

# Introduction of New Product

## Metasol Energy Saving Contactors

Energy Saving Contactor(ESC) has DC controlled coil that requires lower power consumption. ESC is suitable for automatic control, PLC control circuit, etc.

Using ESC, heat generation is consequently decreased, which result in saving energy and increasing life time and reliability of the product.

- Lower power consumption type auxiliary relays and contactors with permanent magnets
- The best Energy saving product for control circuits such as motor, automatic control and PLC circuits.
- Enhanced lifetime and reliability thanks to lower heating of the control coil
- Coil pick-up with a permanent magnetic field, less temperature rise and power consumption
- Less heat generation in Coil (85°C→65°C)
- Low power consumption, high energy efficiency (9W→5W)
- 14.1 mm, reduced (shorter) depth compared to existing products.
- CE marked, UL approval
- Coil polarity (+, -)



### Rating

Contactor type	Type	Unit	MC-6a		MC-9a		MC-12a		MC-18a		MC-9b		MC-12b		MC-18b		MC-22b		
			kW	A	kW	A	kW	A	kW	A	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	2.5	11	3.5	13	4.5	18	5.5	22	
		380/440V	3	7	4	9	5.5	12	7.5	18	4	9	5.5	12	7.5	18	11	22	
		500/550V	3	6	4	7	7.5	12	7.5	13	4	7	7.5	12	7.5	13	15	18	
		690V	3	4	4	5	7.5	9	7.5	9	4	6	7.5	9	7.5	9	15	15	
	AC4	200/240V	1.5	7	1.5	8	2.2	11	3.7	16	1.5	8	2.2	11	3.7	16	3.7	18	
		380/440V	2.2	5	2.2	6	4	9	4	11	2.2	6	4	9	4	11	5.5	13	
Resistive/non-inductive loads	AC1		-	25	-	25	-	25	-	32	-	25	-	25	-	40	-	40	
DC1 (L/R=1ms)	2-pole in series	24V	-	18	-	18	-	18	-	18	-	18	-	18	-	18	-	32	
		48V	-	17	-	17	-	17	-	17	-	17	-	17	-	17	-	30	
Resistive/non-inductive loads	110V	3-pole in series	24V	-	12	-	12	-	12	-	12	-	12	-	12	-	12	-	23
			48V	-	20	-	20	-	20	-	20	-	20	-	20	-	20	-	32
		110V	24V	-	15	-	15	-	15	-	15	-	15	-	15	-	15	-	27
			48V	-	20	-	20	-	20	-	20	-	20	-	20	-	20	-	32
DC2,4 (L/R=15ms)	2-pole in series	24V	-	15	-	15	-	15	-	15	-	15	-	15	-	15	-	25	
		48V	-	12	-	12	-	12	-	12	-	12	-	12	-	12	-	20	
		110V	-	8	-	8	-	8	-	8	-	8	-	8	-	8	-	15	
DC motor loads	3-pole in series	24V	-	18	-	18	-	18	-	18	-	18	-	18	-	18	-	30	
		48V	-	15	-	15	-	15	-	15	-	15	-	15	-	15	-	30	
		110V	-	12	-	12	-	12	-	12	-	12	-	12	-	12	-	20	
Directly mountable overload relay			MT-12						MT-32										
Conductor size (Solid, stranded)	AWG	16~10		16~10		16~8		14~8		16~10		16~8		14~8		14~8			
(the max. number of conducts : 2)	mm <sup>2</sup>	1.5~4		1.5~4		1.5~10		2.5~10		1.5~4		1.5~10		2.5~10		2.5~10			
Conductor type		60/75 °C Cu-wire only						60/75 °C Cu-wire only											

# Contactors relays

## Rating

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

## Selection

Poles	Composition	Types	Remarks
4 Pole	4a, 3a1b, 2a2b 1a3b, 4b	MR-4	Additional auxiliary contacts can be mounted on the relays.
6 Pole	6a, 5a1b, 4a2b 3a3b, 2a4b	MR-6	UA-2 is mounted on the MR-4.
8 Pole	8a, 7a1b, 6a2b 5a3b, 4a4b	MR-8	UA-4 is mounted on the MR-4.

## Control coil characteristics (20°C, Cold state)

DC coil		MR	18-22AF
Control voltage (Uc)		12, 20, 24, 48, 60, 80, 100, 110, 125, 200, 220, 250	
Voltage limit	Pick-up	75% or more	
	Drop-out	10% or less	
Coil consumption (20°C)			
DC 100V	Inrush (W)	5	5
	Holding (W)	5	5
Operating time			
	Closing (ms)	40 ... 60	40 ... 60
	Opening (ms)	4 ... 19	4 ... 19

# Type numbering system

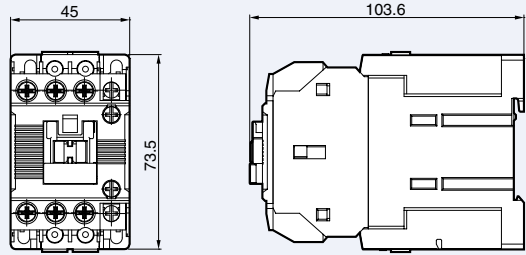
## Contactors

<b>MC-6a</b>	/	<b>R</b>	/	<b>DC110</b>
Rated current		Version		Coil voltage
6a 6A		- Standard		DC 12 DC 12V
⋮		R Reversing		⋮
18a 18A		4 4-pole		⋮
9b 9A				DC 250 DC 250V
⋮				
22b 22A				

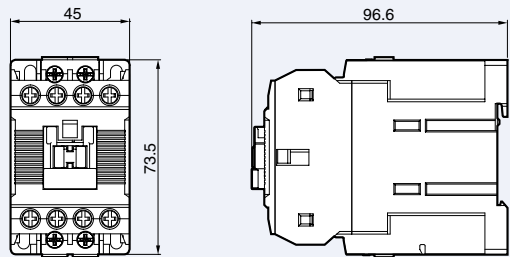
## Contactors relays

<b>1a1b</b>		<b>MR</b>	/	<b>4</b>
Auxiliary contact				Poles
11 1a1b				4 4-pole
10 1a				6 6-pole
01 1b				8 8-pole

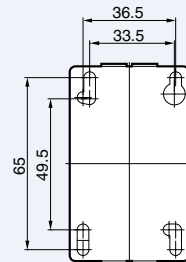
# Dimensions



MC-9b~22b



MR-4, MC-6a~18a



Mounting size

LSIS constantly endeavor to improve our products so that information in this catalog is subject to change without notice.

### HEAD OFFICE

Korea Gyeonggi-do Anyang-si dongan-gu LS-ro 127 (Hogye-dong)  
Tel. (82-2)2034-4887, 4873, 4918, 4148 Fax. (82-2)2034-4648