Our goal is the sea of stars!

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Giantele®

GTM1

Moulded Case Circuit Breaker



www.giant-electric.com

Giantele®


GTM1-100M/4P


GTM1-250M/4P


GTM1-400M/4P


GTM1-630M/4P


GTM1-800M/4P

○ Application

GTM1 series moulded case circuit breaker is one of products developed and manufactured by adopting international advanced technology. It is supplied with rated insulating voltage 500 and 800V and used for the circuit of AC 50/60Hz, rated operating voltage AC 400V (or below), rated operating current up to 1600A for infrequently changing over and starting of the motors. The products conforms to IEC60947-2 standard.

○ Main Technical Specification

Type	Rated current (A)	Pole	Rate dinsulating voltage(V)	Rated operating voltage(V)	Arcingover distance(mm)	Ultimate short circuit breaking capacity(kA)	Service short circuit breaking capacity(kA)	Operation performance		Utilization category
								Load	Unload	
GTM1-63L	(6),10,16,20, 25,32,40,50,63	3，4	500V	400V	0	25	18	1500	8500	A
GTM1-63M					0	50	35			
GTM1-125L	(10),16,20,25, 32,40,50,63, 80,100,125		800V		0(≤50)	35	22			
GTM1-125M					0(≤50)	50	35			
GTM1-250L	100,125,160, 180,200,225				≤50	35	22	1000	7000	
GTM1-250M					≤50	50	35			
GTSM1-400L	225,250,315, 350,400				≤50	50	35	1000	4000	
GTM1-400M					≤100	65	42			
GTM1-630L	400 500 600				≤100	50	35			
GTM1-630M					≤100	65	42			
GTM1-800M	630,700,800				≤100	75	50			
M1-1250M	10,001,250				≤100	100	65			
M1-1600M	1600				≤100	150	80			

Note: 6A without thermal protection
The N-pole of four-poles breaker is sited at the right side of the product has four types:
Type A: Without current trip-release on N pole which making all the time, not closing and opening with the other three poles.
Type B: Without current trip-release on N pole which closing and opening with the other poles.
Type C: With current trip-release which closing and opening with the other three poles.
Type D: With current trip-release which making all the time not closing and opening with the other three poles.

○ Protection Characteristic

The thermodynamic release of a circuit breaker provides the feature of inverse time-delay, while the magnetic release is the instantaneous operation as shown on table 2(distribution circuit breaker) and table 3 (motor protection circuit breaker).

Rated current of release (A)	Thermodynamic release(ambient temperature land +40°C marine +45°C)		Operating current of magnetic release (A)
	1.05In(cold state) Inoperative time(h)	1.30In(heat state) Operative time(h)	
10 ≤ In ≤ 63	≥ 1	<1	10In ± 20%
63 < In ≤ 100	>2	<2	
100 < In ≤ 800	≥ 2	<2	5In ± 20% 10In ± 20%

Table 3

Rated current of release (A)	Thermodynamic release(ambient temperature land +40°C marine +45°C)				Operating current of magnetic release (A)
	1.0In(cold state) non-trip time(h)	1.20In(heat state) trip time (h)	1.50In(heat state) trip time (m)	7.2In(cold state) trip time(s)	
10≤ In≤250	≥2	<2	≤4	4<t≤10	12In±20%
250<In≤ 630			≤8	6<t≤20	

○ Accessories of Circuit Breaker

The external accessories of the breaker

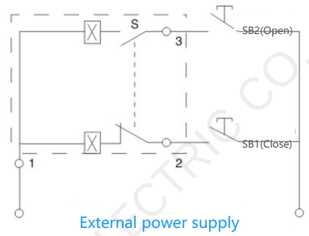
Electromagnetic operation device and Motor-driven operation device1
Wiring diagram of type CDM electromagnetic operation device(fitting AM1-63,100,250) see the following drawing (wiring diagram of the external accessories of the breaker in the dotted fram)


Back panel connection


Plug-in connection


Electromagnetic operation device


Motor-driven operation device

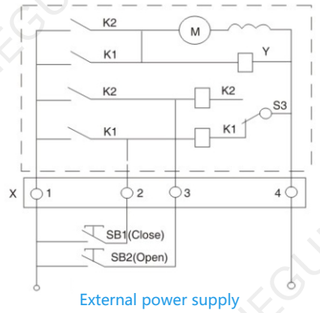


External power supply

Code description: SB1, SB2 stand for push button.(provided by users themselves) Number "1"、"2"、"3" stand for number of wiring terminals.

Voltage rating: AC50/60Hz 230V 400V, DC 220V

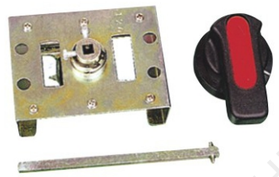
Wiring diagram of type CD Electromagnetic operation device and motor-driven operation device (fitting AM1-400. 630. 800) see belows (wiring diagram of the external accessories of the breaker in the dotted frame)



External power supply

Code description: SB1, SB2 stand for push button. (provided by users themselves) "X" stands for line connection terminals

Voltage rating: AC50/60Hz 230V 400V, DC220V

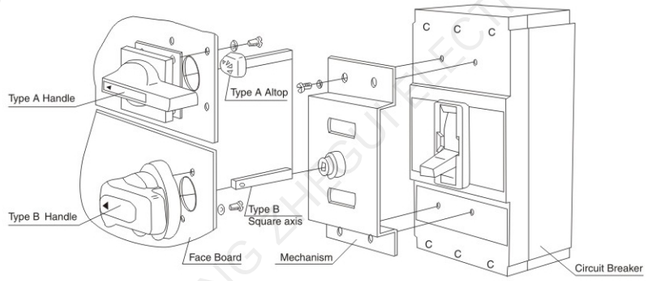


Rotary handle operation device

Rotary handle operation device

The mechanism is used with moulded case circuit breaker to operate the draw-out panel. Power distribution panel and supply box outside the panel by turning the handle ,and to ensure the door of panel would not be openned when the breaker being on.

The hand-drive mechanism can be equiped with two types of operation, one is "A" model square handle, the other is "B" model round handle.



Release pattern and accessories code

Line Handle

UVR: Under-voltage release; SHT: Shunt release;
AL: Alarm contact AX: Auxiliary contact;

Release pattern and accessories code	Name	Type	AM1-63,100,250		AM1-400		AM1-630		AM1-800	
200,300	Without accessories		200: magnetic release (only short circuit protection) 300: thermal magnetic release (both overload and short ci rcuit protection)							
208,308	Alarm contact		AL		AL		AL		AL	
210,310	Shunt release		SHT		SHT		SHT			SHT
220,320	Auxiliary contact		AX		AX		AX		AX	
230,330	Under- voltage release			UVR		UVR		UVR	UVR	
240,340	Shunt release Auxiliary contact		SHT	AX	SHT	AX	SHT	AX	AX	SHT
250,350	Shunt release Under - voltage release		SHT	UVR	SHT	UVR	SHT	UVR	UVR	SHT
260,360	Two group of auxiliary contact		AX	AX	AX	AX	AX	AX	AX	AX
270,370	Under- voltage release Auxiliary contact		AX	UVR	AX	UVR	AX	UVR	UVR	AX
218,318	Shunt release Alarm contact		AL	SHT	SHT	AL	AL	SHT	AL	SHT
228,328	Alarm contact Auxiliary contact		AL AX		AL	AX	AL	AX	AL	AX
238,338	Under- voltage release Alarm contact		AL	UVR	AL	UVR	AL	UVR	AL UVR	
248,348	Shunt release, Alarm contact, Auxiliary contact		AL AX	SHT	SHT	AL AX	AL AX	SHT	AL AX	SHT
268,368	Two group of auxiliary contact, Alarm contact		AL	AX	AL AX	AX	AL AX	AX	AL AX	AX
278,378	Shunt release, Alarm contact, Under - voltage release		SHT	AL UVR	AL UVR	SHT	AL UVR	SHT	SHT	AL UVR



Under-voltage release



Shunt release



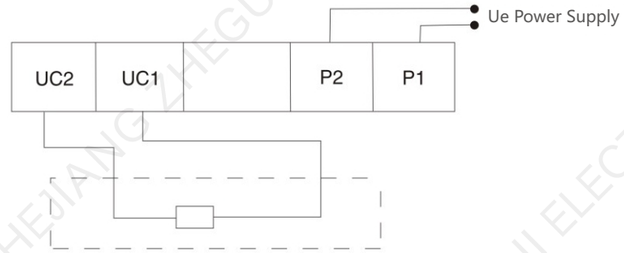
Alarm contact

According to user's demands, accessories could lead to direct wire outcoming or line wiring terminals could be added(please mark out in case of placing order).

● Under-voltage release

Wring diagram of the under-voltage release connected externally (the internal accessories in the dotted fram)

Ue: AC230V. 400V



When the operation voltage is 35%~70% of the rated voltage, the under-voltage release should make the breaker trip correctly.

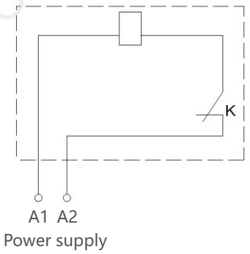
When the operation voltage is 85%~110% of the rated voltage, the under-voltage release should make the breaker close.

In case of the operation voltage less than 35% of the rated voltage, the under-voltage should prevent the breaker from closing.

Note: Only the under-voltage release should be energized in advance, the breaker could be recramped and turned-on, otherwise the breaker will be damaged.

● Shunt release

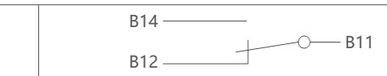
Wring diagram of the shunt release (the internal accessories in the dotted frame) "K" is the slow motion switch normal-close contact connect the coil in series in the shunt release. It turns-on or turns-off automatically as soon as the breaker on or off.

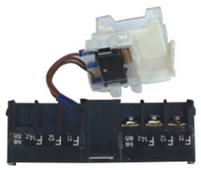


Voltage rating: AC230V 400V, DC 110V 220V

The shunt release should make the breaker trip reliably when the operation voltage is 70%~110% of the rated control voltage.

● Alarm contact

The position of the breaker in "off" or "on"	
The position of the breaker in "free trip" (alarm)	B11and B12 switch from "close" to "open", status of B11 and B14 switch from "open" to "close"



Auxiliary Contact

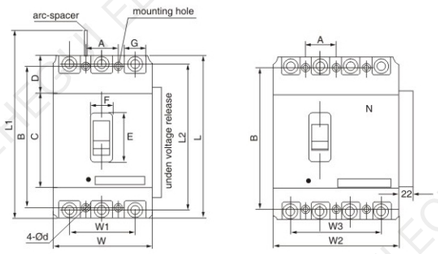
● Auxiliary Contact

When the breaker is in"off"	F14 — F12 — F11 F24 — F22 — F21	For the breaker with frame current 400A and above
	F14 — F12 — F11	For the breaker with frame current 250A and below
When the breaker is in"on"	When the breaker is in "off", the contacts switch from "close" to "open". When the breaker is in "off", the contacts switch from "open"to close"	

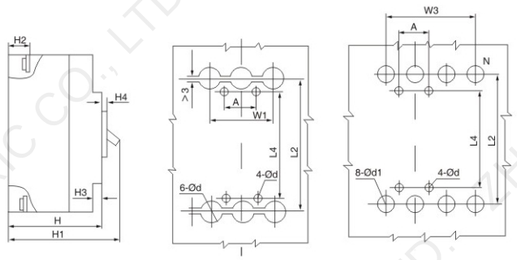
○ Outline and Installation Dimensions (mm)

Type	Outline Dimensions (mm)																													Installation Dimensions		
	Front panel connection														Back panel connection							Plug-in connection											
	W	W1	L	L1	L2	H	H1	H2	H3	H4	C	D	E	F	G	W2	W3	L4	H5	H6	OD	OD1	L5	L6	H7	H8	H9	H10	J	K	Dd1	M	A	B	Dd
GTM1-63L	76	50	135	170	117	74	92	20	7	4	85	28.5	48	22	14	100	75	117	44	66	8	8							60.7				25	117	3.5
GTM1-63M	76	50	135	170	117	82	98.5	28	7	4	85	28.5	48	22	14	100	75	117	44	66	8	8							62				25	117	3.5
GTM1-100L	92	60	150	185	132	68	86	24	7	4	88	35.5	50	22	17.5	122	90	129	68	108	26	16	92	168	50	62	74	17.5	56	60	6.5	M8	30	129	4.5
GTM1-100M	92	60	150	185	132	86	104	24	7	4	88	35.5	50	22	17.5	122	90	129	68	108	26	16	92	168	50	62	74	17.5	56	60	6.5	M8	30	129	4.5
GTM1-250L	107	70	165	215	144	86	110	24	5	4	102	31.5	50	22	17	142	105	126	66	110	20	20	94	183	50	69.5	84.5	17.5	54	70	6.5	M8	35	126	5
GTM1-250M	107	70	165	215	144	103	127	24	5	4	102	31.5	50	22	17	142	105	126	66	110	20	20	94	183	50	69.5	84.5	17.5	54	70	6.5	M8	35	126	5
GTM1-400L	182	116	270	370	234	110	160	43	8	6	134	70	89	65	Φ29	198	144	200	65	125	36	36	169	299	60	92	110	21	123	100	8.5	M12	58	200	7
GTM1-400M	182	116	270	370	234	110	160	43	8	6	134	70	89	65	Φ29	198	144	200	65	125	36	36	169	299	60	92	110	21	123	100	8.5	M12	58	200	7
GTM1-630L	182	116	270	370	234	110	160	43	8	6	134	70	89	65	Φ29	240	174	200	65	125	36	36	169	299	60	92	110	21	123	100	8.5	M12	58	200	7
GTM1-630M	182	116	270	370	234	110	160	43	8	6	134	70	89	65	Φ29	240	174	200	65	125	36	36	169	299	60	92	110	21	123	100	8.5	M12	58	200	7
GTM1-800M	210	140	280	380	243	106	145	33	30	128									128														70	243	7.2
GTM-1250M	210	140	393			200																													
GTM-1600M	210	140	393			200																													

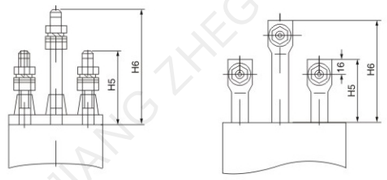
Front panel connection



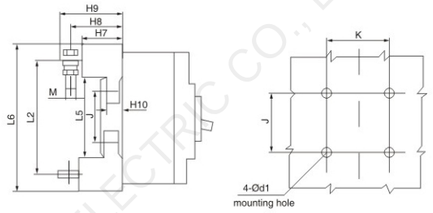
Back panel connection



Front panel connection



Plug-in connection



○ Type and Meaning

GT	M	1	E	□	□	□	3	□	□	□
Company code	MCCB	Design sequence	Intelligent type	Frame size rated current	Onerating mechanism Breaking capacity code: Middle type: M Relatively high type: H		Number pole: 3P-3poles 4P-4poles	Trip type and accessory code (see table)	Electric relay code	Type designation



GTM1E-250/3300



GTM1E-400/3300



GTM1E-800/3300

○ Application

GTM1E series intelligent moulded case circuit breaker is developed and manufactured by adopting international advanced technology. It is supplied with rated insulating voltage 800V and usedl for circuit of AC 50/60Hz, rated operating voltage 400V, rated operating current up to 800A of thel circuit breaker infrequent changing over and starting of the motors. The circuit beaker has protecl tion function of overload long delay inverse time, short circuit short delay time limit, short circuit instantaneous and under voltage, which can protect the line and power supply equipment from damage. The circuit breaker can be mounted vertically(i.e. vertical) or horizontally.

The Circuit breaker canl not be poured into the line, that is, only 1,3,5 connect power cord;2,4,6 connect load line.

● **The circuit breaker conforms to following standards:**

IEC60947-1 GBIT14018.1 low-voltage switchgear and control equipment Part I: General
IEC60947-2 GB14048.2 low-voltage switchgear and control equipment, the second part of circuitl breaker and annex with electronic over-current protection circuit breaker additional requirement;
IEC60947-4 GB14048.4 low-voltage switchgear and control equipment contactors and motor starts;
IEC60947-5.1 GB14048.5 low-voltage switchgear and control equipment electromechanical control circuit electrical appliances.
GB22710 electronic controller for low voltage circuit breaker.

○ Main Performance Characteristics

- GTM1E intelligent moulded case circuit breaker is belongs to B category with three grades protection. In the short-circuit conditions,GTM1Ehas a fully selective cooperation with some other shortcircuit protection devices in the same circuit.
- With five tripping feature options. The users can adjust & set the tripping current according to the load current requirements.
- The energy of electronic release is provided by the circuit breaker itself. The current signal and the control source are from the toroidal current transformer which is installed in the circuit breaker. With warning indication: When the load current exceeds the preset current, the LED on the circuit breaker cover indicates yellow;
- With overload indication: When the load current exceeds the set current, the LED on the circuit breaker cover indicates red;
- With a dedicated fire overload no-trip only alarm function. When the load current overload operation, the circuit breaker does not trip, outputs a passive contact, drive the corresponding alarm device;
- Compliance with IEC60947 Appendix F of the electromagnetic compatibility requirements;Dimensions are same to the same frame PSM1 molded case circuit breaker, installation is inter-changeable.

○ Main Technical Performance of Circuit Breaker



Table 1

Type		GTM1E-125		GTM1E-250		GTM1E-400		GTM1E-800	
Accessories code	Pole / Name	3	4	3	4	3	4	3	4
308	Alarm contact								
310	Shunt realese								
320	Auxiliary contact								
330	Under-voltage release								
340	Shunt realese Auxiliary contact								
350	Shunt realese Under-voltage release	—		—		—			
360	Two group of auxiliary contact								
370	Auxiliary contact Under-voltage release								
318	Shunt realese Alarm contact	—		—		—			
328	Auxiliary contact Alarm contact								
338	Under-voltage release Alarm contact	—		—		—			
348	Shunt realese Auxiliary contact Alarm contact	—		—		—			
368	Two group of auxiliary contact Alarm contact								
378	Auxiliary contact Under-voltage release Alarm contact	—		—		—			

○ .Capacity Loss and Coefficient Ratio

Capacity loss

Type	Charging current	Total power loss for three phases	
		Front-panel board or back panel board connection	plug-in connection
GTM 1E-125	125	35	
GTM 1E-250	250	62	40
GTM 1E-400	400	115	70
GTM 1E-800	800	262	210

Coefficient ratio due to environment temperature factor

Table 4

Environment temperature	+40℃	+45℃	+50℃	+55℃	+60℃
Type / factor	Coefficient ratio	Coefficient ratio	Coefficient ratio	Coefficient ratio	Coefficient ratio
GTM1E-125	1In	0.95In	0.89In	0.84In	0.76In
GTM1E-250	1In	0.96In	0.91In	0.87In	0.82In
GTM1E-400	1In	0.94In	0.87In	0.81In	0.73In
GTM1E-800	1In	0.88In	0.83In	0.79In	0.76In

○ Main Technical Specifications

Type		GTM1E-125		GTM1E-250		GTM1E-400		GTM1E-800	
Frame current(InmA)		125		250		400		800	
Breaking capacity		M	H	M	H	M	H	M	H
Rated current		32A(16,20,25,32) 125A(40,50,60,70,80,90,100,125)		100,125.140.160 180,200.225.250		200,225,250.280 315,350,400		630,640,660,680 700,720,740,760 780,800	
Pole		3,4		3,4		3,4		3,4	
Rated insulating voltage		AC 690V							
Rated operating voltage		AC 400V							
Rated impulse withstanding voltage		6000V		8000V		8000V		8000V	
Bated frequency		50Hz							
Flashover distance	Top-down	≤50		≤50		≤80		≤80	
	Left-right	0		0		0		0	
	Front-back	0		0		0		0	
Using category		A				B			
limiting short-circuit breaking capacity		50	65	50	70	65	85	65	85
Rated service short-circuit breaking capacity		35	50	35	50	42	65	42	65
Rated withstand short-circuit current		1.5	1.5	5	5	8	8	10	10
Operating lift (time)	Elctrical	1500		1000		1000		500	
	Mechanical	8500		7000		4000		3000	

○ Outline and Installation Dimension

