



茂仁電機業有限公司

MOUJEN INTERNATIONAL GROUP

微動開關 · 限制開關 · 按鈕開關

ELECTRICAL CONTROLLERS, COMPONENTS

ISO-9001:2008 MADE IN TAIWAN



RoHS

漢捷企業有限公司

漢碩電機有限公司

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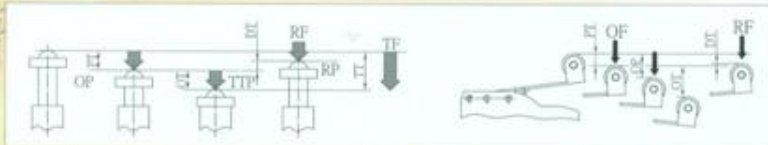
e-mail:hanj@hanj.com.tw

► MJ2-5 SERIES NEW MICRO SWITCHES 2013

◆ Features / 功能 :

1. Dual contacts. 雙接點接觸，接觸誤差率幾乎為零！
2. Positive opening. / 機械性強制脫離的功能，可避免因接點熔合而不動作！
3. IP40 & IP65 protection degree. / 防水等級 IP40 ~ IP65 的多種組合。
4. Flexible application. / 多項組合（螺絲端子、焊接端子、250 快速端子，及多種動作柄組合設定）。

◆ 動作行程圖示



DT-Differential Travel
PT-Pretravel
OT-Over Travel
OP-Operation Position
OF-Operating Force
RF-Release Force



◆ MJ2-CB5 端子防水護套
Terminal protection cover

◆ Rating current / 額定 :

5A / 250VAC
4A / 24VDC 1.1A / 125VDC 0.4A / 250VDC

◆ CHARACTERISTICS / 特性

Operation frequency	Mechanically: 60 operations/min. Electrically: 30 operations/min.
Contact resistance	15mΩ max (initial)
Insulation resistance	100MΩ min. (at 500VDC)
Dielectric Strength	1000VAC, 50/60Hz for 1 minute between non-continuous terminals 2000VAC, 50/60Hz for 1 minute between current-carry part and ground
Vibration	1.5mm amplitude at 55Hz
Protection degree	IP40, IP65 with protection terminal cover
Ambient operating temperature	-25°C to +80°C
Humidity	85% RH max
Service life	Mechanically: 10,000,000 operations Electrically: 500,000 operations



◆ 511101



◆ 511102



◆ 512105



◆ 511106



◆ 511103



◆ 511104



◆ 511107



◆ 511108



◆ 511109



◆ 511110

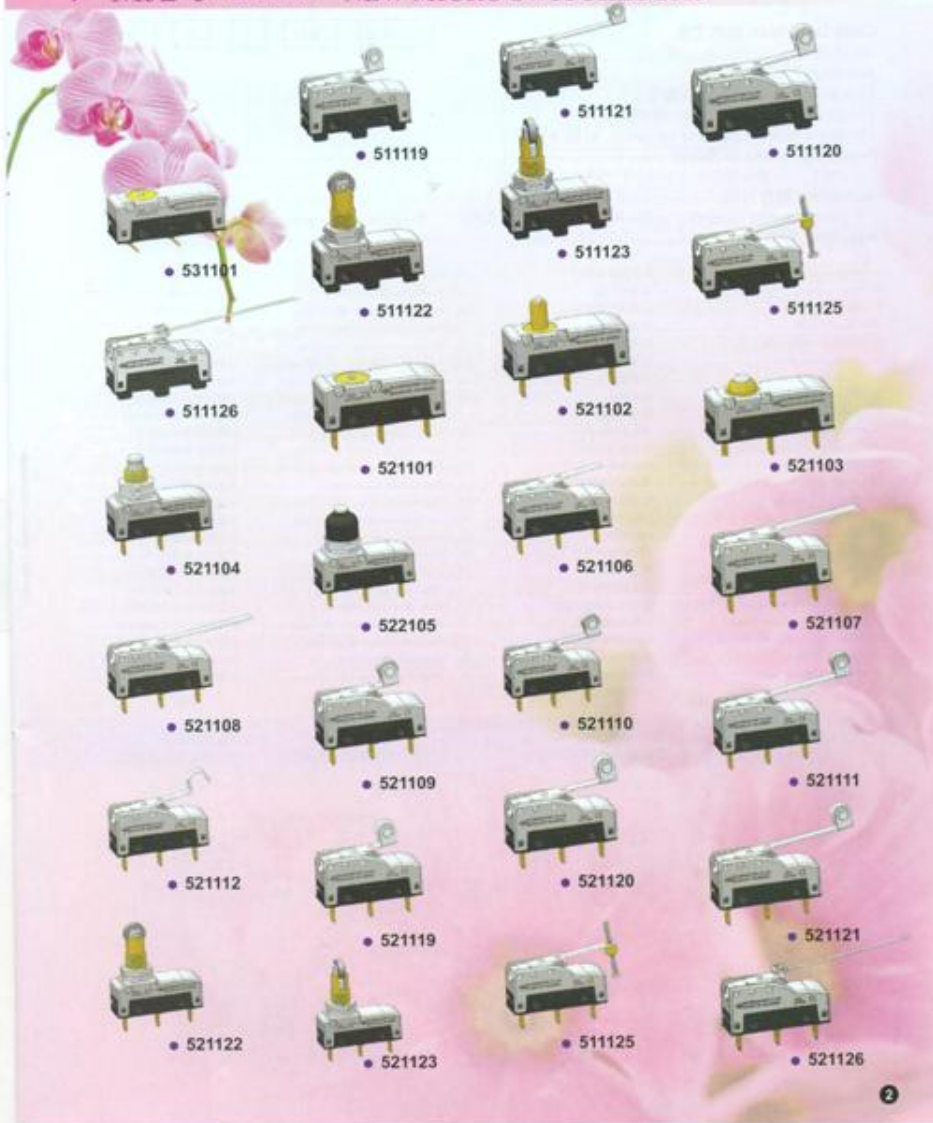


◆ 511111



◆ 511112

► MJ2-5 SERIES NEW MICRO SWITCHES 2013

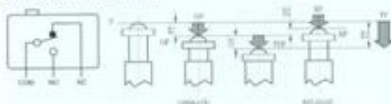


► MJ2 SERIES MICRO SWITCHES

◆ FEATURES/功能

- Regular or sealed operating heads. / 一般或密封式頭部
- Momentary contacts. / 接點式接線
- Completely sealed construction. / 輔助密封式結構
- Wide choice of heads and actuators. / 多種不同的頭及連桿
- Plastic (Standard) or phenolic housing. / 塑膠(標準型)或電木外殼
- Regular or light operating force. / 一般型或輕動作力型
- Temperature range +5°F to +175°F (-15°C to +80°C). / 適用溫度
- Soldering Terminal or Fast Terminal / 焊接端子或快速接線端子

◆ CIRCUITRY/電氣回路



OF : Operating Force TTP : Total Travel Position
 RF : Releasing Force PT : Pretravel
 TF : Total Force OT : Overtravel
 FP : Free Position DT : Travel Differential
 OP : Operating Position TT : Total Travel
 RP : Releasing Position



● MJ2-1308

◆ CHARACTERISTICS/特性

Operating speed	0.01mm to 1m/sec
Operating frequency	Mechanically: 240 operations/min. Electrically: 20 operations/min.
Contact resistance	15m Ω max. (initial)
Insulation resistance	100M Ω min. (at 500 VDC)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 minute between non-continuous terminals 2,000 VAC, 50/60 Hz for 1 minute between current-carry part and ground
Vibration	Malfunction durability: 10 to 55Hz 1.5mm double amplitude
Shock	Mechanical durability: Approx. 1,000m/sec ² (approx. 100G's) Malfunction durability: Approx. 300 m/sec ² (approx. 30G's)
Ambient operating temperature	General purpose type: -25° to +80°C Sealed type: -15° to 80°C
Humidity	General purpose type: 85% RH max Sealed type: 95% RH
Service life	Mechanically: 20,000,000 operations min Electrically: 1.7A, 110VAC/MAAX 500,000 operations min.



● MJ2-1317



● MJ2-1306-PT
● MJ2-1306-PM



● MJ2-1513



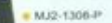
● MJ2-1514



● MJ2-1308R-P



● MJ2-1515



● MJ2-1306-P



● MJ2-1307



● MJ2-1515-P



● MJ2-1308



● MJ2-1315



● MJ2-1308R

◆ RATING/額定

15A	125 or 250V AC
1/8 HP	125 V AC
1/4 HP	250 V AC
1/2 A	125 V DC
1/4 A	250 V DC

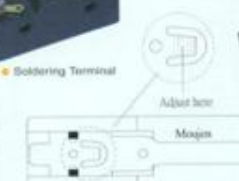
◆ REMARK

● OIL TIGHT SERIES

MJ2-1315 MJ2-1317
 MJ2-1513 MJ2-1514 MJ2-1515
 MJ2-1515-P
 MJ2-1711 MJ2-1712 MJ2-1713
 MJ2-1714 MJ2-1721

● SENSITIVITY ADJUSTABLE SERIES

MJ2-1513 MJ2-1514 MJ2-1543 MJ2-1544
 MJ2-1701 MJ2-1702 MJ2-1703 MJ2-1704
 MJ2-1711 MJ2-1712 MJ2-1713 MJ2-1714



● Soldering Terminal

Adjust base

Main body

● Fast Terminal

ORDER GUIDE

DIMENSIONS (mm)	OPERATING CHARACTERISTICS	DIMENSIONS (mm)	OPERATING CHARACTERISTICS
MJ2-1300 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: 11.3 ± 0.2, ø2.3	MJ2-1300 MJ2-1300L OF MAX 250~450g RF MIN 114g PT MAX 0.5mm OT MIN 0.13mm DT MAX 0.05mm FP MAX OP 15.9x0.4mm	MJ2-1315 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: ø1.8, ø0.2	MJ2-1315 OF MAX 540g RF MIN 114g PT MAX 1.3mm OT MIN 1.6mm DT MAX 0.06mm FP MAX OP 28.2x0.5mm
MJ2-1305 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: ø1.3, ø4	MJ2-1305 MJ2-1305L OF MAX 250~450g RF MIN 114g PT MAX 0.5mm OT MIN 1.6mm DT MAX 0.05mm FP MAX OP 28.2x0.5mm	MJ2-1317 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: ø1.8, ø4	MJ2-1317 OF MAX 540g RF MIN 114g PT MAX 2.6mm OT MIN 2.5mm DT MAX 0.05mm FP MAX OP 38.1x1.2mm
MJ2-1306 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: 12.3, ø7.15	MJ2-1306 MJ2-1306L OF MAX 250~450g RF MIN 114g PT MAX 0.5mm OT MIN 1.6mm DT MAX 0.05mm FP MAX OP 21.3x0.5mm	MJ2-1513 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: ø1.75	MJ2-1513 OF MAX 390g RF MIN 50g PT MAX 2.7mm OT MIN 2.4mm DT MAX 0.6mm FP MAX 43.6mm OP 41.3x0.8mm
MJ2-1307 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: 10.0mm, ø1.25, ø1.25	MJ2-1307 MJ2-1307L OF MAX 250~450g RF MIN 114g PT MAX 0.5mm OT MIN 5.5mm DT MAX 0.05mm FP MAX OP 38.1x0.8mm	MJ2-1514 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: ø1.5, ø1.5	MJ2-1514 OF MAX 190g RF MIN 25g PT MAX 6.4mm OT MIN 4.0mm DT MAX 1.6mm FP MAX 47.2mm OP 41.3x0.8mm
MJ2-1308 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: ø1.7 ± 0.1, ø1.7 ± 0.1	MJ2-1308 MJ2-1308L OF MAX 250~450g RF MIN 114g PT MAX 0.5mm OT MIN 5.5mm DT MAX 0.05mm FP MAX OP 48.7x1.2mm	MJ2-1515 Top view: 25.3 ± 0.25, 25.4 ± 0.10, Ø1.2 Side view: ø1.7, ø1.7	MJ2-1515 OF MAX 540g RF MIN 114g PT MAX 2.3mm OT MIN 1.6mm DT MAX 0.06mm FP MAX OP 28.2x0.5mm

◆ ORDER GUIDE

- Plastic body & Nylon Plastic roller (Standard Type) 塑膠外殼及尼龍塑膠滾輪(標準型) :

MJ2-1280	MJ2-1300	MJ2-1305	MJ2-1306	MJ2-1307	MJ2-1308-P	MJ2-1308R-P	MJ2-1543	MJ2-1544
MJ2-1578	MJ2-1701	MJ2-1702	MJ2-1703	MJ2-1704	MJ2-1315	MJ2-1317	MJ2-1513	MJ2-1514
MJ2-1515	MJ2-1711	MJ2-1712	MJ2-1713	MJ2-1714	MJ2-CB2			
MJ2-1721	MJ2-1741		MJ2-1730	MJ2-1732	MJ2-1737			

- Metal roller type(custom made) 金屬滾輪(訂製品):

MJ2-1308	MJ2-1308R	MJ2-1703-F	MJ2-1704-F	MJ2-1737-F
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- Type Number Ordering Code 型號命名定義表格 (MJ2-)

- ① Series basic definition code 系列基本定義的型號 MJ2。

- ② Feature type number 成品編號的種類

1280-1744 set up ordinal number according to different driving devices.
Please refer to type picture and type number in the catalogue.
1280-1744 依不同的傳動軸種類，而設定的流水號
請參考目錄上放法的圖片與序號編號

- ③ Body(case) material type: 外觀材質的種類

Non-indicate 無表示: Plastic Body (standard) 塑膠外殼 (標準型)
P: Phenolic Body(custom made) 電木外殼 (訂製品)

- ④ OF (operating force) type OF操作力量的種類

Non-indicate 無表示 : Normal force(standard) 一般正常的力量 (標準型)

- ⑤ Terminal type 端子的種類

Non-indicate 無表示 : Only attached screw(standard)
 Only screw to be attached on 2nd set of screw

5. Soldering Terminal Type (custom made) 有組裝焊線端子(訂製品)

- A** : Fast Terminal Type(custom made) 和相装快速连接器(訂製品)

- ⑤ Roller or hood material type 滾輪或罩部材質的種類

- P : Roller (Plastic : NYLON) 塑膠滾輪(尼龍)X黑色

- PT : Head or Roller (custom made TEFLON) 領部或滾輪(訂製品鐵氟龍)(白色)

- ・PM : Head (custom made : POM) 頭部(訂製品POM)(白色)

- 7) High current type (custom made) 大電流型(訂製品)

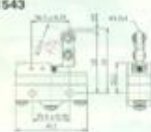
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ORDER GUIDE

DIMENSIONS (mm) OPERATING CHARACTERISTICS DIMENSIONS (mm) OPERATING CHARACTERISTICS

● MJ2-1543



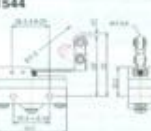
MJ2-1543	MJ2-1543L
QF MAX	170g
RF MIN	40g
PT MAX	2.7mm
OT MIN	2.4mm
OT MAX	8.5mm
FP MAX	43.8mm
QP	41.2x0.8mm

● MJ2-1711



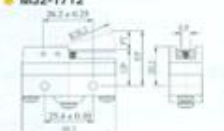
MJ2-1711	
QF MAX	100g
RF MIN	14g
PT MAX	10mm
OT MIN	6.8mm
OT MAX	2.5mm
FP MAX	28.2mm
QP	19x0.8mm

● MJ2-1544



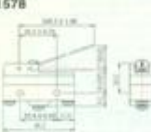
MJ2-1544	MJ2-1544L
QF MAX	170g
RF MIN	25g
PT MAX	8.5mm
OT MIN	4.8mm
OT MAX	1.8mm
FP MAX	47.2mm
QP	41.2x0.8mm

● MJ2-1712



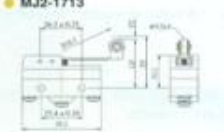
	MJD-1712
QF MAX	150g
RF MIN	25g
PT MAX	7.5mm
OT MIN	8.5mm
OT MAX	1.5mm
FP MAX	28.2mm
QP	19x0.8mm

● MJ2-1578



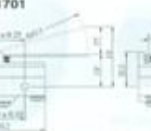
MJ2-1578	MJ2-1578L
QF MAX	170g
RF MIN	8g
PT MAX	10mm
OT MIN	8mm
OT MAX	8mm
FP MAX	25x1mm
QP	

● MJ2-1713



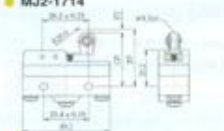
	MJ2-1713
QF MAX	120g
RF MIN	27g
PT MAX	7.5mm
OT MIN	4.0mm
OT MAX	1.0mm
FP MAX	36.5mm
QP	30.2x0.8mm

● MJ2-1701



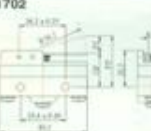
MJ2-1701	MJ2-1701L
QF MAX	170g
RF MIN	14g
PT MAX	10mm
OT MIN	8.5mm
OT MAX	1.2mm
FP MAX	28.2mm
QP	19x0.8mm

● MJ2-1714



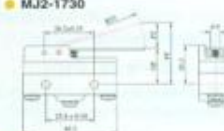
	MJ2-1714
QF MAX	200g
RF MIN	40g
PT MAX	2.5mm
OT MIN	3.4mm
OT MAX	0.5mm
FP MAX	24.2mm
QP	30.2x0.8mm

● MJ2-1702



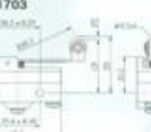
MJ2-1702	MJ2-1702L
QF MAX	100g
RF MIN	20g
PT MAX	1.8mm
OT MIN	3.2mm
OT MAX	1.2mm
FP MAX	28.2mm
QP	19x0.8mm

● MJ2-1730



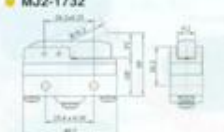
MJ2-1730	
QF MAX	80g
RF MIN	16g
PT MAX	8mm
OT MIN	4.8mm
OT MAX	1.15mm
FP MAX	27.2mm
QP	19x0.8mm

● MJ2-1703



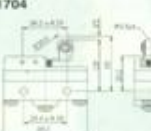
MJ2-1703	MJ2-1703L
QF MAX	100g
RF MIN	25g
PT MAX	7.5mm
OT MIN	4.8mm
OT MAX	1.2mm
FP MAX	28.2mm
QP	30.2x0.8mm

● MJ2-1732



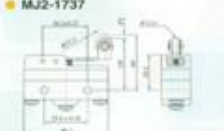
	MJ2-1732
QF MAX	180g
RF MIN	40g
PT MAX	6.5mm
OT MIN	1.4mm
OT MAX	1.5mm
FP MAX	30.5mm
QP	24.2x0.8mm

● MJ2-1704



MJ2-1704	MJ2-1704L
QF MAX	180g
RF MIN	40g
PT MAX	3.5mm
OT MIN	4.8mm
OT MAX	0.5mm
FP MAX	34.5mm
QP	36.2x0.8mm

● MJ2-1737



MJ2-1737	
QF MAX	120g
RF MIN	20g
PT MAX	0.7mm
OT MIN	3.4mm
OT MAX	1.5mm
FP MAX	28.2mm



moujen

► MV SERIES MICRO SWITCHES

◆ FEATURES/功能

- Small dimensions suitable for OEM uses. / 適用於 "OEM"
- High temperature type, max 120°C. / 耐高溫型・最高可達120°C
- Wide choice of heads and actuators. / 具各種不同選擇
- Long life services. / 使用壽命長

◆ RATING/額定

- Standard type—般型
(UL recognized) UL認可
1) 5A 125 or 250VAC
2) 0.5A 125 or 250VDC

◆ High current type 大電流型

- 1) 20A 125 or 250VAC
2) 0.5A 125 or 250VDC

◆ REMARK

- MV-3003AL, MV-3003BL → Actuator length 55.5mm/柄長55.5mm

◆ ORDER GUIDE

• Standard type: 標準型

MV-3000A	MV-3001A	MV-3002A	MV-3003A	MV-3004A	MV-3005A
MV-3003AL	MV-3004S	MV-001	MV-002		

• Light force type: 輕動作力型

MV-3000B | MV-3001B | MV-3002B | MV-3003B | MV-3004B | MV-3005B | MV-3003BL

• Plastic roller (Custom made): 塑膠滾輪 (訂製品)

MV-3004A-P | MV-3005A-P | MV-3004B-P | MV-3005B-P

• NC or NO type (Custom made): NC型・NO型 (訂製品)

MV-3000A-NC,NO | MV-3001A-NC,NO | MV-3002A-NC,NO | MV-3003A-NC,NO | MV-3004A-NC,NO | MV-3005A-NC,NO
MV-3000B-NC,NO | MV-3001B-NC,NO | MV-3002B-NC,NO | MV-3003B-NC,NO | MV-3004B-NC,NO | MV-3005B-NC,NO

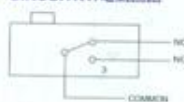
• High temperature body 120°C (Custom made): 耐120° 高溫型 (訂製品)

MV-3100 | MV-3101 | MV-3102 | MV-3103 | MV-3104 | MV-3105

• High current type (Custom made): 大電流型 (訂製品)

MV-3000A20 | MV-3001A20 | MV-3002A20 | MV-3003A20 | MV-3004A20 | MV-3005A20
MV-3000B20 | MV-3001B20 | MV-3002B20 | MV-3003B20 | MV-3004B20 | MV-3005B20

◆ CIRCUITRY/電氣回路

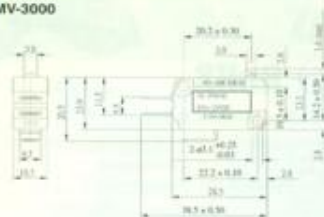


◆ CHARACTERISTICS/特性

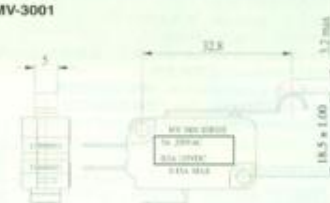
Operating speed	0.01mm to 1m/sec
Operating frequency	Mechanically: 600 operations/min. Electrically: 60 operations/min.
Contact resistance	15m Ω max. (initial)
Insulation resistance	100M Ω min. (at 500 VDC)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 minute between non-continuous terminals 2,000 VAC, 50/60 Hz for 1 minute between current-carrying part and ground
Vibration	Malfunction durability: 10 to 55Hz 1.5mm double amplitude
Shock	Mechanical durability: Approx. 1,000m/sec ² (approx. 100G's) Malfunction durability: Approx. 300 m/sec ² (approx. 30 G's)
Ambient operating temperature	General purpose type: -25°C to +80°C High temperature type: 25°C to 120°C
Humidity	General purpose type: 85% RH max Sealed type: 95% RH
Service life	Mechanically: 5,000,000 operations min. Electrically: 1.5A, 110VAC/MAX 500,000 operations min.



● MV-3000



● MV-3001



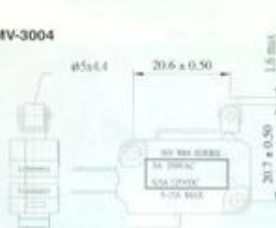
● MV-3002



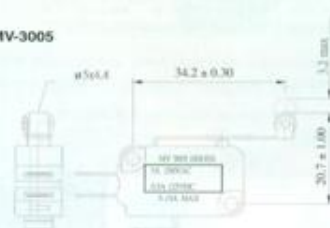
● MV-3003



● MV-3004



● MV-3005



OPERATING CHARACTERISTICS

MV-3000	A	B
OF MAX	250g	100g
RF MIN	50g	25g
PT MAX	1.2mm	
OT MIN	1.0mm	
DT MAX	0.4mm	
OP	14.70 ± 0.4	

MV-3003	A	B
OF MAX	140g	60g
RF MIN	20g	10g
PT MAX	4.0mm	
OT MIN	1.6mm	
DT MAX	1.5mm	
OP	15.20 x 1.2	

MV-3001	A	B
OF MAX	140g	60g
RF MIN	20g	10g
PT MAX	4.0mm	
OT MIN	1.6mm	
DT MAX	1.5mm	
OP	18.70 ± 1.2	

MV-3004	A	B
OF MAX	280g	110g
RF MIN	50g	20g
PT MAX	1.6mm	
OT MIN	0.8mm	
DT MAX	0.6mm	
OP	20, 70 ± 0.6	

MV-3002	A	B
OF MAX	250g	100g
RF MIN	50g	25g
PT MAX	1.6mm	
OT MIN	0.8mm	
DT MAX	0.6mm	
OP	15.20 ± 0.5	

MV-3005	A	B
OF MAX	140g	60g
RF MIN	20g	10g
PT MAX	4.0mm	
OT MIN	1.6mm	
DT MAX	1.5mm	
OP	20.70 ± 1.2	

► MN SERIES MINI ENCLOSED LIMIT SWITCHES

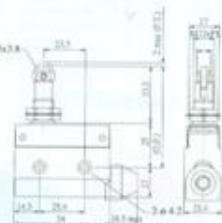
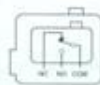
◆ FEATURES/功能

- Side mount switches. / 側面固定式
- Momentary contacts. / 接點瞬接
- Wide choice of heads and actuators. / 具各種不同之頭及連桿
- Sealed actuators. / 密封式連桿
- Completely sealed structure. / 輔助式密封結構
- Plastic sealed construction. / 塑膠成型固定座
- Temperature range +5°F to +175°F (-15°C to +80°C). / 適用溫度

◆ RATING/額定

10A	250V AC
0.5A	125V DC

◆ CIRCUITRY/電氣回路



MN-5311 ROLLER PLUNGER

◆ ORDER GUIDE

◆ Standard type

標準型 (尼龍塑膠滾輪)

MN-5100	MN-5110	MN-5110L	MN-5110XL	MN-5120	MN-5121
MN-5124	MN-5140	MN-5141	MN-5144	MN-5161	MN-5166
MN-5169	MN-5310	MN-5311-P	MN-5312-P		

◆ Plastic head or roller type (Teflon, custom made): 塑膠頭部或滾輪 (特氟龍, 訂製品)

MN-5100-P	MN-5110-P	MN-5310-P	MN-5311-PT	MN-5312-PT
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◆ Metal roller type (custom made) 金屬滾輪 (訂製品)

MN-5311	MN-5312
---------	---------

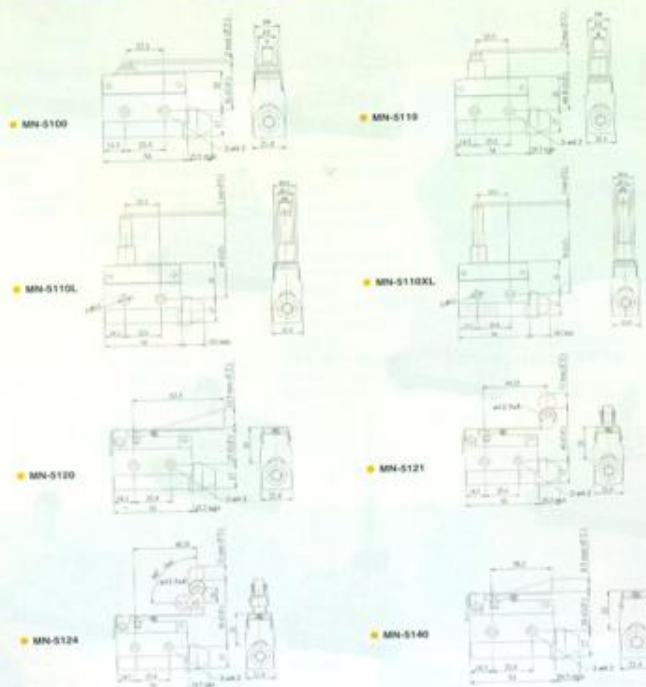


◆ CHARACTERISTICS/特性

Operating speed	0.01mm to 50cm/sec (at pin plunger)
Operating frequency	120 operations/min.
Contact resistance	25m Ω max. (initial)
Insulation resistance	100M Ω min. (at 500 VDC)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 minute between non-continuous terminals 2,000 VAC, 50/60 Hz for 1 minute between current-carrying and non- current-carrying parts and between each terminal and ground
Vibration	Malfunction durability: 10 to 55Hz 1.5mm double amplitude
Shock	Mechanical durability: 1,000m/s ² (approx. 100G's) Malfunction durability: 300m/s ² (approx. 30G's)
Ambient operating temperature	Operating: -10°C to +80°C
Humidity	95% RH max. (at +20°C to 35°C)
Service life	Mechanically: 10,000,000 operations min. (at rated OT value) Electrically (2A, 110VAC) MAX 500,000 operations min.
Degree of protection	IEC: IP65



DIMENSIONS (mm)



OPERATING CHARACTERISTICS

MN-5100	
OF MAX	600g
RF MIN	100g
PT MAX	2.0mm
OT MIN	0.8mm
DT MAX	0.8mm
OP	30 ± 1.5mm

MN-5121	
OF MAX	180g
RF MIN	50g
PT MAX	11.0mm
OT MIN	3.0mm
DT MAX	2.4mm
OP	40 ± 1.9mm

MN-5110	MN-5110L	MN-5110XL
OF MAX	600g	600g
RF MIN	100g	100g
PT MAX	2.0mm	2.0mm
OT MIN	5.0mm	5.0mm
DT MAX	0.8mm	0.8mm
OP	46.8 ± 1.5mm	60 ± 1.5mm

MN-5124	
OF MAX	200g
RF MIN	60g
PT MAX	11.0mm
OT MIN	3.0mm
DT MAX	2.4mm
OP	50 ± 1.9mm

MN-5120	
OF MAX	150g
RF MIN	40g
PT MAX	13.5mm
OT MIN	4.0mm
DT MAX	3.2mm
OP	25 ± 2.0mm

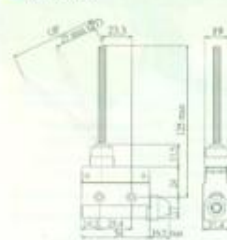
MN-5140	
OF MAX	220g
RF MIN	60g
PT MAX	8.5mm
OT MIN	2.5mm
DT MAX	2.0mm
OP	25 ± 1.3mm



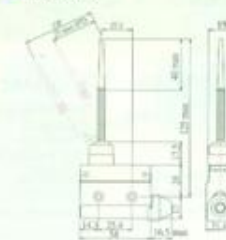
DIMENSIONS (mm)	OPERATING CHARACTERISTICS	DIMENSIONS (mm)	OPERATING CHARACTERISTICS
MN-5141	OF MAX 240g RF MIN 80g PT MAX 6.5mm OT MIN 2.0mm DT MAX 1.5mm OP 40 ± 1.6mm	MN-5144	OF MAX 260g RF MIN 100g PT MAX 6.5mm OT MIN 2.0mm DT MAX 1.5mm OP 50 ± 1.6mm

DIMENSIONS (mm)

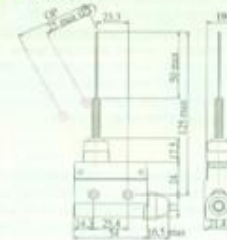
● MN-5161



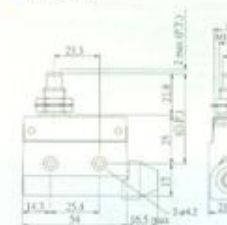
● MN-5166



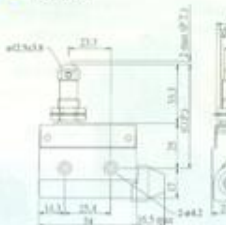
● MN-5169



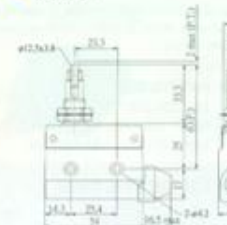
● MN-5310



● MN-5311



● MN-5312



OPERATING CHARACTERISTICS

	MN-5161
OF MAX	120g
RF MIN	-
PT MAX	25mm
OT MIN	11mm
DT MAX	-

	MN-5310
OF MAX	600g
RF MIN	100g
PT MAX	2.0mm
OT MIN	6.0mm
DT MAX	0.8mm
OP	46.8 ± 1.5mm

	MN-5166
OF MAX	120g
RF MIN	-
PT MAX	25mm
OT MIN	11mm
DT MAX	-

	MN-5311
OF MAX	600g
RF MIN	100g
PT MAX	2.0mm
OT MIN	6.0mm
DT MAX	0.8mm
OP	58.3 ± 1.5mm

	MN-5169
OF MAX	120g
RF MIN	-
PT MAX	25mm
OT MIN	11mm
DT MAX	-

	MN-5312
OF MAX	600g
RF MIN	100g
PT MAX	2.0mm
OT MIN	6.0mm
DT MAX	0.8mm
OP	58.3 ± 1.5mm

► MJ1 SERIES ENCLOSED LIMIT SWITCHES

◆ FEATURES/功能

- Side mount switches. / 側邊固定式
- Momentary contacts. / 接點接線
- Level or plunger operation. / 垂直或撞桿式操作
- Regular or sealed operating heads. / 一般或密封式頭
- Completely sealed construction. / 輔助式密封結構
- 1/2" conduit entry, captive cover screws. / 接線頭使用鎖式螺絲
- Dustproof, Oil-Tight, Water-Resistant. / 防塵、防油、防水
- Temperature range +15°F to +175°F (-10°C to +80°C). / 適用溫度

MJ-1 side mount switches are offered with or without actuator seal boots. Both have a combination insulator/seal cemented inside the bottom enclosure. Lead washers are used to seal the mounting holes on side mount switches.

The elastomer boot on sealed actuator versions and cover seal on all switches protect the actuating mechanism and the internal basic switch from contaminations.

All side mount switches are installed with M4 screws. Removal of the bottom enclosure exposes the terminals for easy wiring.

◆ RATING/額定

15A 125, 250V AC
1/8HP 125V AC, 1/4HP 250V AC
1/2A 125V DC, 1/4A 250V DC

◆ CIRCUITRY/電氣回路



◆ ORDER GUIDE

MJ1-6101	MJ1-6102	MJ1-6102R	MJ1-6104	MJ1-6106	MJ1-6107
MJ1-6111	MJ1-6112	MJ1-6112R	MJ1-6114	MJ1-6117	

◆ CHARACTERISTICS/特性

Operating speed	0.01mm to 1m/sec
Operating frequency	Mechanically: 240 operations/min. Electrically: 20 operations/min.
Contact resistance	15m Ω max. (initial)
Insulation resistance	100M Ω min. (at 500 VDC)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 minute between non-continuous terminals 2,000 VAC, 50/60 Hz for 1 minute between current-carrying part and ground
Vibration	Malfunction durability: 10 to 55Hz 1.5mm double amplitude
Shock	Mechanical durability: Approx. 1,000m/sec ² (approx. 100G's) Malfunction durability: Approx. 300 m/sec ² (approx. 30 G's)
Ambient operating temperature	Operating: -10°C to +80°C
Humidity	General purpose type: 85% RH max. Sealed type: 95% RH
Service life	Mechanically: 20,000,000 operations min. Electrically (1.7A, 110VAC) MAX: 500,000 operations min.



ORDER GUIDE

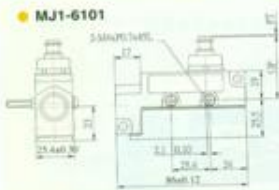
DIMENSIONS (mm)

OPERATING CHARACTERISTICS

DIMENSIONS (mm)

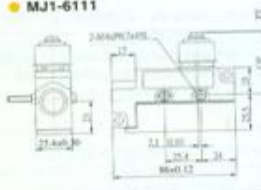
OPERATING CHARACTERISTICS

● MJ1-6101



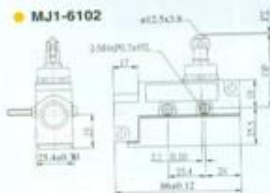
CF MAX	250g-450g
RF MIN	114g
PT MAX	0.8mm
OT MIN	0.5mm
OT MAX	0.05mm
OP	40.2 ± 0.8

● MJ1-6111



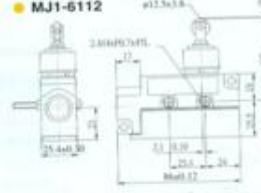
OF MAX	800g
RF MIN	240g
PT MAX	25mm
OT MIN	5mm
OT MAX	0.5mm
OP	50.5 x 0.8

● MJ1-6102



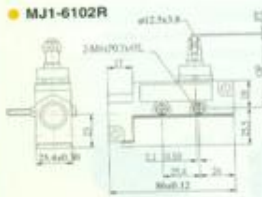
OF MAX	250g-450g
RF MIN	114g
PT MAX	0.8mm
OT MIN	3.0mm
DT MAX	0.05mm
CP	50.7 ± 0.8

● MJ1-6112



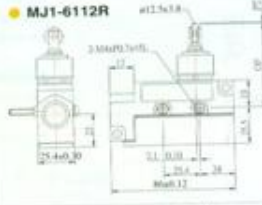
OF MAX	500g
OF MIN	100g
PT MAX	2mm
OT MIN	3.5mm
DT MAX	0-12mm
OP	49.7 ± 0.2

● MJ1-6102R



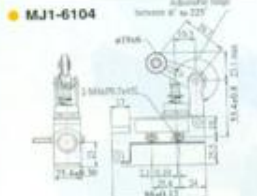
OF MAX	250g-450g
RF MIN	114g
PT MAX	0.8mm
DT MIN	3.6mm
DT MAX	0.05mm
OP	30.7 ± 0.8

● MJ1-6112R



OF MAX	100g
PF MIN	100g
PT MAX	2mm
OT MIN	3.5mm
DT MAX	0.12mm
CP	49.7 ± 0.8

● MJ1-6104



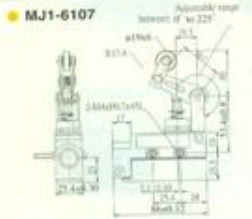
CF MAX	570g
RF MIN	170g
PT MAX	4mm
CT MIN	8mm
DT MAX	0.4mm

● MJ1-6114



OF MAX	640g
RF MIN	200g
PT MAX	Green
OT MIN	Green
DT MAX	0 down

● MJ1-6107



CF MAX	600g
HF MIN	170g
PT MAX	3mm
OT MIN	5.5mm
OT MAX	9.72mm

● MJ1-6117



OF MAX	640g
RF MIN	230g
PT MAX	5mm
OT MIN	6mm
OT MAX	0.72mm

MVS SERIES MVS MICRO SWITCHES



RoHS

1. Features / 功能

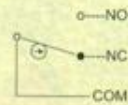
- a. performance according to standards---VDE0660, IEC/EN60947, UL508. / 功能遵照歐規及美規系統製造
- b. positive opening contact. / 強制脫離接點
- c. housing in P.C transparent plastic and clear easily. / PC 透明外觀容易分辨內部動作
- d. screw, solder and #250 fasten terminal for choice. / 螺絲、焊接及# 250 快速端子可供選擇
- e. protection degree---IP40. IP40保護等級

2. Rating / 額定電流電壓

- a. UL-508 6A/125 or 250 VAC, 0.5A/125 or 250 VDC
- b. IEC AC-15 6A / 230VAC (10A Max)
- DC-13 6A / 24VDC (10A Max)



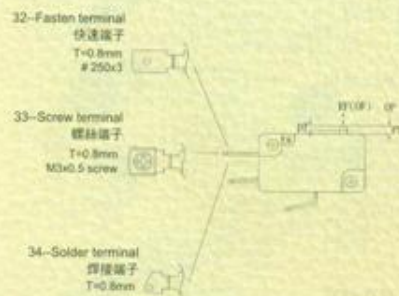
3. Circuitry / 電氣圖路



5. Order code / 訂購代號

MVS - 32 00
產品型號 ① ②

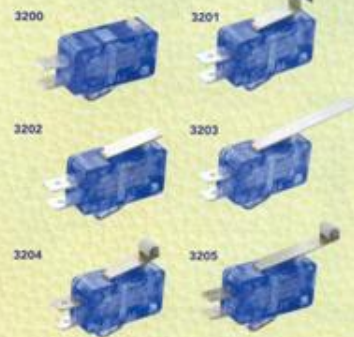
① Terminal type 端子的種類



4. Characteristics / 特性

Operating speed	0.01 to 1m/sec.
Operating frequency	mechanically : 300 operations / min.
Contact resistance	30mΩ max.
Dielectric strength	1000 VAC, 50/60 Hz for 1 minute between non-continuous terminals.
Ambient operating temperature	(- 40℃~+85℃)
Storage humidity	85% RH max.
Service life	mechanically: 10,000,000 operations. electrically 5,000,000 operations.(1.5A,110VAC/MAX.
Protection degree	IP 40.

② Categories of actuators 頭部動作柄的種類



exp 舉例說明

1. MVS-3304 螺絲端子短柄



2. MVS-3203 快速端子長柄

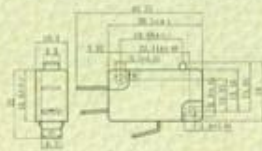


3. MVS-3400 焊接端子接線



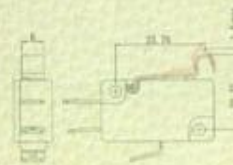
Dimension (mm)
operating characteristics

- MV5-3200



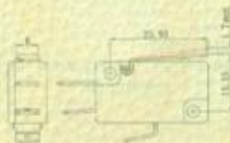
MVS-3200	
CF MAX	200g
RF MIN	50g
PT MAX	1.2mm
OT MIN	1.0mm
OT MAX	0.12mm
OP	14.6 ± 0.2mm

• MVS-3201



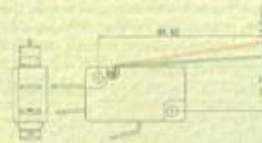
MVS-3201	
CP MAX	225kg
HP MIN	50kg
PT MAX	1.3mm
OT MIN	1.3mm
OT MAX	0.15mm
CP	20.6 ± 0.5mm

• MVS-3202



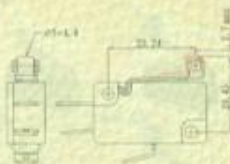
MVS-3202	
CP MAX	220g
RF MIN	50g
PT MAX	1.8mm
OT MIN	1.3mm
DT MAX	0.15mm
Cell	15.8 ± 0.3mm

• MVS-3203



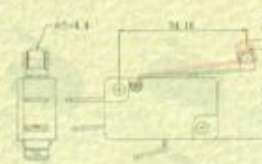
MVS-3203	
OF MAX	140g
HF MIN	20g
PT MAX	3.8mm
OS MIN	3.0mm
OT MAX	0.5mm
OP	17.5 ± 0.5mm

• MVS-3204



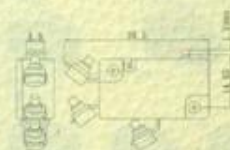
MVS-3204	
OF MAX	22mg
HF MIN	50g
PI MAX	1.3mm
CI MIN	1.3mm
DI MAX	0.13mm
OP	21.0 x 0.3mm

- MVS-3205



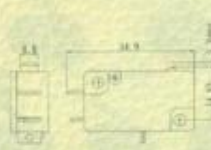
MVS-3205	
OF MAX	140g
RF MIN	20g
PT MAX	2.5mm
OT MIN	1.5mm
DT MAX	0.3mm
DP	21.7 x 6.3mm

- MVS-3300



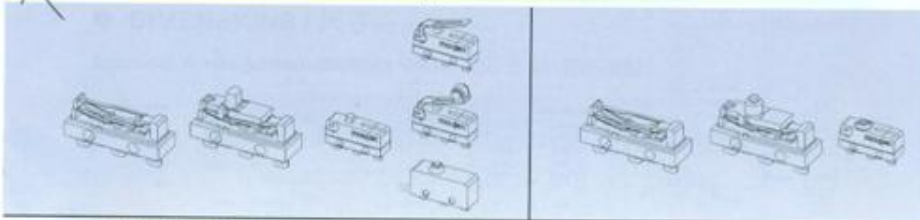
MVS-3300	
OF MAX	250g
HF MIN	50g
PT MAX	1.2mm
OT MIN	1.0mm
DT MAX	0.12mm
OP	14.9 ± 0.2mm

• MVS-3400



MVS-3400	
CF MAX	250g
RF MIN	50g
FT MAX	1.2mm
OT MIN	1.0mm
DT MAX	0.12mm
CF	14.6 / 0.2mm

MZ-7 SERIES Watertight Miniature Switches



◆ FEATURES/功能

- MZ-7 Miniature Switch with positive opening operation. (IEC/EN 60947, UL508, VDE0660) / 強制脫離超小型開關。
- Ideal for use in machinery, control units and automation systems. / 適用於機器設備、控制元件、自動化系統。
- MZ-7 Miniature Switch features positive opening operation of NC contacts even when contacts are welded due to short-circuits or overload currents. / 常閉接點因短路或超載過電流而造成接點無法開路時，具有強制脫離的功能。
- Optional actuators available with plain lever or roller lever. / 可選用搖柄或搖輪柄。
- Protection degree is for contact are IP40, IP60 and IP67. / 三種IP保護等級IP40、IP60、IP67。
- With Silver or Gold or Cu+Ag contact material. / 銀接點(標準型) 或金接點(特殊型) 或銅銀鍍(特殊型)。

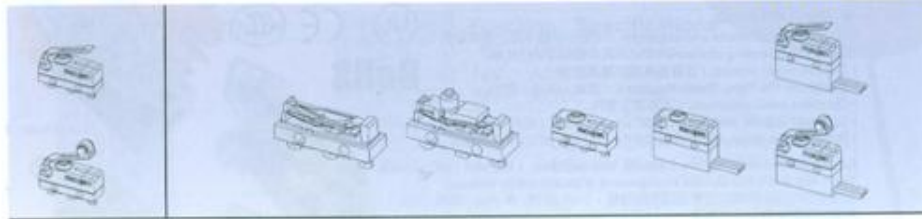
◆ CHARACTERISTICS/特性

Operating frequency	Mechanical	200 operations /min.
Contact material	Ag or Au	
Contact resistance	100mΩ max.	
Insulation resistance	100MΩ min. (at 500 VDC)	
Dielectric strength	1000VAC, 50/60 Hz for 1 minute between terminals of the same polarity.	
Ambient operating temperature	-25 °C to +80 °C	
Ambient operating Humidity	85% ~ 100% RH max.	
Service life	Mechanical	500,000 operations min
Degree of protection	IP40, IP60 & IP67	



X

ORDER GUIDE



Product Codes For Watertight Miniature Switches MZ-7 Series 產品編碼

Code Definition 編碼定義

Series 系列

Type No. 型號

Actuator options 動作配件選擇

- 0 = Pushbutton (standalone) 常開型
 1 = Push lever, short 短行程
 2 = Push lever, long 長行程
 3 = Roller lever, short 短行程
 4 = Roller lever, long 長行程
 5 = Dummy Roller 假滾輪

Contact materials 接點材料

- 0 = Cu-Ag
 1 = Silver
 2 = Gold

Protection class 保護等級

- 1 = IP40
 2 = IP65
 3 = IP67
 4 = IP67 covered with PVC tube IP67+塑膠套管

Wire side 電線位置

- R = Right side 右側
 L = Left side 左側
 B = Bottom side 底部

Wire specification 電線規格

- S = Standard wires 一般型
 U = UL wires 美國分級電線

Wire length 電線長度

- Blank = Standard (30cm)
 Custom made

MZ-7 5 1 1-B U

CIRCUITRY / 電路圖

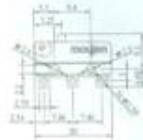
RATING / 額定
5A, 250VAC

	MZ-7
FP	9.1±0.15mm
OP	8.4±0.2mm
RP	8.55±0.2mm
TTP	7.15(MIN)mm
RT	0.7mm
OT	1.25mm
DT	0.55mm
TT	1.95mm

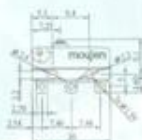
Mounting : Tightening Torque Of The Screws is 0.2 Nm Max.

DIMENSIONS (mm)

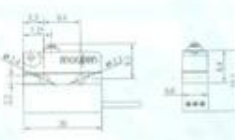
● MZ-7511



● MZ-7512



● MZ-7513



► MJ SERIES PRECISION OIL-TIGHT LIMIT SWITCHES

◆ FEATURES/功能

- Wide choice of heads and actuators. / 可配合各種不同之連桿及頭
- Variety of operating characteristics. / 具多種使用特性曲線
- Captive cover screws. / 接線頭具帽式蓋蓋螺絲
- Dustproof, Oil-Tight, Water-Resistant. / 防塵、防油、防水
- Stainless steel essentials. / 不銹鋼主零件
- Standard size & dimensions, 1/2" conduit entry. / 規格及尺寸標準化
- Temperature range +15°F to +175°F (-10°C to +80°C). / 適用溫度

All oil tight limit switches are 2 circuits limit switches, 1 NO and 1 NC circuits.
The 1 NO and 1 NC contact arrangement is double break isolated.
所有密封式限制開關都是雙迴路限制開關，1NO (常開) 與 1NC (常閉) 迴路，各迴路接點間有兩段式絕緣。

◆ RATING/額定

10A	125 or 300V AC (resistive)
0.8A	125 V DC (resistive)
0.4A	250 V DC
1/2HP	125 V AC
1HP	250 V AC

◆ CIRCUITRY/電氣回路



◆ CHARACTERISTICS/特性

Operating speed	1mm to 2m/sec
Operating frequency	Mechanically: 120 operations/min. Electrically: 30 operations/min.
Contact resistance	15m Ω max. (initial)
Insulation resistance	100M Ω min. (at 500 VDC)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 minute between non-continuous terminals 2,200 VAC, 50/60 Hz for 1 minute between each terminal and non-current-carrying metal part and between each terminal and ground
Vibration	Malfunction durability: 10 to 55Hz 1.5mm double amplitude
Shock	Mechanical durability: Approx. 1,000m/sec ² (approx. 100G's) Malfunction durability: Approx. 300m/sec ² (approx. 30 G's)
Ambient operating temperature	Operating: -10°C to +80°C
Humidity	95% RH max
Service life	Mechanically: 15,000,000 operations min. Electrically (2.5A, 110VAC) MAX: 500,000 operations min.
Degree of protection	IEC 529 class IP65 (Sealed accessories requirement)

◆ ORDER GUIDE

- Standard type ~ 2 screws: 標準型—兩個螺絲孔型

MJ-7101 MJ-7102 MJ-7102R MJ-7103 MJ-7104 MJ-7106 MJ-7126 MJ-3241 MJ-3242 MJ-3243
MJ-3244 MJ-7107 MJ-7107L MJ-7108 MJ-7204 MJ-7207 MJ-7207L MJ-7208 MJ-7000

- "O" type ~ 3 screws (Custom made): 三個螺絲孔型 (訂製品)

MJ-7101O MJ-7102O MJ-7102RO MJ-7103O MJ-7104O MJ-7106O MJ-7126O MJ-3241O MJ-3242O
MJ-3243O MJ-3244O MJ-7107O MJ-7107LO MJ-7108O MJ-7204O MJ-7207O MJ-7207LO MJ-7208O

- Plastic roller type (Custom made): 塑膠滾輪 (訂製品)

MJ-7104-P MJ-7204-P MJ-7108-P MJ-7208-P

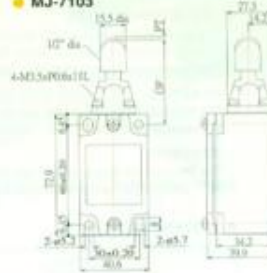
- Ø50mm rubber's roller type (Custom made): 50mm橡膠滾輪 (訂製品)

MJ-7104-26 MJ-7204-26 MJ-7108-26 MJ-7208-26

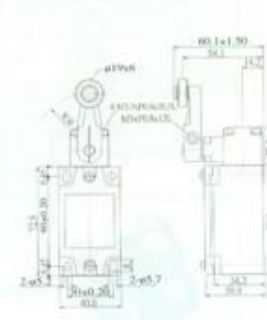
- Metal roller type (Custom made): 金屬滾輪 (訂製品)

MJ-3241-M MJ-3242-M MJ-3243-M MJ-3244-M

● MJ-7103



● MJ-7204



	MJ-7204
OF MAX	900g - 2 in. lbs.
RF MIN	50g - 2 in. oz.
PT MAX	25' to 30'
OT MIN	60'
DT MAX	16'
	TT: 90' + 10'

► MJ SERIES PRECISION OIL-TIGHT LIMIT SWITCHES

◆ OVERTRAVEL TYPE

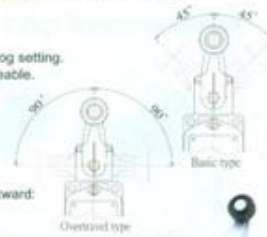
The Overtravel Type is a limit switch which is provided with a greater OT to facilitate dog setting. Since this type is identical to the Basic Type in dimension, both types are interchangeable. The Overtravel Type is classified into two versions - 71 series and - 72 series.

-71 SERIES

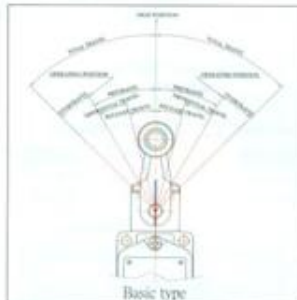
The head of -71 series switch can be installed in any of the four directions: 45° operation on either side - possible

-72 SERIES

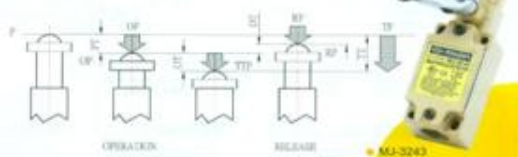
The head of -72 series switch can be installed only in two directions, forward and backward: 90° operation on either side - possible



◆ ROTARY ACTUATION



◆ IN-LINE PLUNGER ACTUATION



Characteristics: OF-Operating Force; PT-Pretravel; OT-Over Travel; DT-Differential Travel; RF-Release Force; OP-Operation Position; TF-Travel Force; RP-Release Position; TT-Total Travel

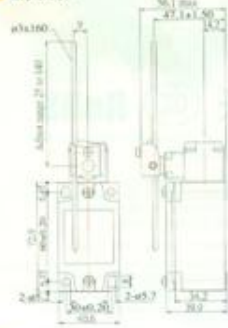
◆ REMARK

● MJ-7107L, MJ-7207L → 395mm long stick: 395mm 長柄

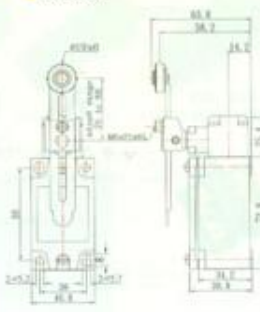


DIMENSIONS (mm)

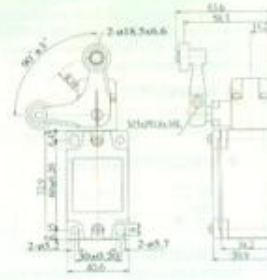
● MJ-7107



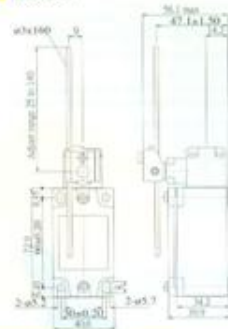
● MJ-7108



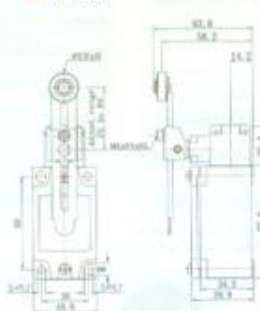
- MJ-3241 ● MJ-3243
- MJ-3242 ● MJ-3244



● MJ-7207



● MJ-7208



OPERATING CHARACTERISTICS

MJ-7107	
CF MAX	245g — .5 in. oz.
RF MIN	25g — 1 in. oz.
PT MAX	15' to 20'
OT MIN	30'
DT MAX	12'
TF: Max. 200g-1/2 in lb.	
TT: Min 43'	

	MJ-7207
OF MAX	150g — 5 in. oz.
RF MIN	25g — 1 in. oz.
PT MAX	25° to 30°
OT MIN	60°
DT MAX	16"
	TF: Max. 200g-1/2 in lb.
	TT: 90° ± 10°

	MJ-7108
OF MAX	1400g -- 3 in. lbs.
RF MIN	227g -- 1/2 lb.
PT MAX	15" to 20"
OT MIN	25"
DT MAX	12"
	TF: Max. 2720g-4 in lbs.
	TT: Min 43"

MJ-7208	
OF MAX	900g — 3 in. lbs.
RF MIN	50g — 1/2 lb.
PT MAX	25' to 30'
OT MIN	60'
DT MAX	16'
	TF: Max. 1820g-4 in lbs
	TT: 90' ± 10'

	MJ-3241
OF MAX	1200g — 2 in. oz.
RF MIN	—
PT MAX	55°
OT MIN	35°
DT MAX	

► ME SERIES MINI LIMIT SWITCHES

◆ FEATURES/功能

- Wide choice of heads and actuators. / 可配合各種不同之連桿及頭
- Variety of operating characteristics. / 具多種使用特性曲線
- Captive cover screws. / 吊線器與板式電蓋螺絲
- Mode of operation is field adjustable. / 可調式
- Internal grounding screw. 內裝接地螺絲
- Dustproof, Oil-Tight, Water-Resistant. / 防塵、防油、防水
- Temperature range +5°F to +160°F. / 適用溫度(-15°C to +70°C)

◆ RATING/額定

5A	250V AC (resistive)
0.4A	115V DC (resistive)

◆ CIRCUITRY/電氣回路



◆ FIELD ADJUSTABLE

Rotary motion roller lever and rod actuators are adjustable through 360°. They may be set for operation clockwise, counter-clockwise, or in both directions. Operating heads may be positioned in any of four 90° positions.

◆ EASY WIRING

1. Loosen cover screws and remove cover.
2. Remove rubber strain relief from switch cover.
3. Slip strain relief over cable.
4. Fasten terminal screws and grounding screw tightly after inserting cables or terminals.
5. After wiring, insert strain relief into the groove of the switch cover.
6. Fasten 3 cover screws evenly. Do not over tighten.
7. Recommended Cable # 18/3 SJT Flexible.



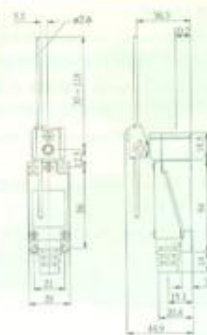
ME-8105



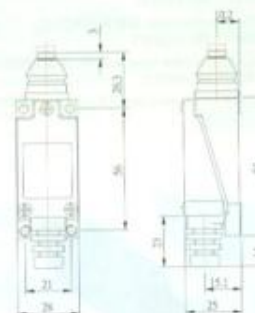
◆ CHARACTERISTICS/特性

Operating speed	0.5mm to 50mm/sec
Operating frequency	Mechanically: 120 operations/min. Electrically: 30 operations/min.
Contact resistance	15m Ω max. (initial)
Insulation resistance	100M Ω min. (at 500 V DC)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 minute between non-continuous terminals 2,000 VAC, 50/60 Hz for 1 minute between each terminal and non-current carrying metal part and between each terminal and ground
Vibration	Malfunction durability: 10 to 55Hz; 1.5mm double amplitude
Shock	Mechanical durability: Approx. 1,000m/sec ² (approx. 100G's) Malfunction durability: Approx. 300m/sec ² (approx. 30 G's)
Ambient temperature	Operating: -15°C to +70°C
Humidity	95% RH max
Service life	Mechanically: 10,000,000 operations min. Electrically: 300,000 operations min. (at 110VAC MAX)
Degree of protection	IEC 529 class IP65

● ME-8107



ME-8111



	ME-8107
OF MAX	203g
RF MIN	12g
PT MAX	20"
OT MIN	75"
DT MAX	10"
TT MIN	95"

	ME-B111
OF MAX	900g
RF MIN	150g
PT MAX	1.5mm
OT MIN	4.0mm
DT MAX	0.7mm
TT MIN	5mm



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► ME SERIES MINI LIMIT SWITCHES

◆ ORDER GUIDE

- Standard type (Nylon Plastic roller) : 標準型 (尼龍塑膠滾輪)
ME-8104 | ME-8107 | ME-8108 | ME-8111 | ME-8112-P | ME-8122-P | ME-8166 | ME-8169 | ME-9101 | ME-8000
- Metal roller (Custom made): 金屬滾輪 (訂製品)
ME-8104-M | ME-8108-M | ME-8112 | ME-8122
- Ø50mm rubber's roller (Custom made): 50mm橡膠滾輪 (訂製品)
ME-8104-L | ME-8108-L
- Plastic roller (Teflon, custom made): 塑膠滾輪 (鐵氟龍, 訂製品)
ME-8112-PT | ME-8122-PT
- 1/4 steel and 3/4 spring (Custom made): 動作柄1/4白鐵 3/4彈簧 (訂製品)
ME-9101-Hi

◆ REMARK:

- Metal roller type: 金屬滾輪型式
ME-8104-M | ME-8108-M
- Teflon Plastic roller type: 鐵氟龍滾輪型式
ME-8112-PT | ME-8122-PT
- ø50mm rubber's roller type: ø50mm 橡膠滾輪型式
ME-8104-L | ME-8108-L
- ME-9101-Hi → 1/4 steel and 3/4 spring → 動作柄1/4白鐵 3/4彈簧



ME-8122-P



ME-9101-Hi



ME-8112



ME-8122



ME-9101



ME-8166



ME-8169

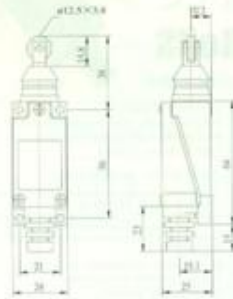


ME-8112-P

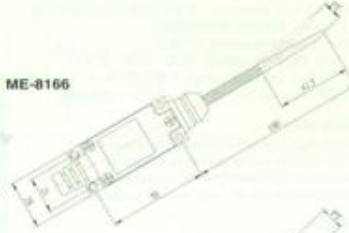
ORDER GUIDE

DIMENSIONS (mm)

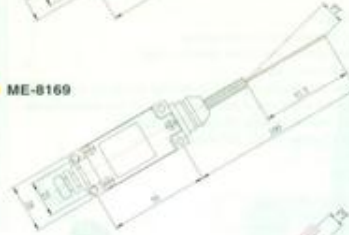
ME-8112



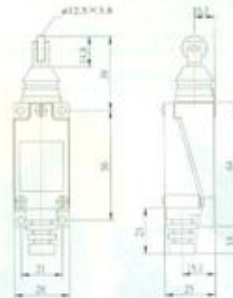
ME-8166



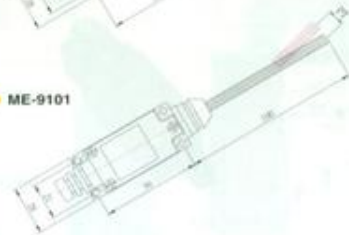
ME-8169



ME-8122



ME-9101



OPERATING CHARACTERISTICS

	ME-8112
OF MAX	900g
RF MIN	150g
PT MAX	1.5mm
OT MIN	4.0mm
DT MAX	0.7mm
TT MIN	5mm

	ME-8122
OF MAX	900g
RF MIN	150g
PT MAX	1.5mm
OT MIN	4.0mm
DT MAX	0.7mm
TT MIN	5mm

	ME-8166
OF MAX	90g
RF MIN	-
PT MAX	30mm
OT MIN	20mm
DT MAX	-
TT MIN	-

	ME-8169
OF MAX	90g
RF MIN	-
PT MAX	30mm
OT MIN	20mm
DT MAX	-
TT MIN	-

	ME-9101
OF MAX	90g
RF MIN	-
PT MAX	30mm
OT MIN	20mm
DT MAX	-
TT MIN	-



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► MEA SERIES MINI LIGHT LIMIT SWITCHES

◆ FEATURES/功能

- Total plastic enclosure, light weight switches. / 塑膠外殼重量輕
- Wide choice of heads and actuators. / 可配合各種不同之連桿及頭
- Captive cover screws. / 蓋線頭具螺式覆蓋螺絲
- Mode of operation is field adjustable. / 可調式
- Dustproof, Oil-Tight, Water-Resistant. / 防塵、防油、防水
- 2 circuits: 1 N.O., 1 N.C. contacts design. / 雙迴路1 N.O., 1 N.C.設計
- Tempe. range +5°F to +160°F (-15°C to +70°C). / 適用溫度

◆ FIELD ADJUSTABLE

Rotary motion roller lever and rod actuators are adjustable through 360°. They may be set for operation clockwise, counter-clockwise, or in both directions. Operating heads may be positioned in any of four 90° and four 45° positions.

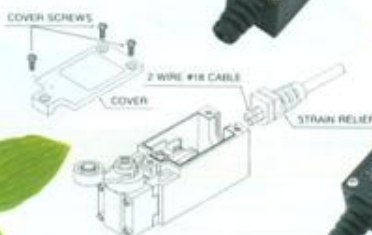
◆ EASY WIRING

1. Loosen cover screws and remove cover.
2. Remove rubber strain relief from switch cover.
3. Slip strain relief cover cable.
4. Fasten terminal screws tightly after inserting cables or terminals.
5. After wiring, insert strain relief into the groove of the switch cover.
6. Fasten 3 cover screws evenly. Do not over tighten.
7. Recommended Cable-#18/2 SUT Flexible.

◆ RATING/額定

6A	125 or 250V AC
0.4A	125V DC

◆ CIRCUITRY/電氣回路



FIVE OPERATING POSITIONS AVAILABLE



◆ CHARACTERISTICS/特性

Operating speed	0.5mm to 50mm/sec
Operating frequency	Mechanically: 120 operations/min. Electrically: 50 operations/min.
Contact resistance	15m Ω max. (initial)
Insulation resistance	100M Ω min. (at 500 V DC)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 minute between non-current terminals 1,500 VAC, 50/60 Hz for 1 minute between each terminal and non-current carrying metal part and between each terminal and ground
Vibration	Malfunction durability: 10 to 55Hz; 1.5mm double amplitude
Shock	Mechanically durability: Approx. 1,000m/sec ² (approx. 100G's) Malfunction durability: Approx. 300m/sec ² (approx. 30 G's)
Ambient temperature	Operating: -15°C to +70°C
Humidity	95% RH max
Service life	Mechanically: 10,000,000 operations min. Electrically: 500,000 operations min. (2A, 110VAC MAX)
Degree of protection	IEC 529 class IP65



MEA-9111



MEA-9104



MEA-9108-L



MEA-9107



MEA-9111-P



MEA-9104-L



MEA-9108

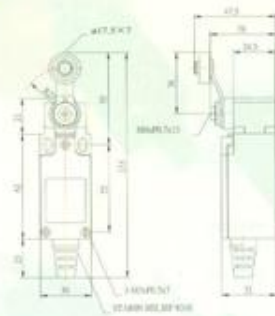


MEA-9104G

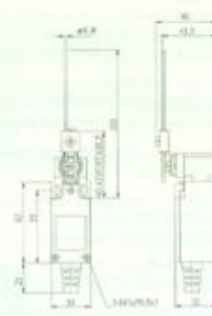
ORDER GUIDE

DIMENSIONS (mm)

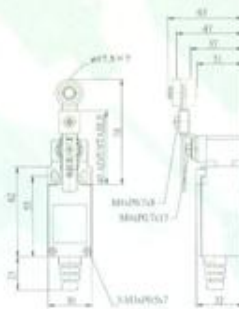
● MEA-9104



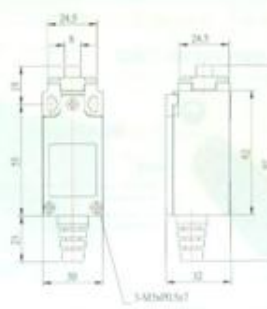
● MEA-9107



● MEA-9108



● MEA-9111



OPERATING CHARACTERISTICS

	MEA-9104
OF MAX	300g
RF MIN	100g
PT MAX	20"
OT MIN	50"
DT MAX	12"
TT MIN	70"

	MEA-9108
CF MAX	100g
RF MIN	40g
PT MAX	20"
OT MIN	50"
DT MAX	12"
TT MIN	70"

	MEA-9107
OF MAX	100g
RF MIN	40g
PT MAX	20"
OT MIN	50"
DT MAX	12"
TT MIN	70"

	MEA-9111
OF MAX	500g
RF MIN	150g
PT MAX	2.0mm
OT MIN	4.0mm
DT MAX	10mm
TT MIN	5mm

► MEA SERIES MINI LIGHT LIMIT SWITCHES

◆ ORDER GUIDE

- Standard type (Nylon Plastic roller) : 標準型 (尼龍塑膠滾輪)

MEA-9104 MEA-9107 MEA-9108 MEA-9111 MEA-9112-P
MEA-9122-P MEA-9161 MEA-9166 MEA-9169

- Flat tail (G) type: 平底 (G)型

MEA-9104G MEA-9107G MEA-9108G MEA-9111G MEA-9112G-P
MEA-9122G-P MEA-9161G MEA-9166G MEA-9169G

- Ø50mm rubber's roller (Custom made): 50mm橡膠滾輪 (訂製品)

MEA-9104-L MEA-9108-L

- Plastic head or roller type (Teflon, custom made): 塑膠頭部或滾輪(特氟龍, 訂製品)

MEA-9111-P MEA-9112-P-T MEA-9122-P-T

- Metal head or roller type (Custom made): 金屬頭部或滾輪(訂製品)

MEA-9112-Z MEA-9122-Z MEA-9112 MEA-9122

- Pre-Cable type (Custom made): 預附電纜型式 (訂製品)

MEA-9104A- MEA-9107A- MEA-9108A- MEA-9111A- MEA-9112A-
MEA-9122A- MEA-9161A- MEA-9166A- MEA-9169A-

* wiring in ☐ M cable/ 附 ☐ 米電纜線

- ◆ "G" type: Flat tail, 平底型

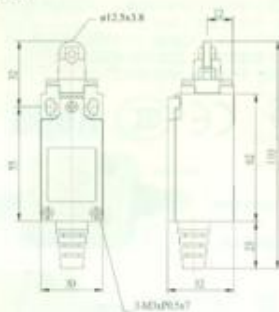


- ◆ Pre-cable type: 預附電纜型式

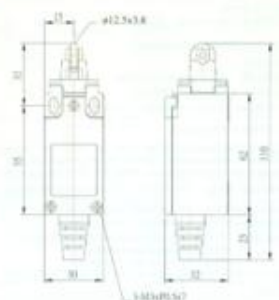


DIMENSIONS (mm)

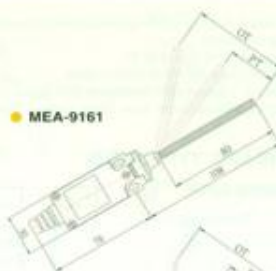
● MEA-9112



● MEA-9122



● MEA-9161



● MEA-9166



● MEA-9169



OPERATING CHARACTERISTICS

	MEA-9112
OF MAX	500g
RF MIN	150g
PT MAX	2.0mm
OT MIN	4.0mm
DT MAX	1.0mm
TT MIN	5mm

	MEA-9122
OF MAX	500g
RF MIN	150g
PT MAX	2.0mm
OT MIN	4.0mm
DT MAX	1.0mm
TT MIN	5mm

	MEA-9161
OF MAX	60g
RF MIN	-
PT MAX	25°
OT MIN	50°
DT MAX	-
TT MIN	70°

	MEA-9166
OF MAX	60g
RF MIN	-
PT MAX	25°
OT MIN	50°
DT MAX	-
TT MIN	70°

	MEA-9169
OF MAX	60g
RF MIN	-
PT MAX	25°
OT MIN	50°
DT MAX	-
TT MIN	70°



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► M4 SERIES ENCLOSED LIMIT SWITCHES

- Miniature Size & Positive opening contact switch inserted for option.
- Wide range of choices.
- Protective grade conforms to IP 67.
- With 2m or 3m cable (VCTF or SJTO cable).
- SJTO cable (UL approved) Oil resistance cord type.
- Standard type, Side out cable type, Quick connect type. (M12 × 1)

- 小型設計種類齊全與強制脫離安全開關可供選擇
- 防油、防水程度佳，符合 IP67
- 標準品附2m或3m電纜線(VCTF或SJTO電纜)
- SJTO 電纜線為 UL 認證之耐油電纜
- 標準型、側出線型、快速連結型



◆ STANDARD TYPE/標準型

ORDERING CODE:

M4

4101

2

M4-4112

Series code

Type NO.

Contacts Code

Cable code

Blank Standard

Z Positive

Opening

Contacts

Cable code : cable type ; cable length

電纜規格、長度

VCTF Cable

(0.75mm² × 4c)

SJTO Cable (UL approved)

(18AWG × 4c)

2 → 2m

3 → 3m

2L → 2m

3L → 3m

ELECTRICAL RATING

5A 125 or 250 V AC

3A 30V DC

0.4 A 125 V DC

CIRCUITRY / 電路圖



◆ CHARACTERISTICS/特性

Operating Speed	0.1m/s~0.5m/s M4 - 4104(4114) : +1mm~1m/s
Operating Temperature	-10°C~70°C(Without freezing)
Humidity	95% RH Max
Operating frequency	Mechanically : 120 operations/min. Electrically : 30 operations/min.
Contact resistance	300m Ω/Max. (initial) (with 3m Cable)
Insulation resistance	100M Ω/Min.(500 VDC)
Dielectric strength	Between non - continuous terminals : 1000 V AC 50/60 Hz 1 minute Between each terminal and non - current - carrying metal part and Between each terminal and ground : 1500V AC 50/60 Hz 1 minute
Vibration	Malfunction durability : 10~50Hz : 1.5mm double amplitude
Shock	Mechanical durability : 1000 m/sec ² (approx 100G) Malfunction durability : 300 m/sec ² (approx 30G)
Service life	Mechanically : 2,000,000 operations min.(Standard) 500,000 operations min. (Positive Opening Contacts) Electrically : 200,000 operations min.(1.5A,110VAC)MAX.
Protection Degree	IEC : IP67



M4-4101



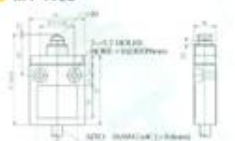
● M4-4102



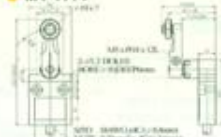
● M4-4102R



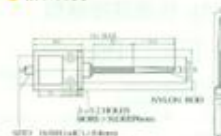
● M4-4103



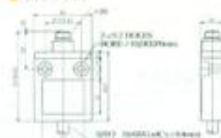
- M4-4104
- M4-4114



M4-4105



● M4-4111



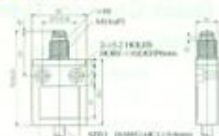
● M4-4112



● M4-4112R



● M4-4310



M4-4311



● M4-4312



OPERATING CHARACTERISTICS

M4-4101		M4-4102		M4-4102R		M4-4103		M4-4104 M4-4114		M4-4106		
OF MAX	1200g	OF MAX	1200g	OF MAX	1200g	OF MAX	1200g	OF MAX	580g	580g	OF MAX	150g
RF MIN	450g	RF MIN	450g	RF MIN	450g	RF MIN	450g	RF MIN	150g	150g	RF MIN	50g
PT MAX	1.8mm	PT MAX	1.8mm	PT MAX	1.8mm	PT MAX	1.8mm	PT MAX	25"	10" + 3"	PT MAX	15"
OT MIN	3mm	OT MIN	3mm	OT MIN	3mm	OT MIN	3mm	OT MIN	40"	50"	OT MIN	+
MD MAX	0.2mm	MD MAX	0.2mm	MD MAX	0.2mm	MD MAX	0.2mm	MD MAX	3"	3"	MD MAX	+
OP	15.7±1mm	OP	28.5±1mm	OP	28.5±1mm	OP	28.5±1mm	OP	+	+	OP	+

M4-4111		M4-4112		M4-4112R		M4-4310		M4-4311		M4-4312	
OF MAX	1800g	OF MAX	1800g	OF MAX	1800g	OF MAX	1200g	OF MAX	1200g	OF MAX	1200g
RF MIN	450g	RF MIN	450g	RF MIN	450g	RF MIN	450g	RF MIN	450g	RF MIN	450g
PT MAX	1.8mm	PT MAX	1.8mm	PT MAX	1.8mm	PT MAX	1.8mm	PT MAX	1.8mm	PT MAX	1.8mm
OT MIN	3mm	OT MIN	3mm	OT MIN	3mm	OT MIN	3mm	OT MIN	3mm	OT MIN	3mm
MD MAX	0.2mm	MD MAX	0.2mm	MD MAX	0.2mm	MD MAX	0.2mm	MD MAX	0.2mm	MD MAX	0.2mm
OP	24.9±1mm	OP	34.3±1mm	OP	34.3±1mm	OP	31.2±1mm	OP	36.8±1mm	OP	36.8±1mm

► M4 SERIES ENCLOSED LIMIT SWITCHES

◆ Side Out Cable Type: 側出線型

ORDERING CODE: M4 - 4101 S - 2

Series code Type NO. Contacts Code: Blank Standard Z Positive Opening Contacts Cable code

M4-4104S

◆ Quick Connent Type (M12×1): 快速連接器型

ORDERING CODE: M4 - 4101 Q - AC

Series code Type NO. Contacts Code: Blank Standard Z Positive Opening Contacts Connection style

M4-4102Q

● Connector Style: 連接器型式

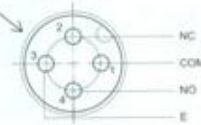
AC → For AC or AC/DC Quick Connect Style.
DC → For DC Quick Connect Style.

M12×1



AC TYPE

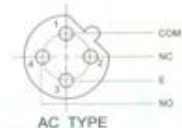
M12×1



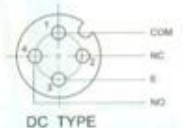
DC TYPE

M4-4102S

● Connector Cable: 連結電線



AC TYPE



DC TYPE



M4-4104Z

ORDERING CODE

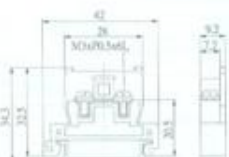
AC TYPE	DC TYPE	Cable length 電線長度
M4-QAC-2	M4-QDC-2	2 m
M4-QAC-3	M4-QDC-3	3 m
M4-QAC-5	M4-QDC-5	5 m

▶ MTB TERMINAL BLOCK SERIES

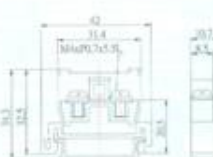
CCC RoHS



MTB-010 10A 600V



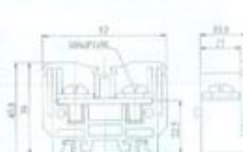
MTB-020 20A 600V



MTB-030 30A 600V



MTB-060 60A 600V



MTB-211 小容量



MTB-212 大容量



MTB-213 固定座



MTB-066 总轨



► M8 SERIES



RoHS

Technical data

[illegible][illegible]

M8 - 8601	A	T
Type number	Contact	With rubber
	Category	strain relief
	ABUS	



Type No:MR Series IP66 (With tail)	8601A	8601B	8601C	8601D	8601E	8611A	8611E	8606E	8602A
	8601AT	8601BT	8601CT	8601DT	8601ET	8611AT	8611ET	8606ET	8602AT
Contacts M=Make B=Break ⊕=Positive opening safety function to IEC/EN 60947-5-1	1M 1B⊕	1M 1B⊕	2M -	- 2B⊕	1M 1B⊕	1M 1B⊕	1M 1B⊕	1M 1B⊕	1M 1B⊕
Circuit - Symbol Contact Sequence ■=Contact closed □=Contact open ZW=Positive opening Sequence									

Dimension

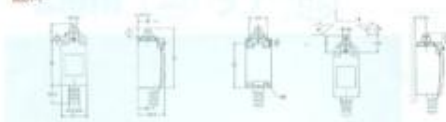
Unit: mm (inch) (mm)

8601



When using lightening fixture: 1.0 (0.4 in.) (0.015 in.)

8601-T



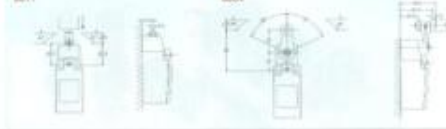
8602



8603



8604



8604A



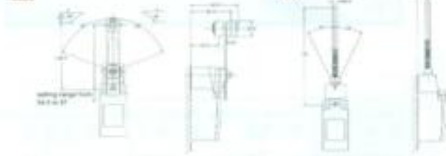
8607



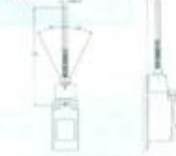
8617



8608



8608A

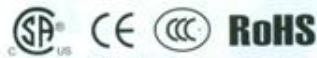


8602B	8602D	8602E	8603A	8603B	8603D	8603E	8604A	8604E	8608A	8608E	8607E
8602BT	8602DT	8602ET	8603AT	8603BT	8603DT	8603ET	8604AT	8604ET	8608AT	8608ET	8607ET
1M	-	1M	1M	1M	-	1M	1M	1M	1M	1M	1M
18	28	18	18	18	28	18	18	18	18	18	18

► 16 D M6 SERIES

◆ Description/特性:

- Apparent shape:
Round($\phi 18\text{mm}$). Square($18 \times 18\text{mm}$). Rectangular($18 \times 24\text{mm}$).
外觀形狀:
圓形($\phi 18\text{mm}$)・正方形($18 \times 18\text{mm}$)・長方形($18 \times 24\text{mm}$)
- Install and remove the contact block easily.
接點塊插入與移除容易。
- Gold-clad cross bar contact.
鍍金橫樑接點。
- Solder/plug-in terminal(#110)and P.C board terminal type.
焊接/插Pin與P.C板用端子。
- Light touch structure.
輕觸式機構。
- Use of High Performance Engineering Plastics.
使用高性能工程塑膠。
- protective grade保護程度:
IP65(IEC Pnd 529)
- Accessories are available with Laser marking.
配件可用雷射雕刻記號。



◆ ELECTRICAL RATINGS 電氣額定:

Contact 接點

Rated voltage 額定電壓	250V AC/DC
Rated current 額定電流	5A

Operating Voltage 操作電壓	30V	125V	250V
Operating current(Resistive) AC 操作電流(電阻性)	3A	2A	
	DC	2A	0.4A

Maximum applicable load(reference value):5V 1mA AC/DC
最大適用負載(參考值)

SPECIFICATIONS 規格

Operating Temperature	-25°C ~ +55°C (Without freezing)
Storage Temperature	-30°C ~ +80°C
Operating Humidity	45 ~ 85% RH
Contact Resistance	50m Ω maximum(initial value)
Insulation Resistance	100M Ω minimum(500V DC megger)
Dielectric strength	Between live part and ground:2500VAC:1minute Between terminals of different poles:2500VAC:1minute Between terminals of the same poles:1000VAC:1minute
Vibration Resistance	Operating extremes:5~55Hz,Amplitude 1.0mm-p-p Damage limits:1000m/s ² (Approx:100G) Operating extremes:1000m/s ² (Approx:10G)
Mechanical Life (min)	Momentary:2,000,000 Alternate:250,000 Selector switch:250,000
Electrical Life (min)	Momentary:100,000(1800 operations/hour) Alternate:100,000(1200 operations/hour) (0.5A,110VAC)MAX Selector switch:100,000
Protection Degree	IP65(IEC Pnd 529)

Lamp 燈泡

Lamp type 燈泡	Rated voltage 額定電壓	Rated current 額定電流	Illumination color 顯光顏色
Incandescent lamp(AC/DC) 白熱燈	6V 14V 28V	200mA 80mA 40mA	*
LED lamp (D C) LED 燈	6V 12V 24V	25mA 25mA 25mA	Red(R) White(W) Green(G) Yellow(Y) Blue(B)
Neon lamp (A C) 霓虹燈	110V 220V	1.2mA 1.2mA	Red(R) Green(G)

► 16 Q M6 SERIES

◆ Pilot Lights/指示灯



Type No

a 16mm series code
系列代號

pilot light
指示灯

M6 L- -

① ② ③ ④

1 Shape 形狀

Shape	Code
Round	A
Square	B
Rectangular	C

2 Terminal Style 端子型式

Terminal	Code
Solder/Plug-in	S
P.C board	P



3 Lamp 燈泡

Incandescent (AC/DC)		Neon (AC)		LED (DC)	
V	Code	V	Code	V	Code
6V	06	110V	110	6V	06E
14V	14	220V	220	12V	12E
28V	28	*	*	24V	24E

- Neon lamp color: Red (R) Green (G)
- LED lamp color: Red (R) Green (G) Yellow (Y)
- White (W) Blue (B)

4 Lens Color 色蓋顏色

Color	Code
Red	R
Green	G
Yellow	Y
Orange	O
White	W
Blue	B



Shape	Type No.
$\phi 18$	M6L-AS
	M6L-AP
18×18	M6L-BS
	M6L-BP
18×24	M6L-CS
	M6L-CP

(焊接 / 插Pin式端子)

Example: M6L-AS (Round, Solder/Plug-in Terminal, Incandescent lamp 28V, Yellow)

(P.C板用端子)

M6L- BP (Square, P.C board Terminal, LED lamp 6V DC, Red)

► 16-03 M6 SERIES

◆ Illuminated Pushbuttons/Pushbuttons 照光按鈕/按鈕開關



Type No

• Illuminated Pushbuttons

ø 16mm series code 系列代號
pushbutton 按鈕開關

M6 P- -

① ② ③ ④ ⑤ ⑥

• Pushbuttons

M6 P- -

① ② ③ ④ ⑤

1 Shape 形狀

Shape	Code
Round	A
Square	B
Rectangular	C

2 Operation 操作方式

Operation	Code
Momentary	M
Alternate	A

3 Terminal Style 端子型式

Terminal	Code
Solder/Plug-in	S
PC board	P

4 Contact 接點

Contact	Code
1C	1
2C	2

5 Lamp 燈泡

Incandescent (AC/DC)		Neon (AC)		LED (DC)	
V	Code	V	Code	V	Code
6V	06	110V	110	6V	06E
14V	14	220V	220	12V	12E
28V	28	*	*	24V	24E

- Neon lamp color : Red (R) Green (G)
- LED lamp color : Red (R) Green (G) Yellow (Y) White(W) Blue(B)

6 Lens Color 色蓋顏色

Color	Code
Red	R
Green	G
Yellow	Y
Orange	O
White	W
Blue	B

Shape	Operation	Contact	Type No.(Illuminated Pushbuttons)	Type No.(Pushbuttons)
ø 18	Momentary 復歸	1C	M6P-AMS1-	M6P-AMS1-
		2C	M6P-AMS2-	M6P-AMS2-
	Alternate 交替	1C	M6P-AAS1-	M6P-AAS1-
		2C	M6P-AAS2-	M6P-AAS2-
18×18	Momentary 復歸	1C	M6P-BMS1-	M6P-BMS1-
		2C	M6P-BMS2-	M6P-BMS2-
	Alternate 交替	1C	M6P-BAS1-	M6P-BAS1-
		2C	M6P-BAS2-	M6P-BAS2-
18×24	Momentary 復歸	1C	M6P-CMS1-	M6P-CMS1-
		2C	M6P-CMS2-	M6P-CMS2-
	Alternate 交替	1C	M6P-CAS1-	M6P-CAS1-
		2C	M6P-CAS2-	M6P-CAS2-

«This list is only for solder/plug-in terminal type. 此表為焊接/插Pin式端子型式
«The Type No. of P.C board terminal type is as example below. P.C板端子型式編號如下例

Example: M6P-AMS1-28 R (焊接/插Pin式端子) M6P-AMS1-R
Solder/plug-in terminal
M6P-AMP1-28 R (P.C板用端子) M6P-AMP1-R
P.C board terminal

- Illuminated Selector Switches

M6 S- -

① ② ③ ④ ⑤ ⑥

- Selector Switches

M6 S-
① ② ③ ④

⑥ Lens Color
色藪顏色

Color	Code
Red	R
Green	G
Yellow	Y
Orange	O
White	W
Blue	B

Incandescent(AC/DC)		Neon(AC)		LED (DC)	
V	Code	V	Code	V	Code
6V	06	110V	110	6V	06E
14V	14	220V	220	12V	12E
28V	28	*	*	24V	24E

- | Shape | Position | Contact | Type No.(Illuminated Selector) | Type No.(Selector) |
|---|---------------|------------------------------------|--------------------------------|--------------------|
|  | 2
Position | Maintained
保持 | 1C | M6S - 20S1- |
| | | Spring return from right
由右自動復歸 | 2C | M6S - 20S2- |
| | | 1C | M6S - 22S1- | |
| | | 2C | M6S - 22S2- | |
|  | 3
Position | Maintained
保持 | 2C | M6S - 30S2- |
| | | Spring return from left
由左自動復歸 | 2C | M6S - 31S2- |
| | | Spring return from right
由右自動復歸 | 2C | M6S - 32S2- |
| | | 2-way Spring return
雙向自動復歸 | 2C | M6S - 33S2- |
|  | 3
Position | Maintained
保持 | 2C | M6S - 30S2- |
| | | Spring return from left
由左自動復歸 | 2C | M6S - 31S2- |
| | | Spring return from right
由右自動復歸 | 2C | M6S - 32S2- |
| | | 2-way Spring return
雙向自動復歸 | 2C | M6S - 33S2- |

Example: M6S - A 20S1 - 28 R (焊接/插Pin式端子) M6S-A20S1
Solder/plug-in terminal
M6S - A 20P1 - 28 R (P.C板用端子) M6S-A20P1
P.C board terminal

16 01 M6 SERIES

◆ Key Selector Switches/鑰匙開關



Type No. **M6** K- ☐ ☐ ☐ ☐ - ☐

a 16mm series code 系列代號 ☐ (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5)

Key Switch 鑰匙開關

1 Shape 形狀

Shape	Code
Round	A
Square	B
Rectangular	C

2 Operation 操作方式

Position	Position	Code
2 Position 二段	Maintained 保持	20
	Spring return from right 由右自動復歸	22
3 Position 三段	Maintained 保持	30
	Spring return from left 由左自動復歸	31
	Spring return from right 由右自動復歸	32
	2-way Spring return 雙向自動復歸	33

3 Terminal Style 端子型式

Terminal	Code
Solder/Plug-in	S
PC board	P

4 Contact 接點

Contact	Code
1C	1
2C	2

5 Key Removal Position 鑰匙取出位置

Position	Code
A	A
B	B
C	C
A	A
B	B
C	C
D	D
E	E
G	G
H	H

* Key is removable at O Positions
鑰匙在O位置可取出

Shape	Position		Contact	Type No.
	2 Position	Maintained 保持	 1C	M6K - ☐ 20S1- ☐
		Spring return from right 由右自動復歸	 1C	M6K - ☐ 22S1- ☐
	3 Position	Maintained 保持	 2C	M6K - ☐ 30S2- ☐
		Spring return from left 由左自動復歸	 2C	M6K - ☐ 31S2- ☐
	3 Position	Spring return from right 由右自動復歸	 2C	M6K - ☐ 32S2- ☐
		2-way Spring return 雙向自動復歸	 2C	M6K - ☐ 33S2- ☐
				

* If you don't point out the key removable positions, key removable from all the positions will be furnished as a standard. (cod "A") 若未指定鑰匙取出位置，鑰匙可由任何位置取出，代號 "A"

* This list is only for solder/plug-in terminal type. 此表為焊接/插Pin式端子型式

* The Type No. of P.C board terminal type is as example below. P.C板端子型式編號如下例

Example: M6K - ☐ A 20S1 - ☐ A Solder/plug-in terminal (焊接/插Pin式端子)

M6K - ☐ A 20P1 - ☐ A P.C board terminal (P.C板用端子)

► 16 0 M6 SERIES

◆ Buzzer/蜂鳴器

- Steady sound 連續聲
- Intermittent sound (slow) : 斷續聲(慢)
100 cycles/minute (100 次/分)
- Intermittent sound (Quick) : 斷續聲(快)
600 cycles/minute (600 次/分)
- Sound Pressure: 80dB min (at the rated voltage/0.1m)
聲壓: 80dB最低(額定電壓/距0.1m)
- Sound Frequency: 2KHZ±500HZ. 聲頻
- Apparent Shape: 18×24mm
外觀形狀: 18×24mm
- Solder/Plug-in terminal (#110) and PC board terminal
焊接/插pin 與PC板用端子

Type No

16mm series code 系列代號

M6 Z-

Buzzer 蜂鳴器

① ②

1 Rated 額定

Operating Voltage	Code
6V AC/DC	06
12~24 AC/DC	24

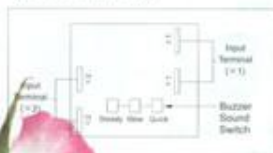
2 Terminal Style 端子型式

Terminal	Code
Solder/Plug-in	S
PC board	P

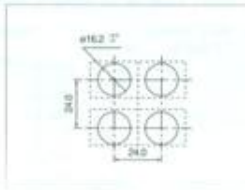
Operating Voltage	Type No.
6V AC/DC	M6Z-06S M6Z-06P
12~24 AC/DC	M6Z-24S M6Z-24P

Insulation Voltage	60V AC/DC
Operating Voltage	6V or 12~24V AC/DC
Current Draw	DC: 7mA AC: 20mA
Sound Frequency	2KHZ ± 500HZ
Flickering Cycle	Slow intermittent sound: 100/minute Quick intermittent sound: 600/minute
Sound Pressure	Steady sound: 80dB minimum (at the rated voltage/0.1m)
Operating Temperature	-20' ~ 55°C (without freezing)
Operating Humidity	45% ~ 85%RH
Insulation Resistance	100MO minimum (500V DC megger)
Dielectric Strength	Between live and dead part: 1000 V AC 1minute
Vibration Resistance	Operating extremes: 5~55HZ Amplitude 1mm p-p
Shock Resistance	Damage limits: 1000m/sec ² (Approx. 100G)
Life	1000 hours minimum

TERMINAL ARRANGEMENT (BOTTOM VIEW)



PANEL CUT-OUT



PC BOARD DRILLING LAYOUT (BOTTOM VIEW)



◆ ACCESSORIES / 配件

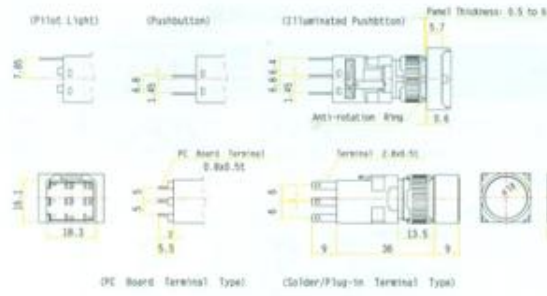
Category	Shape	Type No.	Function. Specifications
Incandescent Lamp 白熱燈		L-06 L-14 L-28	6V AC/DC 200mA 14V AC/DC 80mA 28V AC/DC 40mA
LED Lamp LED 燈		L-06E ☐ L-12E ☐ L-24E ☐	6V DC 25mA Color: Red (R) 12V DC 25mA Green (G) Yellow (Y) 24V DC 25mA White(W) Blue(B) Fill in the color code in (在 內填入顏色代號)
Neon Lamp 霓虹燈		L-110 ☐ L-220 ☐	110V AC 1.2mA Color: Red (R) 220V AC 1.2mA Green (G) Fill in the color code in (在 內填入顏色代號)
Protection Cap 保護蓋 Available with Laser Marking (custom made) 雷射雕刻記號 (訂製品)		M-261	for round and square head push buttons 
		M-262	for rectangular head push buttons 
		M-270	for round head push buttons 
Dust-Proof Cover 防塵蓋		M-271	for square head push buttons 
		M-272	for rectangular head push buttons 
Terminal Cover 端子蓋		M-232	protection contacts against touching 
Blanking Plug 孔塞		M-231	
Metal Threaded Ring 金屬鎖定螺母		M-029	

► 16 9 M6 SERIES

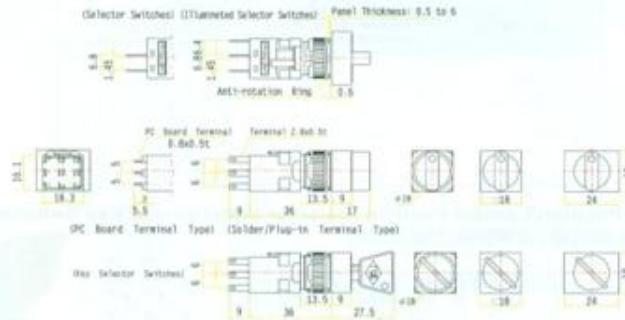
Category	Shape	Type No.	Function. Specifications
Mounting Wrench 螺帽取置器		M-030	Used for tightening the nut.
Lens Removing 色蓋夾		M-170	Used for replacing the color lens.
Lamp Extractor 燈泡取置器		M-230	Used for replacing the lamp.
Color Lens 色蓋		M-218A ☐	◎Fill in the color code in ☐ (在☐內填入顏色代號) Available with Laser Marking(custom made) 雷射雕刻記號(訂製品) Color: R.G.Y.O.W.B Red (R). Green (G). Yellow (Y) Orange (O). White (W). Blue (B).
		M-218B ☐	
		M-218C ☐	
		M-218D ☐	
		M-218E ☐	
Marking Plate 銘板		M-217A ☐	◎Fill in the marking in ☐ (在☐內填入標示記號) Available with Laser Marking(custom made) 雷射雕刻記號(訂製品) Markings: ON. OFF. START. STOP. UP. DOWN. 記號 FWD. REV. AUTO. MAN. POWER. RESET. ↑ ↓ ← →
		M-217B ☐	
		M-217C ☐	

◆ DIMENSIONS / 尺寸

A. Pilot/Lights. Pushbuttons. Illuminated Pushbuttons. 指示燈 按鈕 照光按鈕



B. Selector. Switches. Illuminated Selector Switches. Key Selector Switches. 選擇開關 照光選擇開關 鑰匙開關



C. Switch Unit. 開關單元

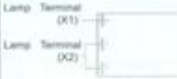
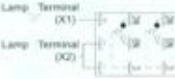


16 0 M6 SERIES

◆ DIMENSIONS / 尺寸

Terminal Arrangement(Bottom View) 端子排列(底部視圖)



Pilot Light	Illuminated Pushbutton Illuminated Selector Switch Illuminated Emergency Stop Switch	Pushbutton Selector Switch Key Selector Switch Emergency Stop Switch
		
Lamp Terminal (X1)	Lamp Terminal (X1)	
Lamp Terminal (X2)	Lamp Terminal (X2)	
	2C Type	2C Type
	Lamp Terminal (X1)	
	Lamp Terminal (X2)	
	1C Type	1C Type

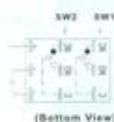
P.C Board Drilling Layout (Bottom View) PC板鑽孔配置(底部視圖)

Pilot Light	Illuminated Pushbutton Illuminated Selector Switch Illuminated Emergency Stop Switch	Pushbutton Selector Switch Key Selector Switch Emergency Stop Switch
		
7.85	8.8 8.8 1.45	8.8 8.8
±0.2 mm	±0.2 mm	±0.2 mm

Operating Position/Contact Position (Selector switches and Key Switches)

操作位置/接點位置(選擇開關及鑰匙開關)

2 Position		3 Position	
1C	2C (SW1) (SW2)	2C (SW1) (SW2)	3C (SW1) (SW2)
			



Panel Cut-Out 面板切割

Round/Square	Rectangular	Emergency stop
		
14.25 14.25	14.25 14.25	14.25 14.25

Panel Cut-Out (Use Dust-Proof Cover)

面板切割(使用防塵套)

Round/Square	Rectangular
	
14.25 14.25	14.25 14.25

請考慮操作功能再確定安裝間距

MFS foot switch 腳踏開關



FEATURES / 特性

TYPE 種類	ITEM NO 型號	RATING 額定	MICRO SWITCH 微動開關形式	CABLE LENGTH 電纜種類 / 長度	CONTACT 接點	OPERATION FORCE 動作壓力	HOUSING MATERIAL 外觀材質
MINIATURE 小型	MFS-1011-1	10A 250V AC	MV-3000A20 x 1PC	0.75mm, + 3C/1M	1A1B (1CO)	1kg	ABS PLASTIC (ABS塑膠)
	MFS-1011-2	10A 250V AC	MV-3000A20 x 1PC	0.75mm, + 3C/2M	1A1B (1CO)	1kg	ABS PLASTIC (ABS塑膠)
MINIATURE WITH LOCK 小型附固定片	MFS-1012-1	10A 250V AC	MV-3000A20 x 1PC	0.75mm, + 3C/1M	1A1B (1CO)	1kg	ABS PLASTIC (ABS塑膠)
	MFS-1012-2	10A 250V AC	MV-3000A20 x 1PC	0.75mm, + 3C/2M	1A1B (1CO)	1kg	ABS PLASTIC (ABS塑膠)
MEDIAN TYPE 標準型	MFS-1021-1	10A 250V AC	MV-3000A20 x 1PC	0.75mm, + 3C/1M	1A1B (1CO)	3kg	ALUMIUM CASTING 鋁合金
	MFS-1021-2	10A 250V AC	MV-3000A20 x 1PC	0.75mm, + 3C/2M	1A1B (1CO)	3kg	ALUMIUM CASTING 鋁合金
	MFS-1022-1	10A 250V AC	MV-3000A20 x 2PCS	0.75mm, + 6C/1M	2A2B (2CO)	3kg	ALUMIUM CASTING 鋁合金
	MFS-1022-2	10A 250V AC	MV-3000A20 x 2PCS	0.75mm, + 6C/2M	2A2B (2CO)	3kg	ALUMIUM CASTING 鋁合金
	MFS-1031-1	15A 250V AC	MJ2-1704 x 1PC	0.75mm, + 3C/1M	1A1B (1CO)	3kg	ALUMIUM CASTING 鋁合金
	MFS-1031-2	15A 250V AC	MJ2-1704 x 1PC	0.75mm, + 3C/2M	1A1B (1CO)	3kg	ALUMIUM CASTING 鋁合金
	MFS-1032-1	15A 250V AC	MJ2-1704 x 2PCS	0.75mm, + 6C/1M	2A2B (2CO)	3kg	ALUMIUM CASTING 鋁合金
	MFS-1032-2	15A 250V AC	MJ2-1704 x 2PCS	0.75mm, + 6C/2M	2A2B (2CO)	3kg	ALUMIUM CASTING 鋁合金

CIRCUITRY / 電氣回路

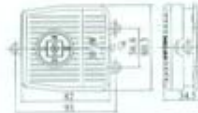
3C (3 Cable)



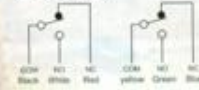
小型



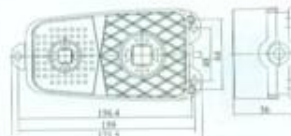
小型附固定片



6C (6 Cable)



標準型



M22 SERIES



Product Features

- Minimum fitting hole dimension: 30X40 mm 最小安裝孔切割距離: 30X40 mm
- Degree of protection: minimum IP 65 保護等級: IP65
- Up to 6 contacts per mounting position 每個安裝位置可達到6組接點
- Quick setting modular system 快速模組系統
- Front ring with black, shined silver, gold 前面板飾環有黑、亮銀及金色
- Mounting diameter: 22.3mm 面板鑽孔尺寸: 22.3mm
- Approved by UL, CSA, C.C.C. UL, CSA, C.C.C. 認證

(一) M22FP Flat head/illuminated Pushbutton 平面按鈕開關



1 Operation 操作	2 Wiring terminal 配線端子接腳	3 Contact switch block 接點	4 Rating operation voltage 電壓 (有燈型型)	5 Color of lens 顏色	6 Symbol 標記
M-Momentary 瞬時 A-Alternate 交替	SF-Screw terminals with fixing on adapter 螺絲前扣 SB-Screw terminals with fixing on base 螺絲底座 CF-Clamp terminals with fixing on adapter 彈片前扣 CB-Clamp terminals with fixing on base 彈片底座 PF-PCB terminals with fixing on adapter 基板端子前扣	11-NO+NC(1A+1B) 10-NO(1A) 01-NC(1B) 20-2NO(2A) 02-2NC(2B)	E30-LED30V E230-LED230V	G-green 綠色 R-red 紅色 Y-yellow 黃色 W-white 白色 BL-blue 藍色 WO 白色不透光 RO 紅色不透光 BKO 黑色不透光	As required * * * * * * *
M22FP- 1 2 3 4 5 6 EXP-1: M22FP- M SF 11 E30 G 1. M22FP-MSF11G 平面按鈕螺絲前扣1A+1B接點・ 綠色(控制面板使用) M22FP- 1 2 3 4 5 6 EXP-2: M22FP- A SB 20 E230 R 2. M22FP-ASB20R 平面按鈕交替底座2A接點・ 紅色(控制盒使用)					



(二) M22XP Extended head/illuminated Pushbutton 凸頭按鈕開關



1 Operation 操作	2 Wiring terminal 配線端子接腳	3 Contact switch block 接點	4 Rating operation voltage 電壓(有燈型型)	5 Color of lens 顏色	6 Symbol 標記
M-Momentary 瞬時 A-Alternate 交替	SF-Screw terminals with fixing on adapter 螺絲前扣 SB-Screw terminals with fixing on base 螺絲底座 CF-Clamp terminals with fixing on adapter 彈片前扣 CB-Clamp terminals with fixing on base 彈片底座 PF-PCB terminals with fixing on adapter 基板端子前扣	11-NO+NC(1A+1B) 10-NO(1A) 01-NC(1B) 20-2NO(2A) 02-2NC(2B)	E30-LED30V E230-LED230V	G-green 綠色 R-red 紅色 Y-yellow 黃色 W-white 白色 BL-blue 藍色	As required * * * * *
M22XP- 1 2 3 4 5 6 EXP-1: M22XP- M SF 11 E30 G 1. M22XP-MSF11E30G 凸頭按鈕螺絲前扣1A+1B接點・ LED30伏電壓・綠色(控制面板使用) M22XP- 1 2 3 4 5 6 EXP-2: M22XP- A SB 10 E230 W 2. M22XP-ASB10E230W 凸頭按鈕交替底座1A接點・ LED230伏電壓・ 白色(控制盒使用)					



(三) M22DP Double Actuator Pushbutton 雙頭按鈕開關



1 Wiring terminal 配線端子接腳	2 Contact switch block 接點	3 Rating operation voltage 電壓(有燈泡型)	4 Color of lens 顏色	5 Symbol 標記
SF -Screw terminals with fixing on adapter 螺絲前扣 SB -Screw terminals with fixing on base 螺絲基座 CF -Clamp terminals with fixing on adapter 彈片前扣 CB -Clamp terminals with fixing on base 彈片基座 PF -PCB terminals with fixing on adapter 基板端子前扣	11-NO+NC(1A+1B) 10-NO(1A) 01-NC(1B) 20-2NO(2A) 02-2NC(2B)	E30-LED30V E230-LED230V	GR-green red 綠紅色 WB-white black 白黑色	<I, O> <Start, Stop> <+, -> *

M22DP-1 2 3 4 5
EXP: M22DP-SF 02 E230 GR (I, O)

M22DP-SF02E230GR (I, O)
雙頭按鈕螺絲前扣2B接點・LED230伏電壓・
綠紅色(啟動・停止)・(控制面板使用)



(四) M22MP Mushroom Actuator Pushbutton 香菇頭按鈕開關

M22MPL Illuminated Mushroom Actuator Pushbutton 燈光式香菇頭按鈕開關



1 Operation 操作	2 Wiring terminal 配線端子接腳	3 Contact switch block 接點	4 Rating operation voltage 電壓(有燈泡型)	5 Color of lens 顏色	6 Symbol 標記
M -Momentary 瞬時 A -Alternate 交替	SF -Screw terminals with fixing on adapter 螺絲前扣 SB -Screw terminals with fixing on base 螺絲基座 CF -Clamp terminals with fixing on adapter 彈片前扣 CB -Clamp terminals with fixing on base 彈片基座 PF -PCB terminals with fixing on adapter 基板端子前扣	11-NO+NC(1A+1B) 10-NO(1A) 01-NC(1B) 20-2NO(2A) 02-2NC(2B)	E30-LED30V E230-LED230V	G-green 綠色 R-red 紅色 Y-yellow 黃色 W-white 白色 BL-blue 藍色	請片指示標記 <I, O> *

M22MP-1 2 3 4 5 6
EXP: M22MP-M SF 11 R

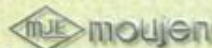
1. M22MP-MSF11R
香菇頭按鈕瞬時前扣1A+1B接點・
紅色(控制面板使用)

M22MP-1 2 3 4 5 6
EXP: M22MP-A SB 2G G

2. M22MP-ASB20G
香菇頭按鈕交替基座2A接點・
綠色(控制盒使用)



(五) M22S Selector Actuator Switch 選擇開關



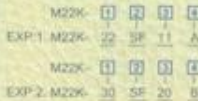
1 Shape 外型	2 Operation 操作	3 Wiring terminal 配線端子接腳	4 Contact switch block 接點	5 Rating operation voltage 電壓	6 Color of lens 顏色
R-Rotary 轉動 T-Thumb grip 手指扳動	22—2 positions (40° spring return) 2段(40°彈回) 20—2 positions (60° stay-put) 2段(60°定點左右) 32—3 positions (40° spring return) 3段(40°彈回) 30—3 positions (60° stay-put) 3段(60°定點左右) 其他特殊使用方式由圖內零件 組合變化以符合需要	SF-Screw terminals with fixing on adapter 螺絲前扣 SB-Screw terminals with fixing on base 螺絲基座 CF-Clamp terminals with fixing on adapter 彈片前扣 CB-Clamp terminals with fixing on base 彈片基座 PF-PCB terminals with fixing on adapter 基板端子前扣	11-NO+NC (1A+1B) 10-NO(1A) 01-NC(1B) 20-2NO(2A) 02-2NC(2B)	(Thumb grip only) (只有T型手指扳動) E30-LED30V E230-LED230V	G-green 綠色 R-red 紅色 Y-yellow 黃色 W-white 白色 BL-blue 藍色



(六) M22K Key-operated Actuator Switch 鑰匙開關

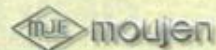


1 Operation 操作	2 Wiring terminal 配線端子接腳	3 Contact switch block 接點	4 Key withdrawable in position 鑰匙抽出位置
22—2 positions (40° spring return) 2段(40°彈回) 20—2 positions (60° stay-put) 2段(60°定點左右) 32—3 positions (40° spring return) 3段(40°彈回) 30—3 positions (60° stay-put) 3段(60°定點左右) 其他特殊使用方式由圖內零件 組合變化以符合需要	SF-Screw terminals with fixing on adapter 螺絲前扣 SB-Screw terminals with fixing on base 螺絲基座 CF-Clamp terminals with fixing on adapter 彈片前扣 CB-Clamp terminals with fixing on base 彈片基座 PF-PCB terminals with fixing on adapter 基板端子前扣	11-NO+NC(1A+1B) 10-NO(1A) 01-NC(1B) 20-2NO(2A) 02-2NC(2B)	2 positions: A O B O.I C O 3 positions: A I O II O B I O II I O II C I O II I O D I O II O II E I O O F I O I II G I O I I



EXP:
1 M22K-22SF11A-
鑰匙開關2段彈回前扣，
1A1B接點，O點取出Key
2 M22K-30SF20B-
鑰匙開關3段定點前扣，2A接點，
I，O，II全點取出Key，
PS: 以上皆為控制極規格

(七) M22L Pilot Light 指示燈



1 Shape 外型	2 Wiring terminal 配線端子接腳	3 Rating operation voltage 電壓(有燈泡型)	4 Color of lens 顏色	5 Symbol 標記
F-Flat head 平頭 X-Extended head 凸頭	SF-Screw terminals with fixing on adapter 螺絲前扣 SB-Screw terminals with fixing on base 螺絲基座 CF-Clamp terminals with fixing on adapter 彈片前扣 CB-Clamp terminals with fixing on base 彈片基座 PF-PCB terminals with fixing on adapter 基板端子前扣	E30-LED30V E230-LED230V	G-green 綠色 R-red 紅色 Y-yellow 黃色 W-white 白色 BL-blue 藍色	As required: * * * *

M22L- 1 2 3 4 5
EXP-1: M22L- F SF 20 BL
1. M22L-FSFE30BL
指示燈平頭前扣，LED30伏特電壓，
藍色(控制盤板用)

M22L- 1 2 3 4 5
EXP-2: M22L- F SB E230 R
2. M22L-FSBE230R
指示燈平頭基座，LED230伏特電壓，
紅色(控制盤用)



(八) M22LC Compact Pilot Light 簡易指示燈



1 Shape 外型	2 Rating Operation Voltage(bulb) 電壓	3 Color of lens 顏色
F-Flat head 平頭 X-Extended head 凸頭	Incandescent(AC/DC) 白熱燈 06 —6VAC /DC 14 —14VAC /DC 28 —28VAC /DC 120 —120VAC /DC LED E06 —6VAC /DC E12 —12VAC /DC E24 —24VAC /DC E110 —110VAC /DC E220 —220VAC /DC	G-green 綠色 R-red 紅色 Y-yellow 黃色 W-white 白色 BL-blue 藍色

M22LC- 1 2 3
EXP-1: M22LC- F 28 R
1. M22LC-F28R 簡易型指示燈，
平頭白熱燈泡，28伏電壓，紅色

M22LC- 1 2 3
EXP-2: M22LC- X E110 Y
2. M22LC-XE110Y 簡易型指示燈，
凸頭，110伏電壓LED燈泡，黃色
P.S.: 簡易型指示燈只用於控制盤板



(九) M22E Emergency-Stop Pushbutton 緊急按鈕開關

M22EL Illuminated Emergency-Stop Pushbutton 照光式緊急按鈕開關



1 Operation
操作

P-Pull to release
拉出解除
K-Key to release
鑰匙解除
T-Turn to release
轉動解除

M22E- 1 2 3
EXP: 1. M22E- P SF 20

1. M22E-P6F20 緊急按鈕，拉出解除，
螺絲前扣，2A接點(控制櫃使用)



2 Wiring terminal
配線端子接腳

SF-Screw terminals with fixing on adapter
螺絲前扣
SB-Screw terminals with fixing on base
螺絲底座
CF-Clamp terminals with fixing on adapter
彈片前扣
CB-Clamp terminals with fixing on base
彈片底座

M22E- 1 2 3
EXP: 2. M22E- K SB 11

2. M22E-KSB11 緊急按鈕，
鑰匙解除，螺絲底座，
1A+1B接點(控制櫃使用)



3 Contact switch block
接點

11-NO+NC(1A+1B)
10-NO(1A)
01-NC(1B)
20-2NO(2A)
02-2NC(2B)

M22E- 1 2 3
EXP: 3. M22E- T SB 20

3. M22E-TSB20 緊急按鈕，轉動解除，
螺絲底座，2A接點(控制櫃使用)



(十) M22 Box 控制盒



1 Box hole
孔數

B1-one hole 1孔
B2-two holes 2孔
B3-three holes 3孔
B4-four holes 4孔
B6-six holes 6孔

IP65

M22- 1 2 3
EXP: M22- B3 3

M22-B3 3孔控制盒，上自下黑



2 Color
顏色

YB-yellow black 黃黑
IB-ivory black 白黑



(十一) M22FPS Foot and Palm Switch 手足開關(緊急)



1 Operation 操作
M-Spring-return 復歸
A-Stay-Put 交鎖
P-Pull to release 拉回復歸

2 Wiring terminal 配線端子接腳
SB-Screw terminals with fixing on Base 螺絲底座
CB-Clamp terminals with fixing on Base 彈片底座

3 Contact switch block 接點
11-NO+NC(1A+1B)
10-NO(1A)
01-NC(1B)
20-2NO(2A)
02-2NC(2B)

4 Color of lens 顏色
R-red ivory 紅頭白座
Y-yellow ivory 黃頭白座
RY-red yellow 紅頭黃座

M22FPS- 1 2 3 4
EXP-1: M22FPS- M SB 20 R
1. M22FPS-MSB20R-緊急手足開關, 復歸, 2A接點, 上紅下白色

M22FPS- 1 2 3 4
EXP-2: M22FPS- P SB 10 RY
2. M22FPS-PSB10RY-緊急手足開關, 拉回復歸, 1A接點, 上紅下黃色

Accessories 配件

▶ Contact Blocks 接點組

Front fixing Screw terminals 螺絲端子	1 3 4	-NO(A接點)	代號 SF-NO
	1 3 2	-NC(B接點)	SF-NC
Clamp terminals 彈片端子	1 3 2	-NC(B接點)	CF-NC
	1 3 4	-NO(A接點)	CF-NO
PCB terminals 基板端子	1 3 4	-NO(A接點)	PF-NO
	1 3 2	-NC(B接點)	PF-NC



綠色表NO組, 紅色表NC組

Base fixing Base 固定	1 3 4	-NO(A接點)	代號 SB-NO
	1 3 2	-NC(B接點)	SB-NC
Clamp terminals 彈片端子	1 3 2	-NC(B接點)	CB-NC
	1 3 4	-NO(A接點)	CB-NO

▶ LED Element-LED 燈組

Front fixing 前固定	Rated Operational Voltage 操作電壓	Rated Operational Current 操作電流	Power consumption 功率	代號
Screw terminals 螺絲端子	12-30VAC/DC	5-14mA	0.26W /24V	SF-E30
	85-264VAC	5-15mA	0.33W /24V	SF-E230
	50/60Hz			
Clamp terminals 彈片端子	12-30 VAC/DC	5-14mA	0.26W /24V	CF-E30
	85-264 VAC	5-15mA	0.33W /24V	CF-E230
	50/60Hz			
PCB terminals 基板端子	12-30 VAC/DC	5-14mA	0.26W /24V	PF-E30



Base fixing 基座固定	Rated Operational Voltage 操作電壓	Rated Operational Current 操作電流	Power consumption 功率	代號
Screw terminals 螺絲端子	12-30VAC/DC	5-14mA	0.26W /24V	SB-E30
	85-264VAC	5-15mA	0.33W /24V	SB-E230
	50/60Hz			
Clamp terminals 彈片端子	12-30 VAC/DC	5-14mA	0.26W /24V	CB-E30
	85-264 VAC	5-15mA	0.33W /24V	CB-E230
	50/60Hz			

M22LC-Bulb 燈絲型燈泡

Incandescent Bulb	白熱燈	
Code rated	operational voltage	current
代號	操作電壓	操作電流
M22-06	6VAC/DC	200mA
M22-14	14VAC/DC	80mA
M22-28	28VAC/DC	40mA
M22-120	120VAC/DC	25mA

M22-FR Front ring 圓板飾環

Black 黑

Silver 亮銀

Gold 金

M22-TR Threaded ring 鎖緊固定環

Plastic 塑膠

metal 鈹合金

M22-A3 Fixing adapter For 3 elements 鎖部與3組開關中接環

Code
代號 M22-A3

M22E-GR Guard ring for Emergency-stop 緊急開關保護環

Code
代號 M22E-GR

Button Plates 色蓋及標示

D.P.



M22 Legend plates 銘板

M22-Mounting Wrench 取蓋器

M22E-Label for ES 緊急開關貼紙

e90mm x e60mm

M20-Cable Gland 電纜固定環

M20 x P1.5

M22-C1 Dust Protection Caps For M22 FP 按鈕開關防塵蓋

M22-C2 Dust Protection Caps For M22 DP 雙按鈕開關防塵蓋

LED Bulb	LED燈
Code rated	operational voltage
代號	操作電壓
M22-E06	6VAC/DC
M22-E12	12VAC/DC
M22-E24	24VAC/DC
M22-E110	110VAC/DC
M22-E220	220VAC/DC

Code
代號 M22-FRB

Code
代號 M22-FRS

Code
代號 M22-FRG

Code
代號 M22-TRP

Code
代號 M22-TRM

M22-A4 Fixing adapter for 4 elements 鎖部與4組開關中接環

Code
代號 M22-A4

M22E-GRC Guard ring cover for Emergency-stop 緊急開關保護套組

Code
代號 M22E-GRC

FP, XP, MP



Code
代號 M22-LP
Available with Laser Marking (custom made)
雷射雕刻記號(訂製品)

Code
代號 M22-MW

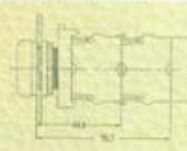
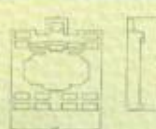
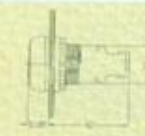
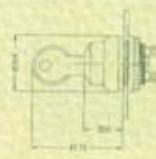
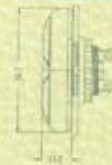
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Code
代號 M20

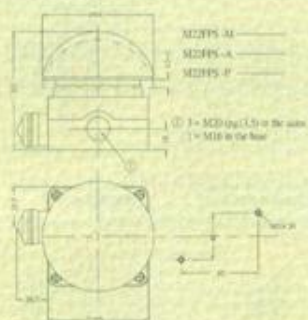
Code
代號 M22-C1

Code
代號 M22-C2

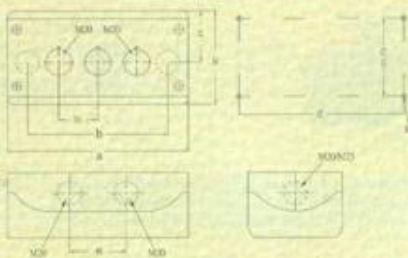
		Contact elements	LED elements	Illuminated pushbutton actuators, Pushbutton actuators, Mushroom actuators, spring return	On/Off pushbutton actuators	Select switch actuators, Illuminated selector switch actuators
		接觸元件組裝	LED 組裝	發光按鈕組裝	發光開關	組合選擇開關
General Technical data						
Standards		IECEN 60947 (A, 505, 508, 509)				
Lifespan, mechanical	Operations	> 500000	—	> 500000	> 200000	> 100000
Operating frequency	Operations/h	< 3600	—	< 3600	< 3600	< 2500
Actuating force	N	< 5.5 N	—	< 5.5 N	< 5.5 N	—
Operating torque		< 0.8 Nm	—	—	—	< 0.5 Nm
Degree of protection, IECEN 60529		See Selection pages				
Ambient temperature Open		-25/70 °C	-25/70 °C	-25/70 °C	-25/70 °C	-25/70 °C
Mechanical shock resistance according to IEC 60068-2-27 Shock duration 11ms, half-sinusoidal		> 30g	> 30g	> 30g	> 30g	> 30g
Terminal capacity						
Screw		0.75 - 2.5 mm	0.75 - 2.5 mm	—	—	—
Stripped		0.5 - 2.5 mm	0.5 - 2.5 mm	—	—	—
Contacts 接觸特性組裝						
Rated impulse withstand voltage	Uimp	6000 VAC	6000 VAC			
Rated insulation voltage	Ui	500 V	500 V			
Max. short-circuit protective device Fuse	gG/gL	10 A				
Switching capacity 接觸電流容量						
Rated operational current						
AC-15						
115V	W	8 A				
230V	W	6 A				
400V	W	4 A				
500V	W	2 A				
DC-13						
24V	W	3 A				
42V	W	1.7 A				
60V	W	1.2 A				
110V	W	0.8 A				
220V	W	0.5 A				
Lifespan, electrical						
AC-15						
230 V / 0.5 A	Operations	100000				
230 V / 1.0 A	Operations	100000				
230 V / 3.0 A	Operations	50000				
DC-13						
12 V / 2.0 A	Operations	120000				
Technical Data		For illuminated actuators	For lights, compact actuators, indicators, Compact indicator lights	Illuminated pushbutton actuators, Pushbutton actuators, Mushroom actuators, stop-act	Emergency stop actuators	
General Technical data		發光開關	指示燈及發光指示燈	發光按鈕組裝	緊急停止開關	
Standards		IECEN 60947 (A, 505, 508, 509)				
Lifespan, mechanical	Operations	> 100000	—	> 100000	> 100000	
Operating frequency	Operations/h	< 180	—	< 180	< 180	
Actuating force		—	—	< 5.5 N	< 5.5 N	
Operating torque		< 0.5 Nm	—	—	—	
Ambient temperature Open		-25/70 °C	-25/70 °C	-25/70 °C	-25/70 °C	
Mechanical shock resistance according to IEC 60068-2-27 Shock duration 11ms, half-sinusoidal		> 30 g	> 30 g	> 30 g	> 30 g	
Terminal capacity						
Screw		—	0.5 - 1.5 mm	—	—	
Stripped		—	0.5 - 1.5 mm	—	—	
Contacts						
Rated impulse withstand voltage	Uimp	—	4000 VAC			
Rated insulation voltage	Ui	—	250 V			
		MQTPPS foot and push switches 腳底開關				
		Spring return 彈簧返回		Stop-act 緊急停止		
General Technical data						
Standards		IECEN 60947 (A, 505, 508, 509)				
Lifespan, mechanical	Operations	> 100000		> 100000		
Operating frequency	Operations/h	< 360		< 360		
Actuating force		< 4000g		< 8120 g		
Operating torque		—		—		
Degree of protection, IECEN 60529		IP67		IP67		
Ambient temperature Open		-25/40 °C		-25/40 °C		
Mechanical shock resistance according to IEC 60068-2-27 Shock duration 11ms, half-sinusoidal		> 15 g		> 15 g		



• **M22FPS** Foot and palm switches
手足開關 (緊急)



Switch Box (開關盒)
B1-B6



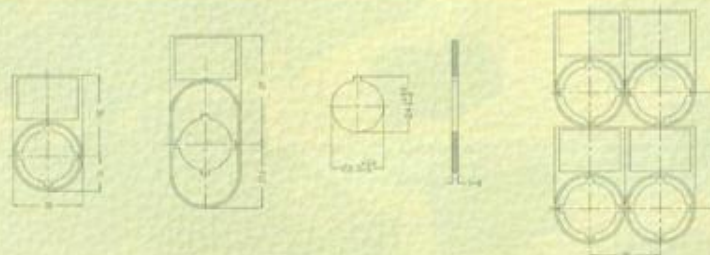
Type	Mounting	a	b	e	Cable entries		
B1	1	72	42.6	58.6	2xM16	3xM20	2xM25
B2	2	120	85.6	106.5	2xM20	3xM20	2xM25
B3	3	153	118.6	139.5	2xM25	2xM25	4xM20
B4	4	186	151.6	172.5	2xM20	2xM25	4xM20
B6	6	252	217.6	238.5	2xM20	2xM25	4xM20

• **M22-各系列**
Label mounts
標識尺寸

• **M22DP**
Label mounts
標識尺寸

Mounting hole with lug slot
面板開孔尺寸及厚度

Grid dimension to
IEC/EN 60947



• **M22E-GRC** Guard ring cover for emergency-stop
緊急開關保護蓋

• **M22E-GR** Guard ring for emergency-stop
緊急開關保護蓋



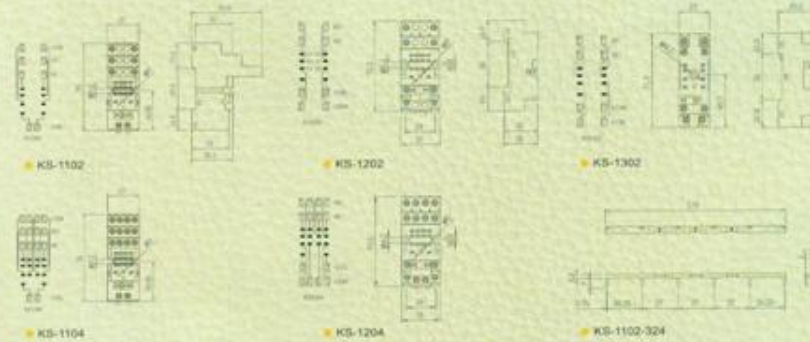
KS SERIES SOCKET AND ACCESSORIES FOR RELAYS 繼電器座 10A 300V AC

RoHS



DIMENSIONS (mm)

Description	1102	1104	1202	1304	1302
Dielectric strength	≥ 2kV				
Protection class	IP20				
Tightening torque for screw	0.5 Nm				
Max. wire size (mm ² /for solid wire	1x6 / 2x2.5		1x2.5 / 2x1.5		
Max. wire size (mm ² /for stranded wire	1x4 / 2x2.5		1x2.5 / 2x1.5		



Single Phase Solid State Relay 單相固態繼電器

◆ Features / 功能

- No-contact operation
- Zero-cross switching to reduce in-rush current
- High surge voltage duration by snubber circuit
- High surge rating allows lamp & motor load switching
- High reliability and long service life
- 無接點動作方式
- 零點觸發減少突波發生
- 突波吸收回路
- 適用於燈泡與馬達之負載開關



◆ INPUT 輸入

Type 型式	MSR-1DA	MSR-1AA
Control voltage 控制電壓	4-32Vdc	80-250Vac
Must operate voltage 觸發電壓	4Vdc	60Vac
Must release voltage 復歸電壓	2Vdc	40Vac
Max. input current 輸入電流	6-10mA	10mA/110Vac

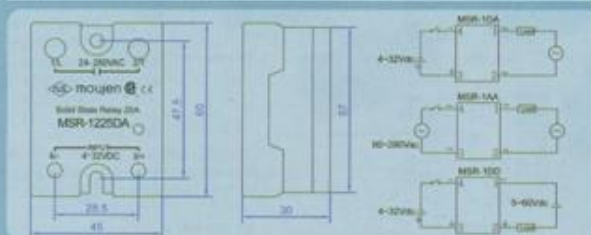
◆ GENERAL 一般規格

Insulation resistance (input-output) 絕緣強度	>100MQ
Dielectric strength (input-output) 耐壓強度	4000Vrms
Dielectric strength (input-output & housing) 耐壓強度	2500Vrms
Operation temperature 工作溫度	-20°C~80°C
Storage temperature 儲存溫度	-40°C~100°C
Material 材質	PBT
Weight 重量	110g



◆ OUTPUT 輸出

Type 型式	MSR-1DA					MSR-1AA		
Model 型號	210DA 410DA	225DA 425DA	240DA 440DA	250DA 450DA	275DA 475DA 475DAAR	210AA 410AA	225AA 425AA	240AA 440AA
Rated output current (Arms) 輸出額定電流	10A	25A	40A	50A	75A	10A	25A	40A
Output load voltage 負載電壓	24-250Vac / 48-480Vac					24-250Vac / 48-480Vac		
Peak voltage 峰值電壓	600V _p / 800V _p					600V _p / 800V _p		
Surge current 衝擊電壓	150A	250A	400A	500A	750A	150A	250A	400A
Off-state leakage current 洩漏電流	3mA	8mA	8mA	8mA	8mA	3mA	8mA	8mA
On-state voltage drop 飽和電壓	1.8V / 25°C					1.6V / 25°C		
Turn-on time 動作時間	<10ms					<20ms		
Turn-off time 復歸時間	<10ms					<20ms		



Type	Length	Mounting
HS-50L	50	1
HS-100L	100	2
HS-150L	150	3
HS-200L	200	4

Single Phase Solid State Relay 單相固態繼電器

◆ Features / 功能

- DD:
 - Ideal for DC solenoid valve and DC motor.
- VA:
 - Use for light control and motor speed control.
- CAX:
 - With 4-20mA for linear proportional control.



◆ INPUT 輸入

Type 型式	MSR-1DD	MSR-1VA	MSR-1CA
Control voltage 控制電壓	4-32Vdc	250Ω / 110V 500Ω / 220V	4-20mA
Must operate voltage 觸發電壓	4Vdc	—	—
Must release voltage 復歸電壓	2Vdc	—	—
Max. input current 輸入電流	6-10mA	—	—

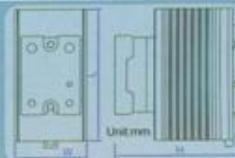
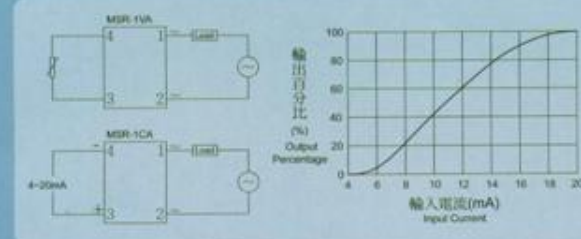
◆ GENERAL 一般規格

Insulation resistance (input-output) 絕緣強度	>100MΩ
Dielectric strength (input-output) 耐壓強度	4000Vrms
Dielectric strength (input-output & housing) 耐壓強度	2500Vrms
Operation temperature 工作溫度	-20°C~80°C
Storage temperature 儲存溫度	-40°C~100°C
Material 材質	PBT
Weight 重量	110g

◆ OUTPUT 輸出

• CAX does not include the heat-sink & aluminum rail.

Type 型式	MSR-1DD		MSR-1VA			MSR-1CA			
Model 型號	105DD	110DD	210VA	225VA	240VA	225CAX	240CAX	425CAX	440CAX
Rated output current(Arms) 輸出額定電流	5A	10A	10A	25A	40A	25A	40A	25A	40A
Output load voltage 負載電壓	5-60Vdc		80-280Vac			90-280Vac		330-500Vac	
Peak voltage 峰值電壓	150V _p		600V _p			600V _p		800V _p	
Surge current 衝擊電壓	14A	20A	150A	250A	400A	250A	400A	250A	400A
Off-state leakage current 洩漏電流	<1mA		8mA	8mA	5mA	8mA	8mA	8mA	8mA
On-state voltage drop 飽和電壓	1.6V / 25°C					1.6V / 25°C			
Turn-on time 動作時間	<1ms		—			—			
Turn-off time 復歸時間	<1ms		—			—			



Heat sink HC rail type

Type	L	W	H
HC-40H	100	55	40
HC-60H	100	55	60
HC-100H	100	55	100

Three Phase Solid State Relay 三相固態繼電器

◆ Features / 功能

- No-contact operation
- Zero-cross switching to reduce in-rush current
- High surge voltage duration by snubber circuit
- High surge rating allows lamp & motor load switching
- High reliability and long service life



◆ INPUT 輸入

Type 型式	MSR-3DA
Control voltage 控制電壓	5~32Vdc
Must operate voltage 觸發電壓	6Vdc
Must release voltage 復歸電壓	3Vdc
Max. input current 輸入電流	5~10mA

◆ OUTPUT 輸出

Type 型式	MSR-3DA				
Model 型號	210DA 410DA	225DA 425DA	240DA 440DA	250DA 450DA	275DA 475DA
Rated output current (Amps) 輸出額定電流	10A	25A	40A	50A	75A
Output load voltage 負載電壓	24~280Vac / 48~480Vac				
Peak voltage 峰值電壓	600V _p / 800V _p				
Surge current 衝擊電壓	150A	250A	400A	500A	750A
Off-state leakage current 洩漏電流	3mA	5mA	8mA	8mA	8mA
On-state voltage drop 飽和電壓	1.6V / 25°C				
Turn-on time 動作時間	<10ms				
Turn-off time 復歸時間	<10ms				

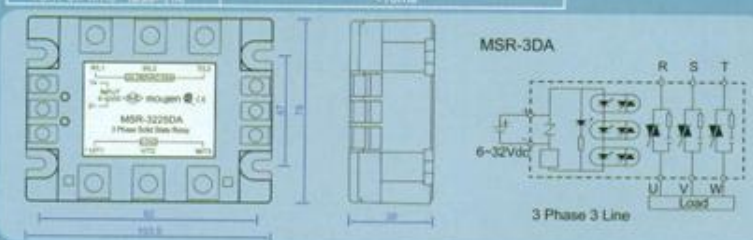


◆ GENERAL 一般規格

Insulation resistance (input-output) 絕緣強度	>100MΩ
Dielectric strength (input-output) 耐壓強度	4000Vrms
Dielectric strength (input-output & housing) 耐壓強度	2500Vrms
Operation temperature 工作溫度	-20°C~80°C
Storage temperature 儲存溫度	-40°C~100°C
Material 材質	PC+ABS/PBT(UL94V0)
Weight 重量	400g

◆ Fuse options 保險絲選用

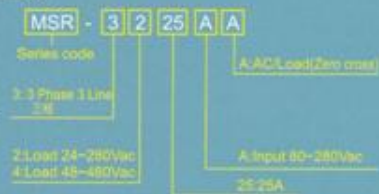
40A	40FE
50A	50FE
75A	80FE



Three Phase Solid State Relay 三相固態繼電器

◆ Features / 功能

- No-contact operation
- Zero-cross switching to reduce in-rush current
- High surge voltage duration by snubber circuit
- High surge rating allows lamp & motor load switching
- High reliability and long service life



◆ INPUT 輸入

Type 型式	MSR-3AA
Control voltage 控制電壓	80~280Vac
Must operate voltage 觸發電壓	80Vac
Must release voltage 復歸電壓	40Vac
Max. input current 輸入電流	10mA / 110Vac

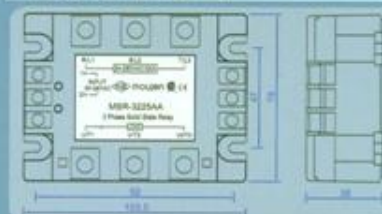
◆ GENERAL 一般規格

Insulation resistance (input-output) 絕緣強度	>100MQ
Dielectric strength (input-output) 耐壓強度	4000Vrms
Dielectric strength (input-output & housing) 耐壓強度	2500Vrms
Operation temperature 工作溫度	-20°C~80°C
Storage temperature 儲存溫度	-40°C~100°C
Material 材質	PC+ABS/PBT(UL94V0)
Weight 重量	400g

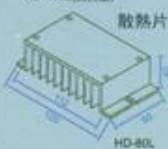
◆ OUTPUT 輸出

Type 型式	MSR-3AA				
Model 型號	210AA 410AA	225AA 425AA	240AA 440AA	250AA 450AA	275AA 475AA
Rated output current(Arms) 輸出額定電流	10A	25A	40A	50A	75A
Output load voltage 負載電壓	24~280Vac / 48~480Vac				
Peak voltage 峰值電壓	600V _p / 800V _p				
Surge current 衝擊電壓	150A	250A	400A	500A	750A
Off-state leakage current 洩漏電流	3mA	8mA	8mA	8mA	8mA
On-state voltage drop 飽和電壓	1.6V / 25°C				
Turn-on time 動作時間	<20ms				
Turn-off time 復歸時間	<20ms				

Heat sink	L(mm)	W(mm)	H(mm)
HD-80L	80	120	40
HD-145L	145	120	40
HE-80L	80	120	82
HE-145L	145	120	82



HD-80L
HD-145L(30型)



MSR-3AA

