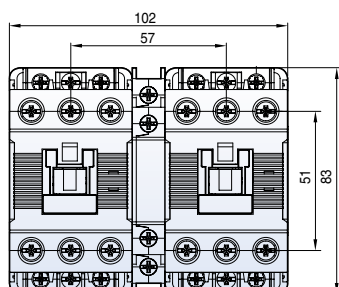


MS-9bR-22bR AC



Reversing contactors and starters (40AF)

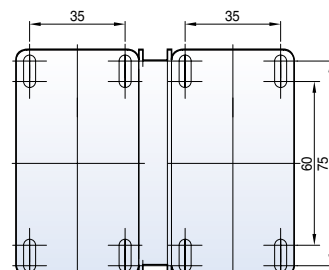
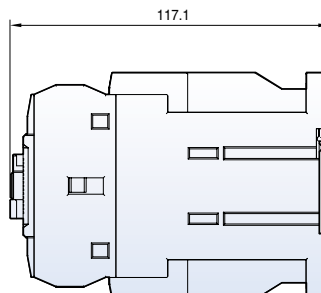
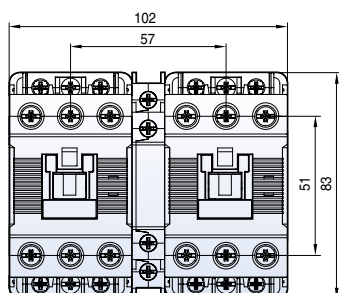
MC-32aR~40aR AC



[mm]

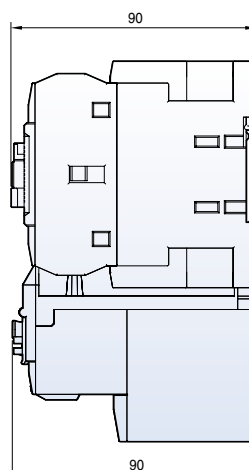
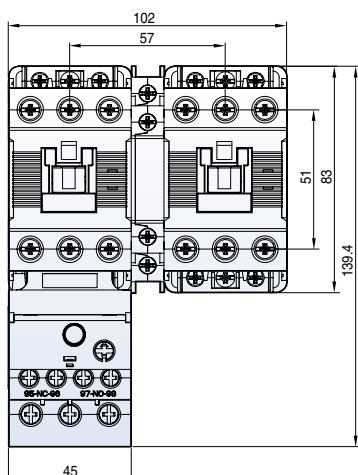
0.9kg

MC-32aR~40aR DC



1.4kg

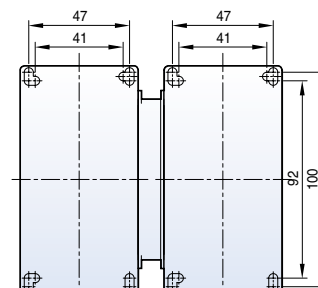
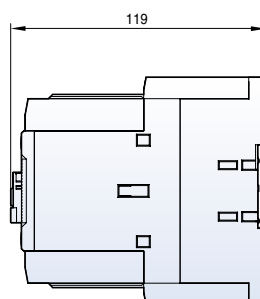
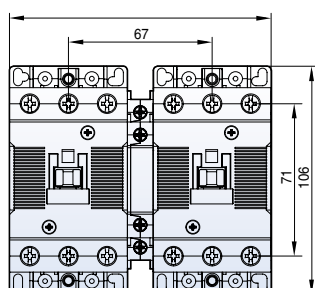
MS-32aR~40aR AC



1.1kg

Reversing contactors and starters (65AF)

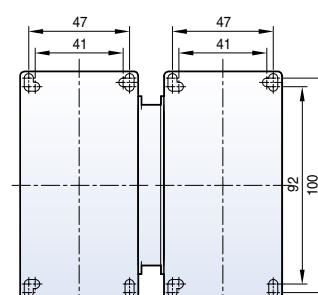
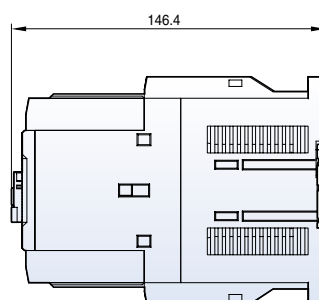
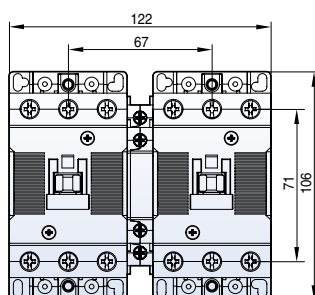
MC-50aR-65aR AC



[mm]

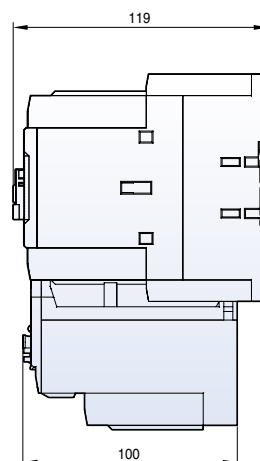
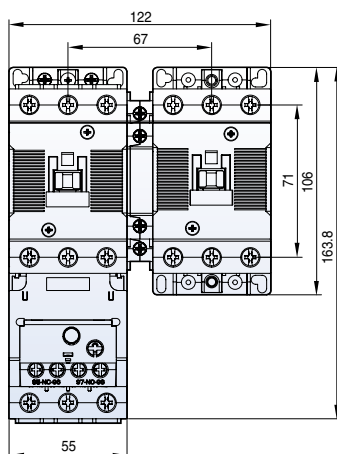
1.8kg

MC-50aR-65aR DC



2.4kg

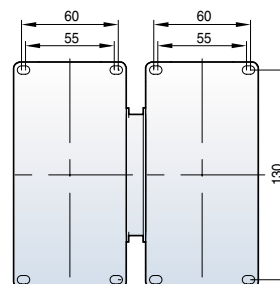
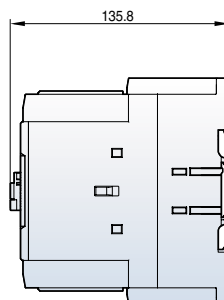
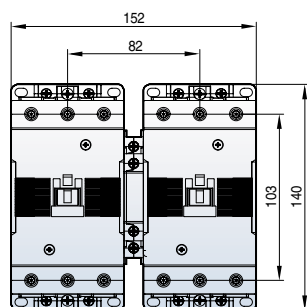
MS-50aR-65aR AC



1.9kg

Reversing contactors and starters (100AF)

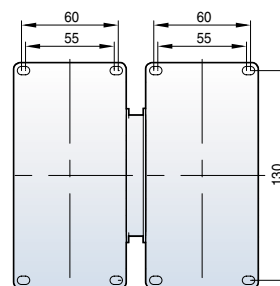
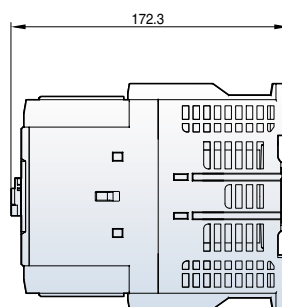
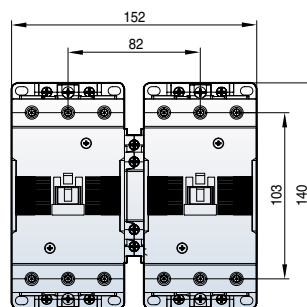
MC-75aR~100aR AC



[mm]

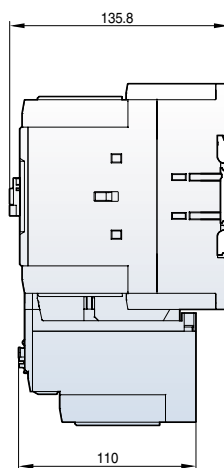
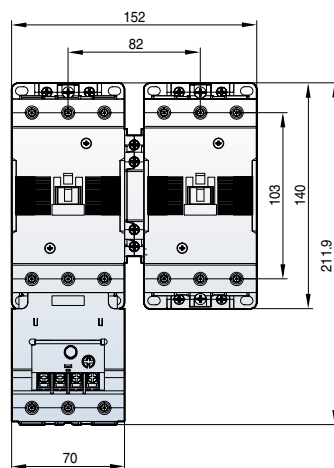
3.3kg

MC-75aR~100aR DC



5.2kg

MS-75aR~100aR AC

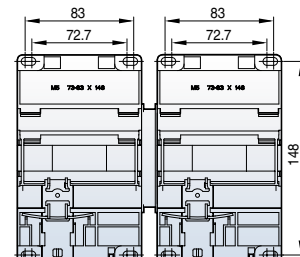
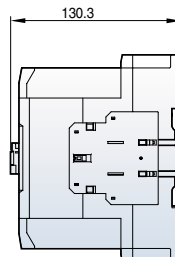
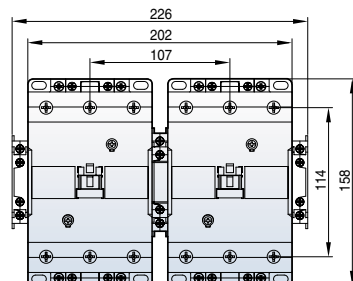


3.8kg

Reversing contactors and starters (150~800AF)

MC-130aR

MC-150aR

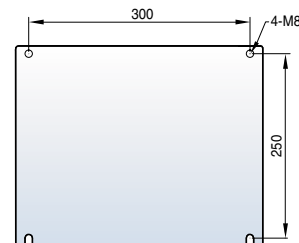
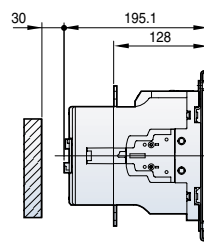
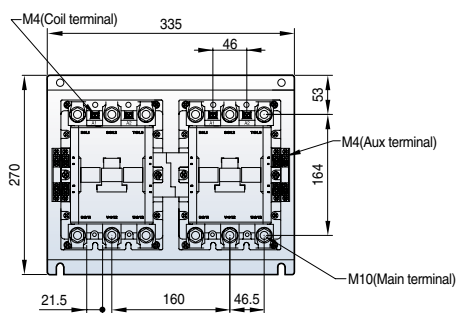


[mm]

4.3kg

MC-185aR

MC-225aR

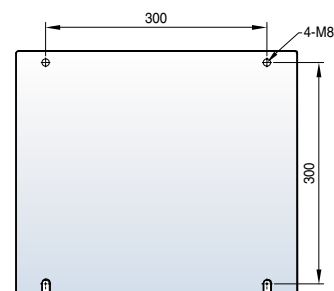
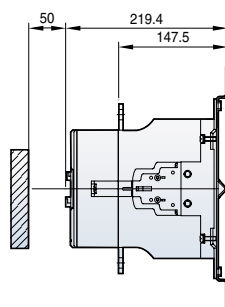
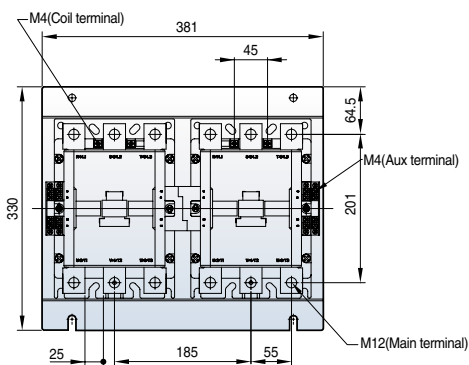


12.9kg

MC-265aR

MC-330aR

MC-400aR

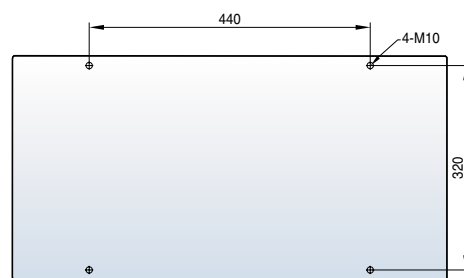
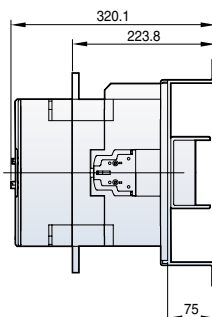
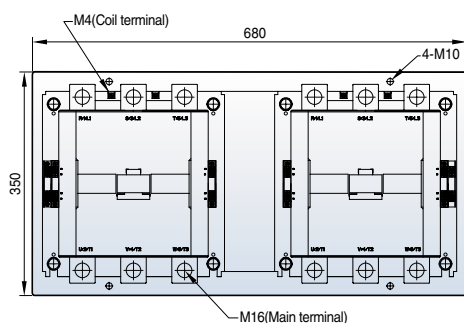


21.4kg

MC-500aR

MC-630aR

MC-800aR



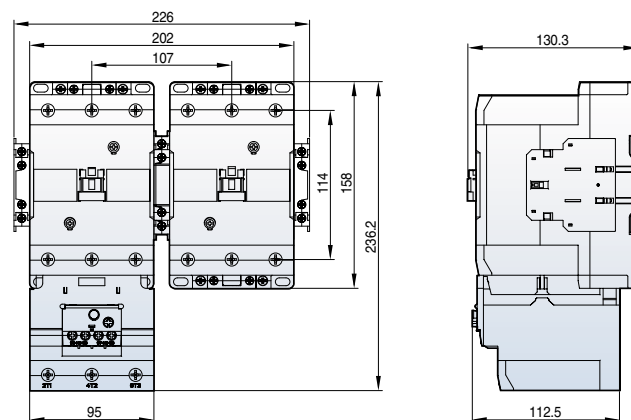
60kg

Reversing contactors and starters (150~400AF)

[mm]

MS-130aR AC

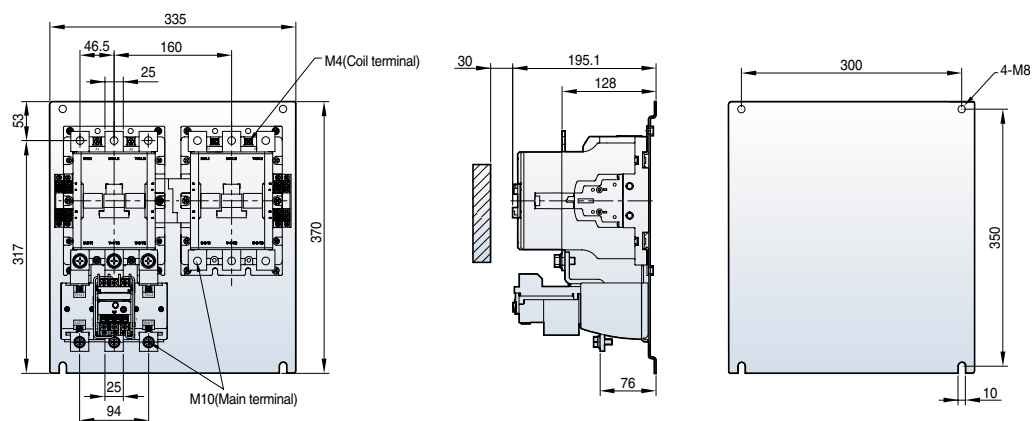
MS-150aR AC



5kg

MS-185aR AC

MS-225aR AC

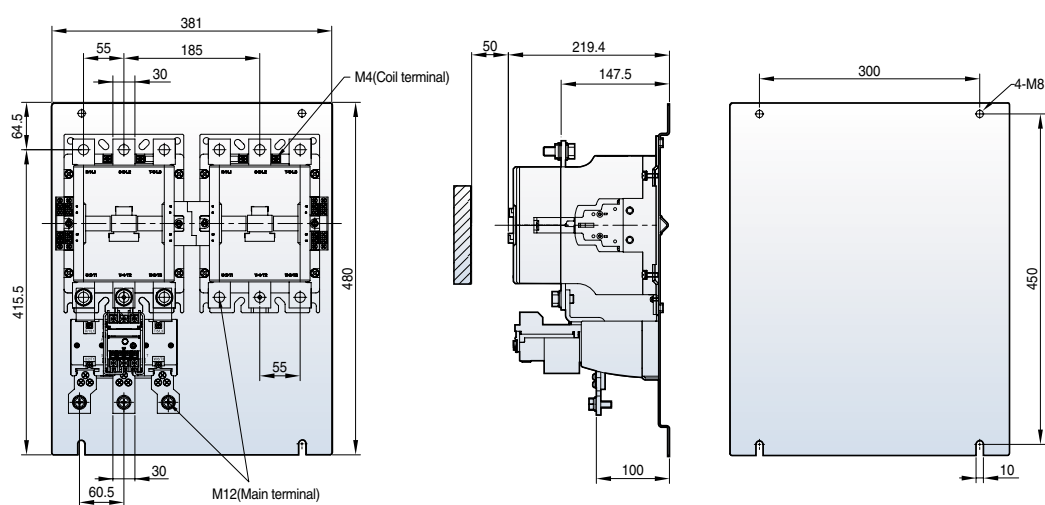


15.5kg

MS-265aR DC

MS-330aR DC

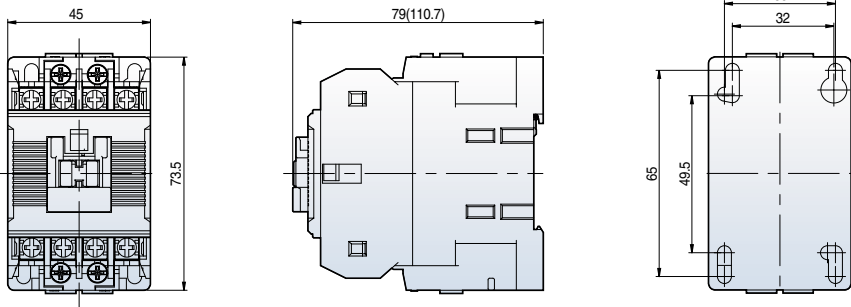
MS-400aR DC



23kg

Contactor relays

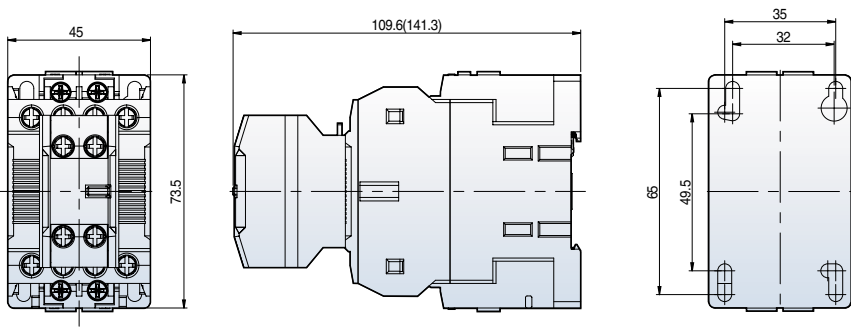
MR-4 (D)



[mm]

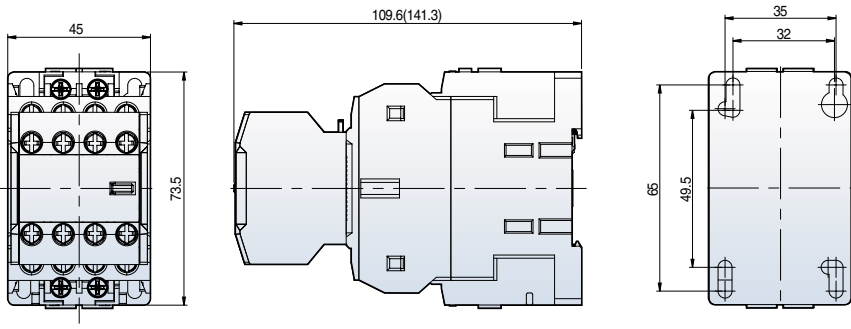
284g

MR-6 (D)



315g

MR-8 (D)



339g

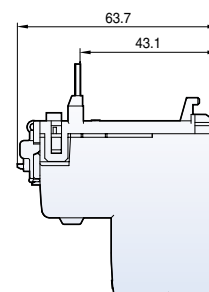
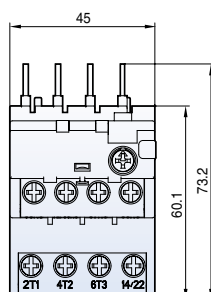
Composition

MR-4					
MR-6					
MR-8					

Note) 1. UA-2: Auxiliary contact units 2. UA-4: Auxiliary contact units
3. Please refer to the contact diagram represented on catalog when contactor relays MR-4, 4D and auxiliary contact units UA-2,4 are purchased separately.
4. Be sure to order the auxiliary contact units separately except for the above contact units. 5. () : Dimension for DC control contactor relays

Overload relays

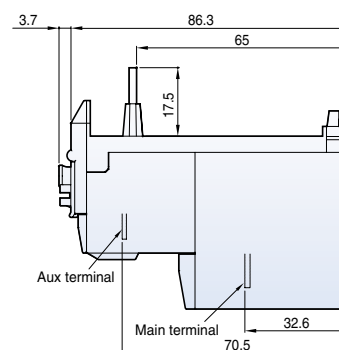
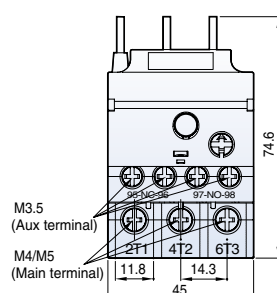
MT-12



[mm]

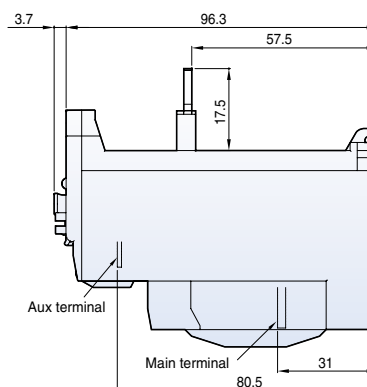
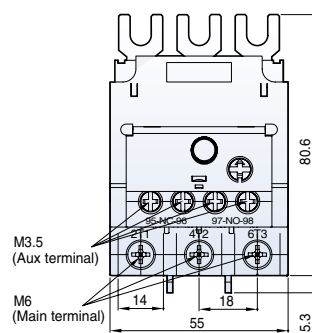
100g

MT-32



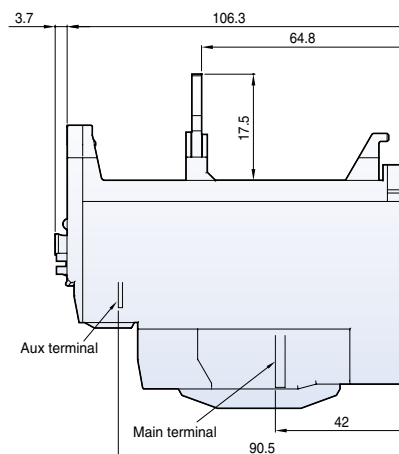
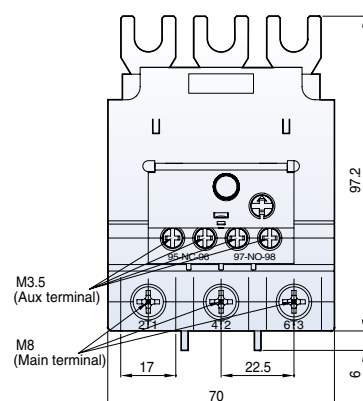
167g

MT-63



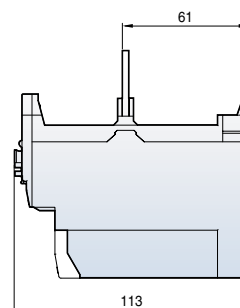
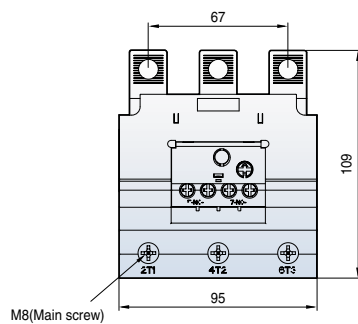
303g

MT-95



474g

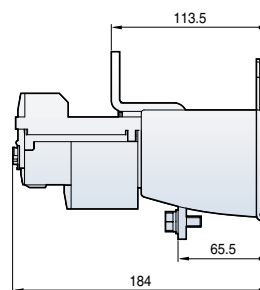
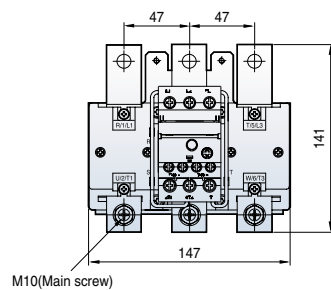
MT-150



[mm]

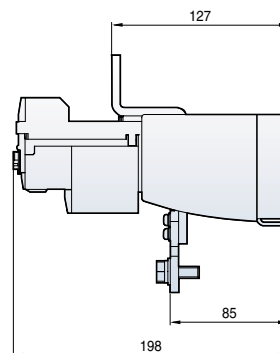
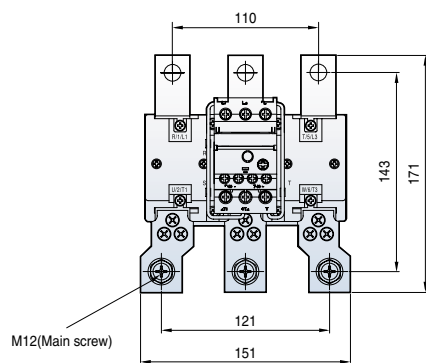
0.7kg

MT-225



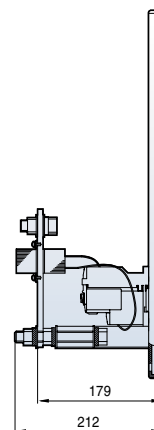
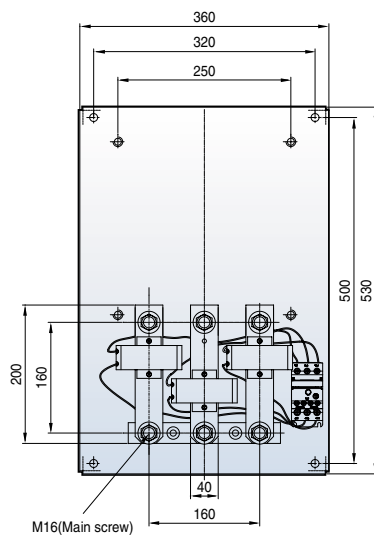
2.5kg

MT-400



2.6kg

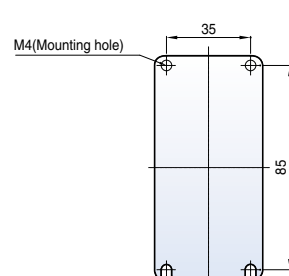
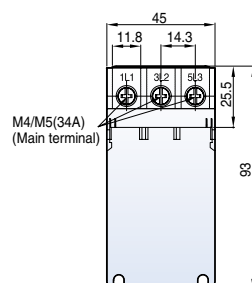
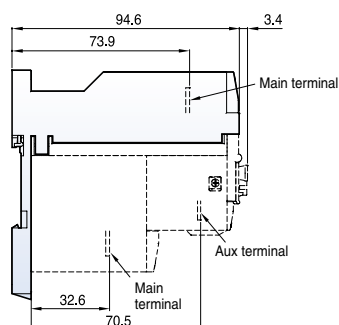
MT-800



11.5kg

Overload relays (Separate mount)

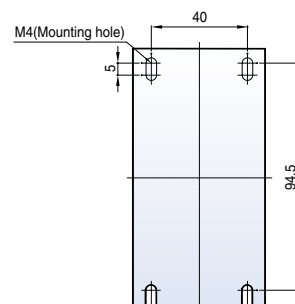
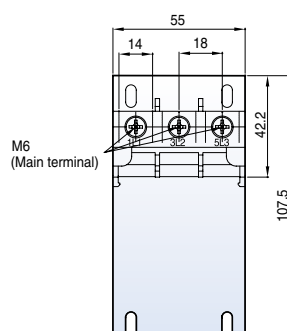
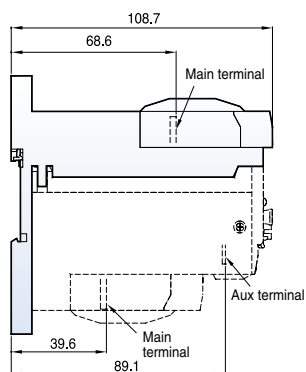
UZ-32



[mm]

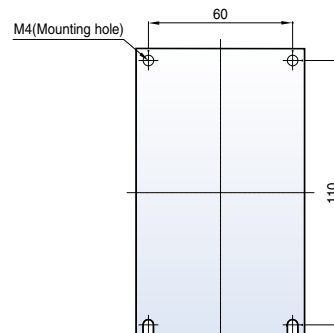
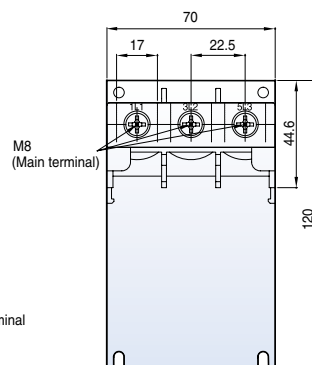
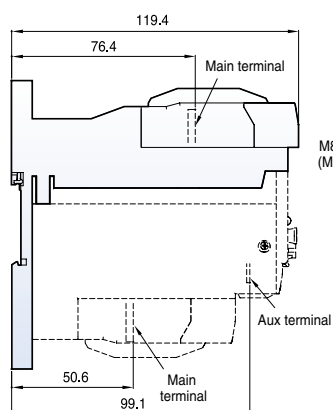
68g

UZ-63



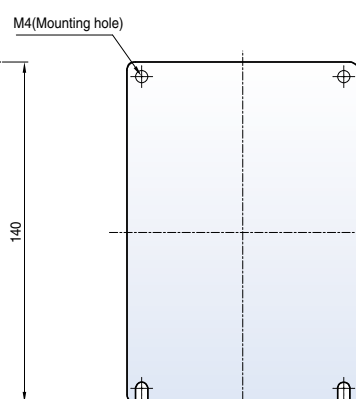
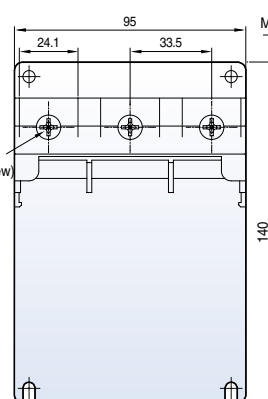
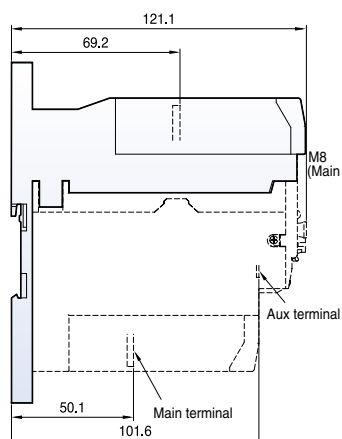
134g

UZ-95



230g

UZ-150



284g

Contact arrangement

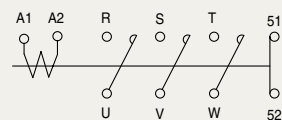
Contactors

MC-6a~18a

1a

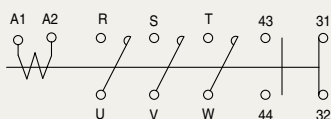


1b



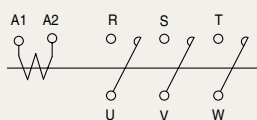
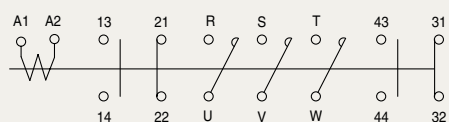
MC-9b~22b

1a1b



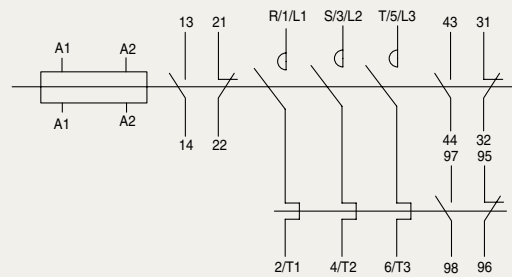
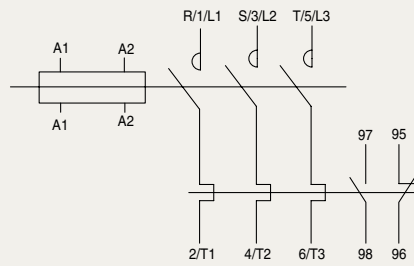
MC-32a~150a

2a2b

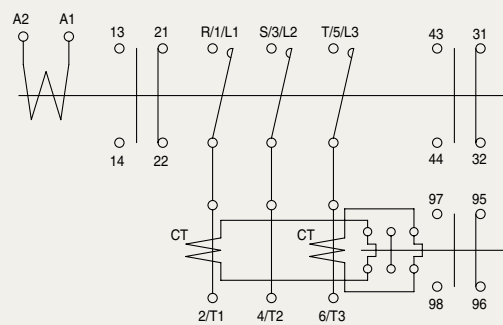


Motor starters

MS-6a~150a

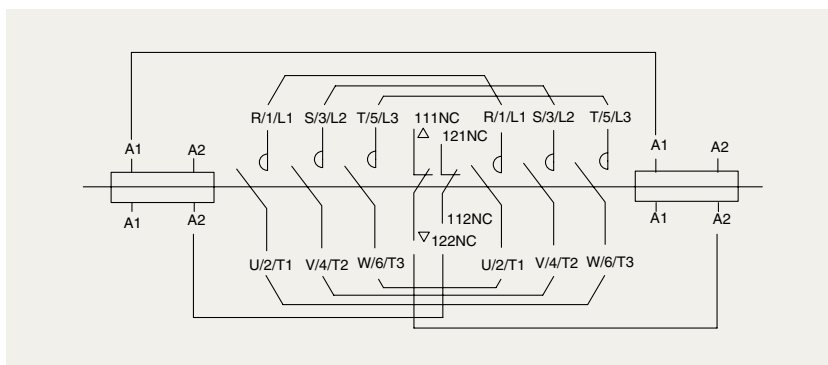


MS-185a~800a

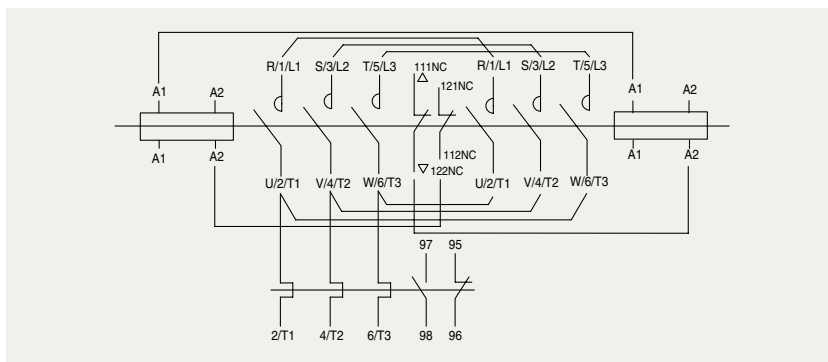


Reversing contactors

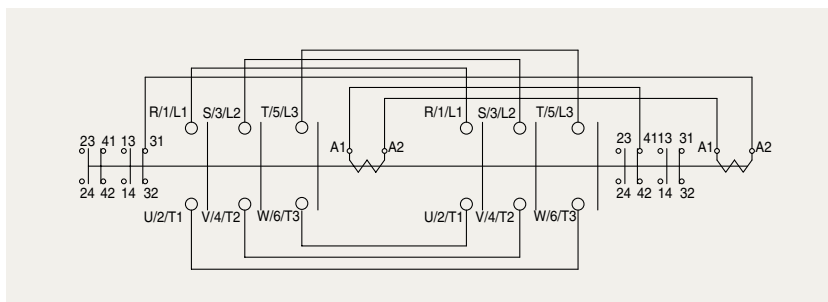
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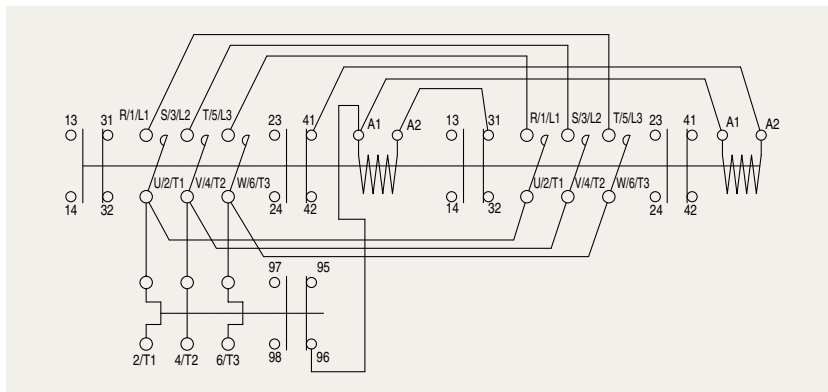
MS-6aR~150aR



MC-185aR~800aR



MS-185aR~400aR





Metasol MC 4pole



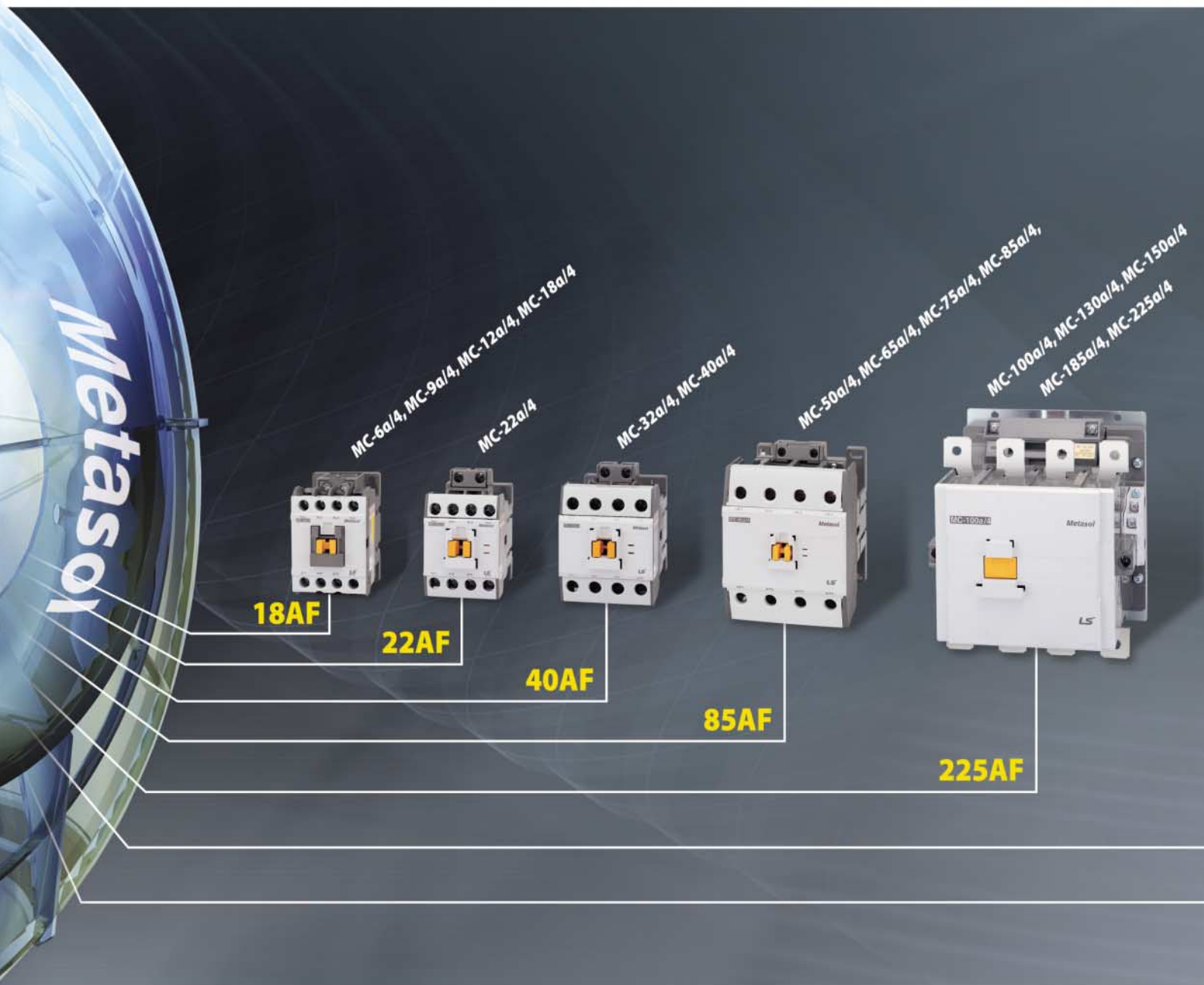
Contents :

Contactor

Overview	110
Table of specifications	112
Dimension	116



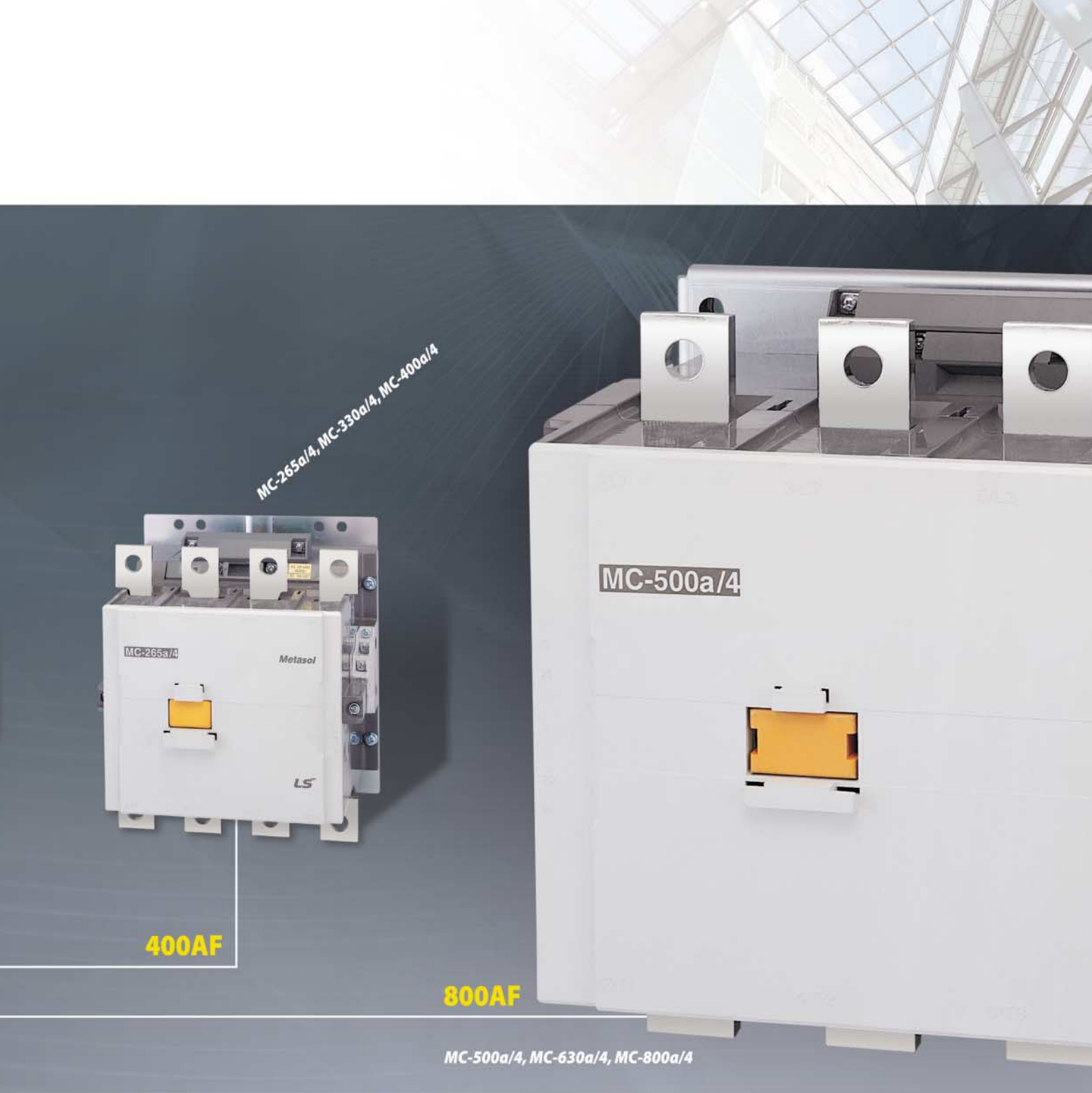
Metasol Series completion



More Safe,
More Valuable



Contactors & Overload Relays



- *Advanced technology & Expert solution*
- *Offering economical solution with compact size & easy connection*
- *Perfect system with peripheral devices.*
- *Environment friendly product: complies with International environment standard RoHS.*

Table of specifications

MC type Magnetic Contactors



Frame size				
Type				
		Screw clamp terminal		
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(AC1)				
Durability		Mechanical		
		Electrical		
Current and Power	AC-1	Thermal current	A	
		200/240V	kW	
			A	
		380/400V	kW	
			A	
		500/550V	kW	
			A	
		690V	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	Weight	kg	
	Control	Size(W×H×D)		mm
	DC	Weight	kg	
	Control	Size(W×H×D)		mm
Auxiliary(standard)				
Auxiliary		Side Mount		
		Front Mount		



18AF			
MC-6a/4	MC-9a/4	MC-12a/4	MC-18a/4
4pole			
690V			
690V			
50/60Hz			
6kV			
1800 operations per hour			
15 mil. Operations			
0.5 mil. Operations		0.8 mil. Operations	
25	25	25	40
9	9	9	15
25	25	25	40
17	17	17	27
25	25	25	40
21	21	21	35
25	25	25	40
27	27	27	44
25	25	25	40
25	25	25	32
0.5	0.5	0.75	1
1.5	1.5	2	3
2	2	3	5
3	3	5	7.5
5	5	7.5	10
7.5	7.5	10	15
00	00	0	0
0.33			
45 × 73.5 × 79			
0.5			
45 × 73.5 × 110.7			
-			
UA-1			
UA-2, UA-4			

**22AF**

MC-22a/4

●

4pole

690V

690V

50/60Hz

6kV

1800 operations

15 mil. Operations

1 mil. Operations

40

15

40

27

40

35

40

44

40

32

2

3

7.5

7.5

10

15

1

0.4

47.2 × 80 × 86.8

0.5

47.2 × 80 × 113.2

-

UA-1

UA-2, UA-4

40AF

MC-32a/4

MC-40a/4

●

4pole

690V

690V

50/60Hz

6kV

1800 operations per hour

15 mil. Operations

1 mil. Operations

50

60

18

22

50

60

35

42

50

60

43

52

50

60

55

66

50

60

45

50

2

3

5

5

7.5

10

10

10

20

25

20

25

1

1

0.59

59 × 83.5 × 94.5

0.7

59 × 83.5 × 121

-

UA-1

UA-2, UA-4

85AF

MC-50a/4

MC-65a/4

MC-75a/4

MC-85a/4

●

4pole

690V

1000V

50/60Hz

8kV

1800 operations per hour

12 mil. Operations

1 mil. Operations

80

100

110

135

30

37

41

51

80

100

110

135

56

70

76

95

80

100

110

135

70

88

97

120

80

100

110

135

88

110

120

150

80

100

110

135

70

80

90

100

3

5

5

7.5

7.5

10

15

15

10

15

20

25

15

20

25

30

30

40

50

50

30

40

50

50

2

2

2

3

1.2

91 × 123.5 × 117.8

1.29

91 × 123.5 × 117.8

-

UA-1

UA-2, UA-4

Table of specifications

MC type Magnetic Contactors



Frame size				
Type		Screw clamp terminal		
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(AC1)				
Durability		Mechanical		
		Electrical		
Current and Power	AC-1	Thermal current	A	
		200/240V	kW	
			A	
		380/400V	kW	
			A	
		500/550V	kW	
	A			
	690V	kW		
		A		
UL rating (50/60Hz)	Continuous current		A	
		Single	110~120V	HP
		Phase	220~240V	HP
			200~208V	HP
		Three	220~240V	HP
			Phase	440~480V
	550~600V	HP		
	NEMA Size			
Size and weight		AC	Weight	kg
		Control	Size(W × H × D)	mm
		DC	Weight	kg
		Control	Size(W × H × D)	mm
Auxiliary(standard)				
Auxiliary		Side Mount		
		Front Mount		

* - FLA = 722 A, LRA = 5618 A

** - FLA = 566 A, LRA = 4495 A

225AF				
MC-100a/4	MC-130a/4	MC-150a/4	MC-185a/4	MC-225a/4
●				
4pole				
690V				
1000V				
50/60Hz				
8kV				
1200 operations per hour				
15 mil. Operations				
0.8 mil. Operations				
160	165	250	300	330
57	60	76	87	100
150	155	200	230	260
106	110	142	165	185
150	155	200	230	260
132	137	180	205	230
150	155	200	230	260
165	170	225	255	290
150	155	200	230	260
160	160	210	230	275
7.5	10	15	15	15
15	20	25	30	40
30	40	40	60	60
30	40	50	60	75
60	75	100	125	150
60	75	100	125	150
3	3	4	4	4
5.6				
175 × 203 × 185				
2a2b				
AU-100				
-				

**400AF**

MC-265a/4	MC-330a/4	MC-400a/4
●		
4pole		
690V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
15 mil. Operations		
0.5 mil. Operations		
360	420	500
115	135	160
300	350	420
215	250	300
300	350	420
265	315	375
300	350	420
335	390	470
300	350	420
300	350	450
-	-	-
-	-	-
75	100	125
100	100	150
200	200	300
200	200	300
5	5	5

9.9

206 × 243 × 205

2a2b

AU-100

-

**800AF**

MC-500a/4	MC-630a/4	MC-800a/4
●		
4pole		
690V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
12 mil. Operations		
0.5 mil. Operations		
630	750	900
245	255	310
630	660	800
450	470	570
630	660	800
560	590	710
630	660	800
710	740	900
630	660	800
580	660	900
-	-	-
-	-	-
150	200	200
200	250	300
400	500	600 *
400	500	600 **
6	6	7

26.3

346 × 310 × 244

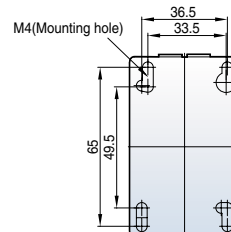
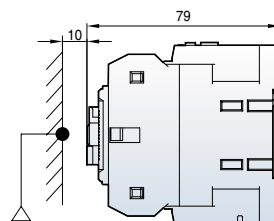
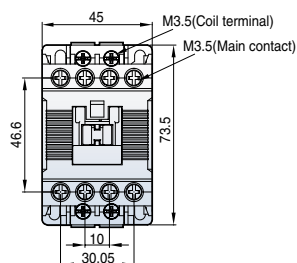
2a2b

AU-100

-

Contactors (MC-6a/4~22a/4)

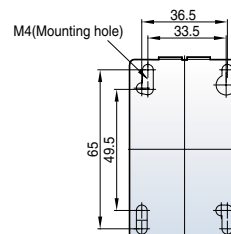
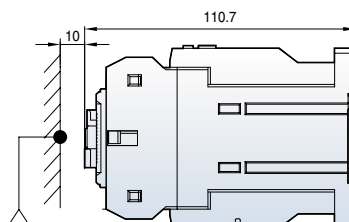
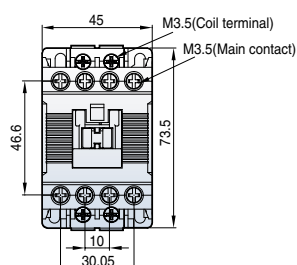
MC-6a/4~18a/4 AC



[mm]

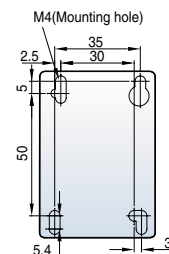
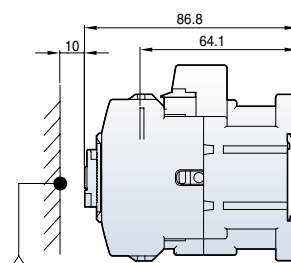
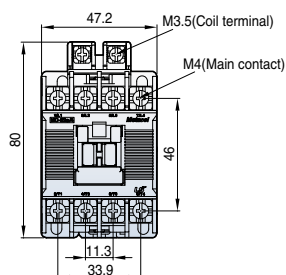
0.3kg

MC-6a/4~18a/4 DC



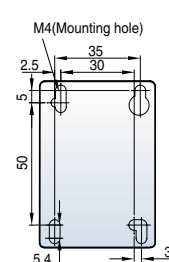
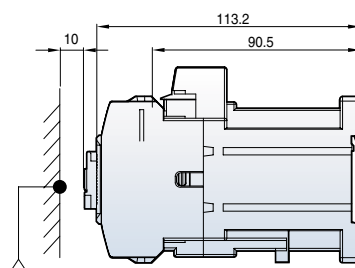
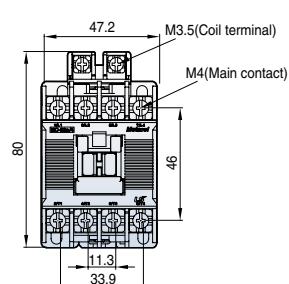
0.45kg

MC-22a/4 AC



0.4kg

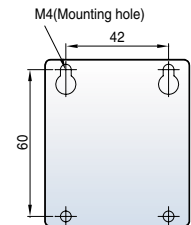
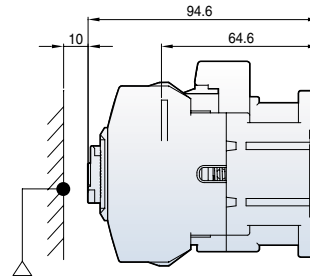
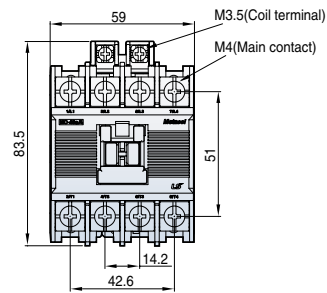
MC-22a/4 DC



0.5kg

Contactors (MC-32a/4~85a/4)

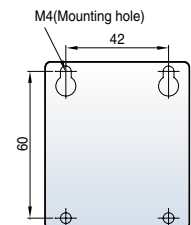
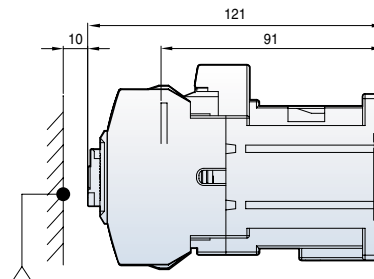
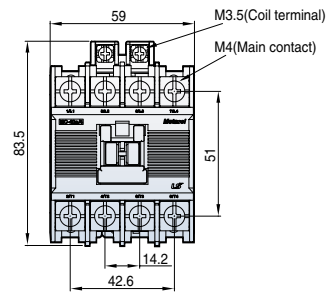
MC-32a/4~40a/4 AC



[mm]

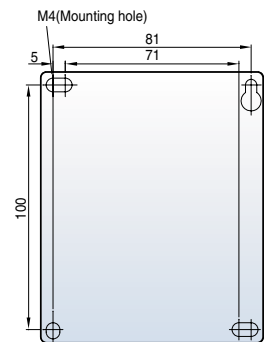
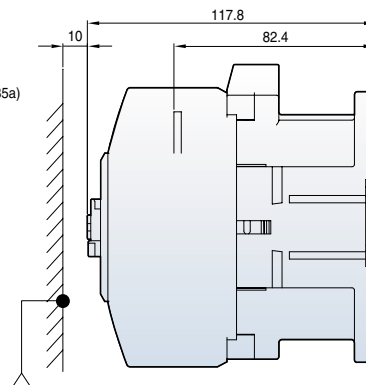
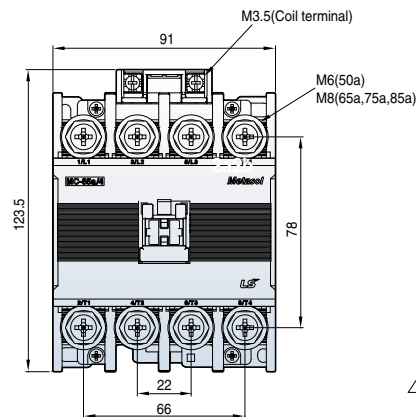
0.59kg

MC-32a/4~40a/4 DC



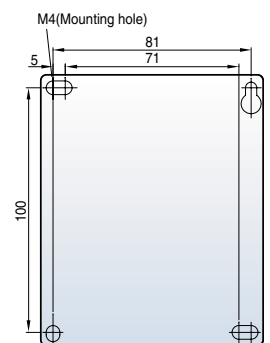
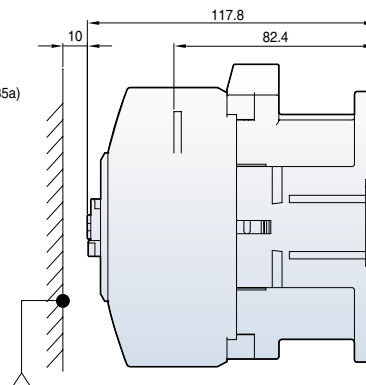
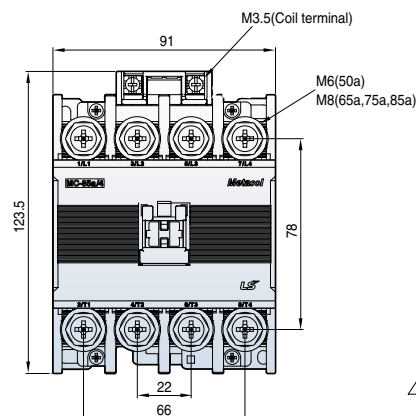
0.7kg

MC-50a/4~85a/4 AC



1.2kg

MC-50a/4~85a/4 DC



1.29kg

Contactors (MC-100a/4~800a/4)

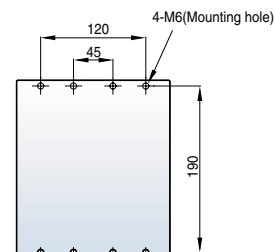
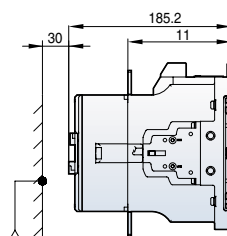
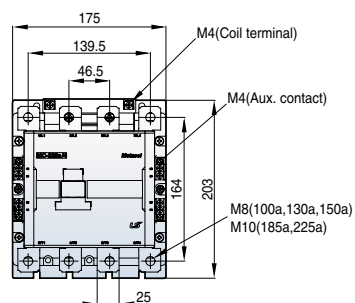
MC-100a/4

MC-130a/4

MC-150a/4

MC-185a/4

MC-225a/4



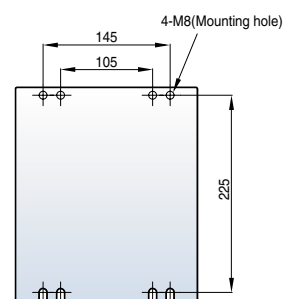
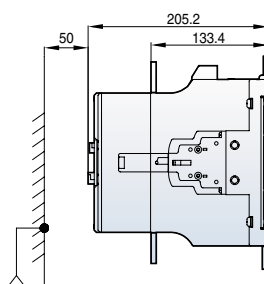
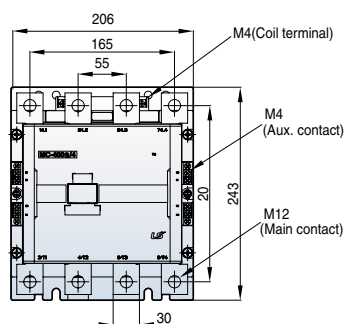
[mm]

5.6kg

MC-265a/4

MC-330a/4

MC-400a/4

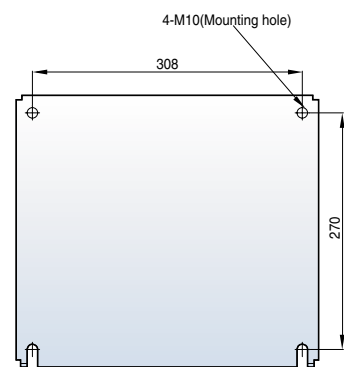
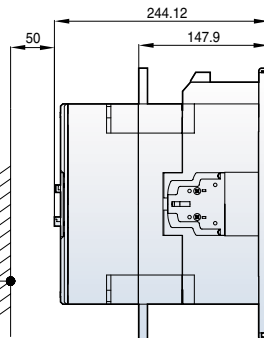
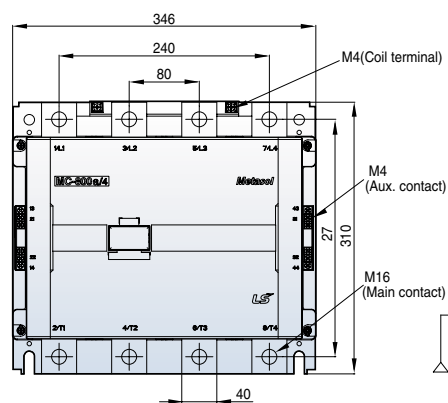


9.9kg

MC-500a/4

MC-630a/4

MC-800a/4



26.3kg

Green Innovators of Innovation



Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact a qualified service technician when you need maintenance.
Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.

LS Industrial Systems Co., Ltd.

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■ HEAD OFFICE

LS Tower 1026-6, Hogue-dong, Dongan-gu,
Anyang-si, Gyeonggi-do 431-848, Korea
Tel. (82-2)2034-4887, 4873, 4918, 4148
Fax. (82-2)2034-4648

■ CHEONG-JU PLANT

Cheong-Ju Plant #1, Song Jung Dong, Hung Duk Ku,
Cheong Ju, 361-720, Korea

■ Global Network

- **LS Industrial Systems (Middle East) FZE >> Dubai, U.A.E.**
Address: LOB 19 JAFZA VIEW TOWER Rm 205, Jebel Ali Freezone P.O. Box 114216, Dubai, U.A.E
Tel: 971-4-886 5360 Fax: 971-4-886-5361 e-mail: jungyongl@lsis.biz
- **Dalian LS Industrial Systems Co., Ltd. >> Dalian, China**
Address: No.15, Liaohezi 3-Road, Economic and Technical Development zone, Dalian 116600, China
Tel: 86-411-8273-7777 Fax: 86-411-8730-7560 e-mail: lixk@lsis.com.cn
- **LS Industrial Systems (Wuxi) Co., Ltd. >> Wuxi, China**
Address: 102-A, National High & New Tech Industrial Development Area, Wuxi, Jiangsu, 214028, P.R.China
Tel: 86-510-8534-6666 Fax: 86-510-522-4078 e-mail: xuhg@lsis.com.cn
- **LS-VINA Industrial Systems Co., Ltd. >> Hanoi, Vietnam**
Address: Nguyen Khe - Dong Anh - Ha Noi - Viet Nam
Tel: 84-4-882-0222 Fax: 84-4-882-0220 e-mail: srjo@lsisvina.com
- **LS-VINA Industrial Systems Co., Ltd. >> Hochiminh, Vietnam**
Address: 41 Nguyen Thi Minh Khai Str. Yoco Bldg 4th Floor, Hochiminh City, Vietnam
Tel: 84-8-3822-7941 Fax: 84-8-3822-7942 e-mail: sbpark@lsisvina.com
- **LS Industrial Systems Tokyo Office >> Tokyo, Japan**
Address: 16FL, Higashi-Kan, Akasaka Twin Tower 17-22, 2-chome, Akasaka, Minato-ku Tokyo 107-8470, Japan
Tel: 81-3-3582-9128 Fax: 81-3-3582-2667 e-mail: jschuna@lsis.biz
- **LS Industrial Systems Shanghai Office >> Shanghai, China**
Address: Room E-G, 12th Floor Huamin Empire Plaza, No.726, West Yan'an Road Shanghai 200050, P.R. China
Tel: 86-21-5237-9977 (609) Fax: 89-21-5237-7191 e-mail: jinhk@lsis.com.cn
- **LS Industrial Systems Beijing Office >> Beijing, China**
Address: B-Tower 17FL, Beijing Global Trade Center B/D. No.36, BeiSanHuanDong-Lu, DongCheng-District, Beijing 100013, P.R. China
Tel: 86-10-5825-6025,7 Fax: 86-10-5825-6026 e-mail: cuixiaorong@lsis.com.cn
- **LS Industrial Systems Guangzhou Office >> Guangzhou, China**
Address: Room 1403,14F, New Poly Tower, 2 Zhongshan Liu Road, Guangzhou, P.R. China
Tel: 86-20-8326-6764 Fax: 86-20-8326-6287 e-mail: linsz@lsis.biz
- **LS Industrial Systems Chengdu Office >> Chengdu, China**
Address: Room 1701 17Floor, huanminhanjun international Building, No1 Fuxing Road Chengdu, 610041, P.R. China
Tel: 86-28-8670-3101 Fax: 86-28-8670-3203 e-mail: yanggt@lsis.com.cn
- **LS Industrial Systems Qingdao Office >> Qingdao, China**
Address: 7B40, Haixin Guangchang Shenye Building B, No.9, Shandong Road Qingdao 26600, P.R. China
Tel: 86-532-8501-6568 Fax: 86-532-583-3793 e-mail: lirj@lsis.com.cn

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