

Ministyczniki / Cewka AC

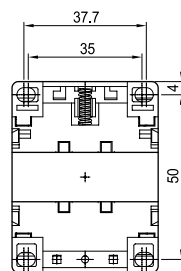
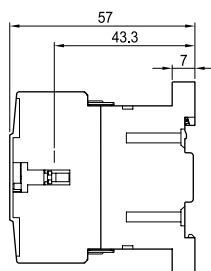
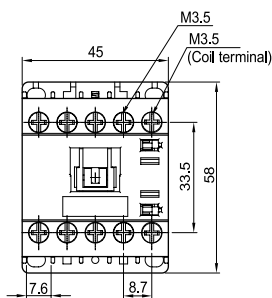
Zaciski Rozmiar	Zaciski śrubowe	Zaciski konektorowe	Zaciski sprężynowe	Zaciski do układów drukowanych
6A	GMC-6M	GMC-6MF	GMC-6MC	GMC-6MP
9A	GMC-9M	GMC-9MF	GMC-9MC	GMC-9MP
12A	GMC-12M	GMC-12MF	GMC-12MC	GMC-12MP
16A	GMC-16M	GMC-16MF	GMC-16MC	GMC-16MP

Ministyczniki / Cewka DC

Zaciski Rozmiar	Zaciski śrubowe	Zaciski konektorowe	Zaciski sprężynowe	Zaciski do układów drukowanych
6A	GMD-6M	GMD-6MF	GMD-6MC	GMD-6MP
9A	GMD-9M	GMD-9MF	GMD-9MC	GMD-9MP
12A	GMD-12M	GMD-12MF	GMD-12MC	GMD-12MP
16A	GMD-16M	GMD-16MF	GMD-16MC	GMD-16MP

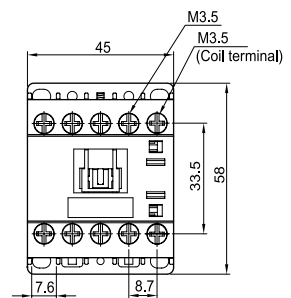
Wymiary

● Typ GMC



0 17kg

● Typ GMD



Ministyczniki

Napięcie cewki AC 50/60Hz

24, 36, 42, 48, 110, 115, 120, 127,
200/208, 220, 220/230, 230/240, 256, 277,
380/400, 400, 440, 480, 500, 550V AC

Prąd dla AC-3 (IEC60947-4)				Prąd dla AC-1 (Ith)	Styki pomocnicze (Ith)
220 ~ 240V	380 ~ 440V	500 ~ 550V	690V		
1.5kW 7A	2.2kW 6A	3kW 5A	3kW 4A	20A	1NO or 1NC (10A)
2.2kW 9A	4kW 9A	3.7kW 6A	4kW 5A	20A	
3kW 12A	5.5kW 12A	4kW 7A	4kW 5A	20A	
4kW 16A	7.5kW 16A	5.5kW 9A	4kW 5A	20A	

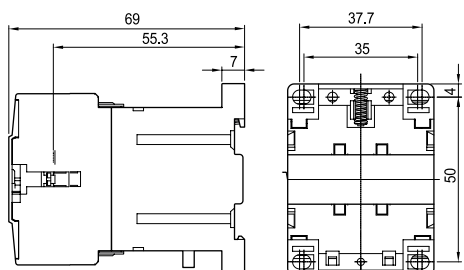
Napięcie cewki DC

Typ standardowy: 12, 20, 24, 36, 42, 48, 60, 72, 110, 120,
125, 220, 240, 250V DC

Typ o niskim poborze mocy: 12, 20, 24, 48, 72, 110,
120V DC (Low)

Typ pośredni: 12, 20, 24, 48, 72, 110, 12V DC)

Prąd dla AC-3 (IEC60947-4)				Prąd dla AC-1 (Ith)	Styki pomocnicze (Ith)
220 ~ 240V	380 ~ 440V	500 ~ 550V	690V		
1.5kW 7A	2.2kW 6A	3kW 5A	3kW 4A	20A	1NO or 1NC (10A)
2.2kW 9A	4kW 9A	3.7kW 6A	4kW 5A	20A	
3kW 12A	5.5kW 12A	4kW 7A	4kW 5A	20A	
4kW 16A	7.5kW 16A	5.5kW 9A	4kW 5A	20A	



0.23kg

Właściwości (dla 440VAC)

Rozmiar	6A	9A	12A	16A
Prąd znamionowy	6A	9A	12A	16A
Zdolność załączania	72A	108A	144A	180A
Zdolność wyłączenia	60A	90A	120A	150A
Ilość zadziałań	1800 operacji/godz.			
Wytrzymałość	elektryczna: 1mln zadziałań		mechaniczna: 12 mln zadziałań	

Charakterystyka cewki

Napięcie cewki	AC	DC		
		Typ standardowy	Typ o niskim poborze mocy	Typ pośredni
Pobór mocy (W)	2	3	1.2	2
Wzbudzenie	32VA	3W	1.2W	2W
Trzymanie	6VA	3W	1.2W	2W
Napięcie zamykania (%)	80~110	80~110	80~125	70~125
Napięcie otwierania (%)	30~40	10~30	10~30	10~30
Czas zamykania (ms)	10~20	40~50	40~50	40~50
Czas otwierania (ms)	35~45	35~45	35~45	35~45

Styczniki rewersyjne



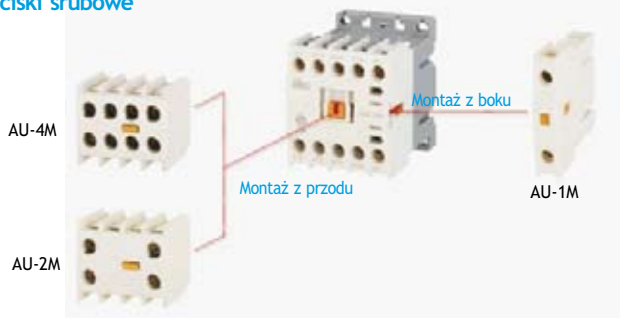
Blokada mechaniczna AR-12M



Akcesoria

Bloki styków pomocniczych

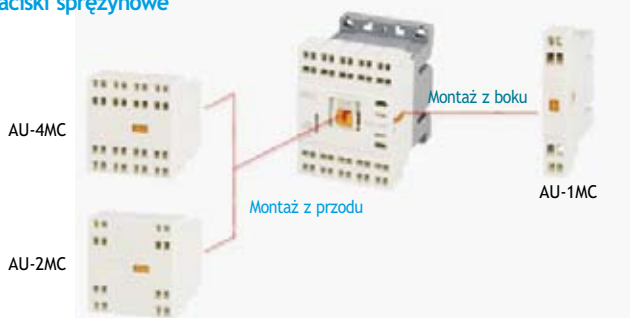
Zaciski śrubowe



Zaciski konektorowe



Zaciski sprężynowe

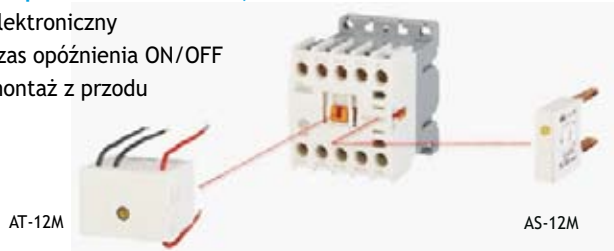


Zaciski do układów



Styki pomocnicze zwłoczne, AT-12M

- elektroniczny
- czas opóźnienia ON/OFF
- montaż z przodu



Układ ochronny cewki AS-12M



Zaciski	Montaż	Układ styków	
Montaż z góry	2NO	AU-2M20	
	2NC	AU-2M02	
	1NO+1NC	AU-2M11	
	4NO	AU-4M40	
	3NO+1NC	AU-4M31	
	2NO+2NC	AU-4M22	
	1NO+3NC	AU-4M13	
	4NC	AU-4M04	
	Montaż z boku	1NO	AU-1M10
		1NC	AU-1M01
Montaż z góry	2NO	AU-2MF20	
	2NC	AU-2MF02	
	1NO+1NC	AU-2MF11	
	4NO	AU-4MF40	
	3NO+1NC	AU-4MF31	
	2NO+2NC	AU-4MF22	
	1NO+3NC	AU-4MF13	
	4NC	AU-4MF04	
	Montaż z boku	1NO	AU-1MF10
		1NC	AU-1MF01
Montaż z góry	2NO	AU-2MC20	
	2NC	AU-2MC02	
	1NO+1NC	AU-2MC11	
	4NO	AU-4MC40	
	3NO+1NC	AU-4MC31	
	2NO+2NC	AU-4MC22	
	1NO+3NC	AU-4MC13	
	4NC	AU-4MC04	
	Montaż z boku	1NO	AU-1MC10
		1NC	AU-1MC01
Montaż z boku	1NO	AU-1MP10	
	1NC	AU-1MP01	

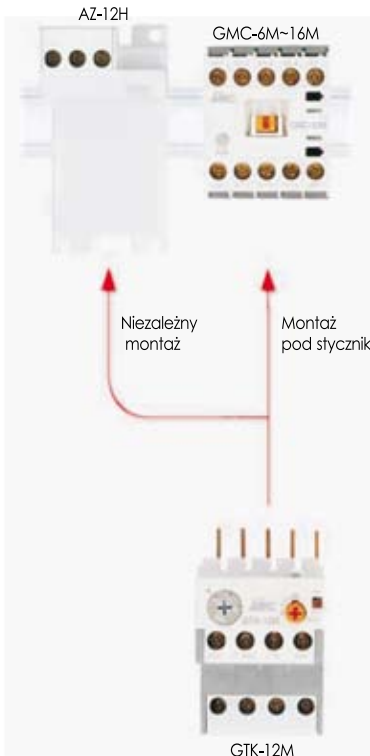
Przełączniki termiczne



GTK-12M

Opis

Bezpośrednio montowane pod stycznik lub na szynie DIN poprzez dedykowany adapter
 AZ-12H
 Mały rozmiar: szerokość 45mm
 Styki 1NO+1NC
 Zabezpieczeni zaniku fazy (typ GTK)
 Kompensacja temperatury w zakresie -5°C do 40°C
 Reset manualny i automatyczny



GTK-12M

Typ

Nastawa prądowa (A)		Typ dyferencyjny	
3-czujniki			
0.1 - 0.16	GTK-12M	0.16	
0.16 - 0.25	GTK-12M	0.25	
0.25 - 0.4	GTK-12M	0.4	
0.4 - 0.63	GTK-12M	0.63	
0.63 - 1	GTK-12M	1	
1 - 1.6	GTK-12M	1.6	
1.6 - 2.5	GTK-12M	2.5	
2.5 - 4	GTK-12M	4	
4 - 6	GTK-12M	6	
5 - 8	GTK-12M	8	
6 - 9	GTK-12M	9	
7 - 10	GTK-12M	10	
9 - 13	GTK-12M	13	
12 - 16	GTK-12M	16	

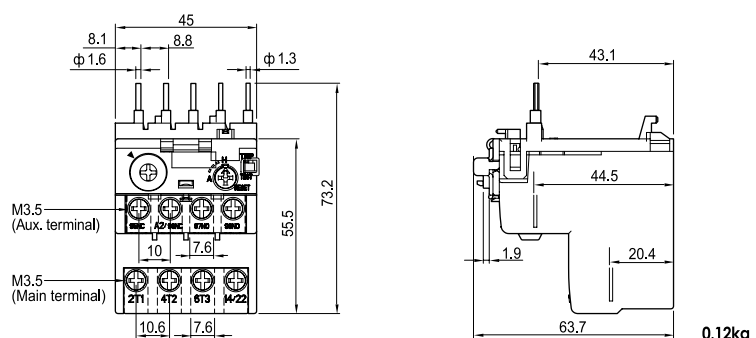
Właściwości styków pomocniczych

Praca AC15			Praca DC13	
110V	220V	550V	110V	220V
2.5(0.3)A	2(0.3)A	1(0.3)A	0.28A	0.14A



GTK-12MH

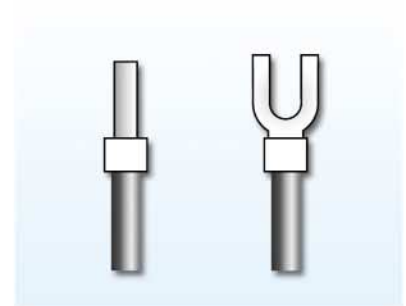
Wymiary



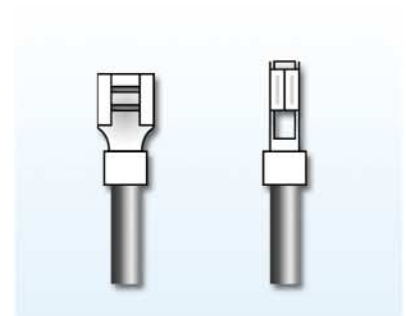
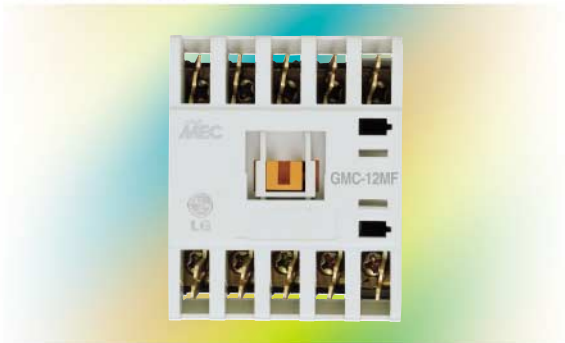
Mini-Contactors

Mini-Contactors providing Various Connections

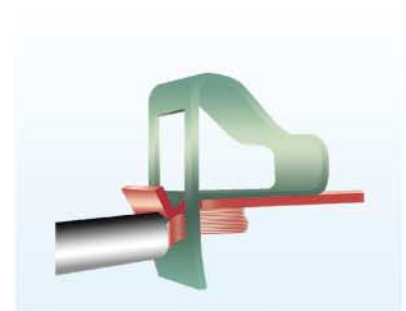
Screw clamps ... For conventional screw connections



Fast-on ... For fast-on connections



Cage clamps ... For screwless connections



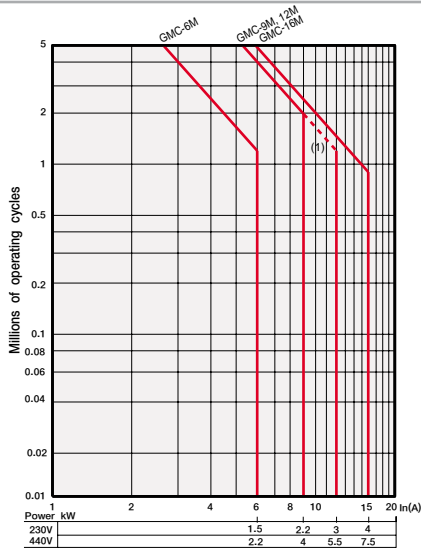
Solder pins ... To mount on Printed circuit boards



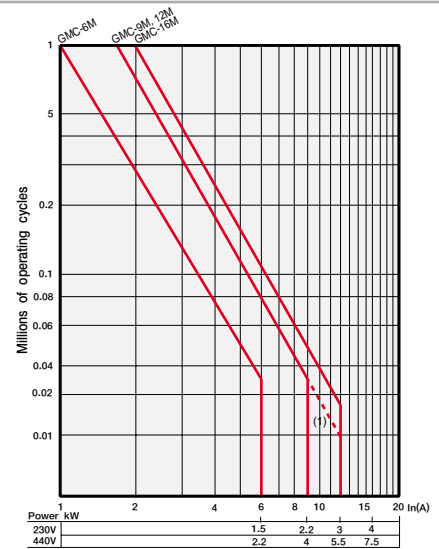
Characteristic curves

Electrical lifespan of contactors

Use in category
AC-3 ($U_e \geq 440V$)



Use in category
AC-4 ($U_e \geq 440V$)

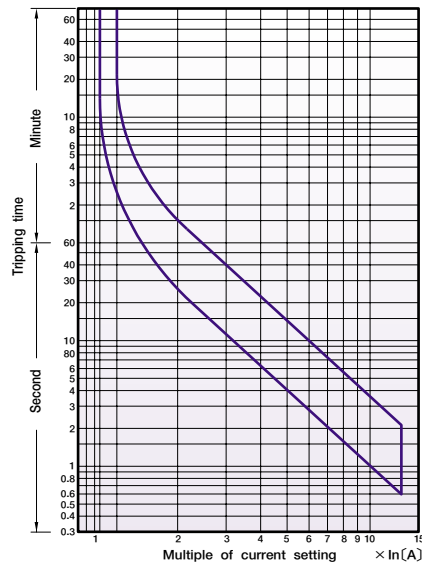


(1) The dotted lines are only applicable to GMC-12M contactors.

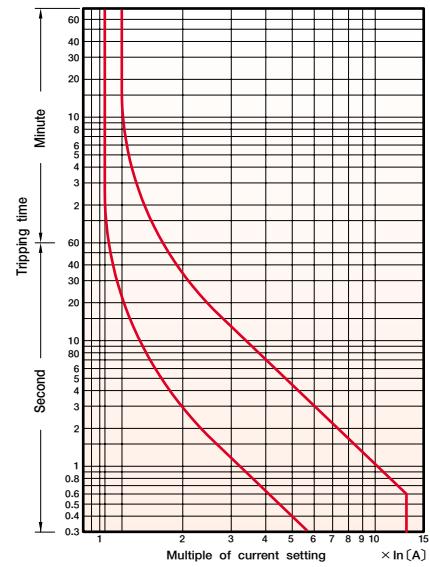
Overload relay curves

Non-Differential type

Cold state

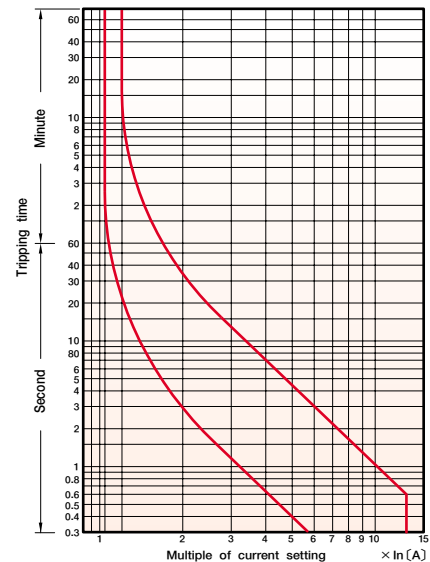
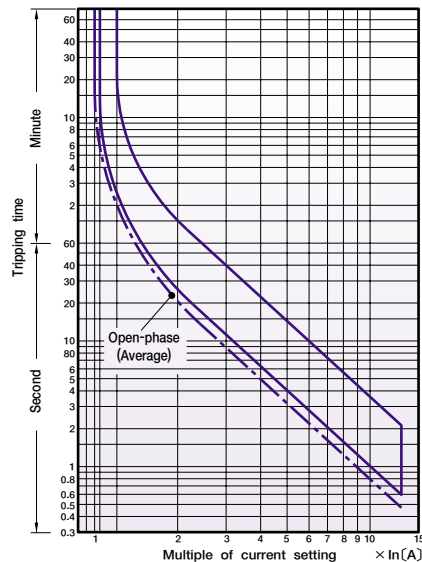


Hot state





GTH-12M

Differential type





GTK-12M

Mini contactors / AC coil

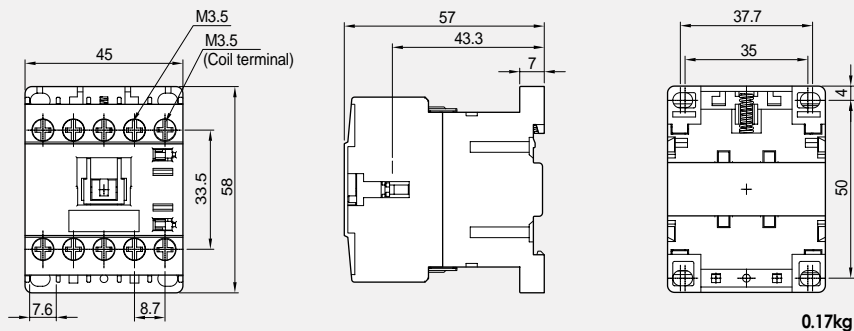
				
				
Connection	Screw clamps	Fast-on	Cage clamps	Solder pins
Frame size				
6A	GMC-6M	GMC-6MF	GMC-6MC	GMC-6MP
9A	GMC-9M	GMC-9MF	GMC-9MC	GMC-9MP
12A	GMC-12M	GMC-12MF	GMC-12MC	GMC-12MP
16A	GMC-16M	GMC-16MF	GMC-16MC	GMC-16MP

Mini contactors / DC coil

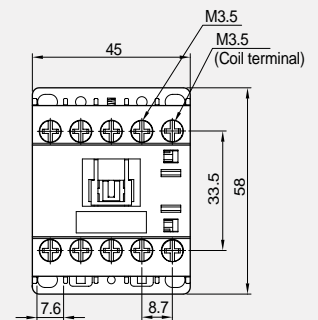
				
				
Connection	Screw clamps	Fast-on	Cage clamps	Solder pins
Frame size				
6A	GMD-6M	GMD-6MF	GMD-6MC	GMD-6MP
9A	GMD-9M	GMD-9MF	GMD-9MC	GMD-9MP
12A	GMD-12M	GMD-12MF	GMD-12MC	GMD-12MP
16A	GMD-16M	GMD-16MF	GMD-16MC	GMD-16MP

Dimensions

● GMC Type



● GMD Type



Description

For motor control
3 main plus 1 auxiliary contacts

Coil voltage, AC 50/60Hz

24, 36, 42, 48, 110, 115, 120, 127,
200/208, 220, 220/230, 230/240, 256, 277,
380/400, 400, 440, 480, 500, 550V AC

AC3 ratings (IEC60947-4)				AC1 rating (lth)	Auxiliary contacts (lth)
220 ~ 240V	380 ~ 440V	500 ~ 550V	690V		
1.5kW 7A	2.2kW 6A	3kW 5A	3kW 4A	20A	1NO or 1NC (10A)
2.2kW 9A	4kW 9A	3.7kW 6A	4kW 5A	20A	
3kW 12A	5.5kW 12A	4kW 7A	4kW 5A	20A	
4kW 16A	7.5kW 16A	5.5kW 9A	4kW 5A	20A	

Description

For motor control
3 main plus 1 auxiliary contacts

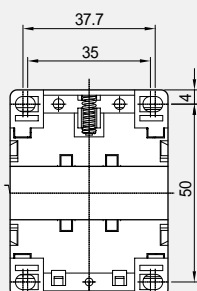
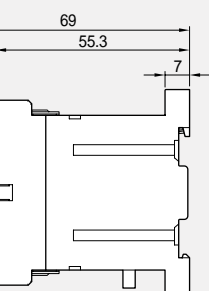
Coil voltage, DC,

Standard type : 12, 20, 24, 36, 42, 48, 60, 72, 110, 120,
125, 220, 240, 250V DC

Low consumption type : 12, 20, 24, 48, 72, 110,
120V DC(Low)

Wide Voltage : 12, 20, 24, 48, 72, 110, 12V DC(Wide)

AC3 ratings (IEC60947-4)				AC1 rating (lth)	Auxiliary contacts (lth)
220 ~ 240V	380 ~ 440V	500 ~ 550V	690V		
1.5kW 7A	2.2kW 6A	3kW 5A	3kW 4A	20A	1NO or 1NC (10A)
2.2kW 9A	4kW 9A	3.7kW 6A	4kW 5A	20A	
3kW 12A	5.5kW 12A	4kW 7A	4kW 5A	20A	
4kW 16A	7.5kW 16A	5.5kW 9A	4kW 5A	20A	



0.23kg

Performance (at 440VAC)

Frame size	6A	9A	12A	16A
Operation current	6A	9A	12A	16A
Making current	72A	108A	144A	180A
Breaking current	60A	90A	120A	150A
Operation cycle	1800 operations/hour			
Endurance	• Electrical:1 mil. operations		• Mechanical:12 mil. operations	

Note) 16A frame is not UL listed item.

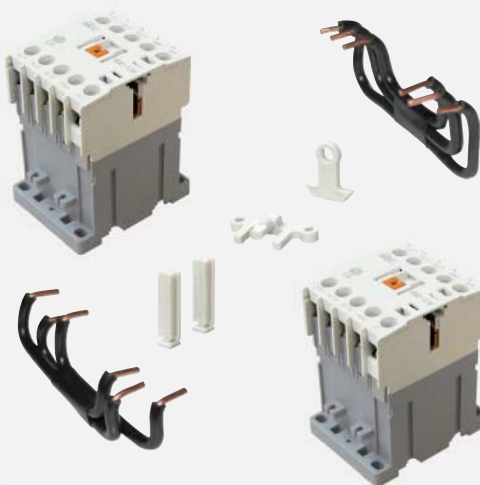
Coil characteristic

Coil voltage	AC	DC		
		Standard	Low consumption	Wide voltage
Coil consumption (W)	2	3	1.2	2
Inrush	32VA	3W	1.2W	2W
Sealed	6VA	3W	1.2W	2W
Closing voltage (%)	80~110	80~110	80~125	70~125
Opening voltage (%)	30~40	10~30	10~30	10~30
Closing time (ms)	10~20	40~50	40~50	40~50
Opening time (ms)	35~45	35~45	35~45	35~45

Reversing contactor



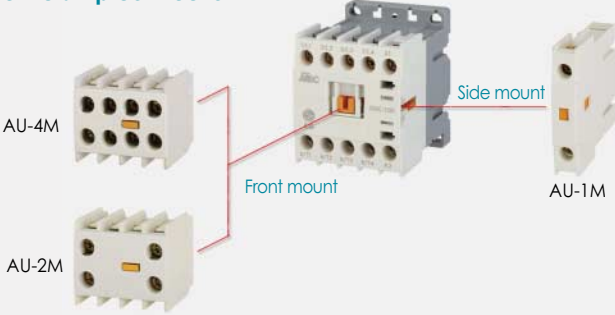
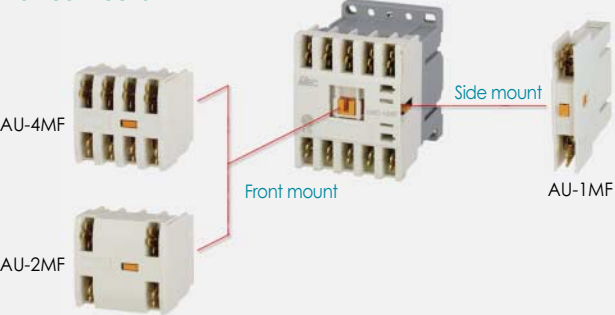
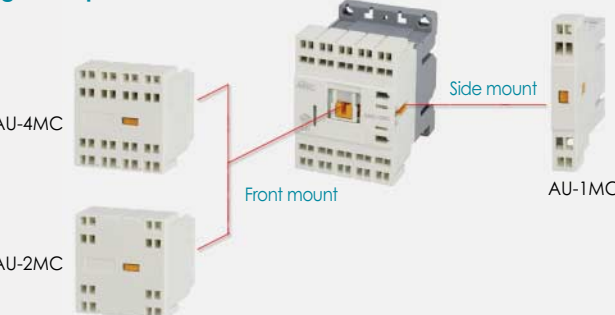
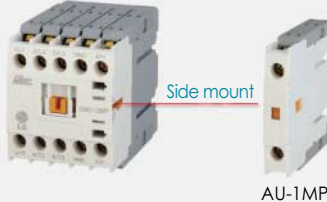
Interlock unit, AR-12M



consists of
- Mechanical interlock components
- Cable kits for line and load sides

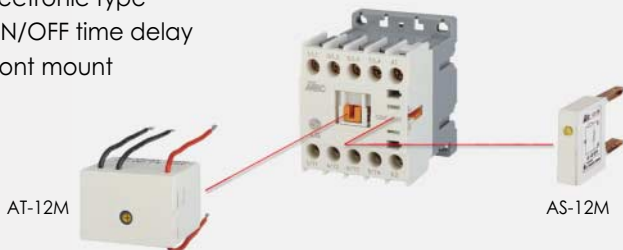
Accessories for contactors

Auxiliary contact blocks

Terminal connection	Mounting	Composition	Catalog no.	
Screw clamp connection 	Front mount	2NO	AU-2M20	
		2NC	AU-2M02	
		1NO+1NC	AU-2M11	
		4NO	AU-4M40	
		3NO+1NC	AU-4M31	
		2NO+2NC	AU-4M22	
		1NO+3NC	AU-4M13	
		4NC	AU-4M04	
	Side mount	1NO	AU-1M10	
		1NC	AU-1M01	
	Fast-on connection 	Front mount	2NO	AU-2MF20
			2NC	AU-2MF02
			1NO+1NC	AU-2MF11
		4NO	AU-4MF40	
		3NO+1NC	AU-4MF31	
		2NO+2NC	AU-4MF22	
		1NO+3NC	AU-4MF13	
		4NC	AU-4MF04	
Side mount		1NO	AU-1MF10	
		1NC	AU-1MF01	
Cage clamp connection 		Front mount	2NO	AU-2MC20
			2NC	AU-2MC02
			1NO+1NC	AU-2MC11
		4NO	AU-4MC40	
		3NO+1NC	AU-4MC31	
		2NO+2NC	AU-4MC22	
		1NO+3NC	AU-4MC13	
		4NC	AU-4MC04	
	Side mount	1NO	AU-1MC10	
		1NC	AU-1MC01	
	Solder pin connection 	Side mount	1NO	AU-1MP10
			1NC	AU-1MP01

Timer unit, AT-12M

- Electronic type
- ON/OFF time delay
- Front mount



Surge absorber unit, AS-12M

- Coil surge suppressor



Mini Overload relays



GTK-12M

Description

Direct mount on the mini contactors with screw clamp connection.

--- **contactor types : GMC(D)-6M, GMC(D)-9M, GMC(D)-12M, GMC(D)-16M,**

DIN rail or screw mountable with the optional base AZ-12H

Small physical size : 45 mm wide

1NO+1NC trip contacts

Trip class 10A according to IEC60947-4-1

Differential current/Phase failure protection : GTK types

Non-differential GTH types are available for the economic solution

Ambient compensated -5 to 40 °C

Manual/Automatic reset convertible.

Remote reset is optional.

Trip free designed



Separate
mount

Direct
mount



GTK-12M

Catalog No.

Setting ranges(A)	Differential type	Non-differential type	
	3-heater	3-heater	2-heater
0.1 - 0.16	GTK-12M • 0.16	GTH-12M/3 • 0.16	GTH-12M • 0.16
0.16 - 0.25	GTK-12M • 0.25	GTH-12M/3 • 0.25	GTH-12M • 0.25
0.25 - 0.4	GTK-12M • 0.4	GTH-12M/3 • 0.4	GTH-12M • 0.4
0.4 - 0.63	GTK-12M • 0.63	GTH-12M/3 • 0.63	GTH-12M • 0.63
0.63 - 1	GTK-12M • 1	GTH-12M/3 • 1	GTH-12M • 1
1 - 1.6	GTK-12M • 1.6	GTH-12M/3 • 1.6	GTH-12M • 1.6
1.6 - 2.5	GTK-12M • 2.5	GTH-12M/3 • 2.5	GTH-12M • 2.5
2.5 - 4	GTK-12M • 4	GTH-12M/3 • 4	GTH-12M • 4
4 - 6	GTK-12M • 6	GTH-12M/3 • 6	GTH-12M • 6
5 - 8	GTK-12M • 8	GTH-12M/3 • 8	GTH-12M • 8
6 - 9	GTK-12M • 9	GTH-12M/3 • 9	GTH-12M • 9
7 - 10	GTK-12M • 10	GTH-12M/3 • 10	GTH-12M • 10
9 - 13	GTK-12M • 13	GTH-12M/3 • 13	GTH-12M • 13
12 - 16	GTK-12M • 16	GTH-12M/3 • 16	GTH-12M • 16

Auxiliary (Trip) contact rating

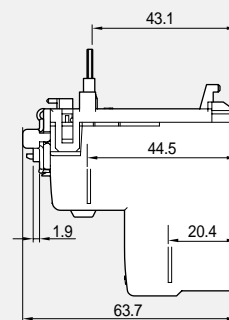
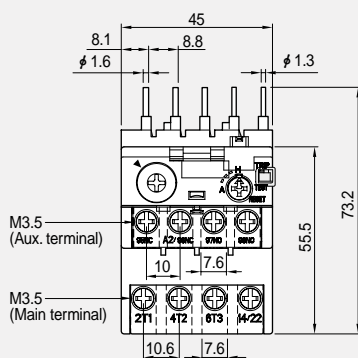
AC15(11) duty			DC13(11) duty	
110V	220V	550V	110V	220V
2.5(0.3)A	2(0.3)A	1(0.3)A	0.28A	0.14A

Note) Values are the ratings of NO contact under auto reset mode.



GTK-12MH

Dimensions



0.12kg