GSM1系列塑料外壳式断路器
GSM1 Series Moulded Case Circuit Breakers

一、用途（INTENDED USE）

GSM1系列塑料外壳式断路器适用于交流50Hz,其额定绝缘电压至800V(GSM1–63型额定绝缘电压为500V)，额定工作电压至690V(GSM1–63型额定工作电压至400V），额定工作电流至800A的电路中作为线路的不频繁转换和电动机的不频繁启动之用。四极塑壳式断路器主要用于建筑配电系统中，对电线、电缆进行短路、过载保护和线路的不频繁转换，同时可实现中性线和相线一起开断，防止中性线上高电位传递，以保证维护和操作人员的安全。断路器本体除具有对线路及电动机的短路和过载保护外，还可嵌装欠电压脱扣器、分励脱扣器、报警触头、辅助触头和电操机构等功能模块，实现多种保护和控制功能。

GSM1 series moulded case circuit breakers suitable for turn–on or turn–off not frequently and starting a motor not frequently in the circuit of AC50Hz, rated insulation voltage up to 800V(GSM1–63 is 500V), rated working voltage 690V or below(GSM1–63 is 400V), rated working current up to 800A.The breakers of 4 poles are mainly suitable for cable short cuicuit protection,cable overload protection and turn–on or turn–off not frequently in the power supply system.meanwhile can open neutral conductor and leg conductor together as to keep from high electric potential transferring and protect operators.Besides having short cuicuit and overload protection for cuicuit and motor,the breakers can assembly many function modules such as under–voltage realease,shunt release,alarm contact，anxiliary contact,motor–driven operation device and so on,meeting all kinds of protection and control functions.

二、符合标准（CONFORM TO STANDARDS）

■ 本断路器产品执行下列标准：
The breakers comply with the demands of the following standards:

△ GB14048.2 低压开关设备和控制设备：低压断路器
Low–voltage switchgear and controlgear: Low voltage breakers

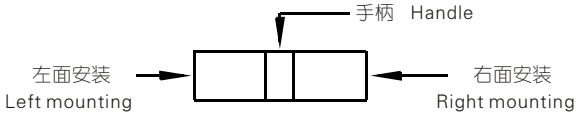
△ IEC60947–2 低压开关设备和控制设备：第二部分 低压断路器
Low–voltage switchgear and controlgear: Part II Low voltage breakers

三、产品型号及含义(TYPE ANDMEANING)

GS M 1–□□□/□□□□

- 中性极型式代号（三极无此代号）：可选A或B
  Code of N–pole(no code for 3 poles product): A or B
- 用途代号：配电用无代号，保护电机用代号为2
  Code for application:no code for power distribution 2 for motor protection
- 脱扣方式及附件代号（见表一）
  Code for release pattern and inner accessories (see Table 1)
  首位数字表示脱扣器方式；后两位数字表示内部附件代号
  The first digit stands for release pattern.The other twodigits stand for code of inner accessories
  2:仅有电磁（瞬时）脱扣器 Only has electromagnetic (instantaneous)type release
  3:热动–电磁（复式）脱扣器 Thermo–electromagnetic (double) type release
- 极数：3、4 Code for the pole number: 3、4
- 操作方式: Code for the operation means:
  手柄直接操作无代号 No code for handle operation directly
  “P”电动操作 Power driven “Z”转动手柄操作Turning handle
- 额定短路分断能力代号（四极无此代号）
  Code for the breaking ability（No code for 4 poles product
  L–标准型 typical type M–较高分断型 second high breaking type
  H–高分断型 hige breaking type
- 壳架等级额定电流 Code for the frame grade
- 设计序号 Code for designation
- 塑料外壳式断路器 Moulded case circuit breakers
- 企业代号 Code for company

■ 表一：脱扣方式及附件代号
Table 1:release pattern and code for inner accessories



□ 报警触头 Alarm contact　■ 辅助触头 Auxiliary contact　○ 欠压脱扣器 Under–voltage release　● 分励脱扣器 Shunt release　→ 引线方向 Lead direction

附件代号 Accessories code	附件名称 Accessories name / 型 号 Type	GSM1–63 GSM1–100 GSM1–225	GSM1–400L GSM1–400H	GSM1–400M GSM1–630 GSM1–800
200、300、无/NO	无附件 No Accessories			
208、308	报警触头 Alarm contact	□	□	□
210、310	分励脱扣器 Shunt release	●	●	●
220、320	辅助触头 Auxiliary contact	■	■	■
230、330	欠压脱扣器 Under–voltage release	○	○	○
240、340	分励脱扣器 Shunt release 辅助触头 Auxiliary contact	● ■	● ■	● ■
250、350	分励脱扣器 Shunt release 欠压脱扣器 Under–voltage release	● ○	● ○	● ○
260、360	二组辅助触头 Two group of auxiliary contact	■ ■	■ ■	■ ■
270、370	辅助触头 Auxiliary contact 欠压脱扣器 Under–voltage release	■ ○	■ ○	■ ○
218、318	分励脱扣器 Shunt release 报警触头 Alarm contact	□ ●	● □	■ ●
228、328	辅助触头 Auxiliary contact 报警触头 Alarm contact	▣	□ ■	□ ■
238、338	欠压脱扣器 Under–voltage release 报警触头 Alarm contact	□ ○	□ ○	□ ○
248、348	分励脱扣器辅报触头 Shunt release auxiliary contact alarm contact	▣ ●	● ▣	● ▣
268、368	二组辅助触头 报警触头 Two group of auxiliary contact alarm contact	▣	▣ ■	▣ ■
278、378	欠压脱扣器辅报触头 Under–voltage release auxiliary contact alarm contact	▣ ○	▣ ○	▣ ○

■ 注 (Note):

△ 200：表示仅有电磁脱扣器的断路器；300：表示带有热动－电磁脱扣器的断路器。
200: breaker only for electromagnetic release pattern 300:breaker has thermo–electromagnetic release pattern.

△ GSM1–63,100,225四极断路器N极为A型中无240、340、260、360、 218、318、248、348、268、368附件型式。
For GSM1–63,100,225 four poles breaker of N–pole type A,has no the following accessories code:240,340,260,360,218,318,248,348,268,368.

△ 对GSM1–400,630,800型断路器，其中248、348、278、378规格中辅助触头为一对触头（即一常开、一常闭），268，368规格中辅助触头为三对触头。

For GSM1–400,630,800, codes 248,348,278,378 only have one pair of auxiliary contacts(a normal opened, a normal closed),but 268,368 have three pairs of auxiliary contacts.

△ GSM1–63 6A产品无长延时保护，仅有瞬时保护。
For the specification 6A of GSM1–63,only has short circuit.

四、工作环境 ENVIRONMENT CONDITION FOR OPERAT

△ 产品周围空气温度上限为＋40℃，下限为－5℃，24小时平均值不超过＋35℃；
Ambient temperature: –5℃～+40℃ , the average of temperature not exceeding +35℃ during 24 hours.

△ 安装地点的海拔高度不超过2000米；Elevation≤2000m.

△ 安装地点的空气相对湿度在最高温度为＋40℃时不超过50%，在较低温度下可以有较高的相对湿度，例如20℃时达90%。对由于温度变化偶尔产生的凝露应采取特殊措施；
Relative humidity:not exceeding 50% at the maximum ambient temperature of +40.With lower temperature,higher humidity would be permitted, but the lowest average temperature in a month not exceeding +25℃ during the most moist month,and the maximum monthly average relative humidity not exceeding 90% in that month,and giving consideration to the dews on the goods surface,which would appear due to temperature change.

△ 污染等级为3级；Pollution protection:Grade 3.

△ 断路器主电路及欠压脱扣器安装类别为Ⅲ其余辅助电路、控制电路安装类别为Ⅱ；
Installing categories: “ Ⅲ ” for breakers` main circuits, coils of under–voltage release and primary circuit of transformers; “ Ⅱ ” for other auxiliary circuits and control circuits.

△ 断路器能耐受潮湿空气、盐雾、油雾、霉菌、核辐射的影响；
Be able to bear the influence of moisture in the air or salt fog and oil fog or mould or nuclear radiation.

△ 断路器安装的最大倾斜度为±22.5° ；The gradient≤22.5° .

△ 断路器在受到船舶正常振动时能可靠工作；
Be working reliably under the condition of normal vibration on ship.

△ 断路器在受到地震情况下(4g)能可靠工作；
Be working reliably when earthquake(4g)occuring.

△ 断路器应安装在无爆炸危险和无导电尘埃无足以腐蚀金属和破坏绝缘的地方；
There must be not any explosive medium, and there must be not any gas which would corrode metal or any conducting dust which would destroy the insulation.

△ 断路器应安装在没有雨雪侵袭的地方。
The place would not be invaded by rain and snow.

五、产品分类 CLASSIFICATION OF BREAKERS

△ 按额定短路分断能力分（四极无此分类）：标准型（L型）较高分断型（M型）高分断型(H型)；
According to the breaking ability（having not the classification for four poles breakers): Typical type(Type L); Second high breaking type(Type M) High breaking type(Type H.)

△ 按接线方式分：板前接线（基本接线方式）板后接线；插入式接线（分板前插入式接线和板后插入式接线仅GSM1–100,225,400L有板前插入式接线）
According to the wiring method: Wiring in front of the board; Wiring on back of the board; Insertion type (including insertion type in front of the board and insertion type on back of the board, only GSM1–100,225,400L has the wiring method of insertion in front of the board)

△ 按操作方式分：手柄直接操作；转动手柄操作；电动操作
According to the operation means:Handle operating directly Turning handle Power driven.

△ 按用途分：配电用；保护电动机用。
According to the usage：Power distribution ； motor protection.

△ 按极数分：三极；四极 According to the pole number:Three poles;Four poles.

△ 按脱扣器方式分：热动 – 电磁型（复式）；电磁型（瞬动）
According to the release pattern:Thermo–electromagnetic(double) type release ;only has electromagnetic(instantaneous) type release.

△ 按中性极（N极）的型式分（三极无此分类）：
A型：N极不装过电流脱扣器，且N极始终接通，不与其它三极一起分合；
B型：N极不装过电流脱扣器，且N极与其它三极一起分合。
According to the type of the neutral pole(N–pole)(having not the classification for three poles products):
Type A:N–pole without overcurrent release unit, it has been connected all along,and does not act with other poles to turn on or off;
TypeB:N–pole without overcurrent release unit,it would act with other three poles.

六、主要的性能技术指标（见表二）
MAIN TECHNICAL PERFORMANCE PARAMETER OF THE BREAKER(SEE TABLE 2)

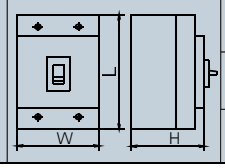
表(Table) 2

壳架电流Inm(A) Frame Current Inm(A)	63			100		
型号 Type	GSM1–63L	GSM1–63M	GSM1–63	GSM1–100L	GSM1–100M	GSM1–100
外形 Outline						
额定电流 In(A) Rated Current In(A)	(6)、10、16、20、25、32、40 50、63			10、16、20、25、32、40、50、63、80、100		
极数Pole number	3	3	4	3	3	4
额定绝缘电压 Ui(V) Rated insulation voltage Ui(V)	AC500			AC800		
额定工作电压 Ue（V） Rated working voltage Ue(V)	AC220~AC400			AC220~AC690		
额定冲击耐受电压Uimp（V） Rated impulse withstand voltage Uimp(V)	6000			8000		
飞弧距离（mm） Arc–over Distance(mm)	0			0或≤50 0 or ≤50		

额定极限短路分断能力 Limiting short-circuit Breaking Ability Icu(kA)	AC690V						20	
	AC400V	25		50		35	50	
额定运行短路分断能力 Operating short-circuit Breaking Ability Ics(kA)	AC690V						10	
	AC400V	18		35		22	35	
操作性能(次) Operational Performance (times)	电气寿命 Electrical Life	4000						
	机械寿命 Mechanical Life	8500						
外形尺寸 Outline Dimensions (mm)	W	78	78	103	92	92	122	
	L	135	135		150	150		
	H	66.5	74.5		61	79		
壳架电流Inm(A) Frame Current Inm(A)		225			400			
型号 Type		GSM1-225L	GSM1-225M	GSM1-225	GSM1-400L	GSM1-400M		
外形 Outline								
额定电流 In(A) Rated Current In(A)		100、125、140、160、180、200、225			225、250、315、350、400			
极数 Pole number		3	3	4	3	3		
额定绝缘电压 Ui(V) Rated insulation voltage Ui(V)		AC800						
额定工作电压 Ue(V) Rated working voltage Ue(V)		AC220~AC690						
额定冲击耐受电压 Uimp(V) Rated impulse withstand voltage Uimp(V)		8000						
飞弧距离(mm) Arc-over Distance(mm)		≤50			≤100			
额定极限短路分断能力 Limiting short-circuit Icu(kA)	AC690V					20		
	AC400V	35	50		50	65		
额定运行短路分断能力 Operating short-circuit Breaking Ability Ics(kA)	AC690V					15		
	AC400V	22	35		35	42		
操作性能(次) Operational Performance (times)	电气寿命 Electrical Life	1500			1000			
	机械寿命 Mechanical Life	7000			4000			
外形尺寸 Outline Dimensions (mm)	W	107	107	142	150	182		
	L	165	165		257	257		
	H	81	98		97	102		
壳架电流Inm(A) Frame Current Inm(A)		400			630			

型号 Type		GSM1-400H	GSM1-400	GSM1-630L	GSM1-630M	GSM1-630	GSM1-630H
外形 Outline							
额定电流In(A) Rated Current In(A)		225、250、315、350、400		400、500、630			
极数Pole number		3	4	3	3	4	3
额定绝缘电压 Ui(V) Rated insulation voltage Ui(V)		AC800					
额定工作电压 Ue(V) Rated working voltage Ue(V)		AC220~AC690					
额定冲击耐受电压 Uimp(V) Rated impulse withstand voltage Uimp(V)		8000					
飞弧距离(mm) Arc-over Distance(mm)		≤100		≤100			
额定极限短路分断能力 Limiting short-circuit Icu(kA)	AC690V				20		
	AC400V	100	65	50	65		100
额定运行短路分断能力 Operating short-circuit Breaking Ability Ics(kA)	AC690V				15		
	AC400V	65	42	35	42		65
操作性能(次) Operational Performance (times)	电气寿命 Electrical Life	1000					
	机械寿命 Mechanical Life	4000					
外形尺寸 Outline Dimensions (mm)	W	150	198	182	182	240	182
	L	257		270			
	H	97		102			
壳架电流Inm(A) Frame CurrentInm(A)		800					

型号Type		GSM1-800L	GSM1-800M	GSM1-800
外形 Outline				
额定电流 I(A) Rated Current In(A)		630、700、800		
极数Pole number		3	3	4
额定绝缘电压Ui(V) Rated insulation voltage Ui(V)		AC800		
额定工作电压 Ue(V) Rated working voltage Ue(V)		AC220~AC690		
额定冲击耐受电压 Uimp(V) Rated impulse withstand voltage Uimp(V)		8000		

飞弧距离 (mm) Arc-over Distance(mm)		≤100		
额定极限短路分断能力 Limiting short-circuit Breaking Ability Icu(kA)	AC690V	10	20	
	AC400V	50	65	65
额定运行短路分断能力 Operating short-circuit Breaking Ability Ics(kA)	AC690V	5	10	
	AC400V	35	42	42
操作性能(次) Operational Performance (times)	电气寿命 Electrical Life	500		
	机械寿命 Mechanical Life	2500		
外形尺寸 Outline Dimensions (mm) 	W	210	210	280
	L	275		
	H	103		

七、断路器的保护特性、特性曲线和电流－温度曲线
PROTECTION FEATURE,CHARACTERISTIC CURVE AND CURRENT –TEMPERATURE CHARACTERISTIC OF THE BREAKER

■ 保护特性见表三（配电用）、表四（保护电动机用）

Protection feature see following Table3(for power distribution) and Table 4(for motor protection)

△ 表三 配电用断路器保护特性

Table 3：protection feature of power distribution breakers

表(Table) 3

断路器额定电流 (A) Rated current of the breaker (A)	热动型脱扣器约定脱扣时间 环境温度40±5℃ Acting time of the thermodynamic release ambient temp.40±5℃		电磁脱扣器动作电流 (A) Electromagnetic release action current (A)
	1.05In（冷态） 1.05In (cold state)	1.3In（热态） 1.3In (heat state)	
	不动作时间(h) not acting time(h)	动作时间(h) acting time(h)	
10≤In≤63	≥1	<1	10In±20%
63<In≤100	≥2	<2	
100<In≤800	≥2	<2	5In±20% 10In±20%

△ 表四、电动机保护用断路器的保护特性

Table 4:Protection feature of motor protection breakers

表(Table) 4

断路器额定电流 (A) Rated current of the breaker (A)	热动型脱扣器约定脱扣时间 环境温度 40±5℃ Acting time of the thermodynamic release ambient temp.40±5℃				电磁脱扣器动作电流(A) Electromagnetic release action current (A)
	1.05In(冷态)不动作时间(h) 1.05In(cold state) not acting time (h)	1.2In (热态)动作时间(h) 1.2In(heat state) acting time (h)	1.5In(热态)动作时间(min) 1.5In(heat state) acting time (min)	7.2In(冷态)动作时间(s) 7.2In(cold state) acting time (s)	
10≤In≤225	≥2	<2	4	4<Tp≤10	12In±20%
225<In≤800			8	6<Tp≤20	

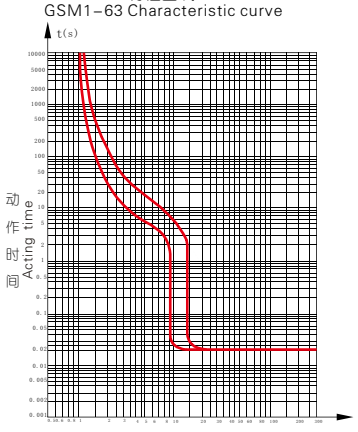
■ 注 (Note):

△ 保护特性表中的热态为从冷态开始，通以1.05In的电流规定时间后的状态；
The heat state in the Table 3 and Table4 means the state after the breaker connects 1.05In for formulated time starting from the cold state;

△ 如果试验过程中周围空气温度与规定环境温度有差异，则按如下电流 – 温度特性曲线校正后的电流进行试验。
If the ambient temperature is different from the formulated temperature in the test,can test as the correction current after the following current–temperature characteristic curve.

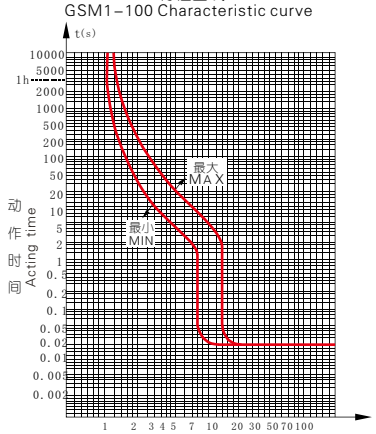
■ 动作特性曲线和电流 – 温度特性曲线
Characteristic curve and current–temperature characteristic curve

△ GSM1–63 特性曲线
GSM1–63 Characteristic curve



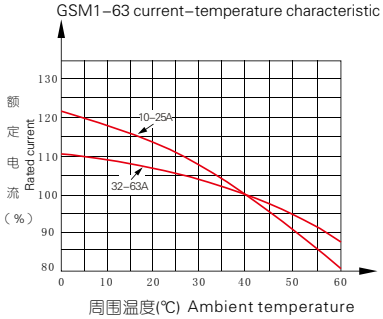
额定电流100% Rated current

△ GSM1–100 特性曲线
GSM1–100 Characteristic curve



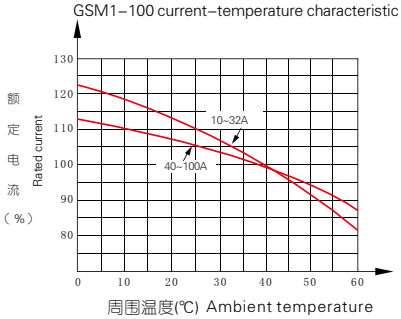
额定电流100% Rated current

△ GSM1–63 电流温度特性曲线
GSM1–63 current–temperature characteristic curve



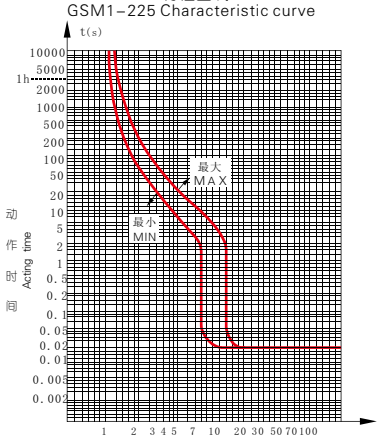
周围温度(℃) Ambient temperature

△ GSM1–100 电流温度特性曲线
GSM1–100 current–temperature characteristic curve



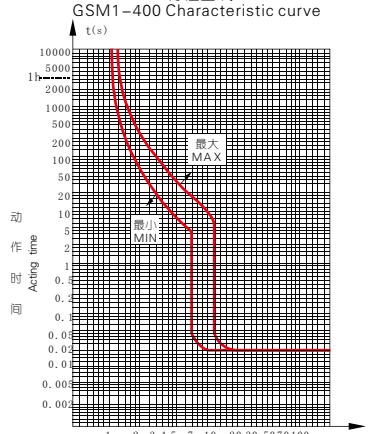
周围温度(℃) Ambient temperature

△ GSM1–225 特性曲线
GSM1–225 Characteristic curve



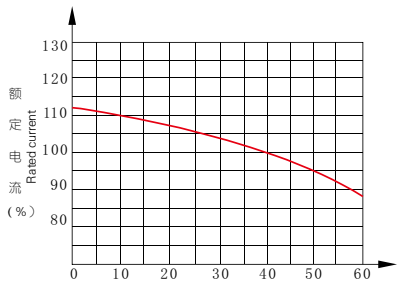
额定电流100% Rated current

△ GSM1–400 特性曲线
GSM1–400 Characteristic curve

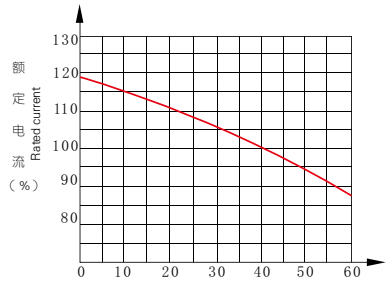


额定电流100% Rated current

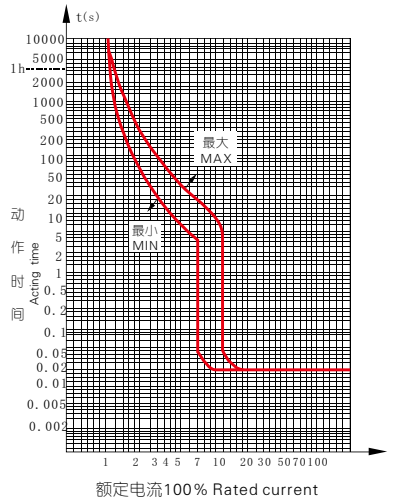
△ GSM1–225电流温度特性曲线
GSM1–225 current–temperature characteristic curve



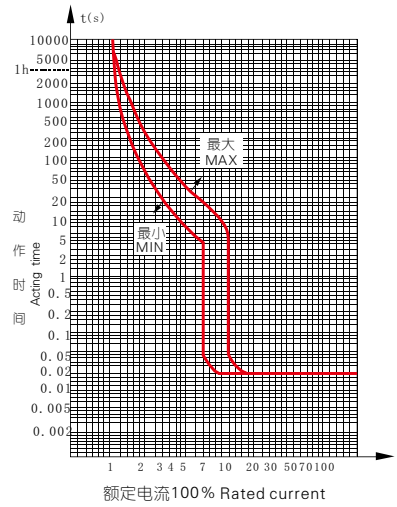
△ GSM1–400 电流温度特性曲线
GSM1–400 current–temperature characteristic curve



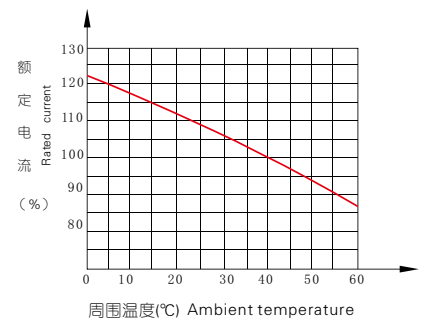
△ GSM1–630 特性曲线
GSM1–630 Characteristic curve



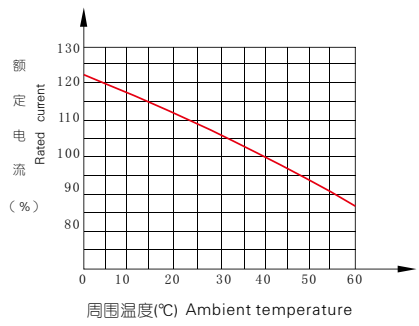
△ GSM1–800 特性曲线
GSM1–800 Characteristic curve



△ GSM1–630 电流温度特性曲线
GSM1–630 current–temperature characteristic curve

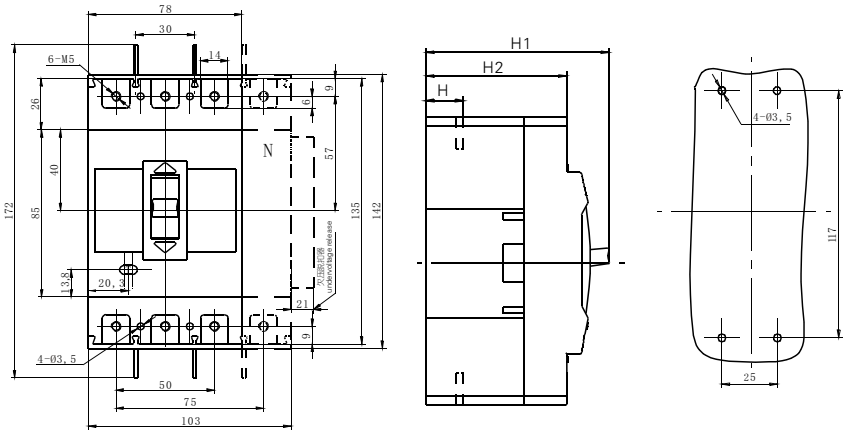


△ GSM1–800 电流温度特性曲线
GSM1–800 current–temperature characteristic curve



八、外形尺寸及安装尺寸
OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

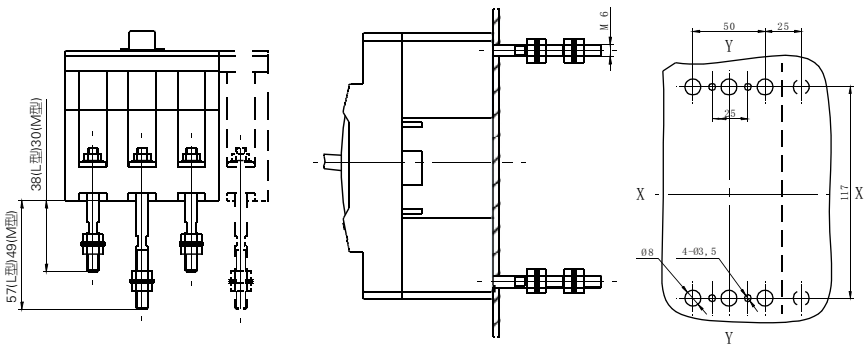
△ GSM1–63(L、M)板前接线（三极、四极）
Wiring in front of the board(GSM1–63L、M,three poles and four poles)
X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



型号 Type	H	H1	H2
GSM1-63L/3	66	90.5	20.5
GSM1-63M/3	74	98.5	28.5
GSM1-63/4	74	98.5	28.5

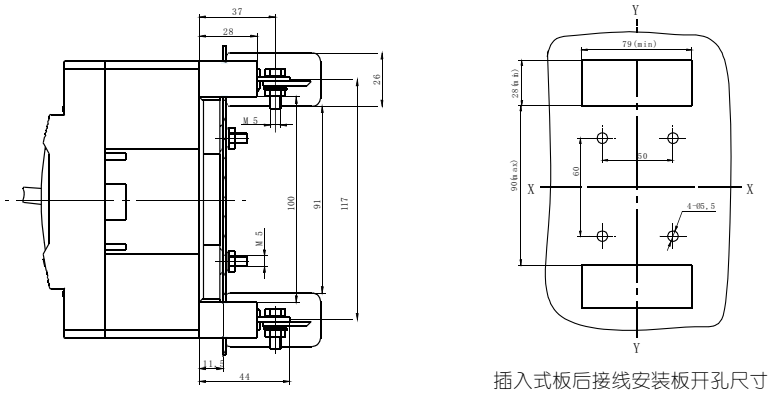
板前接线安装板开孔尺寸
aperture dimensions of the sub-pane,wiring in front of the board

△ GSM1-63(L、M）板后接线（三极、四极）
Wiring on back of the board(GSM1-63L、M,three poles and four poles)
X-X、Y-Y为三极断路器中心 X-X,Y-Y as the center of the breaker(three poles)



板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,wiring on back of the board

△ GSM1-63(L、M)插入式板后接线（三极）
Insertion type on back of the board(GSM1-63L、M,three poles)
X-X、Y-Y为三极断路器中心 X-X,Y-Y as the center of the breaker(three poles)

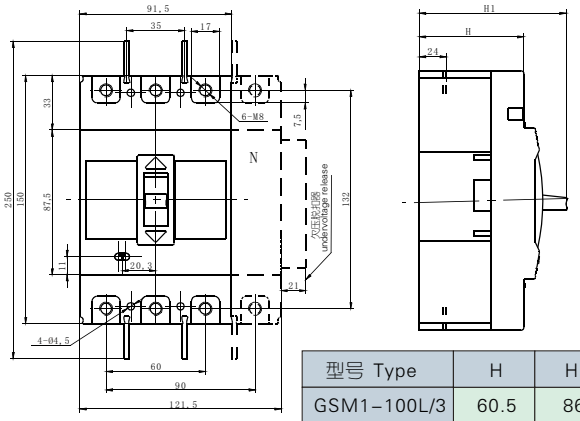


插入式板后接线安装板开孔尺寸
aperture dimensions of the sub-pane,wiring on back of the board

△ GSM1–100(L、M)板前接线（三极、四极）

Wiring in front of the board(GSM1–100L、M,three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



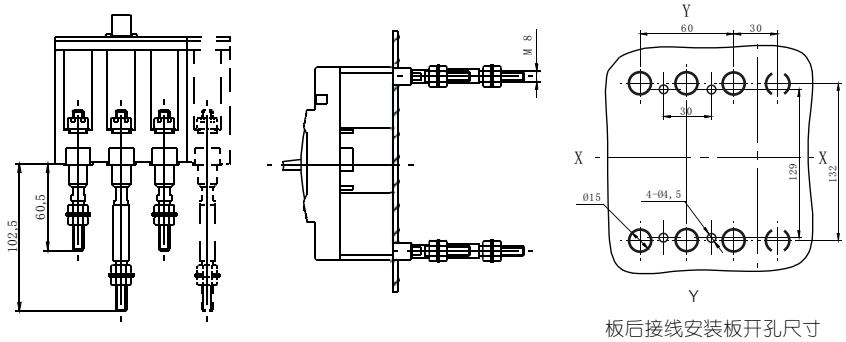
型号 Type	H	H1
GSM1–100L/3	60.5	86
GSM1–100M/3	78.5	104
GSM1–100/4	78.5	104

板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

△ GSM1–100(L、M)板后接线（三极、四极）

Wiring on back of the board(GSM1–100L、M,three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)

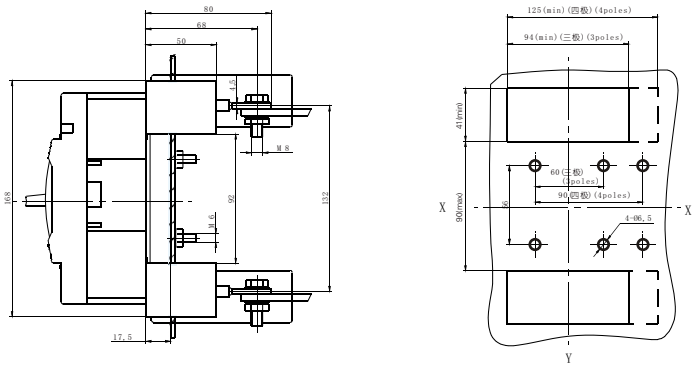


板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

△ GSM1–100(L、M）插入式板后接线（三极、四极）

Insertion type on back of the board(GSM1–100L、M,three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)

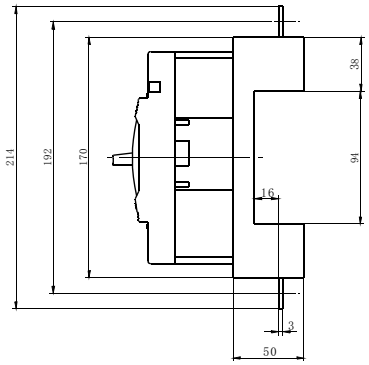


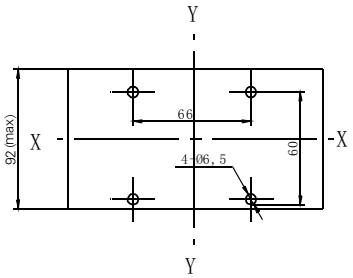
插入式板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

△ GSM1–100(L、M)插入式板前接线（三极、四极）

Insertion type in front of the board(GSM1–100L、M,three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



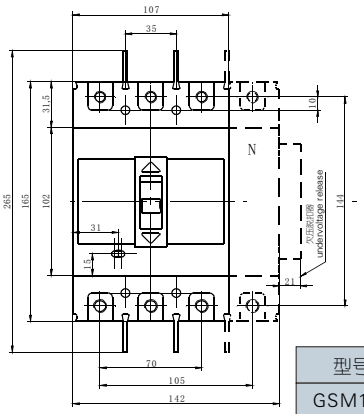


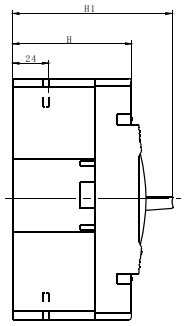
插入式板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

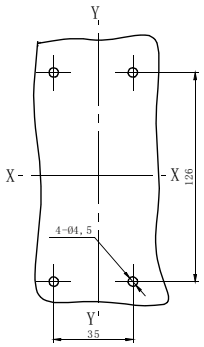
△ GSM1–225(L、M)板前接线（三极、四极）

Wiring in front of the board(GSM1–225L、M,three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)







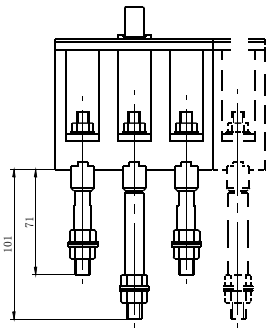
型号 Type	H	H1
GSM1–225L/3	81	110
GSM1–225M/3	98	127
GSM1–225/4	98	127

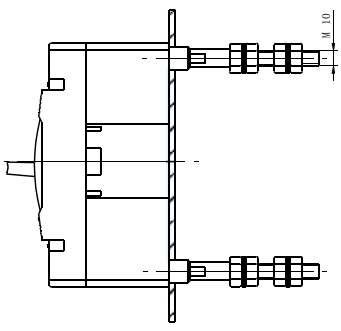
板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

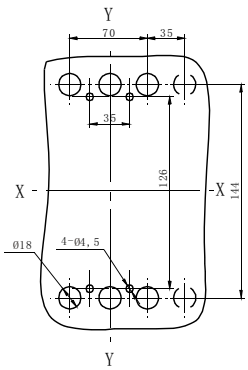
△ GSM1–225(L、M)板后接线（三极、四极）

Wiring on back of the board(GSM1–225L、M,three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)





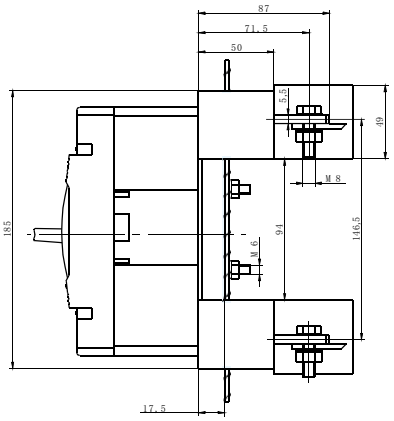


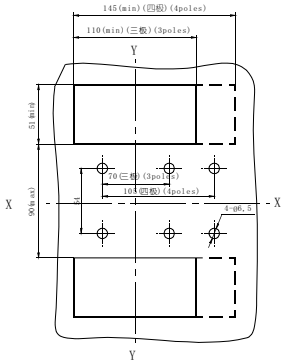
板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

△ GSM1–225(L、M)插入式板后接线（三极、四极）

Insertion type on back of the board(GSM1–225L、M,three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



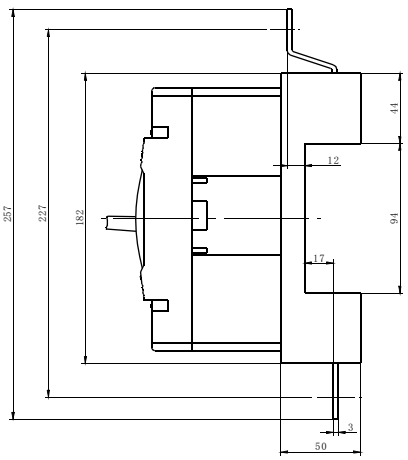


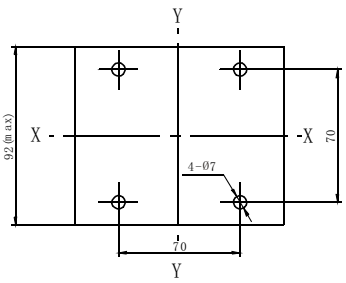
插入式板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

△ GSM1–225(L、M)插入式板前接线（三极）

Insertion type in front of the board(GSM1–225L、M,three poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



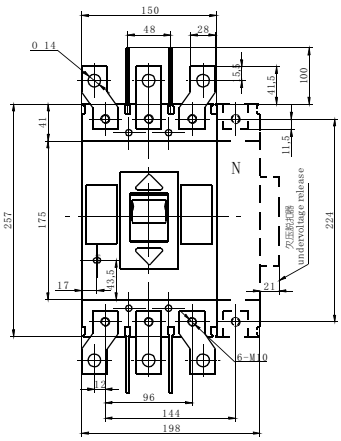


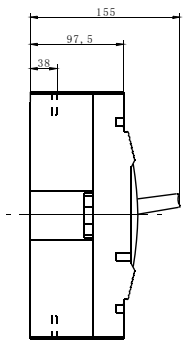
插入式板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

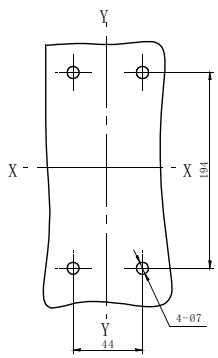
△ GSM1–400L板前接线（三极、四极）

Wiring in front of the board(GSM1–400L,three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)





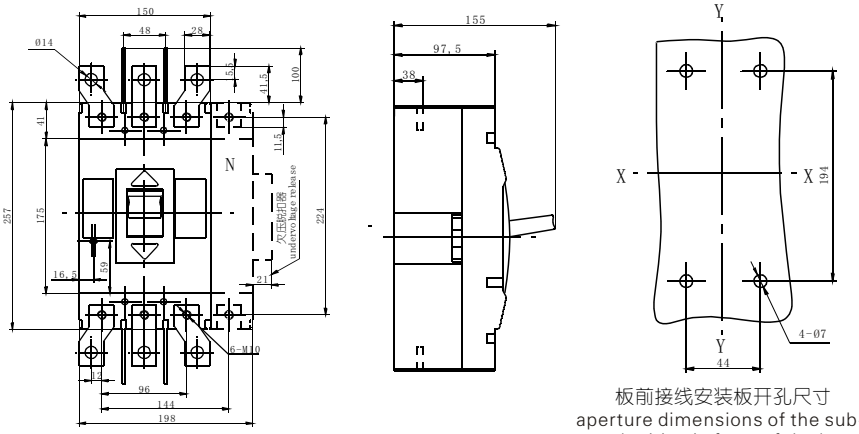


板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

△ GSM1–400H板前接线（三极）

Wiring in front of the board(GSM1–400H,three poles)

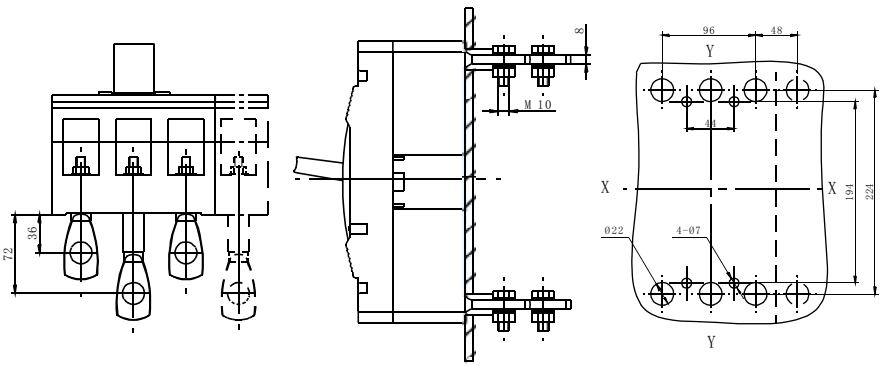
X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

△ GSM1–400L板后接线（三极、四极）

Wiring on back of the board(GSM1–400L,three poles and four poles)

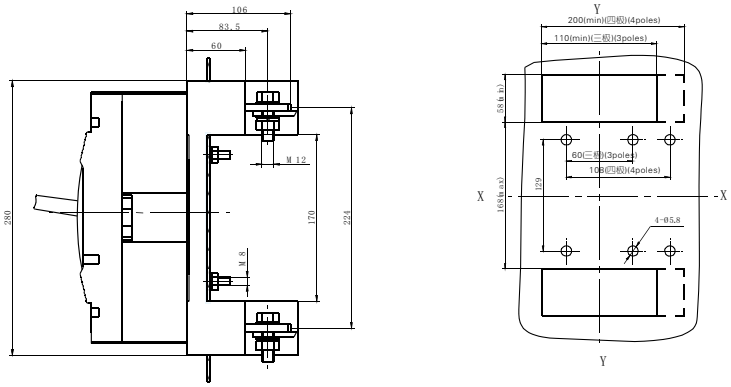


板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

△ GSM1–400L插入式板后接线（三极、四极）

Insertion type on back of the board(GSM1–400L,three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)

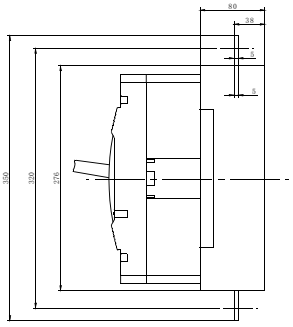


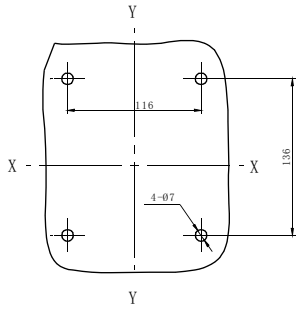
插入式板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

△ GSM1–400L插入式板前接线（三极）

Insertion type in front of the board(GSM1–400L,three poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



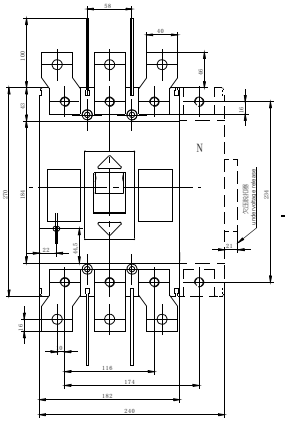


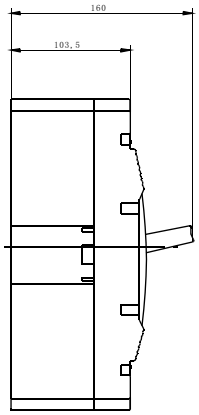
插入式板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

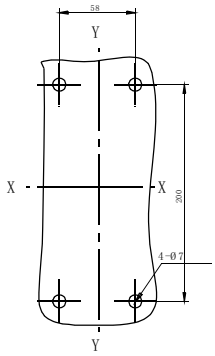
△ GSM1–400M、630(L、M）板前接线（三极、四极）

Wiring in front of the board(GSM1–400M、630L、630M, three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)





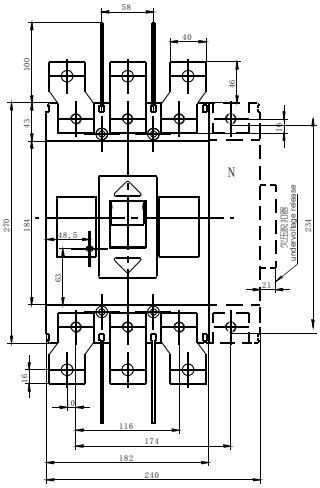


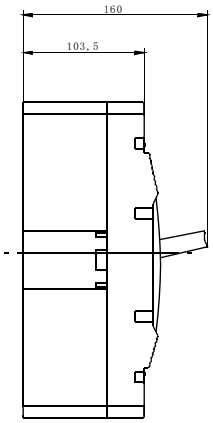
板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

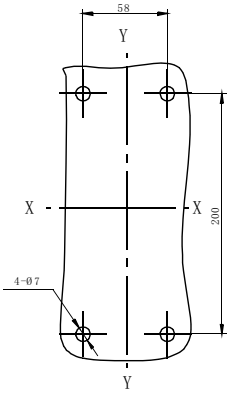
△ GSM1–630H板前接线（三极）

Wiring in front of the board(GSM1–630H, three poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)





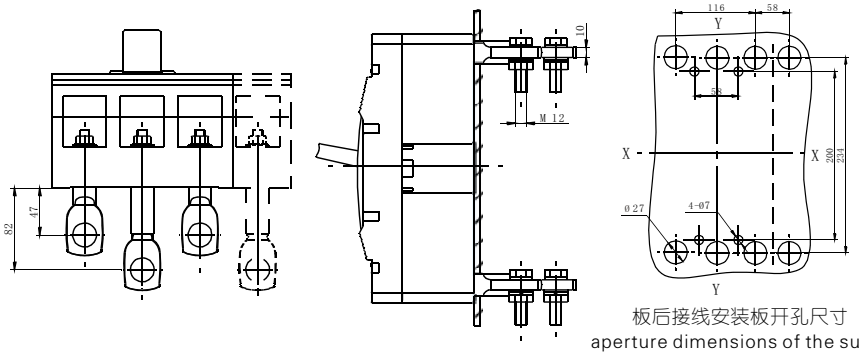


板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

△ GSM1–400M、630(L、M）板后接线（三极、四极）

Wiring on back of the board(GSM1–400M、630L、630M, three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)

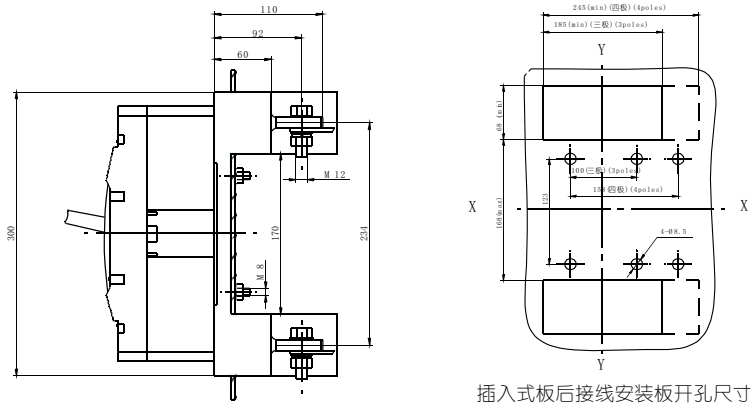


板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

△ GSM1–400M、630(L、M）插入式板后接线（三极、四极）

Insertion typeon back of the board(GSM1–400M、630L、630M, three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)

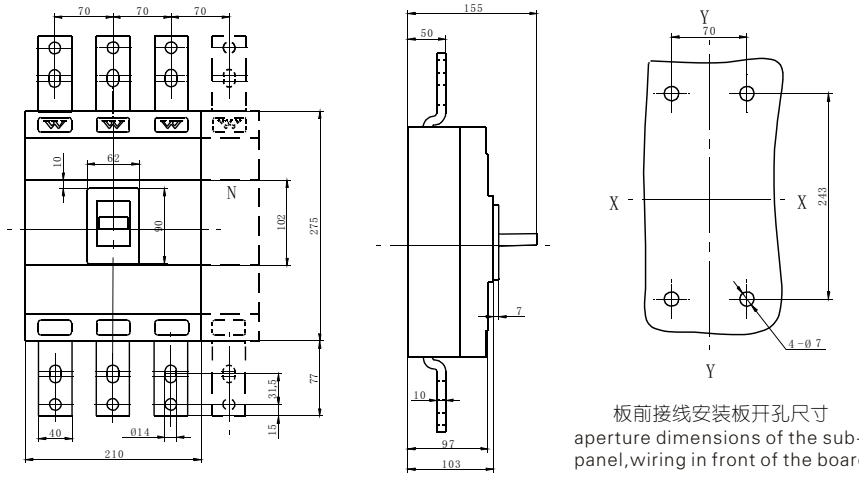


插入式板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

△ GSM1–800(L、M）板前接线（三极、四极）

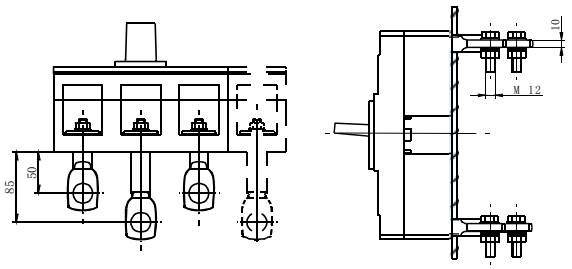
Wiring in front of the board(GSM1–800L、M, three poles and four poles)

X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



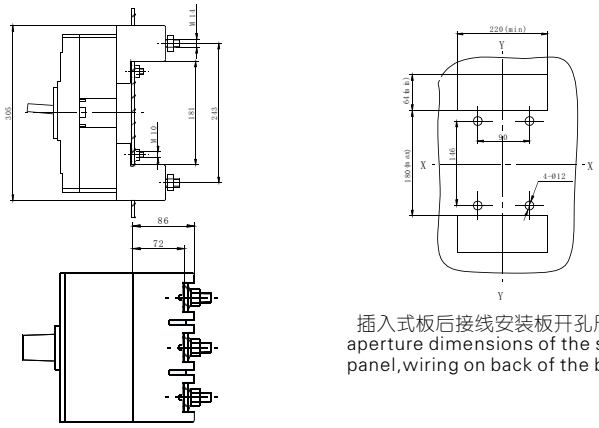
板前接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring in front of the board

△ GSM1–800(L、M）板后接线（三极、四极）
Wiring on back of the board(GSM1–800L、M, three poles and four poles)
X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

△ GSM1–800(L、M）插入式板后接线（三极）
Insertion type on back of the board(GSM1–800L、M, three poles ）
X–X、Y–Y为三极断路器中心 X–X,Y–Y as the center of the breaker(three poles)



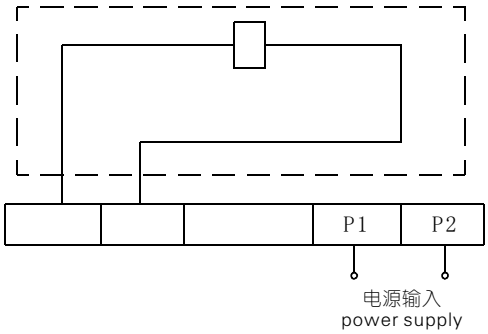
插入式板后接线安装板开孔尺寸
aperture dimensions of the sub–panel,wiring on back of the board

九、断路器的内外附件
THE INTERNAL AND EXTERNAL ACCESSORIES OF THE BREAKER

断路器的内部附件 The internal accessories of the breaker

■ 欠压脱扣器 Under–voltage release
AC50Hz 110V、220V（230V)、380V(400V).

△ 外挂欠电压模块接线图见下图（虚线框内为断路器内部附件）
Wiring diagram of the under–voltage module connected externally(inner Accessories are indicated in the dotted square)



△ 表五：欠电压脱扣器功率
Table 5 : Power of the under–voltage release

表(Table) 5

配用断路器 Fitting breaker	欠电压脱扣器功率（W） Power of the under–voltage release(W)	
	AC220V	AC380V
GSM1–63	3.5	3.3
GSM1–100	2.6	3.3
GSM1–225	3.8	3.3
GSM1–400	3.7	2.7
GSM1–630	2.3	2.7
GSM1–800	2.5	2.8

■ 注(Note):

△ 在额定工作电压的35%–70%时，欠压脱扣器应可靠使断路器脱扣；
Under the voltage of 35%~70% of the rated voltage,the under–voltage release should make the breaker trip correctly.

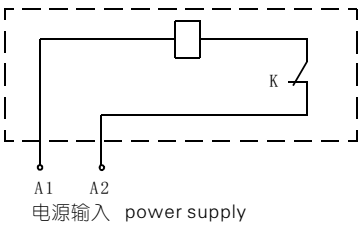
△ 在额定工作电压的85%–110%时，欠压脱扣器应保证断路器能合闸；
Under the voltage of 85%~110% of the rated voltage,the under–voltage release should make the breaker close.

△ 在额定工作电压低于35%时，欠压脱扣器应防止断路器合闸。
In case of the operation voltage less than 35% of the rated voltage,the release should prevent the breaker from closing.

警告：欠电压脱扣器必须先通电，断路器才能合闸。否则将损坏断路器！
Note: Only the under–voltage release should be energized in advanced,the breaker could be recramped and turned–on,otherwise the breaker will be damaged.

■ 分励脱扣器 Shunt release

△ 接线图（虚线框内为断路器内部附件）
Scheme of wiring (the internal accessories in the dotted frame)



K：分励脱扣器内部与线圈串联的微动开关为常闭触头，当断路器分闸后，该触头自行断开，合闸时闭合。
"K" is the slow motion switch normal contact connected the coil in series in the shunt release.It turns–on or turns–off voluntarily as soon as the breaker on or off.

电压规格：AC50Hz 110V、220V(230V)、380V(400V)、DC 220V、110V、24V
在额定控制电源电压的70%–110%之间时，分励脱扣器应可靠使断路器脱扣。
Voltage rating:AC50Hz 110V, 220V(230V) or 380V(400V); DC220V,110V or 24V The shunt release should make the breaker trip reliably when the operation voltage is 70%~110% of the rated control voltage.

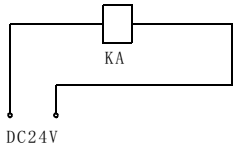
△ 注：当采用额定控制电源电压DC24V规格分励脱扣器时，铜导线最大长度（两根中的每根长度）须满足右表要求。

Note: While selecting DC24V (the rated Conrol power supply voltage) release,the maximum copper wire length (single copper wire)must satisfy right table:

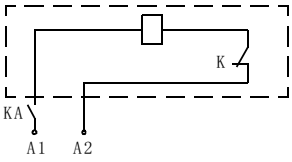
额定控制电源电压Us(DC24V) The rated control voltage \ 导线截面积 Wire area	1.5mm²	2.5mm²
100%Us	150m	250m
85%Us	100m	160m

△ 注：当不满足上述表中要求时，推荐使用下图进行分励控制回路设计。

Note: While don`t satisfy the table, it`s recommended to design the shunt circuit according to the following diagrammatic sketch.



KA：为DC24V中间继电器，触点电流容量为1A
KA: stands for intermediate of DC24V, the current capacity of its contact is 1A

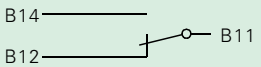


电源输入 power supply

■ 报警触头 Alarm contact

表六：报警触头接线图 Table 6: Wiring diagram of the alarm contact

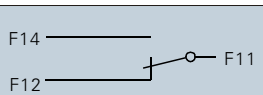
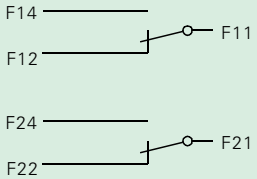
表(Table) 6

断路器处于“分” “合”时的位置 The position of the breaker in "off" or "on"	
断路器处于“自由脱扣”（报警）时的位置 The position of the breaker in "free release"(alarm)	B11、B12接通状态转为断开状态，B11、B14断开状态转为接通状态。 B11 and B12 switch from "close" to "open", status of B11 and B14 switch from "open" to "close".

■ 辅助触头 Auxiliary contact

表七：辅助触头接线图 Table 7: Wiring diagram of the auxiliary contact

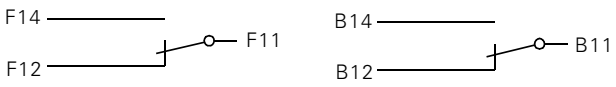
表(Table) 7

断路器处于“分”时的位置 When the breaker is in "off"		壳架等级电流225A及以下断路器 For the breaker with frame current 225A and under
		壳架等级电流400A及以上断路器 For the breaker with frame current 400A and above
断路器处于“合”时的位置 When the breaker is in "on"	“分”时接通状态的触头转为断开状态，“分”时断开状态的触头转为接通状态。 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".	

■ 辅报触头 Auxiliary and alarm contact

△ 辅报触头为一组辅助触头加一组报警触头，接线图如下：

The auxiliary and alarm contacts are consisted of auxiliary contacts and alarm contacts.



△ 辅助触头、报警触头额定工作电流见表八

Rated current of the auxiliary contact and alarm contact see following Table 8 please

表(Table) 8

类 别 Classification	壳架等级额定电流(A) Rated frame current(A)	约定发热电流Ith(A) Conventional thermal current(Ith)	额定工作电流Ie(A) Rated working current(Ie)	
			AC380V	DC220V
辅助触头 Auxiliary contact	Inm≤225	3	0.3	0.15
	Inm≥400	3	0.4	0.15
报警触头 Alarm contact	Inm≤225	3	0.3	0.15
	Inm≥400	3	0.4	0.15

△ 辅助触头的通电操作性能及相应的试验条件见表九

Electrical performance of auxiliary contact and the corresponding test condition see Table 9

表(Table)9

使用类别 Service category	接通 On			分断 Off			通电操作循环次数 Electrical operation times	每分钟操作循环次数 Operation times per minute	通电时间 Duration under current
	I/Ie	U/Ue	cosΦ 或$T_{0.95}$	I/Ie	U/Ue	cosΦ 或$T_{0.95}$			
AC-15	10	1	0.3	1	1	0.3	6050	6	≥0.05s
DC-13	1	1	6Pe	1	1	6Pe			≥$T_{0.95}$

△ 辅助触头的非正常条件下接通与分断能力见表十

The on-off ability of the auxiliary contact under improper condition see following Table 10

表(Table)10

使用类别 Service category	接通 On			分断 Off			通电操作循环次数 Electrical operation times	每分钟操作循环次数*) Operation times per minute	通电时间*) Duration under current
	I/Ie	U/Ue	cosΦ 或$T_{0.95}$	I/Ie	U/Ue	cosΦ 或$T_{0.95}$			
AC-15	10	1.1	0.3	10	1.1	0.3	10	2	≥0.05s
DC-13	1.1	1.1	6Pe	1.1	1.1	6Pe			≥$T_{0.95}$

■ 注：上述二表 Note：For the above two tables:

△ $T_{0.95}$=6Pe是经验公式，其中Pe以“瓦”单位，$T_{0.95}$毫秒单位。

"$T_{0.95}$ = 6Pe" is a traditional formula in which watt is unit of "Pe" and mini-second is unit of "$T_{0.95}$".

△ 当断路器的操作性能总次数小于6050次时，则辅助触头的通电操作性能次 数可与断路器操作性能总次数相等。

If the total operation times of the breaker is less than 6050,the operation times of electrical performance of the auxiliary contact will be equal to that of the breaker.

△ *)操作频率和通电时间允许与断路器主电路的一致。

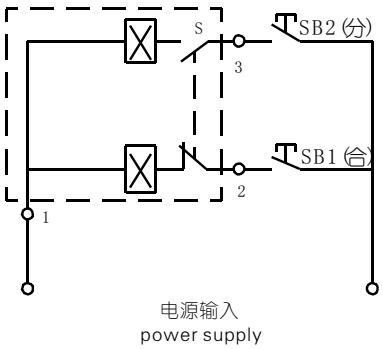
Frequency and duration under current of the auxiliary contact could be same as that of the maincircuit of the breaker.

断路器的外部附件 External accessories of the breaker

■ 电动操作机构 Motor-driven operation device

△ CDM电磁铁操作机构（配用GSM1-63,100,225)接线图见下图（虚线框内为断

路器外部附件接线图）
Wiring diagram of type CDM motor–driven operation device(fitting GSM1–63,100,225) see the following drawing(wiring diagram of the external accessories of the breaker in dotted frame).



电压规格：
AC220V(230V)、380V(400V)、DC220V
Voltage rating：
AC220V(230V)、380V(400V)、DC220V

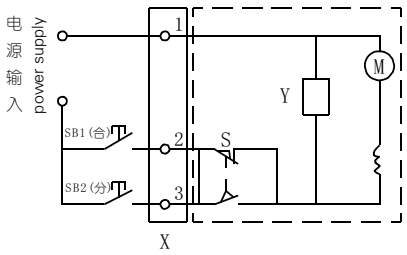
■ 符号说明 Code description:

△ SB1、SB2为操作按钮（用户自备）
SB1、SB2 stand for push button（provides by users themselves）.

△ 编号1、2、3为接线端子号
Number "1"、“2”、“3” stand for number of wiring terminals.

△ S为限位开关 "S" stand for the position switch.

△ CD电动机操作结构（配用GSM1–400,630,800)接线图见下图（虚线框内为断路器外部附 件接线图）
Wiring diagram of type CD motor-driven operation device (fitting GSM1-400, 630, 800) see the following drawing (wiring diagram of the external Accessories of the breaker in dotted frame).



电压规格：
AC220V(230V)、380V(400V)、DC220V
Voltage rating：
AC220V(230V)、380V(400V)、DC220V

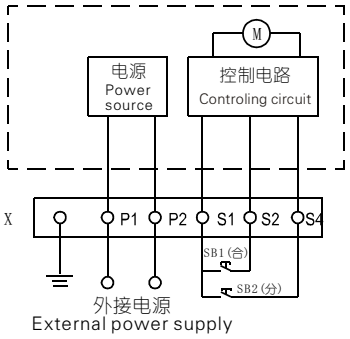
■ 符号说明Code description:

△ SB1、SB2为操作按钮（用户自备）
SB1、SB2 stand for push button（provides by users themselves）.

△ X为接线端子排 "X" stand for line connection terminals.

△ S为限位开关 "S" stand for the position switch.

△ CD2电动操作机构（配用GSM1系列塑壳断路器）接线图见下图（虚线框内为断路器外部附件接线图）
Wiring diagram of type CD2 motor –driven operation device (fitting GSM1 series)see the following drawing (wiring diagram of the external accessories of the breaker in the dotted frame)



电压规格：
AC110V、220V(230V)、DC24V、110V、220V
Voltage rating：
AC110V、220V(230V)、DC24V、110V、220V

■ 符号说明Code description：

△ SB1、SB2为操作按钮（用户自备）
SB1、SB2 stand for push button（provides by users themselves)

△ X为接线端子排 "X" stand for line connection terminals

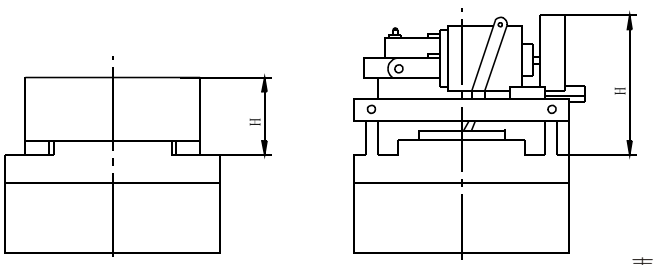
△ P1、P2 为外接电源 P1、P2 stand for external power supply

△ 电动操作机构的动作电流、功率及寿命见表十一
Pickup current,power and electrical life of the motor–driven operation device see following Table11 please.

表(Table) 11

配用断路器 Fitting breaker	起动电流（A） Pickup current(A)			起动功率（W） Motor power(W)			寿命（次） Life（time）		
	CDM电磁铁式 Electromag–netic type	CD电动机式 Motor–driven type	CD2电动机式 Motor–driven type	CDM电磁铁式 Electromag–netic type	CD电动机式 Motor–driven type	CD2电动机式 Motor–driven type	CDM电磁铁式 Electromag–netic type	CD电动机式 Motor–driven type	CD2电动机式 Motor–driven type
GSM1–63	≤5		≤0.5	110		14	10000		10000
GSM1–100	≤7		≤0.5	154		14	10000		10000
GSM1–225	≤8.5		≤0.5	187		14	8000		8000
GSM1–400		≤5.7	≤2		120	35		5000	5000
GSM1–630		≤5.7	≤2		120	35		5000	5000
GSM1–800		≤5.7	≤2		120	35		5000	5000

△ 电动机机构高度（见表十二）
Height of the motor–driven operation device(see Table 12)



表(Table) 12

操作机构所配断路器型号 The type of the breaker fitting for ope–ration device		GSM1–63	GSM1–100	GSM1–225	GSM1–400	GSM1–630	GSM1–800
高度H(mm) Height	CDM电磁铁式 Electromagnetic type	91	91	101			
	CD电动机式 Motor– driven type				141	141	141
	CD2电动机式 Motor– driven type	90.5	89.5	93	142	153	146

△ 注(Note)：

断路器脱扣跳闸后，电动操作机构必须先使断路器再扣，然后才能合闸。

Having released and tripped the breaker,the power–driven operation device should make the breaker recramped first,then it could be turned–on.

■ 转动手柄操作机构 Turning handle operation device

△ 特点 Feature：

该操作机构采用独特的设计和传动结构、通过旋转手柄实现塑壳断路器的合闸、分闸和再扣。操作灵活、平稳、操作力小，安装方便。

Adopting the unique design and transmitting structure, the operation mechanism would make the breaker close,open and recramp by turning the handle. having the feature of smooth and flexible operation,little force and convinent mounting.

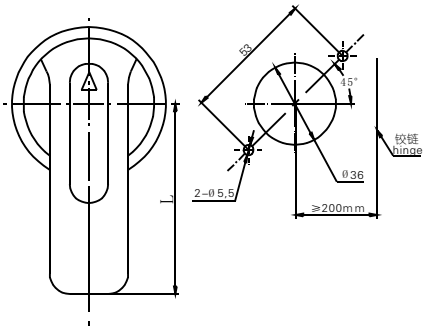
△ 用途Usage：

本机构专用于GSM1系列塑壳断路器，通过转动手柄实现抽屉柜、配电柜、动力箱等在面板上操作的要求，并保证断路器处于合闸时柜体门板不能开启（即与门联锁）。

The mechanism is used specially in GSM1 series moulded case circuit breakers, to operate the drawout panel, power distribution panel and power supply box outside the panel by turning the handle, and toensure the door of panel would not be opened when the breaker being on(i.e. interlock with the door).

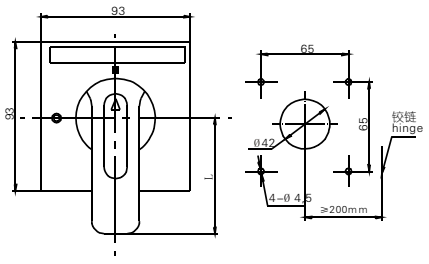
■ 手操机构可配用两种操作手柄：一种为“F”型方型手柄（其中“F"型手柄可分为F1型和F2型，F1：一般型，F2：高防护等级型）；另一种为“A”型圆型手柄，其开孔尺寸见下图：

The hand–drive mechanism can be equipped with two types of operation handles: one is model “ A” round handle,the other is model "F" square handle.（The model "F" square handle has two types:one is model "F1 “ , the other is model "F2". "F1": basic type,"F2":high protective type) Aperture dimension on the panel sheet see the following drawings.



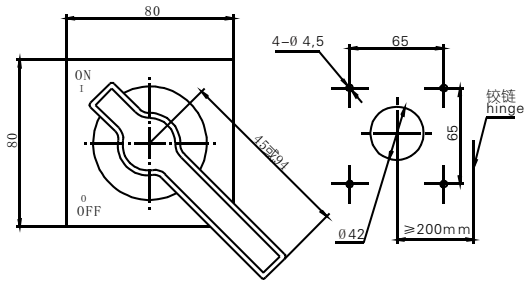
CS1–A型圆形手柄外形及门板开孔尺寸

Contour of model "A" round handle and the aperture dimension on the panel sheet



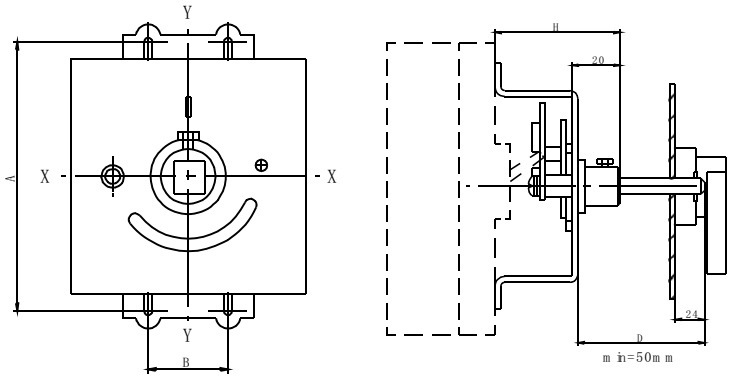
CS1–F1型方形手柄外形及门板开孔尺寸

Contour of model "F1" square handle and the aperture dimension on the panel sheet



CS1-F2型方形手柄外形及门板开孔尺寸

Contour of model "F2" square handle and the aperture dimension on the panel sheet



手动操作机构安装示意图

The mounting drawing of the hand-drive mechanism

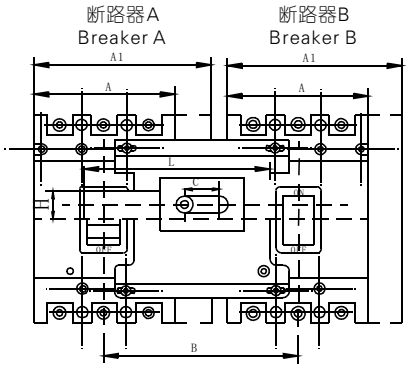
△ 注(Note)：

方轴的标准长度D有150mm、250mm、450mm 三种系列，若订货时不注明方轴长度，则按D＝150mm长度提供，若长度大于150mm，须在订货时注明。

The normal length of the square axis (D) has three series: 150mm,250mm and 450mm. If don`t note the length of the square while making order,will supply the length of 150mm.In case of the length more 150mm,please note while making order.

△ 两台断路器的联锁机构

The mechanical interlock mechanism between two breakers



△ 注(Note)：

安装LS系列机械联锁机构后，断路器不能带分励、欠压脱扣器、电操、手操机构任一附件。

While installation of LS mechanical interlock mechanism,the breaker can not equip with anyone of theaccessories such as shunt release,under-voltage release,motor-driven operation or turning handle operation device.

△ 手动操作机构及联锁机构的安装尺寸见表十三

The mounting dimensions of the hand–drive mechanism and the interlock mechanism see Table 13

表(Table) 13

外部附件名称 Name of external accessories	外部附件型号 Type of external accessories	配用断路器型号 Type of the fitting breaker	安装尺寸（mm） Mounting dimensions （mm）					
			A	B	L	A1	C	H
手动操作机构 hand–drive mechanism	CS1–63	GSM1–63L,M/3 GSM1–63/4	100	25	95	103		49
	CS1–100	GSM1–100L,M/3 GSM1–100/4	103	30	95	122		54
	CS1–225	GSM1–225L,M/3 GSM1–225/4	143	35	95	142		54
	CS1–400	GSM1–400L,H/3 GSM1–400/4	194	138	125	198		86
	CS1–630	GSM1–630L,M,H/3 GSM1–630/4	200	168	125	240		86
	CS1–800	GSM1–800L,M/3 GSM1–800/4	243	198	125	280		97
两台断路器的联锁机构 Interlock mechanism between two breakers	LS–63	GSM1–63L,M/3	78	102	118		38	22
	LS–100	GSM1–100L,M/3	92	120	118		46	22
	LS–225	GSM1–225L,M/3	107	135	138		46	22
	LS–400	GSM1–400L,H/3	150	190	187		58	30
	LS–630	GSM1–400M/3 GSM1–630L,M,H/3	182	220	240		58	30
	LS–800	GSM1–800L,M/3	210	240	280		58	30
	LS–63/4	GSM1–63/4		132	125	103	38	22
	LS–100/4	GSM1–100/4		152	150	122	46	22
	LS–225/4	GSM1–225/4		173	168	142	46	22
	LS–400/4	GSM1–400/4		240	225	198	58	30
	LS–630/4	GSM1–630/4		280	258	240	58	30

十、不同额定电流的连接导线的截面积见表十四、十五
CROSS–SECTIONAL AREA OF CONNECTING WIRE WITH DIFFERENT CURRENT RATING SEE TABLE 14,15.

表(Table) 14

额定电流（A） Rated current (A)	10	16 20	25	32	40 50	63	80	100	125 140	160	180、200 225	250	315 350	400
导线截面积（mm^2） Cross–sectional area of wire (mm^2)	1.5	2.5	4	6	10	16	25	35	50	70	95	120	185	240

表(Table) 15

额定电流（A） Rated current (A)	电缆 Cable		铜排 Copper bar	
	数量 Number	截面积（mm^2）Area of wire(mm^2)	数量 Number	尺寸(mm×mm) Dimension(mm×mm)
500	2	150	2	30×5
630	2	185	2	40×5
700	2	240	2	50×5
800	2	240	2	50×5

十一、使用说明 USE DESCRIPTIONS

△ 断路器采用螺钉安装，既可垂直安装，亦可水平安装；
The breakers can be installed vertically or horizontally by bolts.

△ 断路器手柄可分别处于闭合、断开、自由脱扣三种状态。当手柄处于脱扣位置时，应扳动手柄，实现再扣，然后才能合闸；
The handle of the breaker has three positions: close–up ,cut–off or released state respectively，When the handle at the "released" position, it should be pulled backward to make the breaker "recramped", then to switching–in the circuit.

△ 接线处螺钉必须拧紧；
The binding screws must be screwed down.

△ 断路器各种性能及附件由制造公司整定，用户在使用中不得自行调整；
All the performance of the breaker and accessories have been set on by the company, and it could not be adjusted casually when using.

△ 四极断路器的中性极在产品右侧。
The "N" pole of four poles breakers is sited at the right of the product.

十二、GSM1系列塑壳断路器选型及订货规范 THE LECTOTYPE AND ORDER FORM OF GSM1 SERIES MOULDED CASE CIRCUIT BREAKERS

GSM1–630 M P/ 4 300 2 A 500A AC220V 板后接线 Wiring on back of the board
1 2 3 4 5 6 7 8 9 10

1——壳架等级电流：63,100,225,400,630,800共6种 Frame current：63,100,225,400,630,800.

2——额定极限短路分断能力：分L型和M型（四极无此分类）
Limiting short–circuit breaking ability: Type"L" and Type "M"(having not the classification for four polesbreakers)

3——操作方式：直接操作无代号,电动操作用“P”表示,转动手柄操作用“Z"表示
Operation means：handle operating directly,"P" stand for motor–driven operation
"Z" stand for turning handle operation

4——极数：分3极和4极两种 Number of the pole：three poles andfour poles

5——脱扣方式及附件代号：见表1 Release pattern and inner accessories code: see Table 1

6——用途代号：配电用无代号 保护电动机用代号为2
Code of usage: no code for power distribution "2" for motor protection

7——4极断路器中性极代号：A或B（3极断路器无）
Neutral pole code for four poles breakers：Type“A" and Type “B”（no code for three poles breakers)

8——断路器额定工作电流：见表2 Rated current of breakers: see Table 2

9——附件额定工作电压 Rated working voltage of accessories

10——接线方式：分板前接线、板后接线、插入式接线（分板前插入式和板后插入式两种，但仅GSM1–100,225,400有板前插入式接线）三种，板前接线在订货时可不写
Wiring method:wiring in front of the board wiring on back of the board and insertion type(including insertion type in front of the board and on back of the board. Only GSM–100, 225, 400L have the wiring method of in–sertion in front of the board),can do not write when ordering the method of wiring in front ofthe board.