Derwent
Top 100
Global
Innovator
2020

Metasol Meta Solution

MC/TOR

Contactors and Overload Relays



LS ELECTRIC

Metasol Contactors and overload relays

New Generation of Contactors From LS



Designed to show superior technology : 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.





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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.*
- *25Models in 9 Frames*
- *Ready for IE3*

Motor Starters

- *Compact design for space saving*
- *DIN rail and screw mountable (upto 150AF)*
- *Overload relays directly mountable to contactors separately*
- *Finger-proof design*
- *Easy to combine with manual motor starters*
- *Broad range of accessories*
- *World class products conforming to IEC and UL standards*



18AF	22AF	40AF	65AF	100AF	150AF
Contactor	**Contactor**	**Contactor**	**Contactor**	**Contactor**	**Contactor**
MC-6a, 9a, 12a, 18a	**MC-9b, 12b, 18b, 22b**	**MC-32a, 40a**	**MC-50a, 65a**	**MC-75a, 85a, 100a**	**MC-130a, 150a**
Rated current: 6, 9, 12, 18A	Rated current: 9, 12, 18, 22A	Rated current: 32, 40A	Rated current: 50, 65A	Rated current: 75, 85, 100A	Rated current: 130, 150A
Rated insulation voltage: 690V	Rated insulation voltage: 690V	Rated insulation voltage: 1000V	Rated insulation voltage: 1000V	Rated insulation voltage: 1000V	Rated insulation voltage: 1000V
Overload relay MT-12	**Overload relay MT-32**	**Overload relay MT-32**	**Overload relay MT-63**	**Overload relay MT-95**	**Overload relay MT-150**
Current range: 0.1~18A	Current range: 0.1~40A	Current range: 0.1~40A	Current range: 4~65A	Current range: 7~100A	Current range: 34~150A
Trip class: Class10A, 20	Trip class: Class10A, 20	Trip class: Class10A, 20	Trip class: Class10A, 20	Trip class: Class10A, 20	Trip class: Class10A, 20



225AF

Contactor
MC-185a, 225a
Rated current:
185, 225A
Rated insulation voltage:
1000V
Overload relay MT-225
Current range: 65~240A
Trip class: Class10A, 20

400AF

Contactor
MC-265a, 330a, 400a
Rated current:
265, 330, 400A
Rated insulation voltage:
1000V
Overload relay MT-400
Current range: 85~400A
Trip class: Class10A, 20

800AF

Contactor
MC-500a, 630a, 800a
Rated current:
500, 630, 800A
Rated insulation voltage:
1000V
Overload relay MT-800
Current range: 200~800A
Trip class: Class10A, 20

1260AF

Contactor
MC-1260a
Rated current:
1260A
Rated insulation voltage:
1000V

2650AF

Contactor
MC-1400a, 1700a, 2100a, 2650a
Rated current:
1400, 1700, 2100, 2650A
Rated insulation voltage:
1000V



Offering economical solution with compact size & easy connection



Perfect system with other devices and accessories

■ One-touch connection

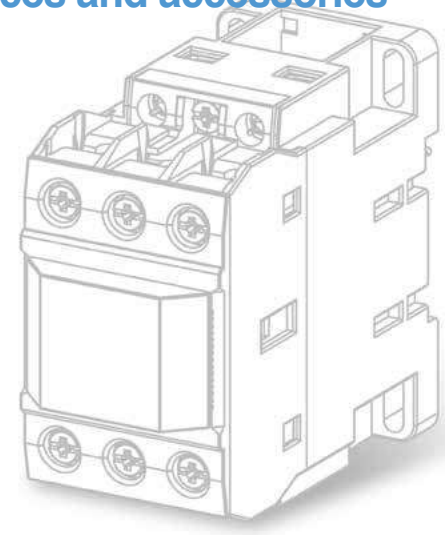
- Din Rail connection without any special tools
- Direct combine a surge unit

■ Simple wiring

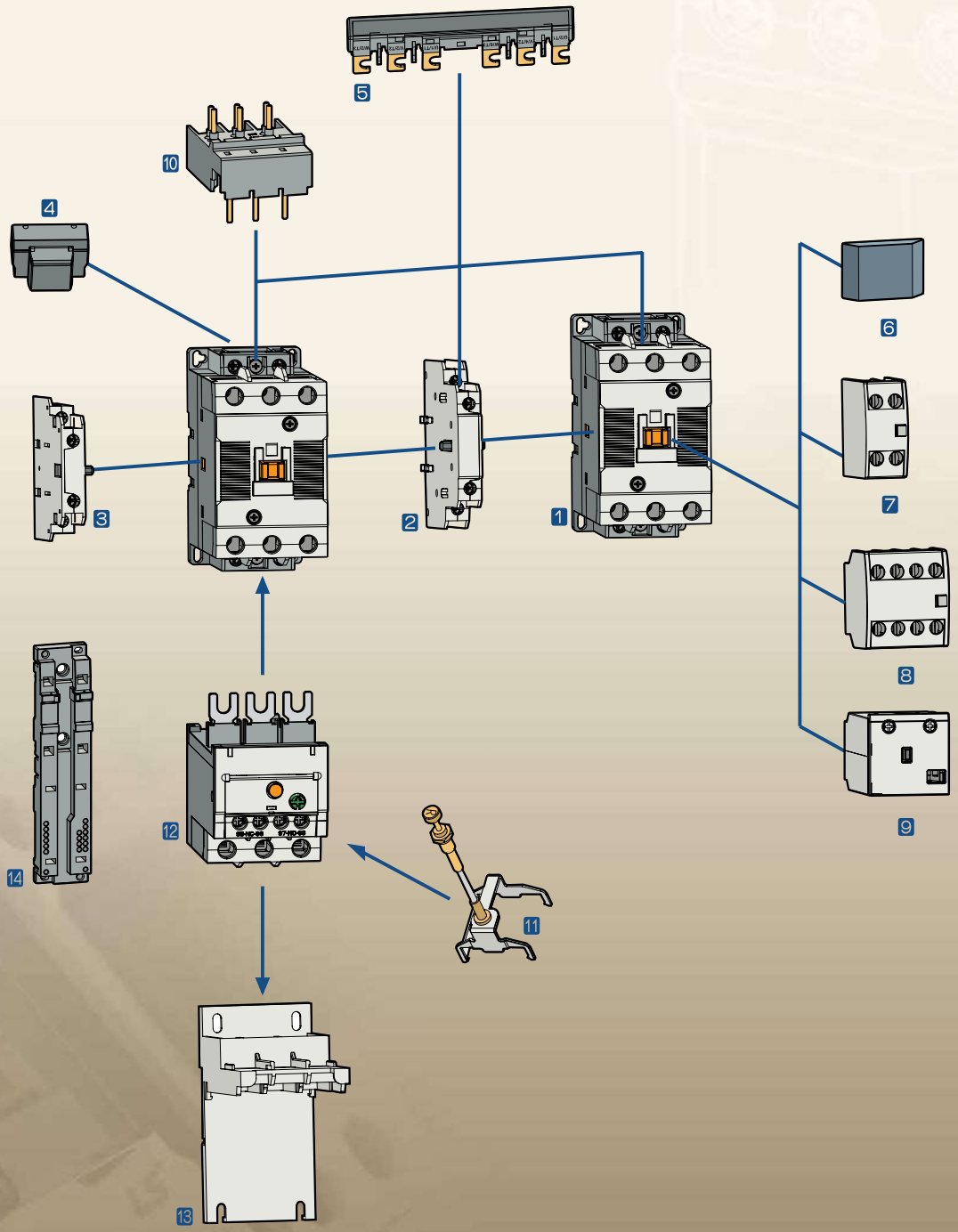
- Mounting unit, Adapter
- Reversing wire set

■ 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



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

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			●	●	●	●	●	●	●	●
	Lug 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 power	AC-1, Thermal current		A	25	25	25	32	25	27	40	45
	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
		1000V	kW	-	-	-	-	-	-	-	-
			A	-	-	-	-	-	-	-	-
Rated Short-time withstand current (IEC 60947)		1s	A	210	250	280	300	250	280	300	400
		10s	A	105	110	120	130	110	120	154	186
		30s	A	70	70	80	85	70	80	100	130
		1min	A	61	61	61	70	61	61	84	90
		3min	A	40	45	47	50	45	50	60	60
		10min	A	30	30	30	40	30	30	40	50
		≥15min	A	25	26	28	30	26	28	30	45
UL rating (50/60Hz)	Continuous current		A	25	25	25	32	25	25	40	40
	Single phase	110~120V	HP	0.5	0.5	1	2	0.5	1	2	2
		220~240V	HP	1.5	1.5	2	3	1.5	2	3	3
		200~208V	HP	2	2	3	7.5	2	3	7.5	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	1	00	0	1	
Size and weight 	AC control	Weight	kg	0.33				0.34			
		Size(W×H×D)	mm	45×73.5×80.4				45×73.5×87.4			
	DC control	Weight	kg	0.4				0.41			
		Size(W×H×D)	mm	45×73.5×96.6				45×73.5×103.6			
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		●	●
	Lug 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		65AF		100AF		
MC-32a	MC-40a	MC-50a	MC-65a	MC-75a	MC-85a	MC-100a
●	●	●	●	●	●	●
		●	●	●	●	●
3pole		3pole		3pole		
1000V		1000V		1000V		
1000V		1000V		1000V		
50/60Hz		50/60Hz		50/60Hz		
8kV		8kV		8kV		
1800 operations per hour		1200 operations per hour		1200 operations per hour		
12 mil. operations		12 mil. operations		12 mil. operations		
2 mil. operations		2 mil. operations		2 mil. operations		1 mil. operations
55	60	100	115	125	135	160
7.5	11	15	18.5	22	25	30
32	40	55	65	75	85	105
15	18.5	22	30	37	45	55
32	40	50	65	75	85	105
18.5	22	30	33	37	45	55
28	32	43	60	64	75	85
18.5	22	30	33	37	45	55
20	23	28	35	42	45	65
22	22	30	30	37	37	37
17	17	23	23	28	28	28
600	700	1000	1050	1100	1200	1320
260	300	550	700	750	800	900
160	190	330	380	400	450	500
100	120	250	270	300	350	400
70	80	150	200	220	270	270
55	65	90	120	140	170	180
50	60	87	96	114	150	160
50	60	70	100	110	135	160
3	3	3	5	5	7.5	10
5	7.5	10	15	15	15	20
7.5	15	20	25	25	30	30
10	15	25	30	30	40	40
20	30	40	50	50	60	75
25	30	50	60	60	75	75
1P	2				3	
0.55 69×83×90		1.05 79×106×119		1.93 94×140×135.8		
0.77 69×83×117.1		1.3 79×106×146.4		2.8 94×140×172.3		
2a2b		**2a2b**		**2a2b**		
UA-1		UA-1		UA-1		
UA-2, UA-4		UA-2, UA-4		UA-2, UA-4		







MT-32/□	MT-63/□	MT-95/□
●	●	●
	●	●
690V	690V	690V
690V	690V	690V
6kV	6kV	6kV
10A, 20	10A, 20	10A, 20
0.1~40A	4~65A	7~100A
0.17	0.31/0.33	0.48/0.5
45×75×90	55×81×100	70×97×110

Table of specifications

MC type
Magnetic contactors





Frame size				150AF		225AF		400AF		
Type				MC-130a	MC-150a	MC-185a	MC-225a	MC-265a	MC-330a	MC-400a
	screws clamp terminals			●	●	●	●	●	●	●
	Lug clamp terminals			●	●	●	●			
Number of poles				3pole		3pole		3pole		
Rated operational voltage, Ue				1000V		1000V		1000V		
Rated insulation voltage, Ui				1000V		1000V		1000V		
Rated frequency				50/60Hz		50/60Hz		50/60Hz		
Rated impulse withstand voltage, Uimp				8kV		8kV		8kV		
Maximum operating rate in operating cycles per hour(AC3)				1200 operations per hour		1200 operations per hour		1200 operations per hour		
Durability	Mechanical			5 mil. operations		5 mil. operations		5 mil. operations		2.5 mil. operations
	Electrical			1 mil. operations		1 mil. operations		1 mil. operations		0.5 mil. operations
Current and power	AC-1, Thermal current		A	200	250	300	350	400	500	520
	AC-3	200/240V	kW	37	45	55	75	80	90	125
			A	130	150	185	225	265	330	400
		380/440V	kW	60	75	90	132	147	160	200
			A	130	150	185	225	265	330	400
		500/550V	kW	60	70	110	132	147	160	225
			A	90	100	180	200	225	280	350
		690V	kW	55	55	110	140	160	200	250
			A	60	60	120	150	185	220	300
		1000V	kW	75	75	132	132	147	147	147
			A	50	50	90	90	105	105	105
Rated Short-time withstand current (IEC 60947)		1s	A	1350	1800	2000	2500	3500	4000	4600
		10s	A	950	1200	1500	1700	2400	3000	4400
		30s	A	700	800	1000	1200	1500	2500	2974
		1min	A	550	600	800	1000	1100	1700	1846
		3min	A	350	450	520	700	800	1000	1313
		10min	A	200	300	350	500	600	620	760
		≥15min	A	175	280	320	400	500	553	699
UL rating (50/60Hz)	Continuous current		A	200	250	300	350	400	500	520
	Single phase	110~120V	HP	10	15	15	15	-	-	-
		220~240V	HP	20	25	30	40	-	-	-
	Three phase	200~208V	HP	40	40	60	60	75	100	125
		220~240V	HP	40	50	60	75	100	100	150
		440~480V	HP	75	100	125	150	200	200	300
		550~600V	HP	75	75	125	150	200	200	300
	NEMA size				4			5		
Size and weight 	AC control	Weight	kg	2.4		5.4		9.2		
		Size(W×H×D)	mm	119×158×130.3		138×203×185.1		163×243×204.4		
	DC control	Weight	kg							
		Size(W×H×D)	mm							
Auxiliary(standard)				2a2b		2a2b		2a2b		
Auxiliary	Side mount			UA-1		AU-100, AU-100E (Max.4a4b)		AU-100, AU-100E (Max.4a4b)		
	Front mount			UA-2, UA-4		-		-		

MT type
Thermal Overload Relays





Type			MT150/□	MT225/□	MT400/□
	screws clamp terminals		●	●	●
	Lug clamp terminals		●	●	
Rated operational voltage, Ue			690V	690V	690V
Rated insulation voltage, Ui			690V	690V	690V
Rated impulse withstand voltage, Uimp			6kV	6kV	6kV
Trip class			10A, 20	10A, 20	10A, 20
Setting range			34~150A	65~240A	85~400A
Size and weight 	Weight	kg	0.67	2.5	2.6
	Size(W×H×D)	mm	95×109×113	147×141×184	151×171×198

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



800AF		
MC-500a	MC-630a	MC-800a
●	●	●
3pole		
1000V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
2.5 mil. operations		
0.5 mil. operations		
700	900	1050
147	190	220
500	630	800
265	330	440
500	630	800
265	330	500
400	500	720
300	400	500
380	420	630
280	280	280
220	220	220
6000	7000	7500
5050	6400	7000
4400	4500	4900
3400	3500	3800
2000	2200	2500
1400	1550	1550
1100	1300	1300
700	900	1050
-	-	-
-	-	-
150	200	200
200	250	300
400	500	600
400	500	600
6		7
22.2 285×310×246		
2a2b		
AU-100, AU-100E (Max.4a4b)		
-		



MT-800/□
●
690V
690V
6kV
10A, 20
200~800A
11.5
360×530×212



1260AF
MC-1260a
●
3pole
1000V
1000V
50/60Hz
8kV
300 operations per hour
0.5 mil. operations
0.05 mil. operations
1260
-
-
-
-
-
-
-
-
-
-
8000
7200
5200
4000
2300
3000
1500
1260
-
-
24 285×352×246
2a2b
AU-100, AU-100E (Max.4a4b)
-



2650AF			
MC-1400a	MC-1700a	MC-2100a	MC-2650a
●	●	●	●
3pole			
1000V			
1000V			
50/60Hz			
8kV			
300 operations per hour			
0.5 mil. operations			0.3 mil. operations
0.05 mil. operations			0.02 mil. operations
1400	1700	2100	2650
290	310	-	-
860	1050	-	-
550	700	900	-
860	1050	1450	-
-	-	-	-
-	-	-	-
800	1000	-	-
800	950	-	-
-	-	-	-
-	-	-	-
-	-	-	
8000	10000	10000	
-	-	-	
4500	5500	5500	
-	-	-	
2600	3000	3000	
-	-	-	
1400	1700	2100	2650
-	-	-	-
-	-	-	-
33.8 431×380×246			47 431×392 ×246
2a2b			
AU-100, AU-100E (Max.4a4b)			
-			

Table of specifications



MC type
Magnetic contactors (4pole)

Frame size				18AF			
Type				MC-6a/4	MC-9a/4	MC-12a/4	MC-18a/4
	Screw clamp terminal			●			
Number of poles				4pole			
Rated operational voltage (Ue)				690V			
Rated insulation voltage (Ui)				690V			
Rated frequency				50/60Hz			
Rated impulse withstand voltage, Uimp				6kV			
Maximum operating rate in operating cycles per hour(AC1)				1800 operations per hour			
Durability	Mechanical			15 mil. Operations			
	Electrical			0.5 mil. Operations		0.8 mil. Operations	
Current and Power		Thermal current	A	25	25	25	40
	AC-1	200/240V	kW	9	9	9	15
			A	25	25	25	40
		380/400V	kW	17	17	17	27
			A	25	25	25	40
		500/550V	kW	21	21	21	35
			A	25	25	25	40
		690V	kW	27	27	27	44
			A	25	25	25	40
UL rating (50/60Hz)	Continuous current		A	25	25	25	32
	Single	110~120V	HP	0.5	0.5	0.75	1
	Phase	220~240V	HP	1.5	1.5	2	3
		200~208V	HP	2	2	3	7.5
	Three	220~240V	HP	3	3	5	7.5
	Phase	440~480V	HP	5	5	7.5	10
		550~600V	HP	7.5	7.5	10	15
Size and weight 	AC	Weight	kg	0.33			
	Control	Size(W×H×D)	mm	45×73.5× 80.4			
	DC	Weight	kg	0.4			
	Control	Size(W×H×D)	mm	45×73.5×96.6			
Auxiliary(standard)				-			
Auxiliary	Side Mount			UA-1			
	Front Mount			UA-2, UA-4			







22AF	40AF		85AF			
MC-22a/4	MC-32a/4	MC-40a/4	MC-50a/4	MC-65a/4	MC-75a/4	MC-85a/4
●	●		●			
4pole	4pole		4pole			
690V	690V		690V			
690V	690V		1000V			
50/60Hz	50/60Hz		50/60Hz			
6kV	6kV		8kV			
1800 operations	1800 operations per hour		1800 operations per hour			
15 mil. Operations	15 mil. Operations		12 mil. Operations			
1 mil. Operations	1 mil. Operations		1 mil. Operations			
40	50	60	80	100	110	135
15	18	22	30	37	41	51
40	50	60	80	100	110	135
27	35	42	56	70	76	95
40	50	60	80	100	110	135
35	43	52	70	88	97	120
40	50	60	80	100	110	135
44	55	66	88	110	120	150
40	50	60	80	100	110	135
32	45	50	70	80	90	100
2	2	3	3	5	5	7.5
3	5	5	7.5	10	15	15
7.5	7.5	10	10	15	20	25
7.5	10	10	15	20	25	30
10	20	25	30	40	50	50
15	20	25	30	40	50	50
0.4	0.59		1.2			
47.2×80×86.8	59×83.5×94.6		91×123.5×117.8			
0.5	0.7		1.29			
47.2×80×113.2	59×83.5×121		91×123.5×117.8			
-	-		-			
AU-1	AU-1		AU-1			
UA-2, UA-4	UA-2, UA-4		UA-2, UA-4			

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MC type
Magnetic contactors (4pole)

Frame size				225AF				
Type				MC-100a/4	MC-130a/4	MC-150a/4	MC-185a/4	MC-225a/4
	Screw clamp terminal					●		
Number of poles						4pole		
Rated operational voltage (Ue)						690V		
Rated insulation voltage (Ui)						1000V		
Rated frequency						50/60Hz		
Rated impulse withstand voltage, Uimp						8kV		
Maximum operating rate in operating cycles per hour(AC1)						1200 operations per hour		
Durability	Mechanical					5 mil. Operations		
	Electrical					0.8 mil. Operations		
Current and Power	AC-1	Thermal current	A	200	250	275	300	350
		200/240V	kW	57	60	76	87	100
			A	200	250	275	300	350
		380/400V	kW	106	110	142	165	185
			A	200	250	275	300	350
		500/550V	kW	132	137	180	205	230
			A	200	250	275	300	350
		690V	kW	165	170	225	255	290
			A	200	250	275	300	350
UL rating (50/60Hz)	Continuous current		A	200	250	275	300	350
	Single Phase	110~120V	HP	7.5	10	15	15	15
		220~240V	HP	15	20	25	30	40
		200~208V	HP	30	40	40	60	60
	Three Phase	220~240V	HP	30	40	50	60	75
		440~480V	HP	60	75	100	125	150
		550~600V	HP	60	75	100	125	150
Size and weight 	AC Control	Weight	kg			5.6		
		Size(W×H×D)	mm			175×203×185		
	DC Control	Weight	kg					
		Size(W×H×D)	mm					
Auxiliary(standard)				2NO2NC				
Auxiliary	Side Mount					AU-100, AU-100E		
	Front Mount					-		

* - FLA = 722 A, LRA = 5618 A
** - FLA = 566 A, LRA = 4495 A





400AF			800AF		
MC-265a/4	MC-330a/4	MC-400a/4	MC-500a/4	MC-630a/4	MC-800a/4
	●			●	
	4pole			4pole	
	690V			690V	
	1000V			1000V	
	50/60Hz			50/60Hz	
	8kV			8kV	
	1200 operations per hour			1200 operations per hour	
	2.5 mil. Operations			2.5 mil. Operations	
	0.5 mil. Operations			0.5 mil. Operations	
400	500	520	700	900	1050
115	135	160	245	255	310
400	500	520	700	900	1050
215	250	300	450	470	570
400	500	520	700	900	1050
265	315	375	560	590	710
400	500	520	700	900	1050
335	390	470	710	740	900
400	500	520	700	900	1050
400	500	520	700	900	1050
-	-	-	-	-	-
-	-	-	-	-	-
75	100	125	150	200	200
100	100	150	200	250	300
200	200	300	400	500	600 *
200	200	300	400	500	600 **
	9.9			26.3	
	206×243×205			346×310 ×244	
2NO2NC			**2NO2NC**		
	AU-100, AU-100E			AU-100, AU-100E	
	-			-	

Memo

FUTURING SMART ENERGY

We open up a brighter future through
efficient and convenient energy solutions.



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 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.



- According to The WEEE Directive, please do not discard the device with your household waste.

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Technical Question or After-sales Service

Customer Center-Quick Responsive Service, Excellent technical support | **82-1644-5481**

2020. 07

Specifications in this catalog are subject to change without notice due to continuous product development and improvement.

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