

KW4B型微動開關系列 Micro switch series

◆ 特點和用途 Characteristic and usage

■ 多種接線端子型式

A variety of contact terminals

■ 廣泛應用於家用電器、電子設備、自動化設備及類似設備。

Widely used in home appliances, electric equipments, automatization equipments and other similar equipment



◆ 技術特性 Specifications

項目 Item		特性值 Value
工作速度 Operating speed		0.1mm ~ 1m/s(與驅動方式有關) (Related with actuator forms)
工作頻率 Operating Frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25cycles/min
絕緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		動作力 > 0.5N: ≤30mΩ (見注) 動作力 ≤ 0.5N: ≤50mΩ (見注) OF > 0.5N: ≤30mΩ (see note) OF ≤ 0.5N: ≤50mΩ (see note)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V, 50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground (case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance		10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance		破壞: 動作力 > 0.5N: 1000m/s ² (約100G) max 動作力 ≤ 0.5N: 500m/s ² (約50G) max 故障: 動作力 > 0.5N: 300m/s ² (約30G) max 動作力 ≤ 0.5N: 200m/s ² (約20G) max Destruction: OF > 0.5N: 1000m/s ² (約100G) max OF ≤ 0.5N: 500m/s ² (約50G) max Malfunction: OF > 0.5N: 300m/s ² (約30G) max OF ≤ 0.5N: 200m/s ² (約20G) max
壽命 Life		機械 ≥ 1,000,000次; Mechanical ≥ 1,000,000 cycles 電氣 ≥ 10,000次; Electrical ≥ 10,000 cycles Mechanical frequency: 60cycles/min Electrical frequencies: 25cycles/min
質量 Weight		約1.6g(無動臂型) Approx. 1.6g(No lever)
安全認證 Safety approvals		UL, CUL, VDE, TUV, ENEC, DEMKO, CE, EK, CQC

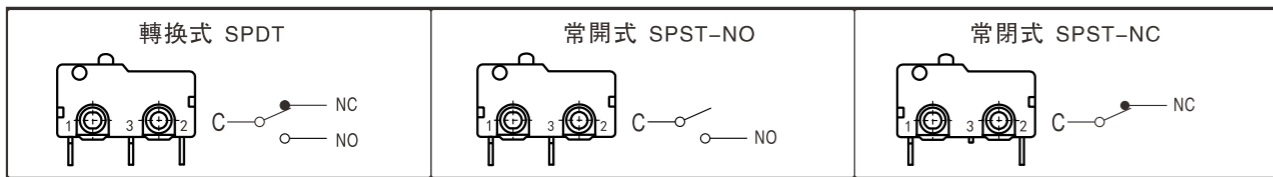
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◆ 型號規格命名及含義 Model number legend and meanings

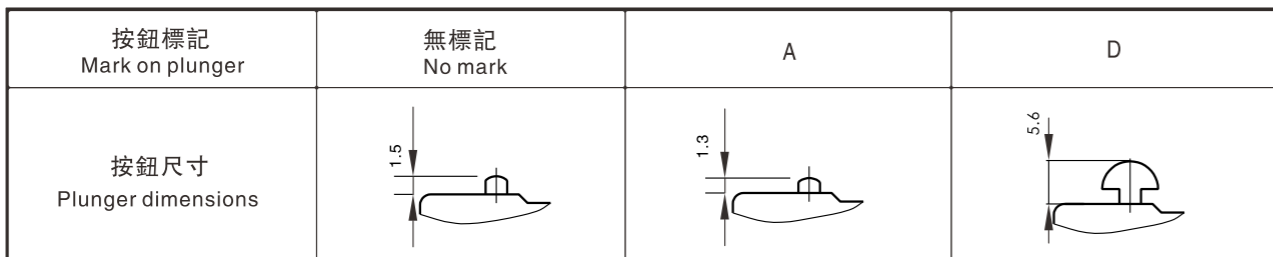
KW4B □ - □ □ □ □ □ □ - (□)
1 2 3 4 5 6 7 8

1 溫度等級 Degrees of temperature	無標記 No mark: 10T85 T125	5 端子類型 Terminal types	F: 焊接端子 solder terminal P: PCB端子 PCB terminal L: 左側面PCB端子 Left side PCB terminal R: 右側面PCB端子 Right side PCB terminal Y: 非標準端子 not standard terminal
2 額定值 Rating	無標記 No mark: 5GPA 25T125 125/250VAC 5E4 5(3)A 25T125 125/250VAC 5E4 1/4hp 25T125 125/250VAC 5E4 10(4)A 25T125 125/250VAC 5E4 10GPA 25T125 125/250VAC 5E4 0~10A 0~36VDC 25T125 5E4 1/2hp 25T125 125/250VAC 5E4 0.1GPA 25T125 125/250VAC 5E4 0.1A 25T125 36VDC 5E4	6 動作力(MAX) Operating force	050: 05N 100: 1N 150: 1.5N 200: 2N 300: 3N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
3 接觸形式 Circuit	Z: 轉換式 SPDT T: 常開(按通)式 SPST-NO D: 常閉(按斷)式 SPST-NC (見P81說明圖 See illustration)	7 按鈕規格 Plunger specs	無標記: No mark: 標準按鈕 Standard plunger A: 短按鈕 Short plunger B: 長按鈕 Long plunger C: 异形按鈕 Abnormity plunger (見說明圖 See illustration) 注: 若採用本表中未列入的非標準按鈕, 則用此新增按鈕的規格代號(本公司確認)表示。 Note: if adopt pther not standard plunger, then indicate with the new spec(confirmed by our company).
4 驅動形式 Actuator forms	0: 無動臂 no lever 1: 短動臂 Short lever 2: 長動臂 Long lever 3: 中動臂 Middle lever 5: 滾輪動臂 Roller 6: 弧形動臂 Arc lever □: 非標準動臂 not standard lever 注: 1) □ 表示非標準動臂的代號, 詳見動臂外形尺寸圖 Note: 1) □ Indicate not standard lever, see outline measurement drawings	8 附加規格編號 適用於: Additional specification number applies to:	1) 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal; 2) 當顧客有特殊動作特性值或其它要求時。 When customer has particular operating value or other requirements. 附加規格編號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

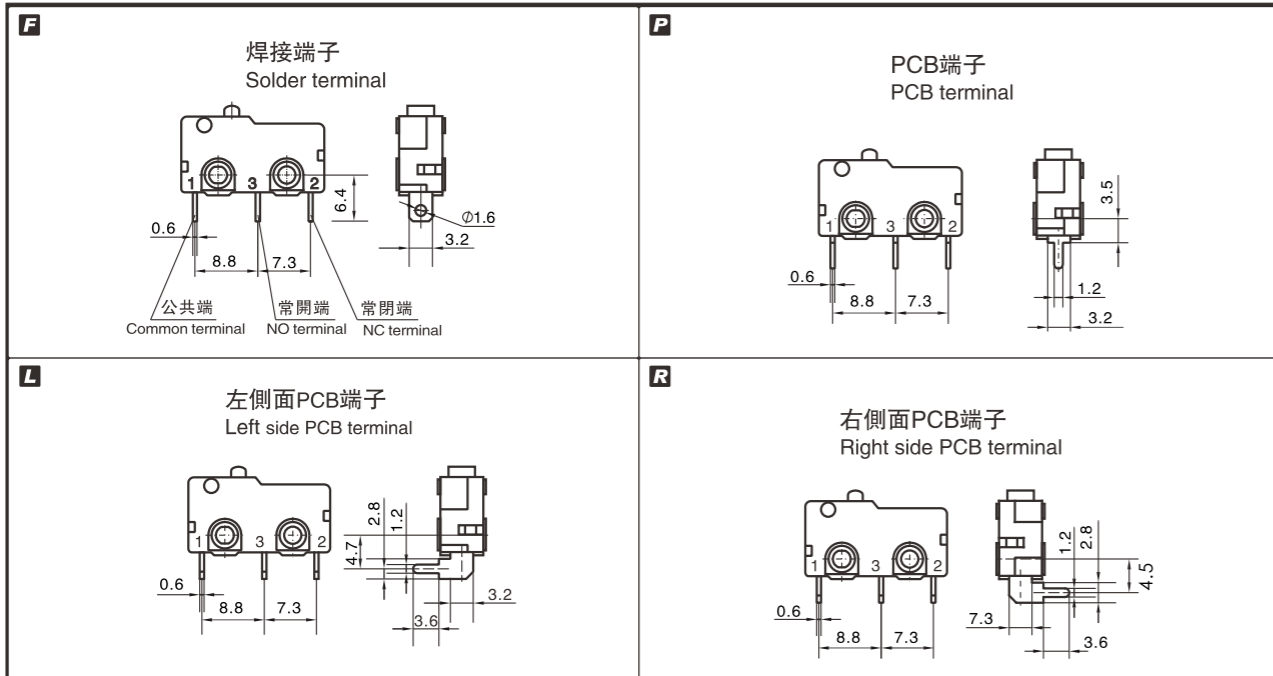
◆ 接觸形式說明圖 Circuit illustration



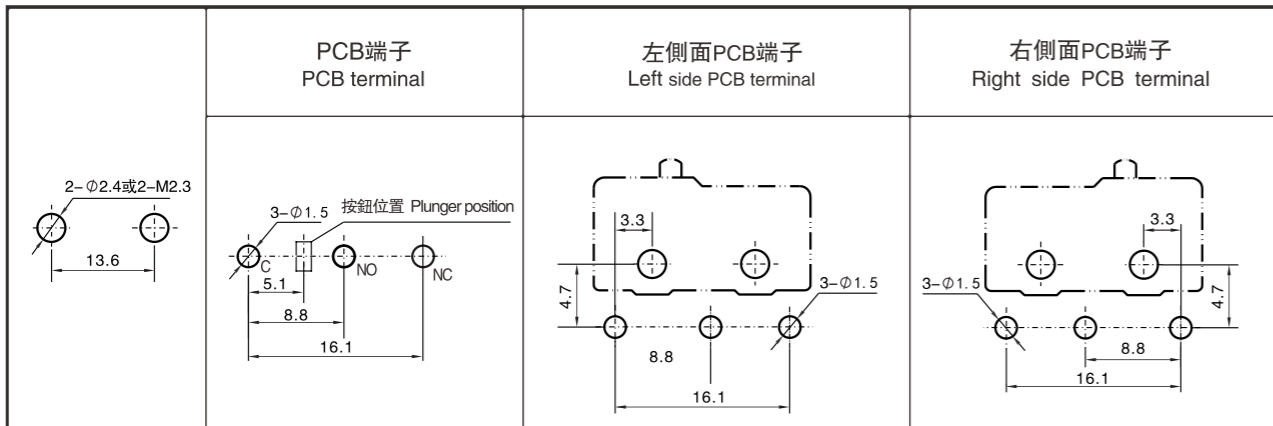
◆ 按鈕規格說明圖 Plunger spec illustration



◆ 接線端尺寸 Terminal dimensions

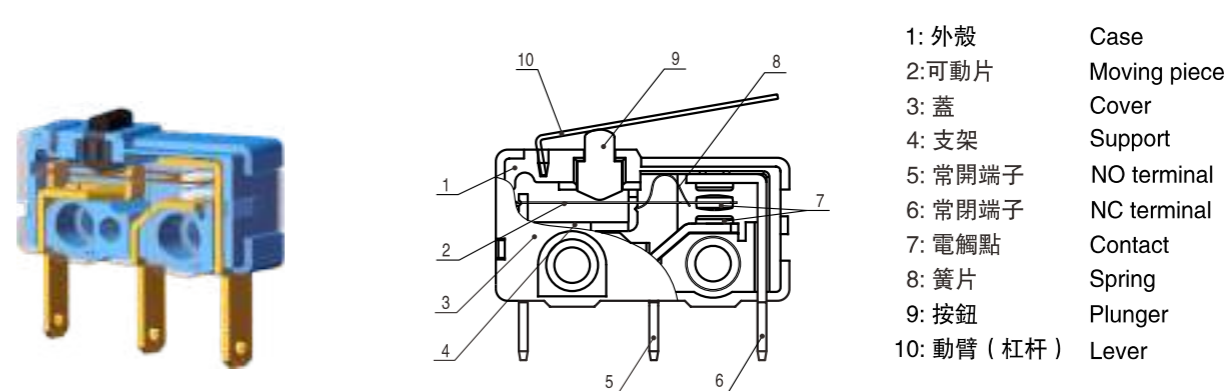


◆ 安裝孔尺寸 Mounting hole dimensions



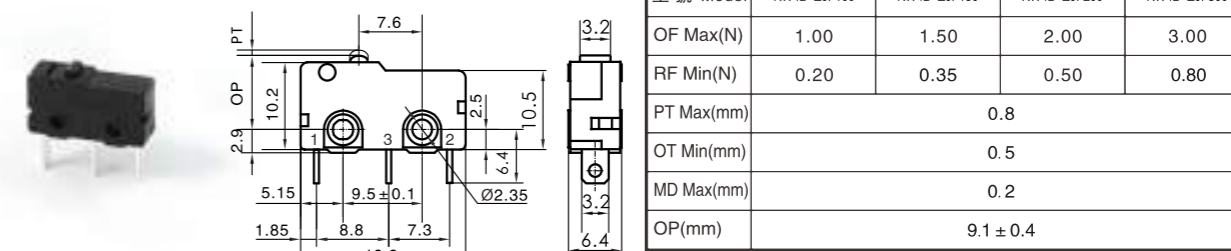
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◆ 內部構造圖 Internal configuration drawing

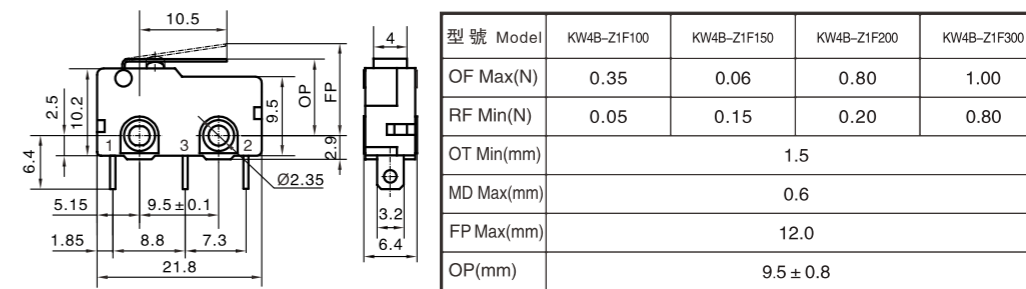


◆ 外形尺寸和動作特性 Dimensions and operating characteristics

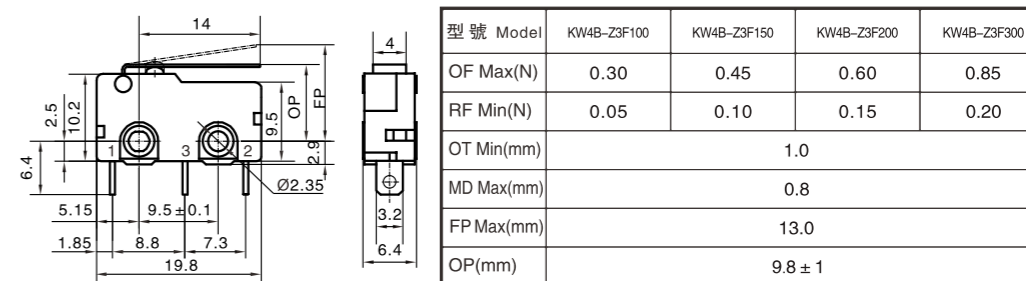
KW4B-Z0F100
KW4B-Z0F150
KW4B-Z0F200
KW4B-Z0F300



KW4B-Z1F100
KW4B-Z1F150
KW4B-Z1F200
KW4B-Z1F300

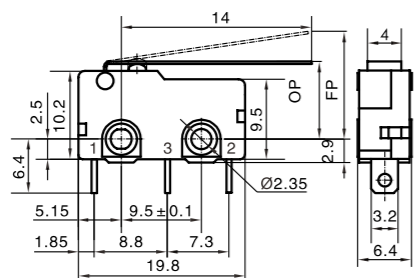


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KW4B-Z3F150
KW4B-Z3F200
KW4B-Z3F300



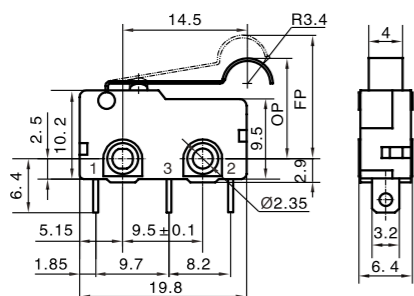
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4B-Z2F100
KW4B-Z2F150
KW4B-Z2F200
KW4B-Z2F300



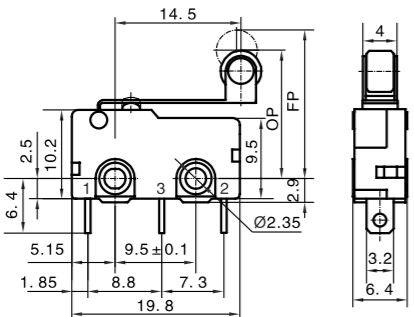
型號 Model	KW4B-Z2F100	KW4B-Z2F150	KW4B-Z2F200	KW4B-Z2F300
OF Max(N)	0.20	0.30	0.40	0.60
RF Min(N)	0.03	0.08	0.10	0.18
OT Min(mm)	2.0			
MD Max(mm)	1.5			
FP Max(mm)	16.0			
OP(mm)	10 ± 1.5			

KW4B-Z6F100
KW4B-Z6F150
KW4B-Z6F200
KW4B-Z6F300



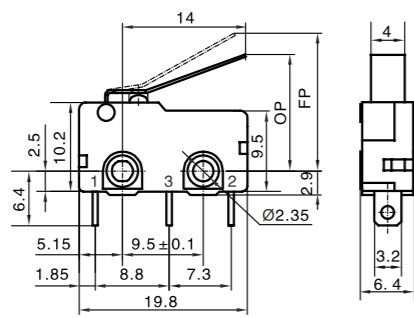
型號 Model	KW4B-Z6F100	KW4B-Z6F150	KW4B-Z6F200	KW4B-Z6F300
OF Max(N)	0.30	0.45	0.60	0.85
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	17.5			
OP(mm)	14.5 ± 1			

KW4B-Z5F100
KW4B-Z5F150
KW4B-Z5F200
KW4B-Z5F300



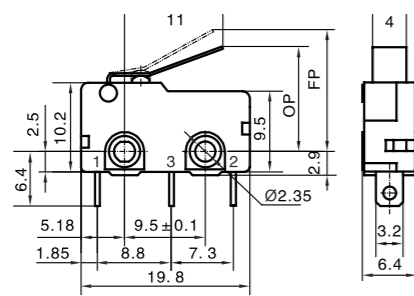
型號 Model	KW4B-Z5F100	KW4B-Z5F150	KW4B-Z5F200	KW4B-Z5F300
OF Max(N)	0.30	0.45	0.60	0.85
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	19.0			
OP(mm)	16.2 ± 1			

KW4B-ZEF100
KW4B-ZEF150
KW4B-ZEF200
KW4B-ZEF300



型號 Model	KW4B-ZEF100	KW4B-ZEF150	KW4B-ZEF200	KW4B-ZEF300
OF Max(N)	0.30	0.45	0.60	0.85
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	17.5			
OP(mm)	14 ± 1			

KW4B-ZQF100
KW4B-ZQF150
KW4B-ZQF200
KW4B-ZQF300

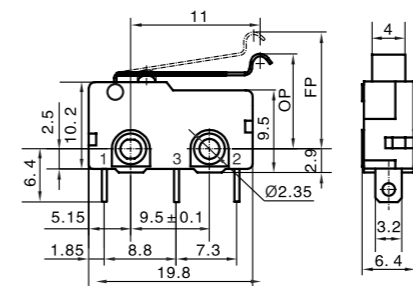


型號 Model	KW4B-ZQF100	KW4B-ZQF150	KW4B-ZQF200	KW4B-ZQF300
OF Max(N)	0.32	0.50	0.65	1.00
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	15.5			
OP(mm)	13.2 ± 1			

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◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4B-Z6BF100
KW4B-Z6BF150
KW4B-Z6BF200
KW4B-Z6BF300



型號 Model	KW4B-Z6BF100	KW4B-Z6BF150	KW4B-Z6BF200	KW4B-Z6BF300
OF Max(N)	0.25	0.40	0.50	0.75
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	16.5			
OP(mm)	13 ± 1.2			

◆ 可供選擇的非標準動臂代號和外形特徵尺寸 Not standard levers for choose and outline characteristic dimension

動臂代號 Lever code	外形特徵尺寸 Outline characteristic dimensions	動臂代號 Lever code	外形特徵尺寸 Outline characteristic dimensions	動臂代號 Lever code	外形特徵尺寸 Outline characteristic dimensions
3A		C		K	
N		G		Q1	
J		F1		S1	
J1		6A		5A	
J2		6C			

KW10型微動開關系列 Micro switch series

◆ 動作靈敏的超小型開關 Action sensitive subminiature switch

- 超小型，大電流。具有微小觸點間隙，快速動作、高靈敏和微小動作行程的特點。
Mini-type, big current. Characteristic: small contact gap, quick action, high sensitivity and small operating travel
- 長壽命
Long life
- 多種接線端子
A variety of contact terminals
- 多種形式動臂
A variety of levers
- 適用於家用電器、音視頻設備、計算機、辦公自動化設備及通訊設備等。
Widely used in home appliance, audio video device, computer, office automation equipment, communication equipment, etc.



◆ 技術特性 Technical Characteristics

項目 Item	特性值 Value
工作速度 Operating speed	1mm ~ 500mm/s (與驅動方式有關)(Related with actuator forms)
工作頻率 Operating frequency	機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絕緣電阻 Insulation resistance	≥ 100MΩ (500VDC)
接觸電阻 Contact resistance	動作力>0.75N: ≤50mΩ (見注) 動作力≤0.75N : ≤100mΩ (見注) OF>0.75N: ≤30mΩ (see note) OF≤0.75N: ≤50mΩ (see note) KW10-D、E、F型: ≤100mΩ (見注) KW10-D、E、Ftype: ≤100mΩ (seende)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity AC600V,50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、 接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts. AC1000V,50/60Hz, 1min
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance	故障: 300m/s ² (約30G)max Malfunction:300m/s ² (approx.30G)max
壽命 Life	機械 ≥1,000,000次; Mechanical ≥1,000,000 cycles 電氣 ≥10,000次; Electrical ≥10,000 cycles
質量 Weight	約0.6g(無動臂型) Approx. 0.6g(No lever)
安全認證 Safety approvals	UL、CUL、TUV、ENEC、DEMKO、CE、EK、CQC

注：指無動臂時按鈕上的動作力。 Note: Refers to the operating force of no lever.

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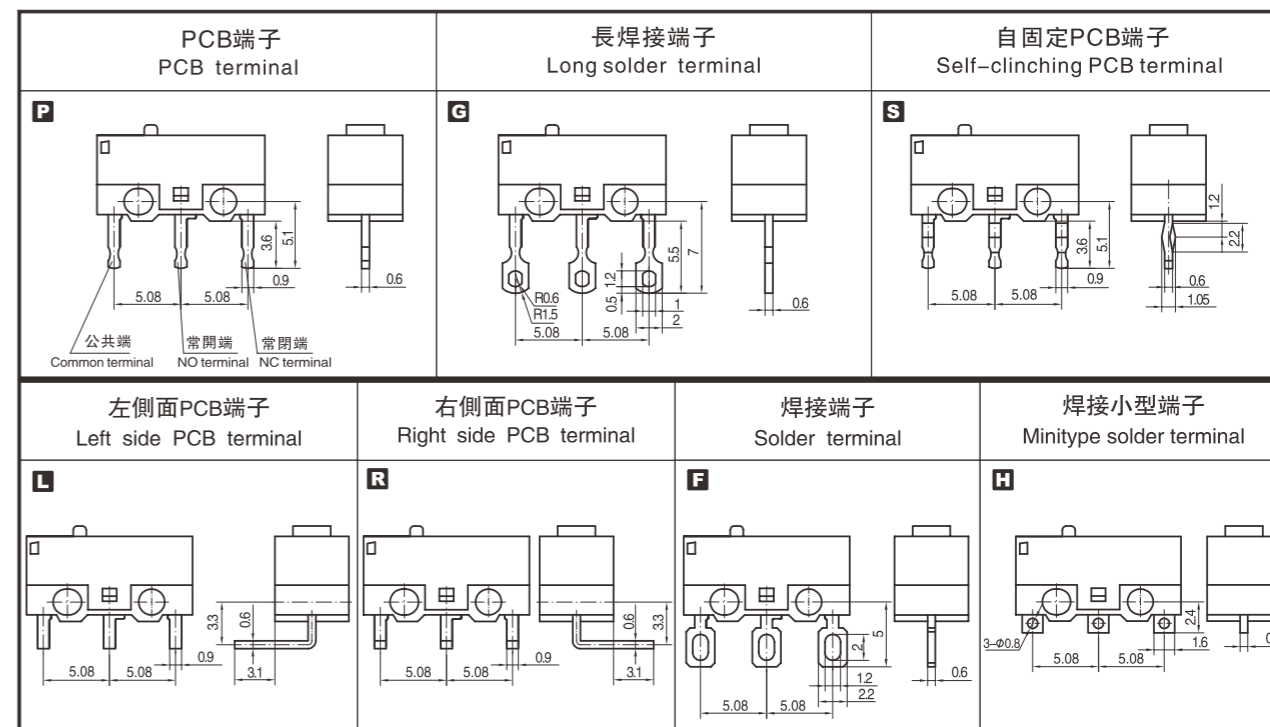
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◆ 型號規格命名及含義 Model number legend and meanings

KW10 - □□□□ - (□)
1 2 3 4 5 6

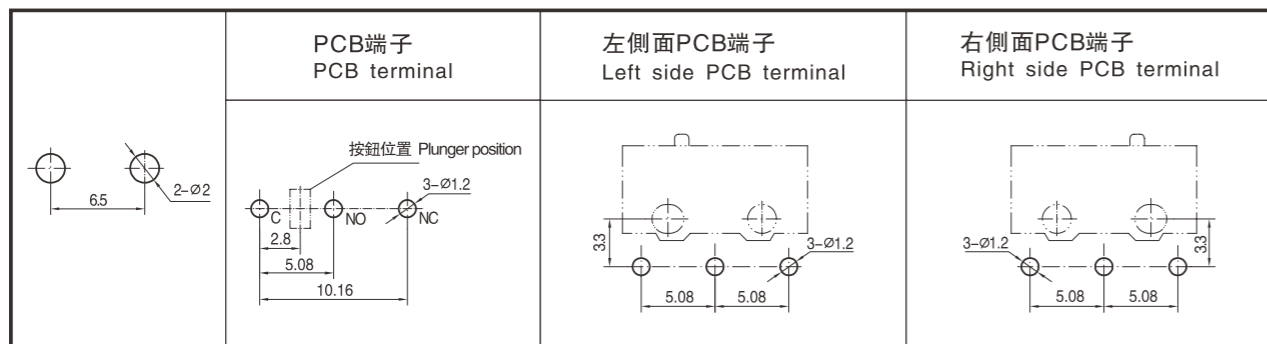
1 額定值 Ratings	無標記 No mark: 3(0.5)A125/250VAC,3(1)A125/250VAC 3GPA125/250VAC 3RA125/250VAC, 3A30VDC KW10-C: 1A125VAC, 1(0.5)A125/250VAC 1GPA125/250VAC 1RA125/250VAC, 1A30VDC KW10-D: 0.5A125VAC, 0.5(0.2)A125/250VAC 0.5GPA125/250VAC 0.5RA125/250VAC, 0.5A30VDC KW10-E: 0.3A125VAC, 0.3(0.1)A125/250VAC 0.3GPA125/250VAC 0.3RA125/250VAC, 0.3A30VDC KW10-F: 0.1A125VAC, 0.1(0.05)A125/250VAC 0.1GPA125/250VAC 0.1RA125/250VAC, 0.1A30VDC	3 驅動形式 Actuator forms	6: 長弧形動臂 Long arc lever 8: 短弧形動臂 Short arc lever □: 非標準動臂 Not standard lever 注: □表示非標準動臂的代號 Indicate not standard lever,
	4 端子類型 Terminal types		F: 焊接端子 Solder terminal G: 長焊接端子 Long solder terminal P: PCB端子 PCB terminal L: 左側面PCB端子 Left side PCB terminal R: 右側面PCB端子 Right side PCB terminal S: 自固定PCB端子 Self-clinching PCB terminal H: 焊接小型端子 Minitype solder terminal Y: 非標準端子 Not standard terminal
2 接觸形式 Circuit	Z-轉換式 SPDT T-常開(按通)式 SPST-NO D-常閉(按斷)式 SPST-NC	5 動作力(max) Operating force	045 : 0.45N 075 : 0.75N 150 : 1.5N 250 : 2.5N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: If it is no tstandard operating force, indicate with the upper limit.
	3 驅動形式 Actuator forms		0: 無動臂 No lever 1: 短動臂 Short lever 2: 長動臂 Long lever 3: 中動臂 Middle lever 5: 滾輪臂 Roller
6 附加規格編號, 適用於: Additional spec numbers, Apply to:		1)當開關使用了非標準零件如非標準端子等時; When used not standard parts such as not standard terminal; 2)當顧客有特殊動作特性值或其它要求時。 When customer has particular operating value or other requirements. 附加規格編號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.	

◆ 接線端尺寸 Terminal dimensions

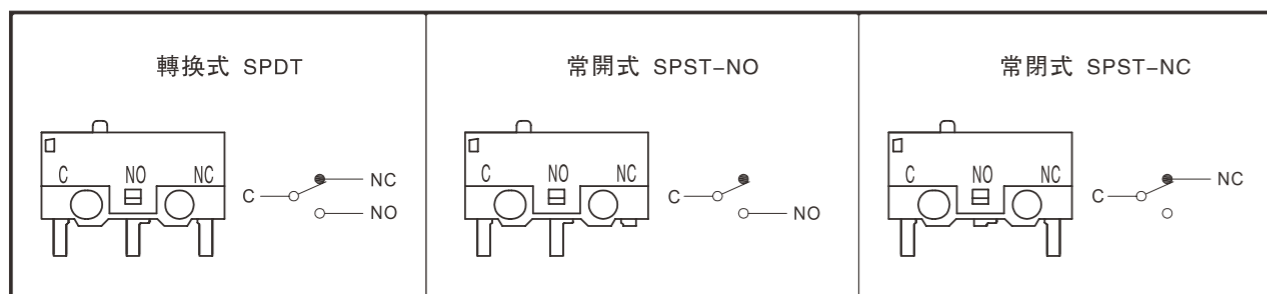


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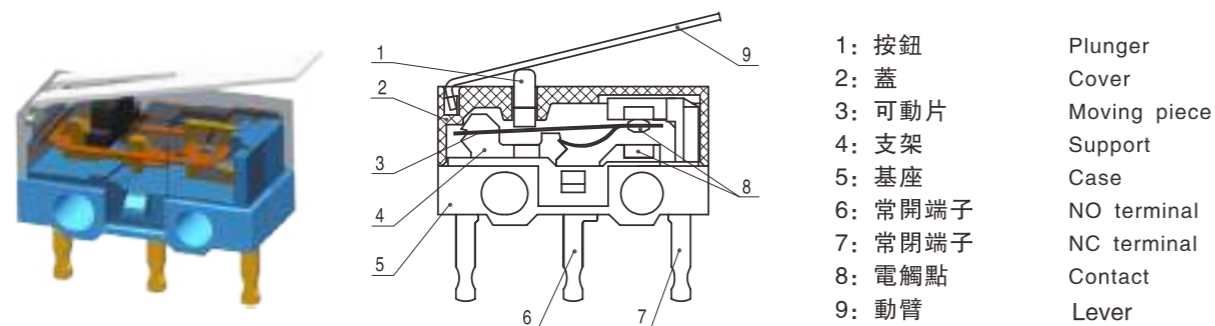
◆ 安裝孔尺寸 Mounting hole dimensions



◆ 接觸形式說明圖 Circuit illustration

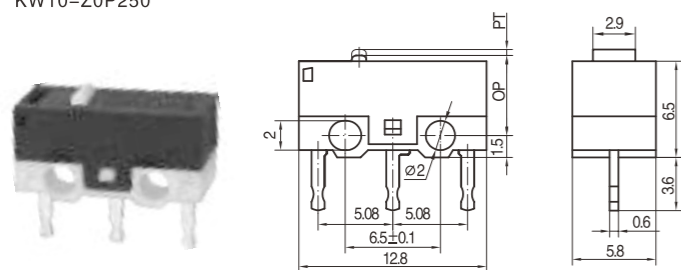


◆ 內部構造圖 Internal configuration drawing



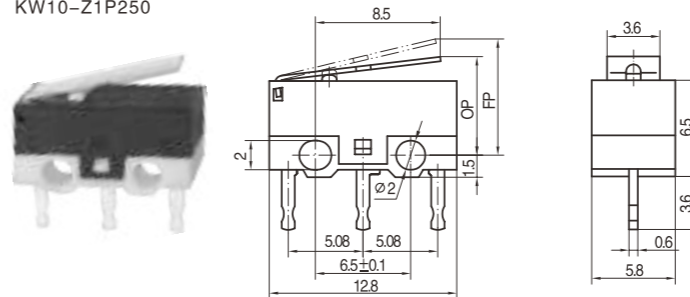
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW10-Z0P075
KW10-Z0P150
KW10-Z0P250

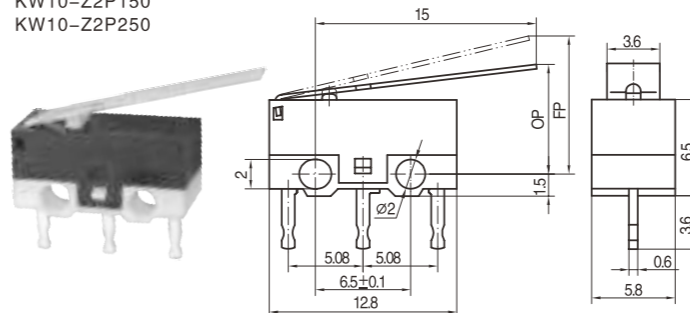


◆ 外形尺寸和動作特性 Dimensions and operating characteristics

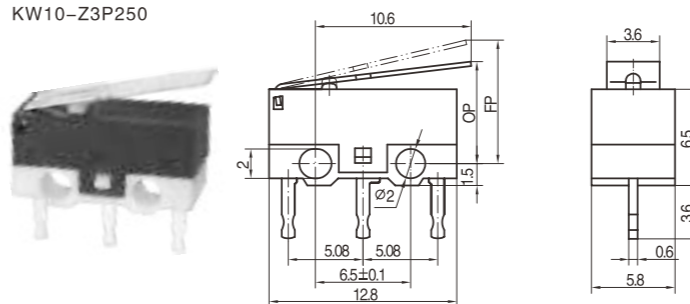
KW10-Z1P075
KW10-Z1P150
KW10-Z1P250



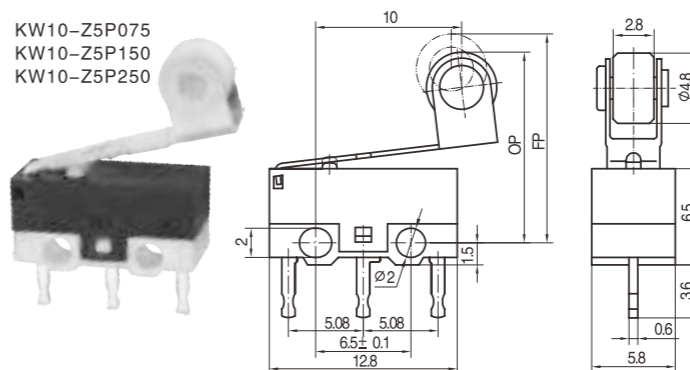
KW10-Z2P075
KW10-Z2P150
KW10-Z2P250



KW10-Z3P075
KW10-Z3P150
KW10-Z3P250

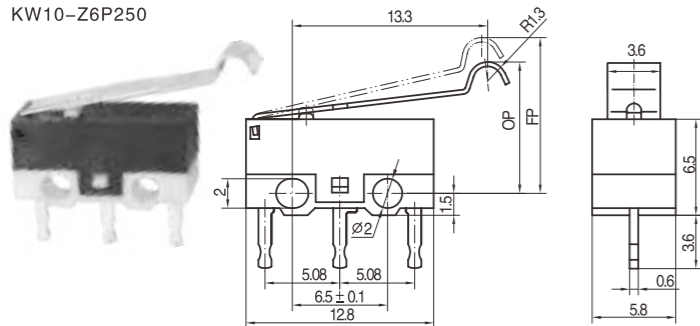


KW10-Z5P075
KW10-Z5P150
KW10-Z5P250



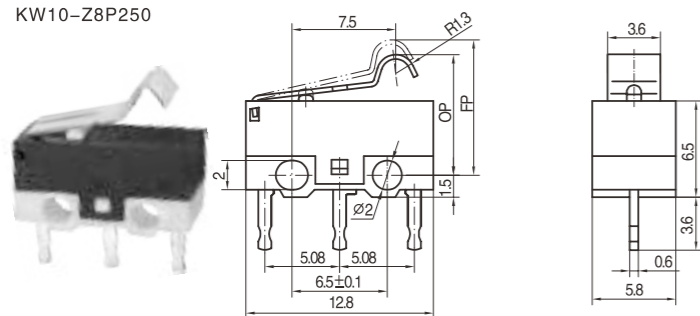
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW10-Z6P075
KW10-Z6P150
KW10-Z6P250



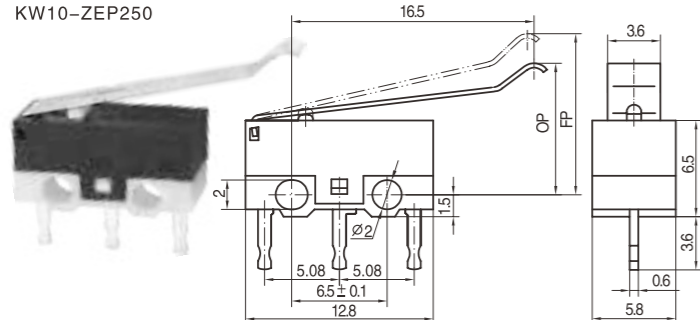
型號 Model	KW10-Z6P075	KW10-Z6P150	KW10-Z6P250
OF Max(N)	0.18	0.36	0.60
RF Min(N)	0.02	0.05	0.10
OT Min(mm)	0.9		
MD Max(mm)	0.9		
FP Max(mm)	11.5		
OP(mm)	8.6 ± 1		

KW10-Z8P075
KW10-Z8P150
KW10-Z8P250



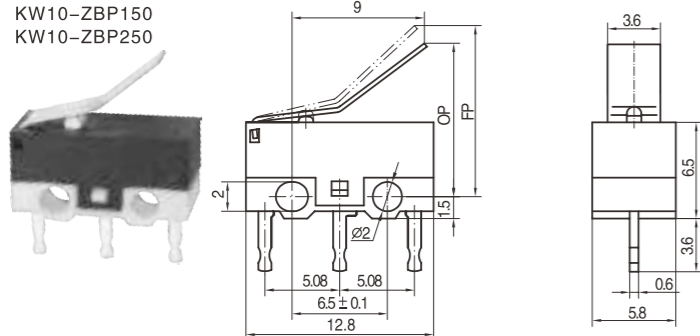
型號 Model	KW10-Z8P075	KW10-Z8P150	KW10-Z8P250
OF Max(N)	0.30	0.60	1.00
RF Min(N)	0.03	0.06	0.12
OT Min(mm)	0.6		
MD Max(mm)	0.6		
FP Max(mm)	10.5		
OP(mm)	8.6 ± 1		

KW10-ZEP075
KW10-ZEP150
KW10-ZEP250



型號 Model	KW10-ZEP075	KW10-ZEP150	KW10-ZEP250
OF Max(N)	0.15	0.30	0.50
RF Min(N)	0.02	0.05	0.10
OT Min(mm)	1.1		
MD Max(mm)	1.0		
FP Max(mm)	11.5		
OP(mm)	8.5 ± 1.5		

KW10-ZBP075
KW10-ZBP150
KW10-ZBP250



型號 Model	KW10-ZBP075	KW10-ZBP150	KW10-ZBP250
OF Max(N)	0.25	0.50	0.80
RF Min(N)	0.02	0.05	0.10
OT Min(mm)	0.6		
MD Max(mm)	0.6		
FP Max(mm)	12.5		
OP(mm)	10.5 ± 1.5		

◆ 可供選擇的非標準動臂代號和外形特徵尺寸
Not standard lever for choose and outline characteristic dimension

動臂代號 Lever code	外形特徵尺寸 Outline characteristic dimension	動臂代號 Lever code	外形特徵尺寸 Outline characteristic dimension
T		6G	
P		6L	
P1		I	
P3		B2	
6J		5A	

◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

【Common use】please refer to related pages

■ 關於和端子的連接 Concerning the connection with terminals

(1) 將導線焊接到端子上時，請先將導線穿過端子孔後再進行焊接。

When jointing the wire to the terminal, please thread through the wire to the hole of the terminal first.

(2) 烙鐵的容量應為30W以下，烙鐵頭溫度在300°C左右(最大控制在350°C以下)，焊接時間在3s之內。焊接不良的情況下使用開關，可能導致異常發熱和燒損。功率超過30W或加熱超過3s，可能導致開關特性劣化。PCB端子與印制板的焊接，請注意焊劑和焊錫的液面不要超過印制板。

The iron capacity should be below 30W, soldering iron temperature at about 300°C(maximum under 350°C), time within 3s. If use switch under bad soldering condition, abnormal heat and burn may happen. Power bigger than 30W or heated over 3s, switch characteristic may be worse. Regarding soldering of PCB terminal and printed board, please pay attention to soldering dosage and soldering tin level does not exceed the printed board.

(3) 請采用手工焊接。因為如果采用焊槽焊接，焊錫可能進入開關內部而導致接觸不良。

Please joint with hands. If joint with wave soldering, soldering tin may come inside switch, then bad contact will happen.

(4) 對於快接式端子，插套插入插片時，應避免在端子的橫向加力，以免引起端子變形和外殼破損。

Regarding the quick connect terminal, when insert slipcover into the insert piece, please do not exert transverse press to the terminal, in order to avoid terminal distort and cover breakage.

■ 關於安裝 Concerning installation

(1) 開關的安裝、拆卸和配線作業以及維護檢查時，請務必斷開電源，否則會引起觸電和燒毀。

Please turn off the power when installing, disassembling, wiring work and maintenance check, otherwise, electric shock and burn will happen.

(2) 安裝時，使用2個M2螺釘，用平墊圈、彈簧墊圈等緊固，並請使用0.08~0.1N·m的緊固轉矩。

When installing, please use 2 M2 screws, then tight it with flat washer, spring washer, and also tight with 0.08~0.1N·m torque.

(3) 開關請安裝在平面上。如果安裝面凹凸不平，可能導致開關歪斜、動作失常和外殼破損。

Please install switch on flat surface. If it is installed in uneven surface, switch deflection, malfunction and cover breakage will happen.

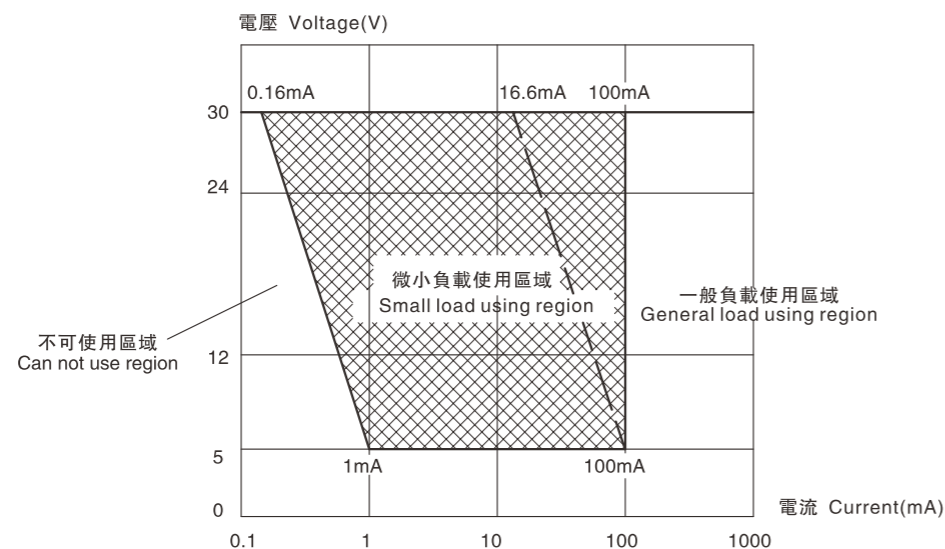
■ 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

Use general load switch in small load circuit, bad contact maybe happen.

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

Please refer to the chart below, use switch within using region, and insert contact to protect circuit according to the needs.



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MS1型微動開關系列 Micro switch series

◆ 品質優良的微動開關 Good quality micro switch

- 長壽命，高可靠。
Long life, high reliability.
- 接線端子種類齊全
A variety of contact terminals
- 標準動作力和低動作力
Standard operating force and low operating force
- 多種溫度等級
A variety of temperature class
- 配備各種形式動臂
A variety of levers



◆ 技術特性 Technical Characteristics

項目 Item	特性值 Value
工作速度 Operating speed	0.1mm ~ 1m/s (與驅動方式有關) (Related with actuator forms)
工作頻率 Operating frequency	機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25 cycles/min
絕緣電阻 Insulation resistance	≥ 100MΩ (500VDC)
接觸電阻 Contact resistance	動作力 > 0.75N: ≤ 50mΩ (見注) 動作力 ≤ 0.75N: ≤ 100mΩ (見注) OF > 0.75N: ≤ 50mΩ (see note) OF ≤ 0.75N: ≤ 100mΩ (see note)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 Double amplitude
抗衝擊 Shock resistance	破壞: 動作力 > 0.5N: 1000m/s ² (約100G)max 動作力 ≤ 0.5N: 400m/s ² (約40G)max 故障: 動作力 > 0.5N: 200m/s ² (約20G)max 動作力 ≤ 0.5N: 100m/s ² (約10G)max Destruction: OF > 0.5N: 1000m/s ² (approx. 100G)max OF ≤ 0.5N: 400m/s ² (approx. 40G)max Malfunction: OF > 0.5N: 200m/s ² (approx. 20G)max OF ≤ 0.5N: 100m/s ² (approx. 10G)max
壽命 Life	機械 ≥ 2,000,000次; Mechanical ≥ 2,000,000 cycles 電氣 ≥ 50,000次; Electrical ≥ 50,000 cycles
質量 Weight	約8g(無動臂型) Approx. 8g(No lever)
安全認證 Safety approvals	UL、CUL、ENEC、SEMKO、DEMKO、CE、EK、CQC

注：指無動臂時按鈕上的動作力。 Note: Refers to the operating force of no lever.

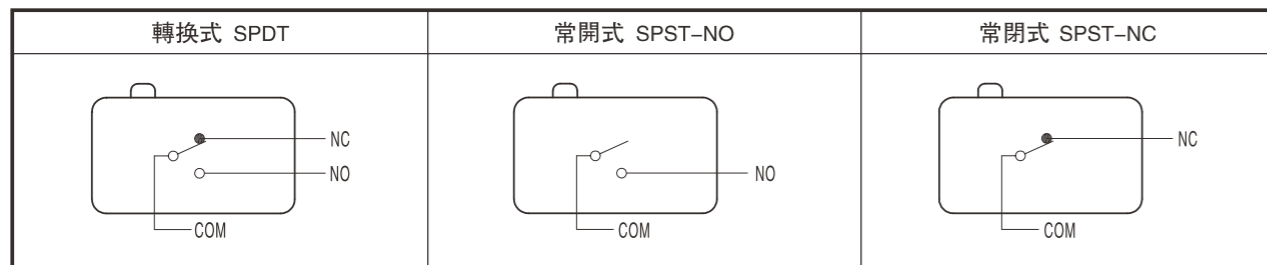
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◆ 型號規格命名及含義 Model number legend and meanings

MS1 □-□□□-□□□-(□)
1 2 3 4 5 6 7 8

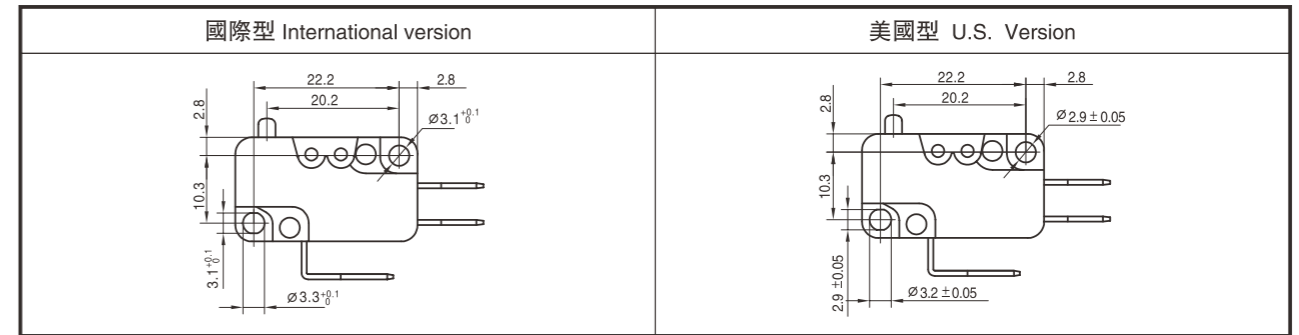
1 溫度等級 Degrees of temperature	無標記: 10T125 No mark	A: 250快接端子之一 250 quick-connect terminal No.1 B: 250快接端子之二 250 quick-connect terminal No.2 C: 250快接端子之三 250 quick-connect terminal No.3 K: 250快接端子之四 250 quick-connect terminal No.4 D: 187快接端子(厚0.5mm) 187 quick-connect terminal(thick 0.5mm) E: 187快接端子(厚0.8mm) 187 quick-connect terminal (thick 0.8mm) F: 焊接端子 Solder terminal G: 螺孔端子 Screw terminal H: 端面PCB端子 Upper PCB terminal J: 底面PCB端子 Bottom PCB terminal L: 左側面PCB端子 Left side PCB terminal R: 右側面PCB端子 Right side PCB terminal Y: 非標準端子 Not standard terminal
2 額定值 Ratings	MS1-16: 16A125VAC,16GPA125/250VAC 16(4)A125/250VAC, 10A30VDC 1/2hp125/250VAC MS1-10: 10A125VAC,10GPA125/250VAC 10(3)A 125/250VAC, 6A30VDC 1/3hp125/250VAC MS1-06: 6A125VAC,6GPA125/250VAC 6(2)A125/250VAC, 4A30VDC 1/4hp125/250VAC MS1-03: 3A125VAC,3GPA125/250VAC 3(1)A125/250VAC MS1-01: 0.1A125VAC,0.1GPA125/250VAC 0.1(0.05)A125/250VAC	5 端子類型 Terminal types
3 接觸形式 Circuit	Z: 轉換式 SPDT T: 常開(按通)式 SPST-NO D: 常閉(按斷)式 SPST-NC (見說明圖 See illustration)	6 安裝孔特徵 Mounting hole features 無標記: 國際型 No mark: international approved version U: 美國型 US version
4 驅動形式 Actuator forms	0: 無動臂 No lever A1/1: 短動臂 Short lever A2/2: 長動臂 Long lever A3/3: 中動臂 Middle lever A4/4: 短滾輪臂 Short roller A5/5: 長滾輪臂 Long roller A6/6: 弧形動臂 Arc lever A□/□: 非標準動臂 Not standard lever 注: 1)A 表示動臂安裝在靠近按鈕位置, 無字母A表示動臂安裝在離按鈕較遠位置。 2)□ 表示非標準動臂的代號。 3)若動臂為內安裝式, 則在動臂代號後加字母N。 Note: 1)A indicate the lever near to the plunger, no A indicate the lever far away from the plunger. 2)□ indicate not standard lever. 3)If lever is mounted inside.add letter "N" after the lever code.	7 動作力 (max) Operating force 015: 0.15N 045: 0.45N 075: 0.75N 100: 1N 170: 1.7N 285: 2.85N 400: 4N 注: 非標準動作力值, 其動作力代號以其上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
		8 附加規格編號, 適用於: Additional spec numbers apply to: 1)當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2)當顧客有特殊動作特性值或其它要求時。 When customer has particular operating value or other requirements. 附加規格編號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

◆ 接觸形式說明圖 Circuit illustration

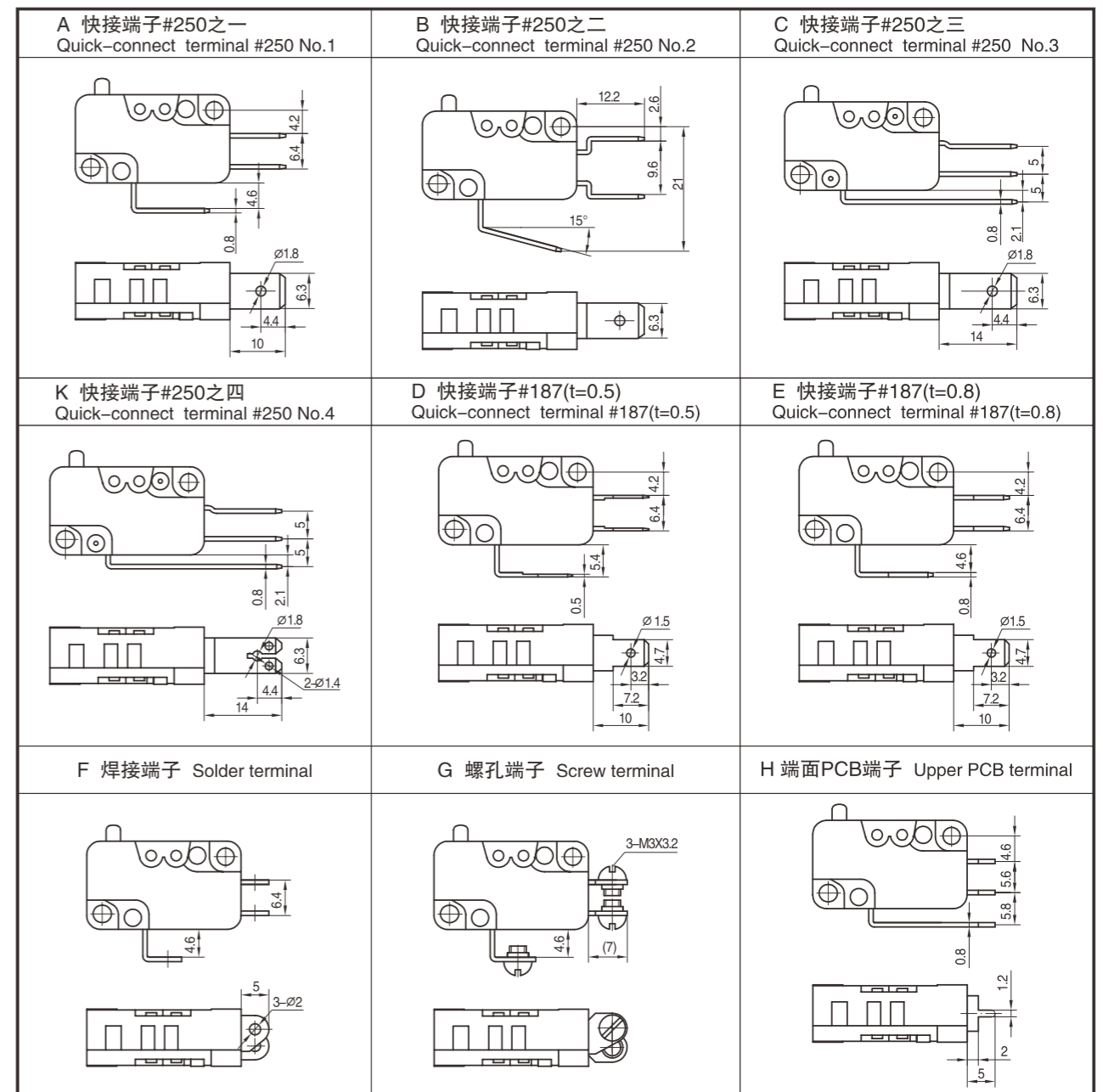


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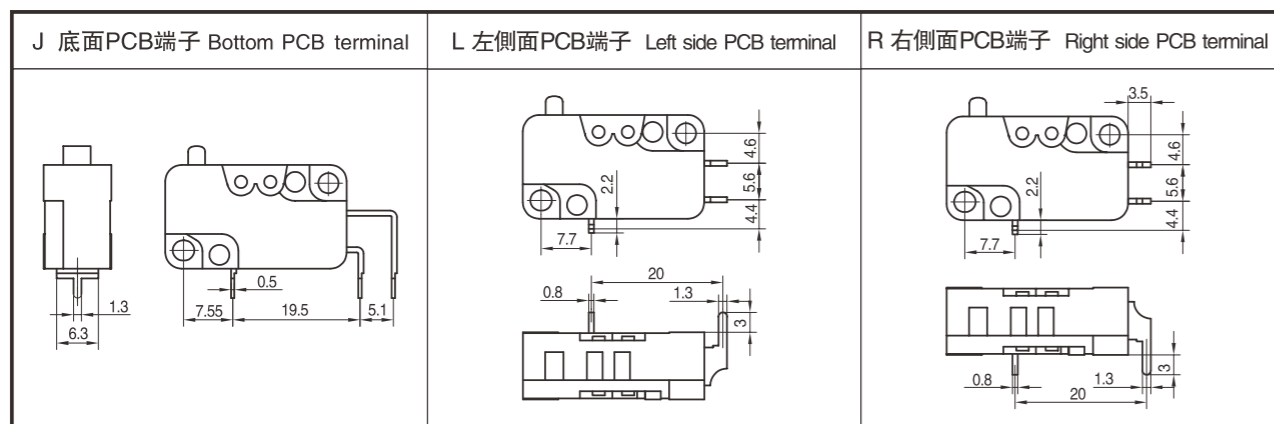
◆ 安裝孔特徵說明圖 Mounting hole characteristic illustration



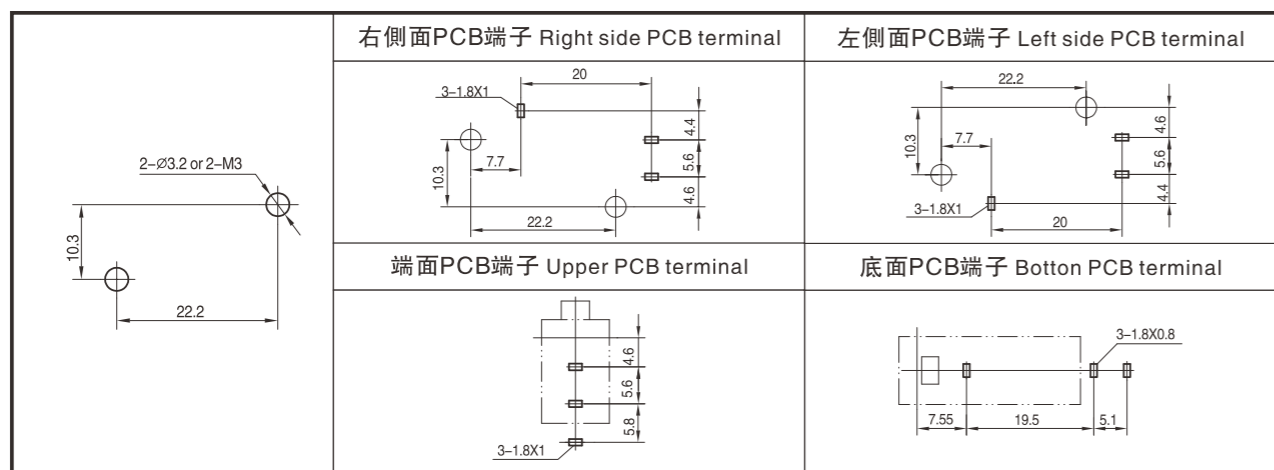
◆ 接線端配置及尺寸 Connect terminals collocation and dimensions



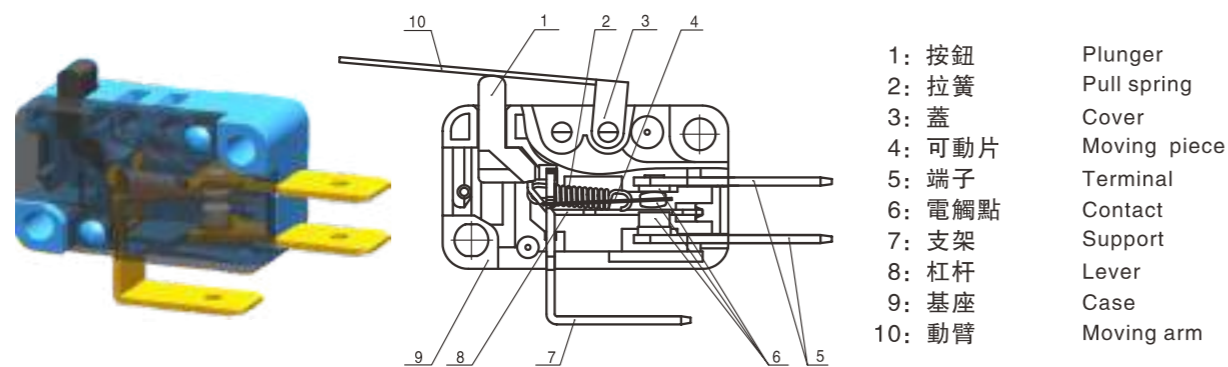
◆ 接線端配置及尺寸 Connect terminals collocation and dimensions



◆ 安裝孔尺寸 Mounting hole dimensions



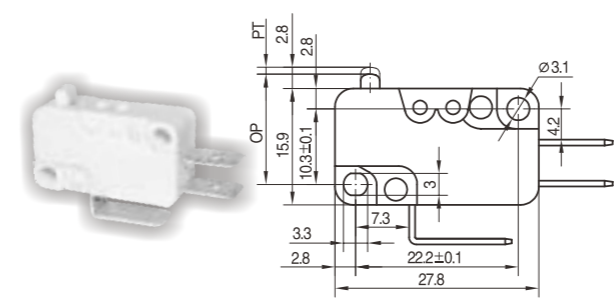
◆ 內部構造圖 Internal configuration drawing



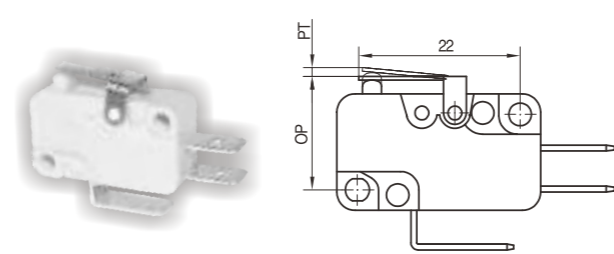
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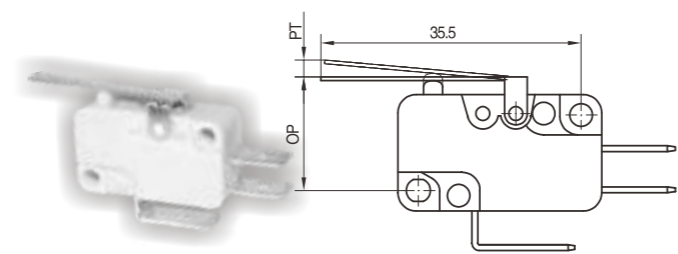
◆ 外形尺寸和動作特性 Dimensions and operating characteristics



型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z0-A075	0.75	1.2	1.3	0.25	14.2-15.2
MS1-03Z0-A075	0.75				
MS1-06Z0-A170	1.70				
MS1-10Z0-A285	2.85				
MS1-16Z0-A400	4.00				
MS1-01Z0-A015	0.15				
MS1-03Z0-A015	0.15				
MS1-06Z0-A045	0.45				
MS1-10Z0-A075	0.75				
MS1-16Z0-A100	1.00				



型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z1-A075	0.75	1.6	1.3	0.4	14.7-15.8
MS1-03Z1-A075	0.75				
MS1-06Z1-A170	1.70				
MS1-10Z1-A285	2.85				
MS1-16Z1-A400	4.00				
MS1-01Z1-A015	0.15				
MS1-03Z1-A015	0.15				
MS1-06Z1-A045	0.45				
MS1-10Z1-A075	0.75				
MS1-16Z1-A100	1.00				



型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z3-A075	0.35	3.2	2.2	0.8	14.1-16.4
MS1-03Z3-A075	0.35				
MS1-06Z3-A170	0.86				
MS1-10Z3-A285	1.44				
MS1-16Z3-A400	2.00				
MS1-01Z3-A015	0.08				
MS1-03Z3-A015	0.08				
MS1-06Z3-A045	0.22				
MS1-10Z3-A075	0.37				
MS1-16Z3-A100	0.50				

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◆ 外形尺寸和動作特性 Dimensions and operating characteristics

型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z2-A075	0.17	7.6	4.7	1.7	12.7-17.8
MS1-03Z2-A075	0.17				
MS1-06Z2-A170	0.38				
MS1-10Z2-A285	0.63				
MS1-16Z2-A400	0.90				
MS1-01Z2-A015	0.035				
MS1-03Z2-A015	0.035				
MS1-06Z2-A045	0.10				
MS1-10Z2-A075	0.17				
MS1-16Z2-A100	0.22				

型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z4-A075	0.75	1.2	1.0	0.25	19.7-21.2
MS1-03Z4-A075	0.75				
MS1-06Z4-A170	1.70				
MS1-10Z4-A285	2.85				
MS1-16Z4-A400	4.00				
MS1-01Z4-A015	0.15				
MS1-03Z4-A015	0.15				
MS1-06Z4-A045	0.45				
MS1-10Z4-A075	0.75				
MS1-16Z4-A100	1.00				

型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z5-A075	0.35	3.2	2.2	0.8	19.3-21.6
MS1-03Z5-A075	0.35				
MS1-06Z5-A170	0.86				
MS1-10Z5-A285	1.44				
MS1-16Z5-A400	2.00				
MS1-01Z5-A015	0.08				
MS1-03Z5-A015	0.08				
MS1-06Z5-A045	0.22				
MS1-10Z5-A075	0.37				
MS1-16Z5-A100	0.50				

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◆ 外形尺寸和動作特性 Dimensions and operating characteristics

型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z6-A075	0.36	3.2	2.2	0.8	17.8-20.1
MS1-03Z6-A075	0.36				
MS1-06Z6-A170	0.90				
MS1-10Z6-A285	1.50				
MS1-16Z6-A400	2.10				
MS1-01Z6-A015	0.08				
MS1-03Z6-A015	0.08				
MS1-06Z6-A045	0.23				
MS1-10Z6-A075	0.38				
MS1-16Z6-A100	0.52				

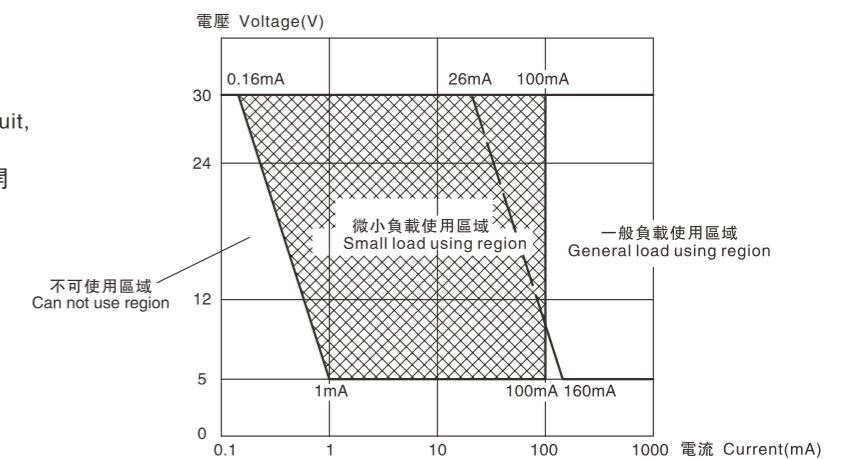
◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁 【Common use】 please refer to related pages

- 關於使用 Concerning the using
 - 請注意開關的溫度等級，在超過溫度等級的環境條件下使用，將不能保證開關的規定特性。
Please pay attention to the temperature class, if use it beyond the temperature class, switch standard characteristics cannot be guaranteed.
 - 對於低荷重型開關，由於其構造特殊，請注意不要讓開關跌落，以免損壞內部結構。
About the low operating force switches, please do not drop the switch so as to avoid damage to inside structure, because it is of special structure.
- 關於安裝 Concerning the installation
 - 開關的安裝、拆卸和配線作業以及維護檢查時，請務必斷開電源，否則會引起觸電和燒毀。
Please turn off the power when installing, disassembling, wiring work and maintenance check, otherwise, electric shock and burn will happen.
 - 安裝時，使用2個M3螺釘，用平墊圈、彈簧墊圈等緊固，並請使用0.4~0.6N·m的緊固轉矩。
When installing, please use 2 M3 screws, then tight it with flat washer, spring washer, and also tight with 0.4~0.6N·m torque.
 - 開關請安裝在平面上。如果安裝面凹凸不平，可能導致開關歪斜、動作失常和外殼破損。
Please install switch on flat surface. If install it in uneven surface, switch deflection, malfunction and cover breakage will happen.
- 關於絕緣距離 Concerning insulation distance

根據IEC 61058-1/EN 61058-1/GB 15092.1之規定，本開關的最小絕緣層厚度為1.1mm，端子和安裝板之間的最小空間距離為1.9mm。如果無法確保零部件所要求的絕緣距離，請使用絕緣護罩或隔板來保證絕緣距離。
According to IEC 61058-1/EN 61058-1/GB 15092.1, the least thickness insulation layer should be 1.1mm, the smallest space distance between the terminal and install board is 1.9mm. If the parts insulation distance cannot be guaranteed, please use insulate cover or guard board to guarantee the insulation distance.
- 關於微小負載電路中的使用

Concerning use in small load circuit
如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。
Use general load switch in small load circuit, bad contact may happen
請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。
Please refer to the chart below, use switch within using region, and insert contact to protect circuit according to the needs.



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MS2型微動開關系列 Micro switch series

◆ 特點和用途 Characteristics and usage

- 具有一定的防護功能
Has protection function.
- 廣泛應用於各種家用電器，並可用於吸塵器等工作環境惡劣的器具。
Widely used in all kinds of home appliances, and also can be used in such as vacuum cleaner etc.appliances which works in bad conditions.



◆ 技術特性 Technical Characteristics

項目 Item	特性值 Value
工作速度 Operating speed	0.1mm ~ 1m/s (無動臂時 No lever)
工作頻率 Operating frequency	機械 60次/min;電氣 25次/min Mechanical 60 cycles/min;Electrical 25 cycles/min
絕緣電阻 Insulation resistance	≥ 100MΩ (500VDC)
接觸電阻 Contact resistance	≤ 50mΩ
耐電壓 Test voltage	同極不相接端子間 Between not connect terminals of the same polarity
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance	耐久 endurance: 1000m/s ² (約100G approx.100G)max 誤動作 Wrong action:300m/s ² (約30G approx.30G)max
防觸電保護等級 Electric shock proof protection grade	II 級 class
外殼防護等級 Degree protection provided by enclosure	IEC IP60 (特定規格 specific specification)
壽命 Life	機械 ≥ 1,000,000次; Mechanical ≥ 1,000,000 cycles 電氣 ≥ 50,000次; Electrical ≥ 50,000 cycles
安全認證 Safety approvals	UL、CUL、TUV、SEMKO、CE

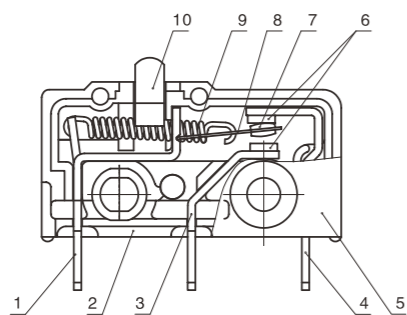
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◆ 型號規格命名及含義 Model number legend and meanings

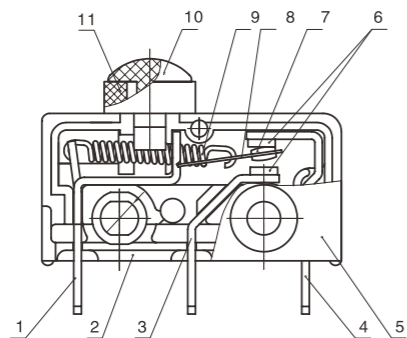
MS2 □-□□□□-□□□□-(□)
1 2 3 4 5 6 7 8 9 10

1 溫度等級 Degrees of temperature	無標記 No mark: T100		F:焊接端子 solder terminal P:PCB端子 PCB terminal H:PCB端子之二 PCB terminal No.2 S:PCB端子之三 PCB terminal No.3 L:左側面PCB端子 Left side PCB terminal R:右側面PCB端子 Right side PCB terminal T:110快接端子 110 quick-connect Y:非標準端子 not standard terminal
2 額定值 Ratings	無標記 No mark: 5A125VAC 5(2)A250VAC 1/10hp250VACa	6 端子類型 Terminal types	
3 接觸形式 Circuit	Z:轉換式 SPDT T:常開(按通)式 SPST-NO D:常閉(按斷)式 SPST-NC (見說明圖 See illustration)	7 動作力(MAX) Operating force	100: 1N 150: 1.5N 200: 2N 300: 3N 注:若是非標準動作力,用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
4 驅動形式 Actuator forms	0:無動臂 No lever 3:中動臂 Middle lever	8 按鈕規格 Plunger specs	無標記 No mark:標準按鈕standard lever A: 非圓形按鈕 Not round plunger
5 外殼類型 Cover types	無標記 No mark: 上面無凸臺 no convexity upside C: 上面有凸臺 Has convexity upside (見說明圖See illustration)	9 防護等級 Degrees of protection provided by enclosure	無標記 No mark: 不密封Non sealed S: 密封Sealed IP60
		10 附加規格代號 Append specs code	適用於apply to: 1)當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2)當顧客有特殊動作特性值或其它要求時; When customer has particular operating value or other requirements. ■ 附加規格代號用阿拉伯數字表示,在沒有附加規格編號時,該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

◆ 內部構造圖 Internal configuration drawing



- 1: 支架 Support
- 2: 基座 Case
- 3: 常開端子 NO terminal
- 4: 常閉端子 NC terminal
- 5: 蓋 Cover
- 6: 電觸點 Contact
- 7: 電觸點 Contact
- 8: 可動片 Moving piece
- 9: 拉簧 Pull spring
- 10: 按鈕 Plunger



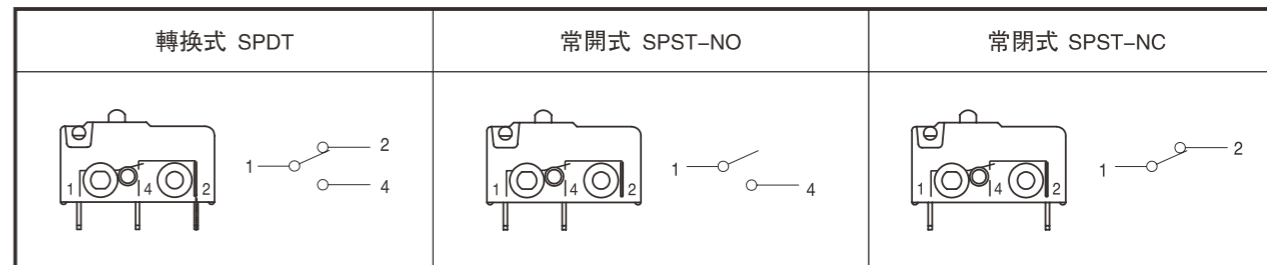
- 1: 支架 Support
- 2: 基座 Case
- 3: 常開端子 NO terminal
- 4: 常閉端子 NC terminal
- 5: 蓋 Cover
- 6: 電觸點 Contact
- 7: 電觸點 Contact
- 8: 可動片 Moving piece
- 9: 拉簧 Pull spring
- 10: 按鈕 Plunger
- 11: 防塵圈 Dustproof ring

◆ 接線端尺寸 Terminal dimensions

F: 焊接端子 Solder terminal	T: 快接端子 #110 Quick connect terminal #110	P: PCB端子 PCB terminal
	H: PCB端子之二 PCB terminal No.2	S: PCB端子之三 PCB terminal No.3

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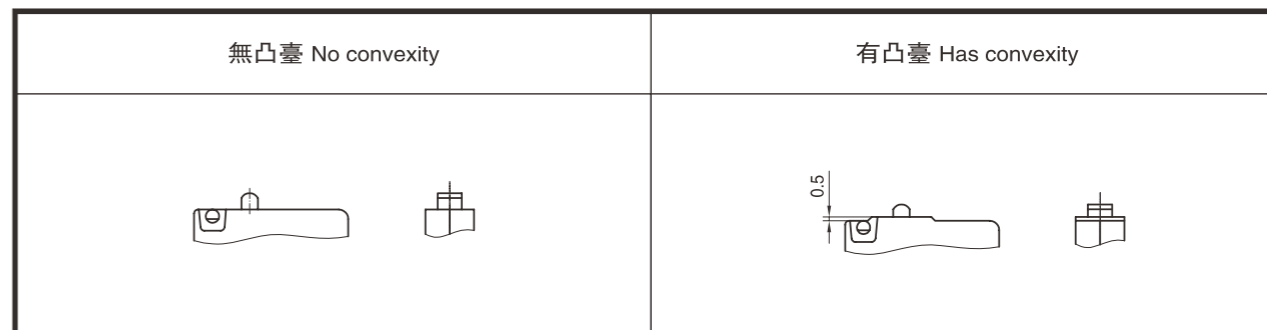
◆ 接觸形式說明圖 Circuit illustration



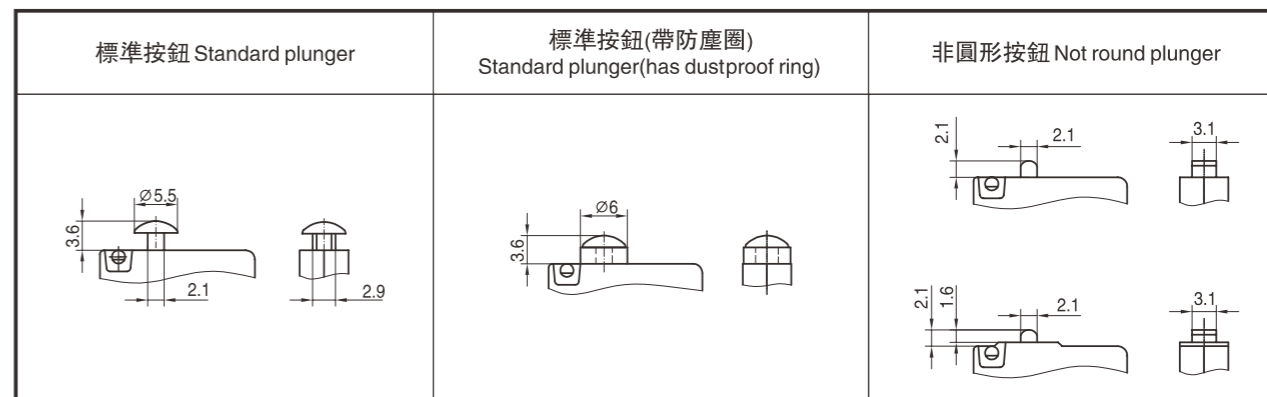
◆ 安裝孔尺寸 Mounting hole dimensions



◆ 外殼類型圖 Cover types drawing

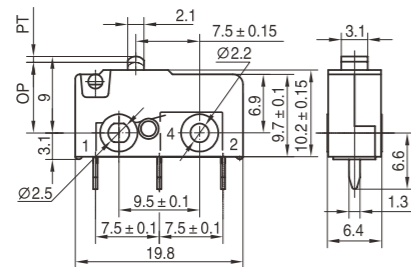


◆ 按鈕規格說明圖 Plunger spec illustration



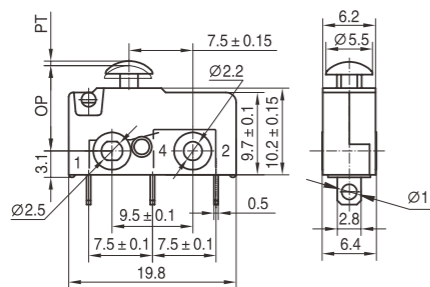
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS2-□Z0C-P100A
MS2-□Z0C-P150A
MS2-□Z0C-P200A
MS2-□Z0C-P300A



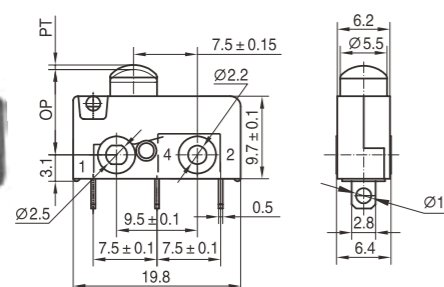
型號 Model	MS2-□Z0C-P100A	MS2-□Z0C-P150A	MS2-□Z0C-P200A	MS2-□Z0C-P300A
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.25	0.40	0.60	0.80
PT Max(mm)	0.8			
OT Min(mm)	0.5			
MD Max(mm)	0.2			
OP(mm)	8.5 ± 0.4			

MS2-□Z0C-F100
MS2-□Z0C-F150
MS2-□Z0C-F200
MS2-□Z0C-F300



型號 Model	MS2-□Z0C-F100	MS2-□Z0C-F150	MS2-□Z0C-F200	MS2-□Z0C-F300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.25	0.40	0.60	0.80
PT Max(mm)	0.8			
OT Min(mm)	0.5			
MD Max(mm)	0.2			
OP(mm)	9.8 ± 0.4			

MS2-□Z0-F150S
MS2-□Z0-F200S
MS2-□Z0-F300S



型號 Model	MS2-□Z0-F150S	MS2-□Z0-F200S	MS2-□Z0-F300S
OF Max(N)	1.50	2.00	3.00
RF Min(N)	0.60	0.80	1.30
PT Max(mm)	0.8		
OT Min(mm)	0.5		
MD Max(mm)	0.2		
OP(mm)	9.8 ± 0.4		

To provide a safe and reliable on-off service, let electric appliances more perfect

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◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

【Common use】please refer to related pages

■ 關於和端子的連接 Concerning the connection with terminals

(1) 將導線焊接到端子上時，請先將導線穿過端子孔後再進行焊接。

When jointing the wire to the terminal, please thread through the wire to the hole of the terminal first.

(2) 烙鐵的容量應為60W以下，焊接時間在3s之內。若操作溫度過高或時間過長，可能導致開關特性劣化。

The iron capacity should be below 60W, joint time within 3s. If operate temperature is too high or time is too long, switch characteristic may be worsen

(3) 請採用手工焊接。因為如果採用焊槽焊接，焊錫可能進入開關內部而導致接觸不良。

Please joint with hands. If joint with wave soldering, soldering tin may come inside the switch, then bad contact will happen.

(4) 對於快接式端子，插套插入插片時，應避免在端子的橫向加力，以免引起端子變形和外殼破損。

Regarding the quick connect terminal, when insert slipcover into the insert piece, please do not exert transverse press to the terminal, in order to avoid terminal distort and cover breakage.

■ 關於絕緣距離 Concerning insulation distance

根據IEC 61058-1/EN 61058-1/GB 15092.1之規定，本開關的最小絕緣層厚度為1.1mm，端子和安裝板之間的最小空間距離為1.6mm。如果無法確保零部件所要求的絕緣距離，請使用絕緣護罩或隔板來保證絕緣距離。

According to IEC 61058-1/EN 61058-1/GB 15092.1, the least thickness insulation layer should be 1.1mm, the smallest space distance between the terminal and install board is 1.6mm. If the parts insulation distance cannot be guaranteed please use insulate cover or the guard board to guarantee the insulation distance.

■ 關於安裝 Concerning installation

(1) 開關的安裝、拆卸和配線作業以及維護檢查時，請務必斷開電源，否則會引起觸電和燒毀。

Please turn off the power when installing, disassembling, wiring work and maintenance check, otherwise, electric shock and burn will happen.

(2) 安裝時，使用2個M2.3螺釘，用平墊圈、彈簧墊圈等緊固，並請使用0.23~0.26N·m的緊固轉矩。

When installing, please use 2 M2.3 screws, then tight it with flat washer, spring washer, and also tight with 0.23~0.26N·m torque.

(3) 開關請安裝在平面上。如果安裝面凹凸不平，可能導致開關歪斜、動作失常和外殼破損。

Please install switch on flat surface. If it is installed in uneven surface, switch deflection, malfunction and cover breakage will happen.

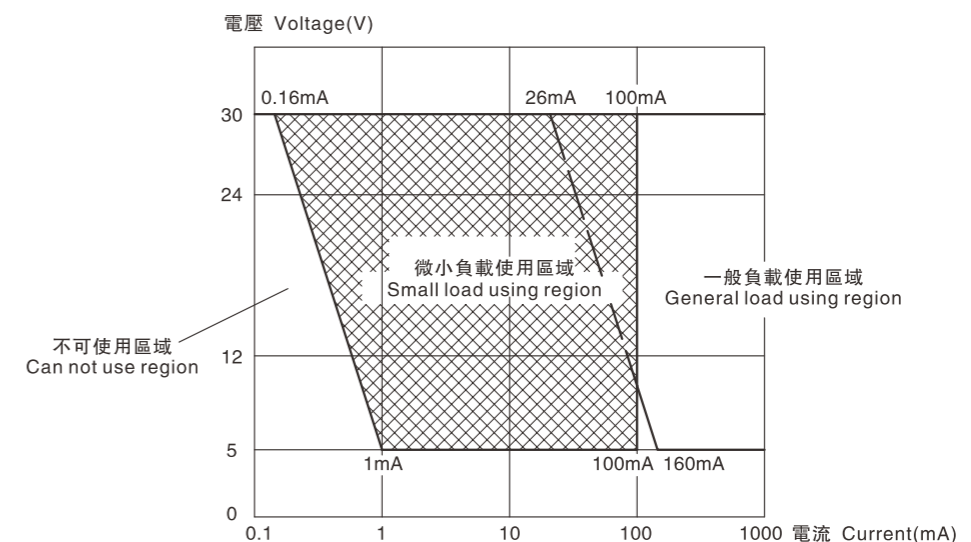
■ 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

Use general load switch in small load circuit, bad contact maybe happen.

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

Please refer to the chart below, use switch within using region, and insert contact to protect circuit according to the needs.



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MS3型微動開關系列 Micro switch series

◆ 特點和用途 Characteristics and usage

- 帶保護功能
Has protection function.
- 可在排水泵及類似設備上使用
Can be used in drainage pump and such similar equipments.



◆ 技術特性 Technical Characteristics

項目 Item	特性值 Value
工作速度 Operating speed	0.1mm ~ 1m/s (無動臂時 No lever)
工作頻率 Operating frequency	機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25 cycles/min
絕緣電阻 Insulation resistance	≥100MΩ (500VDC)
接觸電阻 Contact resistance	≤50mΩ
耐電壓 Test voltage	同極不相接端子間 Between not connect terminals of the same polarity
	帶電金屬零件與地(外殼)之間、接綫端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10~55Hz, 1.5mm雙振幅 Double amplitude
抗衝擊 Shock resistance	耐久: 1000m/S ² (約100G) 最大 endurance: 1000m/S ² (approx 100G) max 誤動作: 300m/S ² (約30G) 最大 Wrong action: 300m/S ² (approx.30G) max
防觸電保護等級 Electric shock proof protection grade	II 級 class
壽命 Life	機械 ≥ 500,000 次; Mechanical ≥ 500,000 cycles 電氣 ≥ 50,000 次; Electrical ≥ 50,000 cycles
安全認證 Safety approvals	UL、CUL、ENEC、DEMKO、EK、CQC

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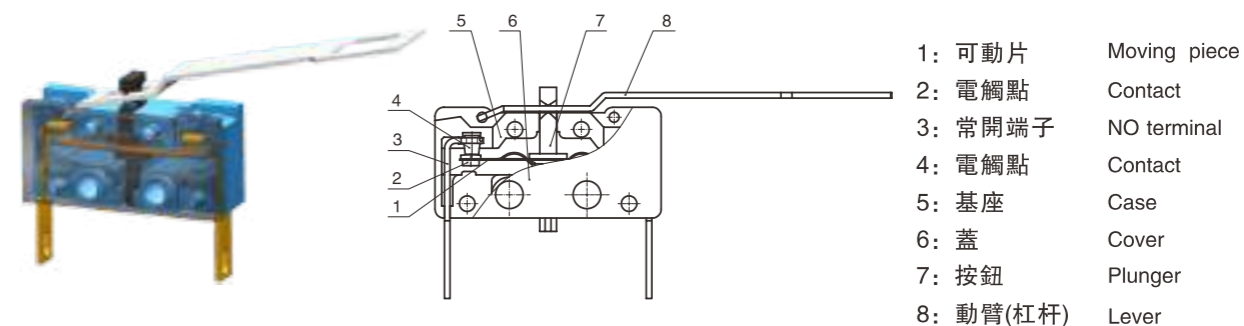
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◆ 型號規格命名及含義 Model number legend and meanings

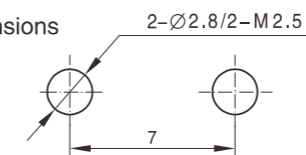
MS3 □-□□□□-□□□-□
1 2 3 4 5 6 7 8 9

1 溫度等級 Degrees of temperature	無標記 No mark: T85	6 端子類型 Terminal types	T:快接端子 Quick-connect terminal Y:非標準端子 Not standard terminal
2 額定值 Ratings	無標記 No mark: 6A125V/250VAC 6GPA125/250VAC 6(3)A125/250VAC 6RA125/250VAC 1/4hp250VAC 1/8hp125VAC	7 動作力(max) Operating force	50: 0.5N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
3 接觸形式 Circuit	D:常閉(按斷)式 SPST-NC	8 按鈕規格 Plunger specs	無標記 No mark: 標準按鈕 standard lever
4 驅動形式 Actuator forms	0:無動臂 No lever 1:標準動臂 Short lever <input type="checkbox"/> 非標準動臂 Not standard lever 注: <input type="checkbox"/> 表示非標準動臂的代號, B表示動臂安裝在離按鈕的遠端。 Note: <input type="checkbox"/> Indicate not standard lever, B indicate the lever far away from the plunger	9 附加規格代號 Append specs code	適用於 apply to: 1)當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2)當顧客有特殊動作特性值或其它要求時; When customer has particular operating value or other requirements. ■ 附加規格代號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.
5 端子位置 Terminal position	A:下面 Below		

◆ 內部構造圖 Internal configuration drawing

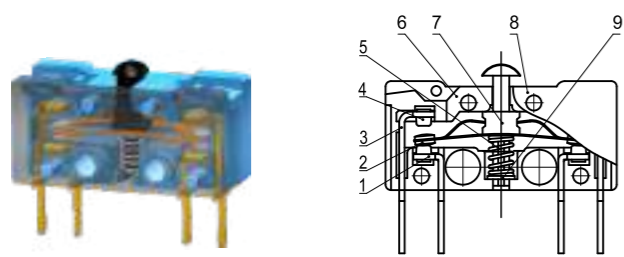


◆ 安裝孔尺寸 Mounting hole dimensions



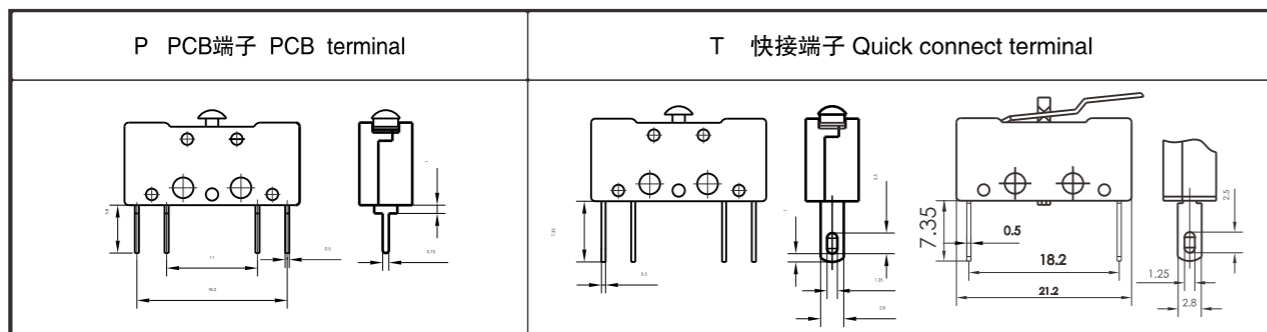
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◆ 内部構造圖 Internal configuration drawing

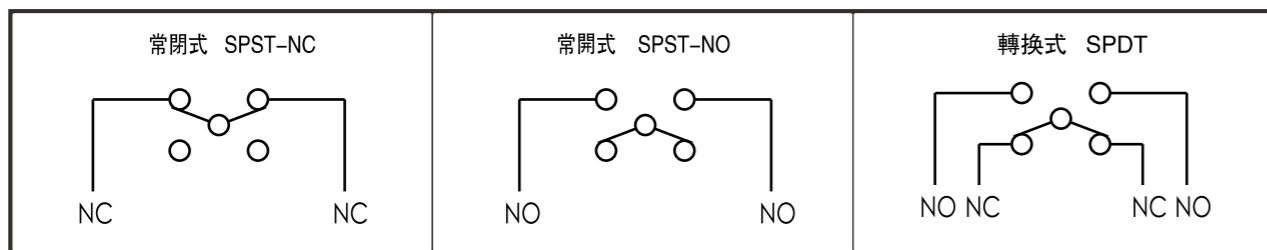


- 1: 常閉端子 NC terminal
- 2: 電觸點 Contact
- 3: 常開端子 NO terminal
- 4: 電觸點 Contact
- 5: 彈簧 Spring
- 6: 基座 Case
- 7: 按鈕 Plunger
- 8: 蓋 Cover
- 9: 墊圈 Cushion ring

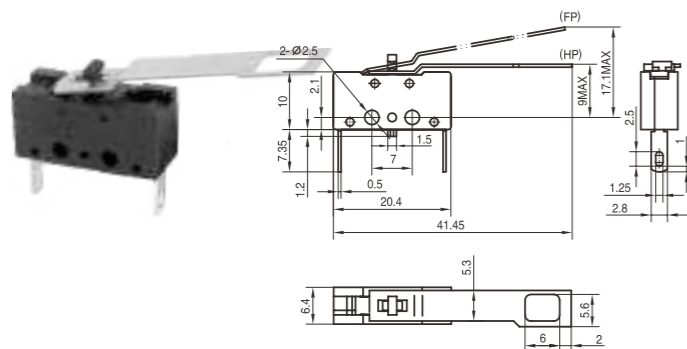
◆ 接線端配置及尺寸 Connect terminals collocation and dimensions



◆ 接觸形式說明圖 Circuit illustration

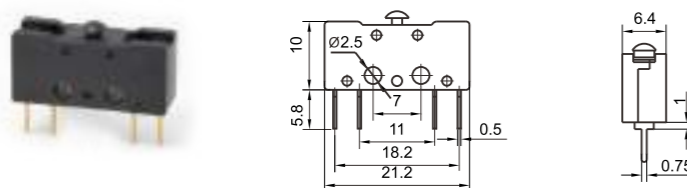


MS3-D1A-T050



型號 Model	MS3-D1A-T050
正向動作力 Positive direction operating force	0.10N MAX
反向動作力 Negative direction operating force	0.07N MAX
正向行程 Positive direction travel	7mm MAX
反向行程 Negative direction travel	5.5mm MAX
正向自由位置 Positive direction free position	17.1mm MAX
反向自由位置 Negative direction free position	9mm MAX
正向動作位置 Positive direction operating position	10.1 ± 0.3mm
反向動作位置 Negative direction operating position	13.5 ± 0.3mm

MS3-Z0A-P160B



型號 Model	MS3-Z0A-P160B
OF MAX(N)	1.60
RF MIN(N)	0.40
PT MAX(mm)	1.0
OP(mm)	8.4 ± 0.4

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MS5型微動開關系列 Micro switch series

◆ 用途 Usage

主要應用於轎車中控鎖及車窗控制
Mainly used in car lock and window control



◆ 型號規格命名及含義 Model number legend and meanings

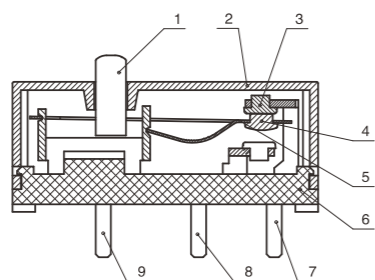
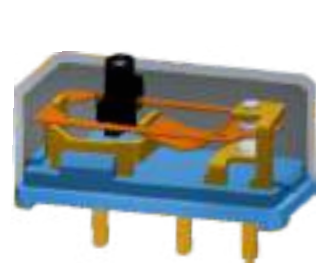
MS5 -□-(□)
1 2

1 額定值 Ratings	2 附加代號 Append specs code
3 : 3A 12VDC 6 : 6A 12VDC 10 : 10A 12VDC	適用於 apply to: 當顧客有特殊要求時 When customers need special requirements 附加代號用拉丁字母表示,在沒有附加時,該位置空缺。 Additional spec number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

◆ 技術特性 Technical Characteristics

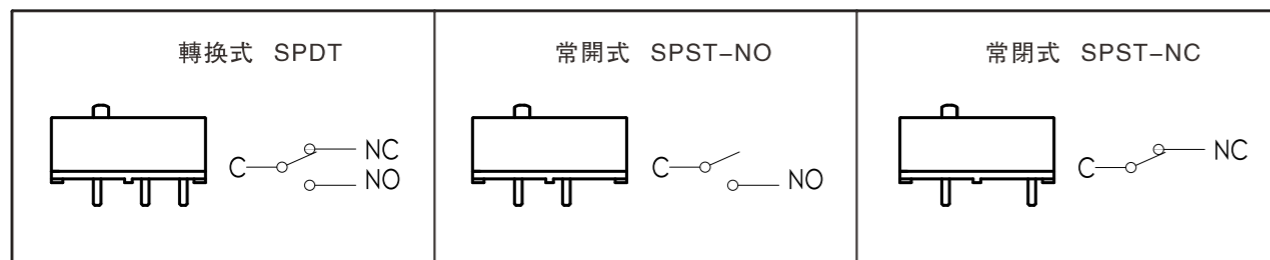
項目 Item	特性值 Value	
環境溫度 Environment temperature	-40~+85°C	
相對濕度 Relative humidity	45%~85%,40°C	
額定電流 Rated current	3A/6A/10A	
額定電壓 Rated voltage	DC12V	
動作力 Operating force	≤4.5N	
工作速度 Operating speed	0.1mm~1m/s	
工作頻率 Operating Frequency	機械60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25cycles/min	
絕緣電阻 Insulation resistance	≥100MΩ(500VDC)	
接觸電阻 Contact resistance	≤50mΩ	
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V,50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、 接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC2000V, 50/60Hz, 1min
抗振動 Vibration resistance	10~55Hz,1.5mm雙振幅double amplitude	
抗衝擊 Shock resistance	耐久: 1000m/S ² (約100G) 最大 endurance: 1000m/S ² (approx 100G) max 誤動作: 300m/S ² (約30G) 最大 Wrong action: 300m/S ² (approx.30G) max	
壽命 Life	機械 ≥100,000次 Mechanical ≥100,000 cycles 電氣 ≥30,000次 Electrical ≥30,000 cycles	

◆ 内部構造圖 Internal configuration drawing

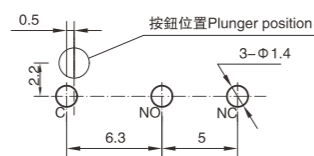


- 1: 按鈕 Plunger
- 2: 蓋 Cover
- 3: 電觸點 Contact
- 4: 電觸點 Contact
- 5: 可動片 Moving piece
- 6: 基座 Case
- 7: 常閉端子 NC terminal
- 8: 常開端子 NO terminal
- 9: 支架 Support

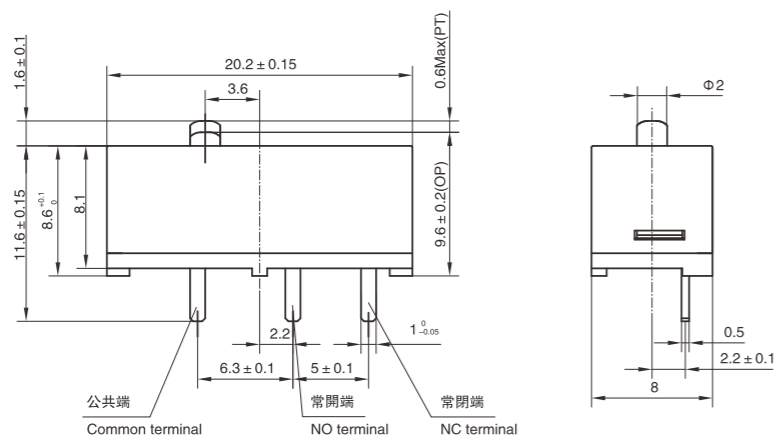
◆ 接觸形式說明圖 Circuit illustration



◆ 安裝孔尺寸 Mounting hole dimension



◆ 外形尺寸 Dimensions



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MS6型微動開關系列 Micro switch series

◆ 特點和用途 Characteristic and usage

- 接觸穩定，防止誤動作，便于拆卸，抗震能力强。
Contact stability, prevent misoperation, easy to disassemble, strong anti-seismic ability.
- 可在汽車等領域使用。
It can be used in automobile and other fields.



◆ 技術特性 Specifications

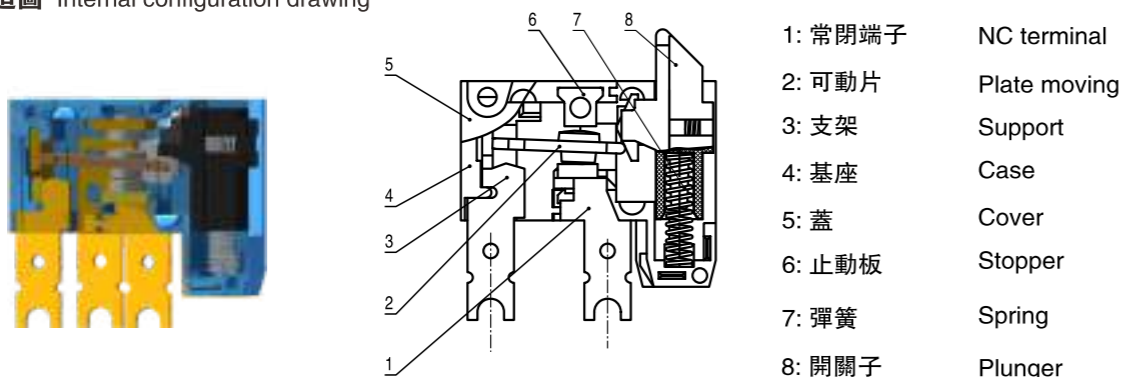
項目 Item	特性值 Value
工作速度 Operating speed	0.1mm ~ 1m/s (無動臂時no lever)
工作頻率 Operating Frequency	機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25cycles/min
絕緣電阻 Insulation resistance	≥ 100MΩ (500VDC)
接觸電阻 Contact resistance	≤ 50MΩ
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground (case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance	耐久 endurance: 1000m/s ² (約100G approx.100G)max 誤動作 Wrong action: 300m/s ² (約30G approx.30G)max
防觸電保護等級 Electric shock proof protection grade	II 級 class
壽命 Life	機械 ≥ 500,000 次; Mechanical ≥ 500,000 cycles 電氣 ≥ 250,000 次; Electrical ≥ 250,000 cycles

◆ 型號規格命名及含義 Model number legend and meanings

MS6 □-□□□-□□□-□-(□)
1 2 3 4 5 6 7 8 9

1 溫度等級 Degree of temperature	無標記 No mark: 40T85	6 動作力(MAX) Operating force	400: 4N 200: 2N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
2 額定值 Rating	無標記 10A 24VDC A: 13A 12VDC B: 5.5A 24VDC C: 1A 28VDC D: 5A 24VDC/10A 12VDC	7 按鈕規格 Plunger specs	L 長按鈕 S 短按鈕 <input type="checkbox"/> 非標按鈕代號 (用字母表示)
3 接觸形式 Circuit	Z:轉換式 SPDT T:常開(按通)式 SPST-NO D:常閉(按斷)式 SPST-NC (見說明圖 See illustration)	8 復位代號 Reset code	R 有復位 N 無復位
4 驅動形式 Actuator forms	0:無動臂 No lever <input type="checkbox"/> 動臂代號 (用A、B、C……表示)	9 附加規格編號 Append specs numbers	適用於apply to: 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 當顧客有特殊動作特性值或其它要求時。 When customer has particular operating value or other requirements. 附加規格編號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.
5 端子類型 Terminal types	A: 250快接端子 250 Quick-connect terminal <input type="checkbox"/> 動臂代號 (用A、B、C……表示)		

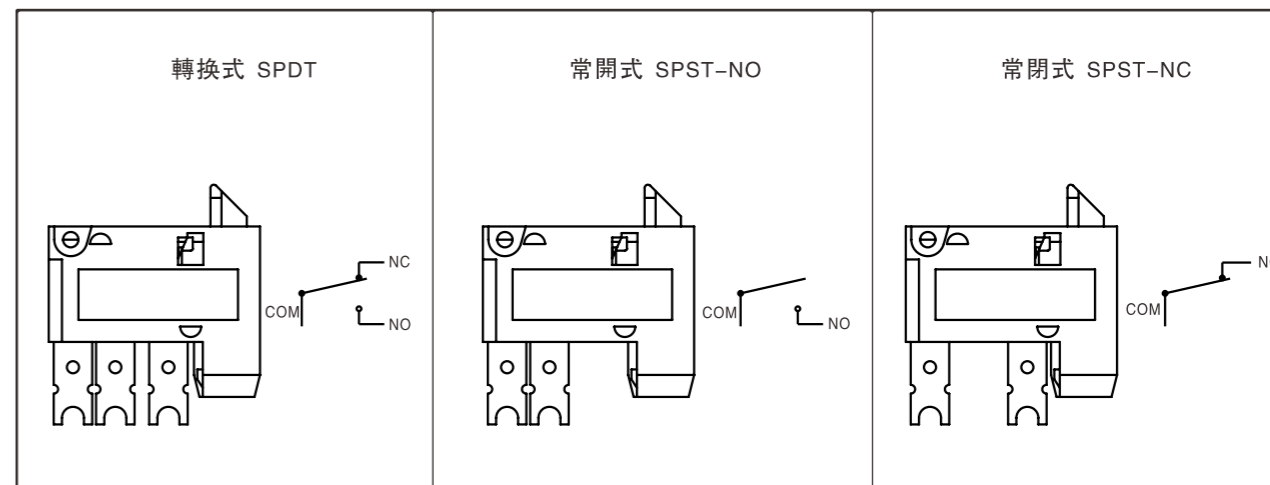
◆ 內部構造圖 Internal configuration drawing



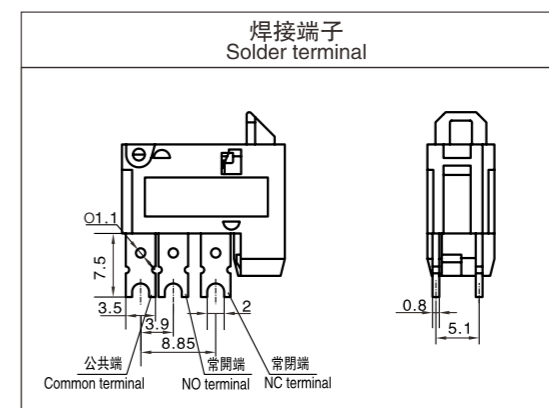
To provide a safe and reliable on-off service, let electric appliances more perfect

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◆ 接觸形式說明圖 Circuit illustration

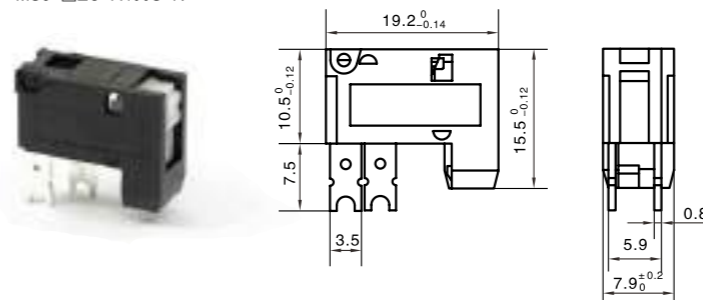


◆ 接線端尺寸 Terminal dimensions



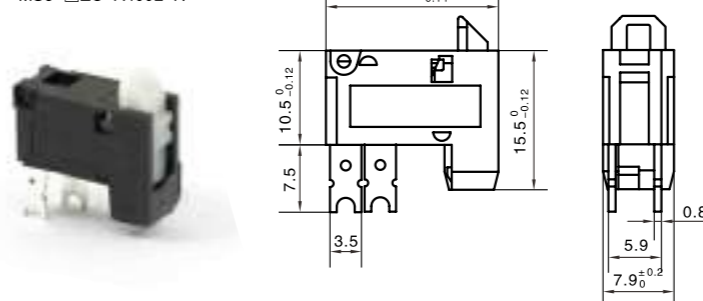
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS6-□ZO-A400S-R



型號 Model	MS6-□ZO-A400S-R
OF Max(N)	4
RF Min(N)	0.4
PT Max(mm)	2.15
OP (mm)	7.6-8.1
RP (mm)	8.3-8.9
TTP (mm)	≤7

MS6-□ZO-A400L-R

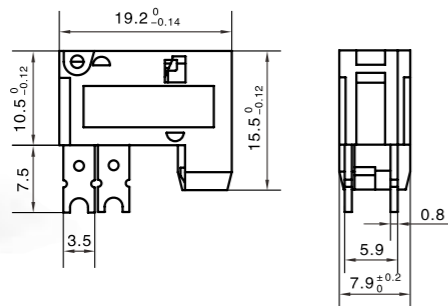


型號 Model	MS6-□ZO-A400L-R
OF Max(N)	4
RF Min(N)	0.4
PT Max(mm)	2.2
OP (mm)	12.2-12.7
RP (mm)	12.9-13.5
TTP (mm)	≤11.65

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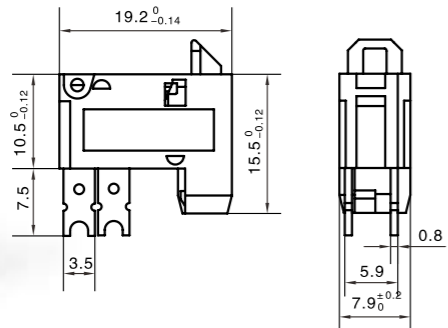
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS6-□ZO-A200S-N



型號 Model	MS6-□ZO-A200S-N
OF Max(N)	2
PT Max(mm)	2.15
OP (mm)	7.6-8.1
RP (mm)	8.3-8.9
TTP (mm)	≤7

MS6-□ZO-A200L-R



型號 Model	MS6-□ZO-A200S-N
OF Max(N)	2
PT Max(mm)	2.2
OP (mm)	12.2-12.7
RP (mm)	12.9-13.5
TTP (mm)	≤11.65

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◆ MS7型微動開關系列 Micro switch series

◆ 特點和用途 Characteristic and usage

- 接觸穩定，超小型，便于拆卸，抗震能力强。
Contact stability, Mini-type, easy to disassemble, strong anti-seismic ability.
- 可在家用電器等領域使用
It can be used in home appliances and other fields



◆ 技術特性 Specifications

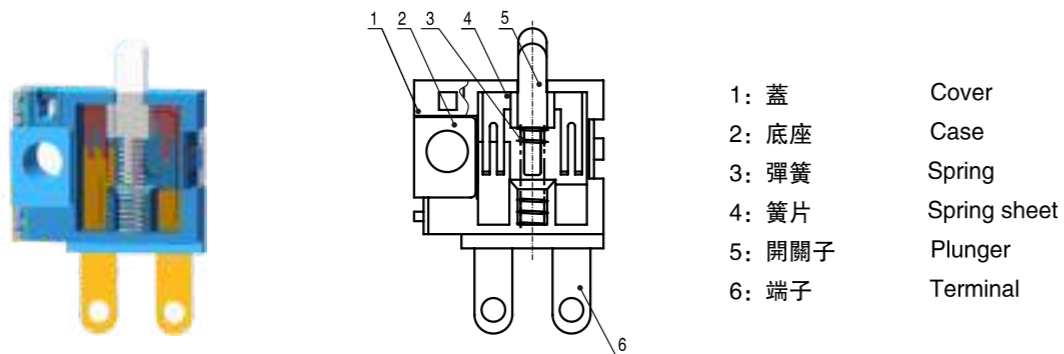
項目 Item	特性值 Value
溫度等級 Degree of temperature	25T85
動作位置 Operating position	4.3 ± 0.4 mm
動作力 Operating force	0.39 ± 0.25N(40 ± 25gf)
絕緣電阻 Insulation resistance	≥100MΩ (500VDC)
接觸電阻 Contact resistance	≤200mΩ
耐電壓 Test voltage	AC250V
壽命 Life	電氣 ≥30,000次 Electrical ≥30,000 cycles

◆ 型號規格命名及含義 Model number legend and meanings

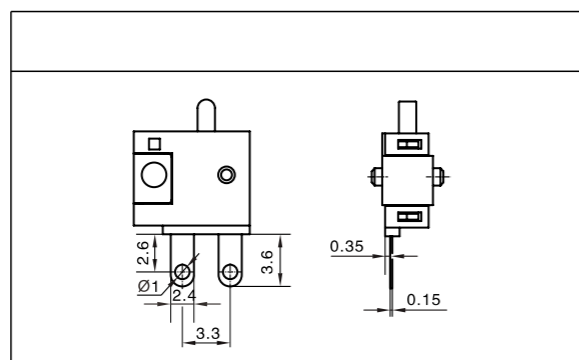
MS7 - □ □ - □ - (□)
1 2 3 4

1 額定值 Rating	無標記 No mark: 0.1mA-15mA 6VDC	3 端子類型 Terminal types	□端子代號(用A、B、C……表示) (英文)
2 驅動形式 Actuator forms	0: 無動臂 □動臂代號(用A、B、C……表示)	4 附加規格代號 Append specs code	附加規格編號用阿拉伯數字表示，在沒有附加規格編號時，該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

◆ 内部構造圖 Internal configuration drawing

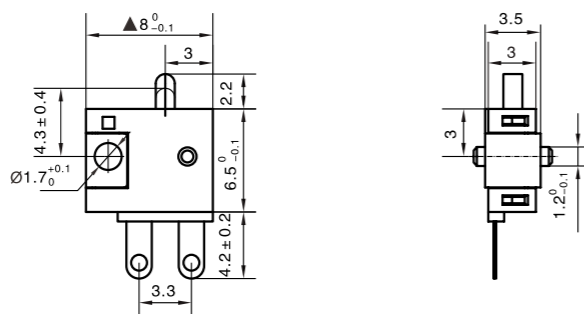


◆ 接線端尺寸 Terminal dimensions

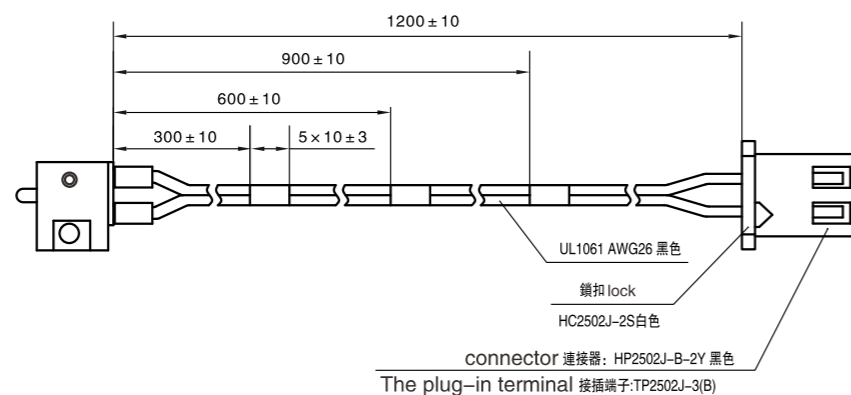


◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS7-0-A



MS7-0-A-02



MS9型微動開關系列 Micro switch series

◆ 特點和用途 Characteristic and usage

- 結構緊湊、接觸穩定可靠；廣泛應用於家用電器、電動工具、玩具、傳真機和報警器等。
Compact structure, stable and reliable contact, widely used in household appliances, power tools, toys, fax machines and alarms.
- 開關超行程在0.6mm以上
Switch over travel more than 0.6mm
- 點接觸穩定可靠
Point contact is stable and reliable
- 接線端子種類齊全，可配備各種導線。
A variety of contact terminals, provide with variety kinds of wire.
- 配備各種形式動臂
Variety of levers



◆ 技術特性 Specifications

項目 Item	特性值 Value	
環境溫度 Environment temperature	-40 ~ +125°C	
工作速度 Operating speed	30mm ~ 600mm/s (無動臂時no lever)	
工作頻率 Operating Frequency	機械 60次/min; 電氣 15次/min Mechanical 60 cycles/min; electrical 15cycles/min	
絕緣電阻 Insulation resistance	≥100MΩ (500VDC)	
接觸電阻 Contact resistance	≤50MΩ	
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V, 50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬零件之間 Between current-carrying metal parts and ground (case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude	
抗衝擊 Shock resistance	耐久 endurance: 1000m/s ² (約100G approx.100G)max 誤動作 Wrong action: 300m/s ² (約30G approx.30G)max	
外殼防護等級 Degree protection provided by enclosure	IEC IP40	
電氣壽命 Electrical life	≥10,000次cycles or ≥50,000次cycles	
機械壽命 Mechanical life	≥1000,000次cycles	

◆ 型號規格命名及含義 Model number legend and meanings

MS9 - □ □ □ - □ □ □ - (□)
1 2 3 4 5 6 7

1 額定值 Ratings	A: 10.1AGP 125/250VAC 1/4HP 125VAC(UL) 10(4)A 250VAC(EN) 1E4 40T125	4 端子類型 Terminal types	R:右側面PCB端子 Right side PCB terminal T:110快接端子 110 quick-connect Y:非標準端子 not standard terminal
	B: 6AGP 125/250VAC(UL) 6A 250VAC(EN) 5E4 40T125		
2 接觸形式 Circuit	C: 1AGP 125/250VAC(UL) 1A 250VAC(EN) 5E4 40T125	5 動作力(MAX) Operating force	070: 0.7N 150: 1.5N 250: 2.5N 300: 3N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
	D: 0.1AGP 125/250VAC(UL) 0.1A 250VAC(EN) 5E4 40T125		
3 驅動形式 Actuator forms	Z:轉換式 SPDT T:常開(按通)式 SPST-NO D:常閉(按斷)式 SPST-NC (見說明圖 See illustration)	6 安裝孔類型 Mounting hole type	無標記:無定位銷 no fixing pin L:左側面固定銷left side fixing pin R:右側面固定銷right side fixing pin
	0:無動臂 No lever 1:短直動臂 Short straight lever 2:長直動臂 Long straight lever 3:中直動臂 Middle straight lever 5:滾輪動臂 Roller lever 6:弧形動臂 Arc lever <input type="checkbox"/> 非標準動臂 Not standard lever		
4 端子類型 Terminal types	F:焊接端子 solder terminal P:PCB端子 PCB terminal L:左側面PCB端子 Left side PCB terminal	7 附加規格代號 Append specs code	特殊要求 (用兩位數字表示) Special Requirements (in two Arabic numerals)

◆ 接線端尺寸 Terminal dimensions

F:焊接端子 solder terminal	P:PCB端子1 (0.6×0.5) PCB terminal 1	B:PCB端子2 (1.3×0.5) PCB terminal 2
L:左側面PCB端子 Left side PCB terminal	R:右側面PCB端子 Right side PCB terminal	T:110快接端子 Quick connect terminal #110

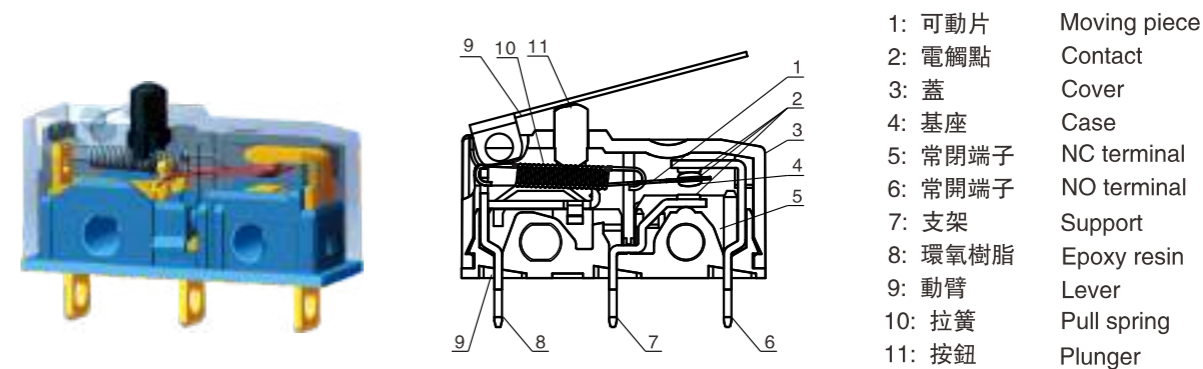
◆ 安裝孔尺寸 Mounting hole dimension

安裝孔安裝 Mounting holes	PCB端子安裝 PCB terminal	左/右側面PCB端子 Left/Right Side Terminals

◆ 接觸形式說明圖 Circuit illustration

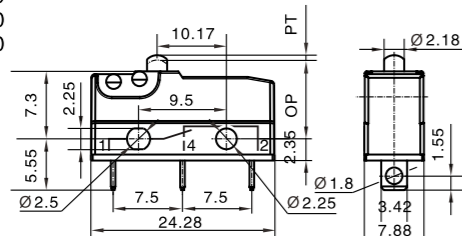
轉換式 SPDT 	常開式 SPST-NO 	常閉式 SPST-NC
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◆ 內部構造圖 Internal configuration drawing



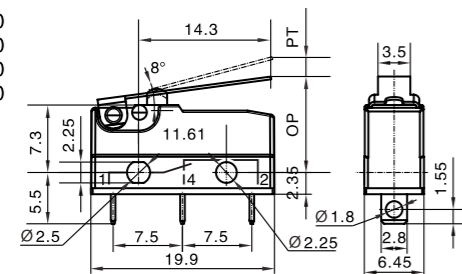
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS9-□Z0-F100
MS9-□Z0-F150
MS9-□Z0-F250
MS9-□Z0-F300



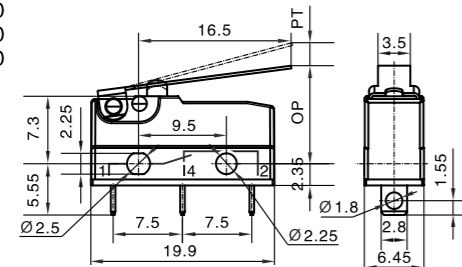
型號 Model	MS9-□Z0-F100	MS9-□Z0-F150	MS9-□Z0-F250	MS9-□Z0-F300
OF Max(N)	1.00	1.50	2.50	3.00
RF Min(N)	0.10	0.35	0.40	0.60
PT Min(mm)	1.1			
OT Min(mm)	0.6			
MD Max(mm)	0.2			
OP(mm)	8.4 ± 0.3			

MS9-□Z0-F100
MS9-□Z0-F150
MS9-□Z0-F250
MS9-□Z0-F300



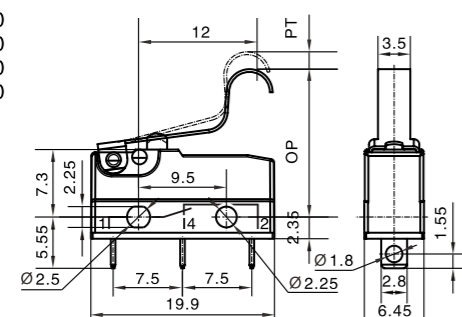
型號 Model	MS9-□Z3-F100	MS9-□Z3-F150	MS9-□Z3-F250	MS9-□Z3-F300
OF Max(N)	0.45	0.60	1.00	1.20
RF Min(N)	0.03	0.08	0.10	0.15
PT Min(mm)	4.00	4.00	4.50	4.50
OT Min(mm)	2.00	2.00	1.50	1.50
MD Max(mm)	0.80	0.80	0.80	0.80
OP(mm)	10.7 ± 1.3	10.7 ± 1.3	10.7 ± 1.6	10.7 ± 1.6

MS9-□Z0-F100
MS9-□Z0-F150
MS9-□Z0-F250
MS9-□Z0-F300



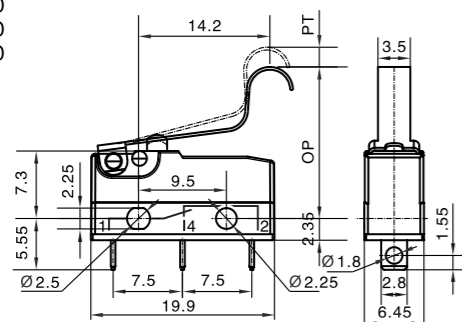
型號 Model	MS9-□Z2-F100	MS9-□Z2-F150	MS9-□Z2-F250	MS9-□Z2-F300
OF Max(N)	0.40	0.50	0.85	1.10
RF Min(N)	0.02	0.06	0.08	0.12
PT Min(mm)	4.50	4.50	5.00	5.00
OT Min(mm)	2.00	2.00	1.50	1.50
MD Max(mm)	1.20	1.20	1.20	1.20
OP(mm)	11.1 ± 1.5	11.1 ± 1.5	11.1 ± 1.8	11.1 ± 1.8

MS9-□Z0-F100
MS9-□Z0-F150
MS9-□Z0-F250
MS9-□Z0-F300



型號 Model	MS9-□Z6-F100	MS9-□Z6-F150	MS9-□Z6-F250	MS9-□Z6-F300
OF Max(N)	0.50	0.65	0.95	1.30
RF Min(N)	0.03	0.08	0.12	0.16
PT Min(mm)	4.00	4.00	4.50	4.50
OT Min(mm)	2.00	2.00	1.50	1.50
MD Max(mm)	0.70	0.70	0.70	0.70
OP(mm)	16.0 ± 1.3	16.0 ± 1.3	16.0 ± 1.6	16.0 ± 1.6

MS9-□Z0-F100
MS9-□Z0-F150
MS9-□Z0-F250
MS9-□Z0-F300



型號 Model	MS9-□ZA-F100	MS9-□ZA-F150	MS9-□ZA-F250	MS9-□ZA-F300
OF Max(N)	0.45	0.60	0.95	1.20
RF Min(N)	0.03	0.08	0.11	0.15
PT Min(mm)	4.50	4.50	5.00	5.00
OT Min(mm)	2.00	2.00	1.50	1.50
MD Max(mm)	1.00	1.00	1.00	1.00
OP(mm)	16.4 ± 1.5	16.4 ± 1.5	16.4 ± 1.8	16.4 ± 1.8

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◆ MS10型微動開關系列 Micro switch series

◆ 穩定可靠的微動開關 Stable and reliable micro switch

- 長壽命，高可靠。
Long life, high reliability.
- 低動作力性能穩定
Low operating force stable performance
- 接線端子種類齊全
A variety of contact terminals
- 多種溫度等級
A variety of temperature deprees
- 配備各種形式動臂
A variety of levers



◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
工作速度 Operating speed		0.1mm ~ 1m/s (與驅動方式有關) (related with actuator forms)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25cycles/min
絕緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		動作力>0.75N: ≤50mΩ (見注) 動作力≤0.75N: ≤100mΩ (見注) OF>0.75N: ≤50mΩ (See note) OF≤0.75N: ≤100mΩ (See note)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V, 50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、接線 端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC3750V, 50/60Hz, 1min
抗振動 Vibration resistance		10 ~ 55Hz, 1.5mm 雙振幅 double amplitude
抗衝擊 Shock resistance		破壞: 動作力>0.5N—1000m/s ² (約100G)max 動作力≤0.5N—400m/s ² (約40G)max 故障: 動作力>0.5N—200m/s ² (約20G)max 動作力≤0.5N—100m/s ² (約10G)max Destruction: OF>0.5N—1000m/s ² (approx.100G)max OF≤0.5N—400m/s ² (approx.40G)max Malfunction: OF>0.5N—200m/s ² (approx.20G)max OF≤0.5N—100m/s ² (approx.10G)max
壽命 Life		機械 ≥2,000,000次; Mechanical ≥2,000,000 cycles 電氣 ≥50,000次 Electrical ≥50,000 cycles
質量 Weight		約6g(無動臂型) Approx. 6g(No lever)
安全認證 Safety approvals		UL、CUL、CQC、ENEC、DEMKO

注: 指無動臂時按鈕上的動作力。 Note: Refers to the operating force of no lever.

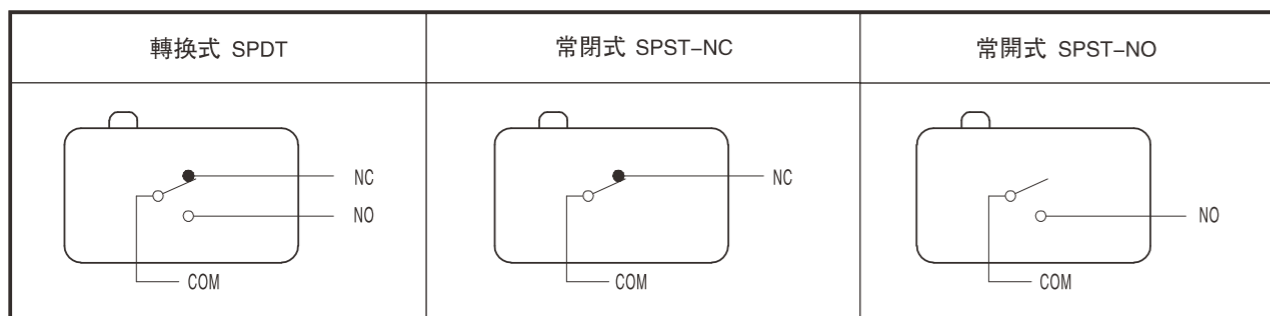
提供安全、可靠的通斷服務，讓電器更完美

◆ 型號規格命名及含義 Model number legend and meanings

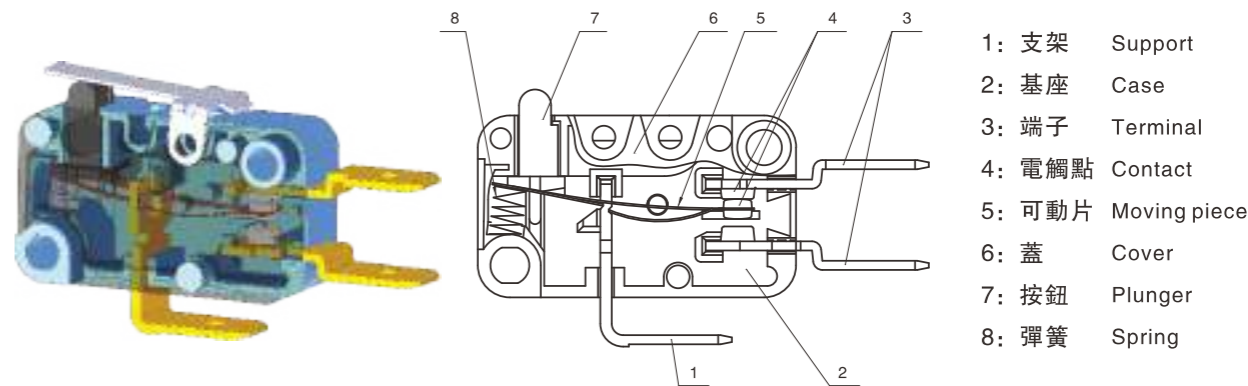
MS10 □-□□□-□□- (□)
1 2 3 4 5 6 7

1 溫度等級 Degrees of temperature	無標記 No mark: 25T125	
2 額定值 Ratings	MS10-16: 16(4)A125/250VAC 16GPA125/250VAC 1/2hp125/250VAC 10A30VDC MS10-10: 10A125/250VAC 10(3)A125/250VAC 10GPA125/250VAC 1/4hp250VAC 1/2hp125VAC 1/3hp125/250VAC 8A30VDC MS10-06: 6A125/250VAC 6(2)A125/250VAC 6GPA125/250VAC 1/4hp125/250VAC 6A30VDC MS10-03: 3A125/250VAC 3(1)A125/250VAC 3GPA125/250VAC 1/6hp125/250VA 3A30VDC MS10-01: 1A125/250VAC 1(0.3)A125/250VAC 1GPA125/250VAC 1/8hp125/250VA 1A30VDC	4 驅動形式 Actuator forms 0: 無動臂 No lever A1/1: 短動臂 Short lever A2/2: 長動臂 Long lever A3/3: 中動臂 Middle lever A4/4: 短滾輪臂 Short roller A5/5: 長滾輪臂 Long roller A6/6: 弧形動臂 Arc lever A: □/□非標準動臂 Not standard lever 注: 1) A 表示動臂安裝在靠近按鈕位置, 無字母A表示動臂安裝在離按鈕較遠位置。 2) □表示非標準動臂的代號。 3) 若動臂為內安裝式, 則在動臂代號後加注字母N。 Note: 1) A Indicate the lever near to the plunger, no A indicate the lever far away from the plunger 2) □Indicate not standard lever plunger. 3) If lever is amoundard inside, add "N" after the lever code.
3 接觸形式 Circuit	Z: 轉換式 SPDT T: 常開(按通)式 SPST-NO D: 常閉(按斷)式 SPST-NC (見說明圖 See illustration)	5 端子類型 Terminal type A: 250快接端子 250 Quick-connect terminal B: 187快接端子(厚0.8mm) 187 quick-connect terminal (thick 0.8mm) C: 187快接端子(厚0.5mm) 187 quick-connect terminal (thick 0.5mm) F: 焊接端子 Solder terminal P: PCB端子 PCB terminal Y: 非標準端子 Not standard terminal 6 動作力(max) Operating force 015: 0.15N 025: 0.25N 050: 0.5N 100: 1N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit. 7 附加規格編號 Additional spec numbers 適用於apply to: 1) 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2) 當顧客有特殊動作特性值或其它要求時。 When customer has particular operating value or other requirements. 附加規格編號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

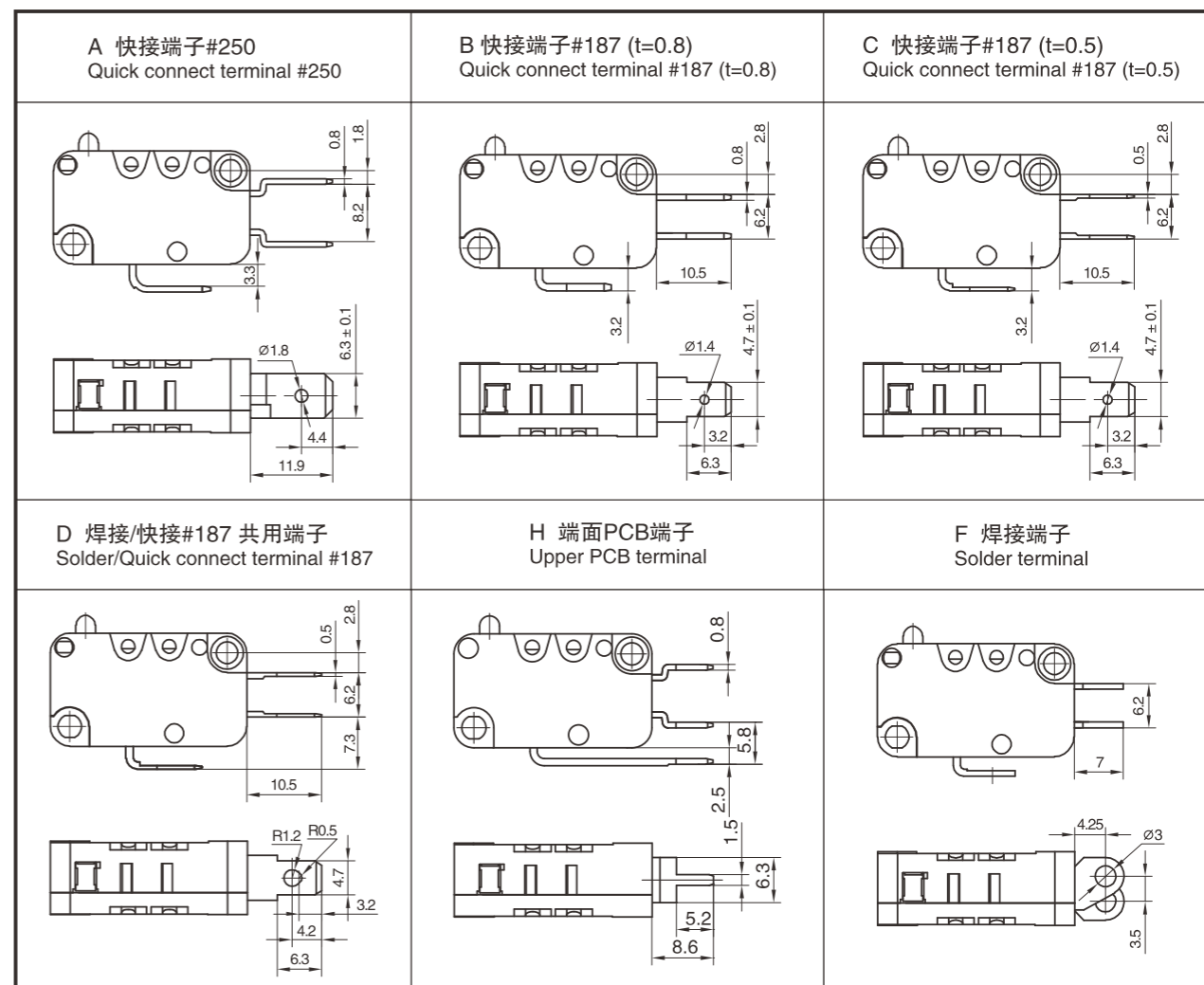
◆ 接觸形式說明圖 Circuit illustration



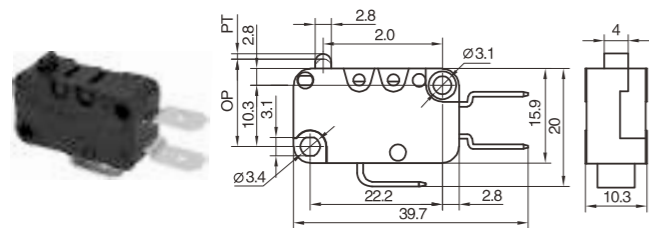
◆ 內部構造圖 Internal configuration drawing



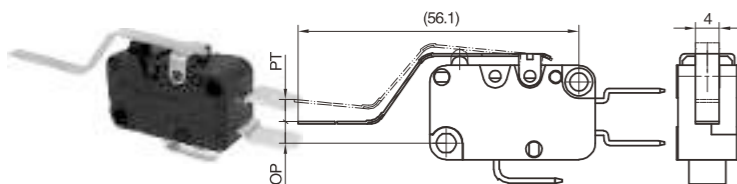
◆ 接線端配置及尺寸 Connect terminals collocation and dimensions



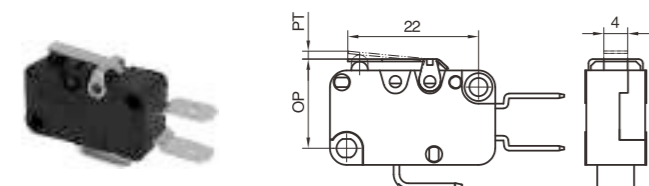
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS10-□Z0-A015
MS10-□Z0-A025
MS10-□Z0-A050
MS10-□Z0-A100

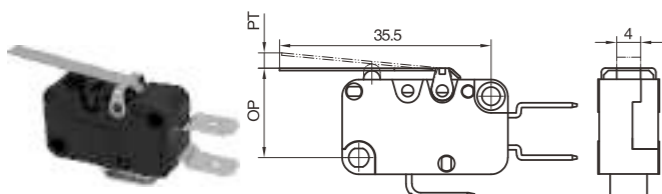
型號 Model	MS10-□Z0-A015	MS10-□Z0-A025	MS10-□Z0-A050	MS10-□Z0-A100
OF Max(N)	0.15	0.25	0.50	1.00
RF Min(N)	0.02	0.06	0.13	0.25
PT Max(mm)	1.2			
OT Min(mm)	1.0			
MD Max(mm)	0.3			
OP(mm)	14.6±0.5			

MS10-□ZB1-A015
MS10-□ZB1-A025
MS10-□ZB1-A050
MS10-□ZB1-A100

型號 Model	MS10-□ZB1-A015	MS10-□ZB1-A025	MS10-□ZB1-A050	MS10-□ZB1-A100
OF Max(N)	0.05	0.065	0.2	0.4
RF Min(N)	0.005	0.015	0.03	0.08
PT Max(mm)	6.2			
OT Min(mm)	2.5			
MD Max(mm)	1.7			
OP(mm)	3.2±2			

MS10-□Z1-A015
MS10-□Z1-A025
MS10-□Z1-A050
MS10-□Z1-A100

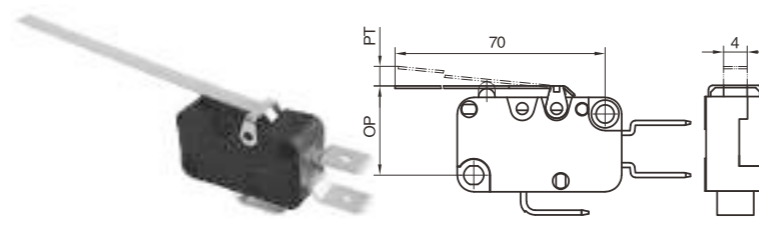
型號 Model	MS10-□Z1-A015	MS10-□Z1-A025	MS10-□Z1-A050	MS10-□Z1-A100
OF Max(N)	0.15	0.25	0.50	1.00
RF Min(N)	0.02	0.06	0.13	0.25
PT Max(mm)	1.3			
OT Min(mm)	1.0			
MD Max(mm)	0.3			
OP(mm)	15±0.6			

MS10-□Z3-A015
MS10-□Z3-A025
MS10-□Z3-A050
MS10-□Z3-A100

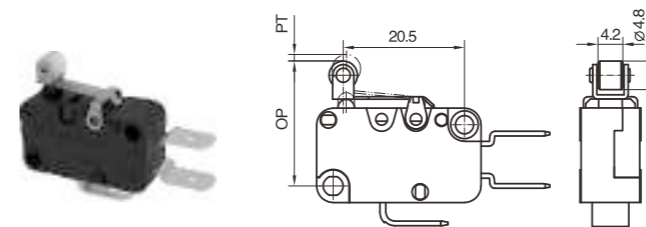
型號 Model	MS10-□Z3-A015	MS10-□Z3-A025	MS10-□Z3-A050	MS10-□Z3-A100
OF Max(N)	0.10	0.15	0.25	0.50
RF Min(N)	0.015	0.025	0.06	0.12
PT Max(mm)	3.5			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	15±1.2			

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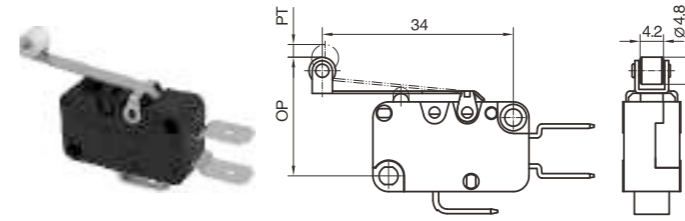
外形尺寸和動作特性 Dimensions and operating characteristics

MS10-□Z2-A015
MS10-□Z2-A025
MS10-□Z2-A050
MS10-□Z2-A100

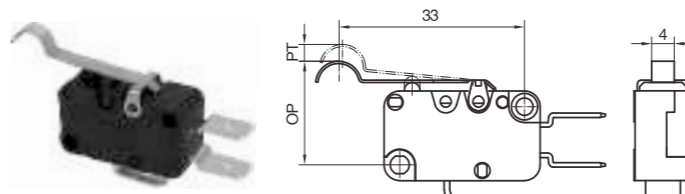
型號 Model	MS10-□Z2-A015	MS10-□Z2-A025	MS10-□Z2-A050	MS10-□Z2-A100
OF Max(N)	0.05	0.07	0.14	0.25
RF Min(N)	0.005	0.015	0.025	0.05
PT Max(mm)	7.6			
OT Min(mm)	4.0			
MD Max(mm)	1.8			
OP(mm)	15.2±2.5			

MS10-□Z4-A015
MS10-□Z4-A025
MS10-□Z4-A050
MS10-□Z4-A100

型號 Model	MS10-□Z4-A015	MS10-□Z4-A025	MS10-□Z4-A050	MS10-□Z4-A100
OF Max(N)	0.15	0.25	0.50	1.00
RF Min(N)	0.02	0.05	0.12	0.25
PT Max(mm)	1.3			
OT Min(mm)	1.0			
MD Max(mm)	0.4			
OP(mm)	20.3±0.8			

MS10-□Z5-A015
MS10-□Z5-A025
MS10-□Z5-A050
MS10-□Z5-A100

型號 Model	MS10-□Z5-A015	MS10-□Z5-A025	MS10-□Z5-A050	MS10-□Z5-A100
OF Max(N)	0.10	0.15	0.25	0.50
RF Min(N)	0.015	0.025	0.06	0.12
PT Max(mm)	3.5			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	20.3±1.2			

MS10-□Z6-A015
MS10-□Z6-A025
MS10-□Z6-A050
MS10-□Z6-A100

型號 Model	MS10-□Z6-A015	MS10-□Z6-A025	MS10-□Z6-A050	MS10-□Z6-A100
OF Max(N)	0.10	0.15	0.25	0.50
RF Min(N)	0.015	0.025	0.06	0.12
PT Max(mm)	3.5			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	18.6±1.2			

MS12型微動開關系列 Micro switch series

◆ 特點和用途 Characteristic and usage

- 體形超級小型，結構緊湊，具備良好的電氣性能。
Excellent electrical characteristics and snap action mechanism in spite of its ultra small size
- 可垂直和水平安裝在印制電路板上
Vertical and horizontal printed circuit board mounting
- 可選有無動臂型
Available with or without auxiliary actuator
- 可用于安裝空間極其有限和高可靠性要求的應用場合
Ideal for applications where size is extremely limited and high reliability is demanded



◆ 技術特性 Specifications

項目 Item	特性值 Value
工作速度 Operating speed	0.1mm ~ 2.7mm/s (無動臂時no lever)
工作頻率 Operating Frequency	機械 60次/min; 電氣 30次/min Mechanical 60 cycles/min; electrical 30cycles/min
絕緣電阻 Insulation resistance	≥100MΩ (500VDC)
接觸電阻 Contact resistance	≤100MΩ
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground (case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance	耐久endurance: 200m/s ² (約10G approx.10G)max 誤動作Wrong action: 100m/s ² (約10G approx.10G)max
使用環境溫度 Ambient operation temperature	-25° C to +85° C 60%環境以下 (無結冰、無凝露) -25° C to +85° C At ambient humidity of 60% max. (with no icing or condensation)
使用環境溫度 Ambient operation temperature	35% to 85% RH (for +5° C to +35° C)
外殼防護等級 Degree protection provided by enclosure	IEC IP40
壽命 Life	機械 ≥50,000次 Mechanical ≥ 50,000 cycles 電氣 ≥30,000次 Electrical ≥ 30,000 cycles
重量 Weight	約0.3g Approx. 0.3g

◆ 型號規格命名及含義 Model number legend and meanings

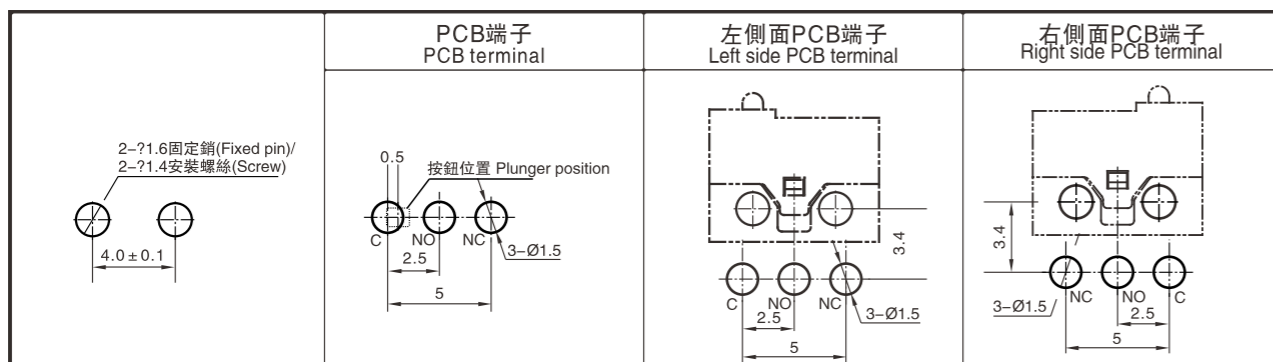
MS12-□□□-□□-(□)
1 2 3 4 5 6

1 額定值 Ratings	A: 50 ~ 500mA 30VDC 3E4 25T70(默認銀觸點) B: 5 ~ 50mA 30VDC 3E4 25T70(默認鍍金觸點)	4 端子類型 Terminal types	L: 左側面PCB端子 Left side PCB terminal R: 右側面PCB端子 Right side PCB terminal Y: 非標準端子not standard terminal
2 接觸形式 Circuit	Z:轉換式 SPDT T:常開(接通)式 SPST-NO D:常閉(按斷)式 SPST-NC (見說明圖 See illustration)	5 動作力(MAX) Operating force	050: 0.5N 100: 1.0N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
3 驅動形式 Actuator forms	0: 無動臂 No lever 1: 短動臂 Short lever	6 附加規格代號 Append specs code	附加代號用兩位阿拉伯數字表示, 如01、02、03……在沒有附加規格編號時, 該位置空缺。 Additional spec number shows as 01, 02, 03……If there is no additional numbers, the place is vacant.
4 端子類型 Terminal types	H: 焊接端子 solder terminal HL: 左側面焊接端子 Left side solder terminal HR: 右側面焊接端子 Right side solder terminal P: PCB端子 PCB terminal		

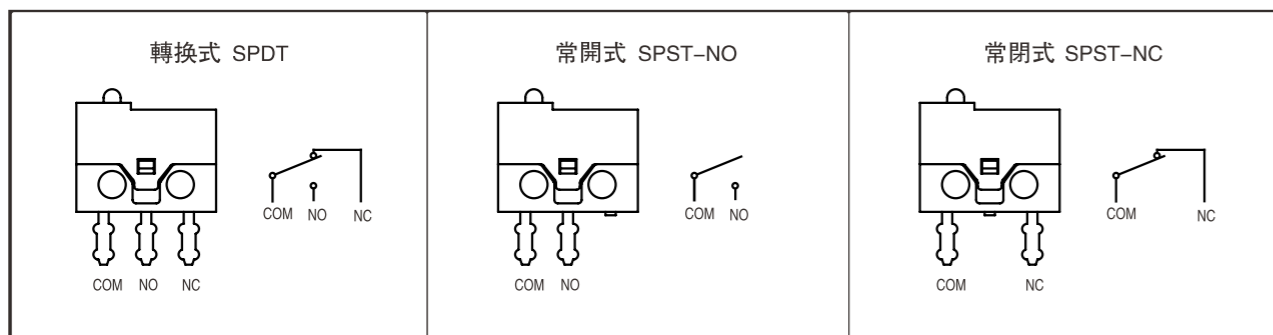
◆ 接線端尺寸 Terminal dimensions

H 焊接端子 Solder terminal 	L 左側面焊接端子 Left side solder terminal 	R 右側面焊接端子 Right side solder terminal
P PCB端子 PCB terminal 	L 左側面PCB端子 Left side PCB terminal 	R 右側面PCB端子 Right side PCB terminal

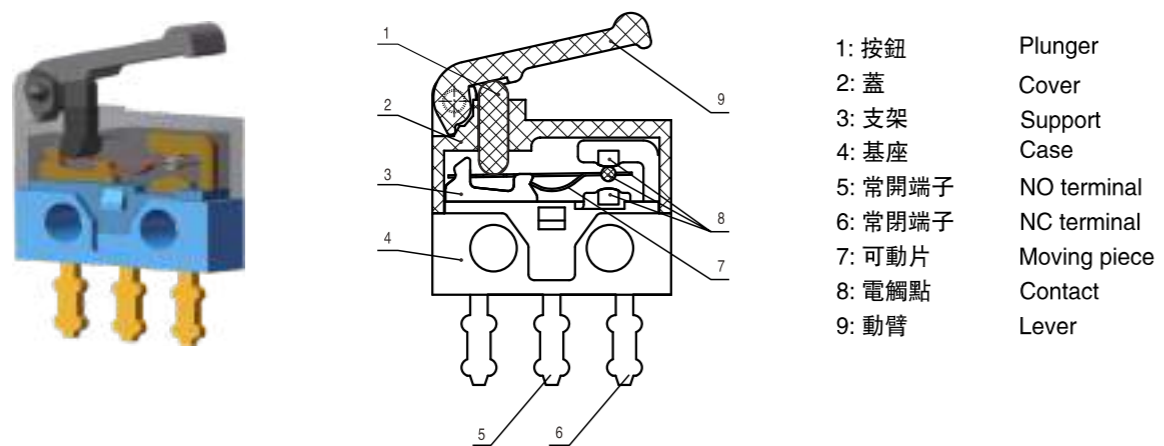
◆ 安裝孔尺寸 Mounting hole dimensions



◆ 接觸形式說明圖 Circuit illustration



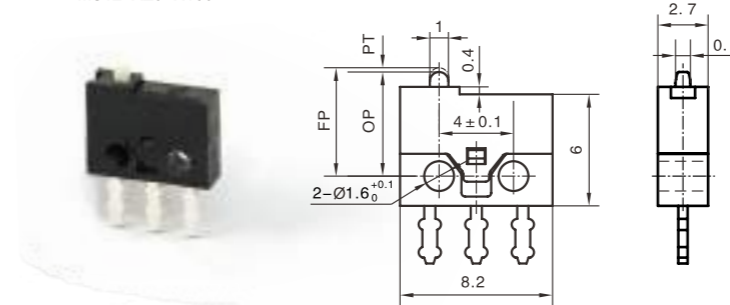
◆ 內部構造圖 Internal configuration drawing



◆ 外形尺寸和動作特性 Dimensions and operating characteristics

按鈕型 Pin Plunger Models

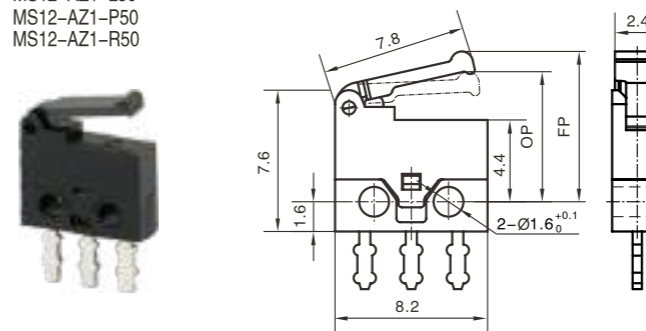
MS12-AZ0-H100
MS12-AZ0-HL100
MS12-AZ0-HR100
MS12-AZ0-L100
MS12-AZ0-P100
MS12-AZ0-R100



OF Max(N)	1.0
RF Min(N)	0.2
PT Max(mm)	0.4
OT Min(mm)	0.1
MD Max(mm)	0.1
OP(mm)	5.7±0.2

動臂型 Lever Models

MS12-AZ1-H50
MS12-AZ1-HL50
MS12-AZ1-HR50
MS12-AZ1-L50
MS12-AZ1-P50
MS12-AZ1-R50



OF Max(N)	0.5
RF Min(N)	0.06
PT Max(mm)	1.6
OT Min(mm)	0.3
MD Max(mm)	0.25
FP Max(mm)	8.3
OP(mm)	7.0±0.5

MS13 型微動開關系列 Micro switch series

◆ 特點和用途 Characteristic and usage

- 采用壓接連接器用端子，節省配綫，節省工時，更加環保。
The terminal used for crimping connector can save wiring, man hour and environmental protection.
- 0.1到5A型品種豐富齊全，多種接觸形式。
0.1 to 5A types are rich in variety and various contact forms.
- 具有兩個不同的安裝孔和各類輔助操作柄，能適應多種安裝方式。
With two different mounting holes and various auxiliary operating handles, it can adapt to a variety of mounting methods.
- 安裝間距和KW4A(S)系列一致，可互換使用。
The installation spacing is consistent with that of KW4A(S) series and can be used interchangeably.
- 廣泛應用於辦公設備、家電設備、兒童座椅、智能遊戲機及汽車電子等設備。
Widely used in office equipment, household appliances, children's seats, intelligent game machines and automotive electronics and other equipment.



◆ 技術特性 Specifications

項目 Item		特性值 Value
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V, 50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、接綫端與不帶電金屬零件之間 Between current-carrying metal parts and ground (case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
壽命 Life	機械壽命 Mechanical life	≥50萬次 (通斷頻率60次/min) ≥500,000 cycles(Operating Frequency 60 cycles/min)
	電氣壽命 Electrical life	≥5萬次 (通斷頻率15次/min) ≥50,000 cycles(Operating Frequency 15 cycles/min)
工作速度(無負載) Operating speed (No load)		0.1mm ~ 1m/s(針狀按鈕位置)(Needle button position)
絕緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤100mΩ (初始值 Initial value)
抗振動 (誤動作振動) Vibration resistance (Misoperation vibration)		單振幅0.75mm, 10Hz ~ 55Hz(觸點開離為1ms以下) Single amplitude 0.75mm, 10Hz ~ 55Hz (The contact gap is less than 1ms)
連接器插鎖定力 Connector locking force		≥20N (在靜荷重下拔出的插拔方向) (Pull out direction under static load)
連接器插拔次數 Connector insertion and removal times		≤5次 (插拔方向) ≤5 cycles(plug direction)
溫度等級 Degrees of temperature		25T125
防護等級 Degree protection		IP40
質量 Weight		約2.5g (按鈕型) Approx. 2.5g(Button type)
安全認證 Safety approvals		UL, CUL, TUV, CE, CQC

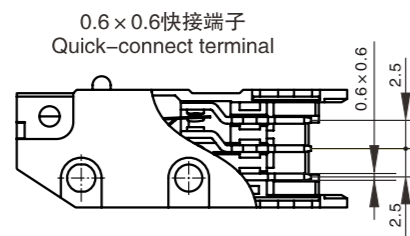
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◆ 型號規格命名及含義 Model number legend and meanings

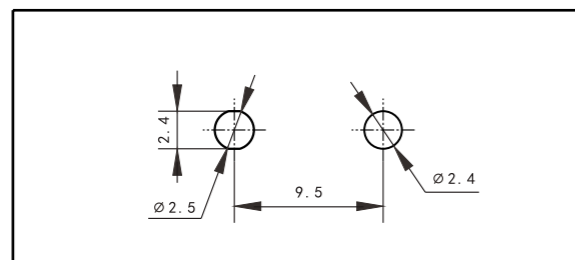
MS13 □ - □ □ □ - □ □ - (□)
1 2 3 4 5 6 7

1 溫度等級 Degree of temperature	無標記: 25T125 No mark	5 端子類型 Terminal types	X: 0.6*0.6快接端子 Quick-connect terminal Y: 非標準端子 not standard terminal
2 額定值 Rating	5:5(3)A 125/250VAC 2E4; 1A 30VDC 1E5; 5A 125/250VAC 5E4		
3 接觸形式 Circuit	Z:轉換式 SPDT T:常開(接通)式 SPST-NO D:常閉(按斷)式 SPST-NC (見說明圖 See illustration)	6 動作力(MAX) Operating force	130:1.3N 180:1.8N
4 驅動形式 Actuator forms	0-無動臂 no lever A1/1-短動臂 short lever A2/2-長動臂 long lever A3/3-中動臂 Middle lever A4/4-短滾輪臂 Short roller A5/5-長滾輪臂 Long roller A6/6-弧形動臂 Arc lever A□/□-非標準動臂 not standard lever 注: 1) A 表示動臂安裝在靠近按鈕位置, 無字母A表示動臂安裝在離按鈕較遠位置。 2) □表示非標準動臂的代號, 詳見動臂外形尺寸圖。 Note: 1) A indicate the lever near to the plunger, no A indicate the lever far away from the plunger. 2) □ indicate not standard lever, details see outline measurement drawings.		7 附加規格編號 Additional spec numbers

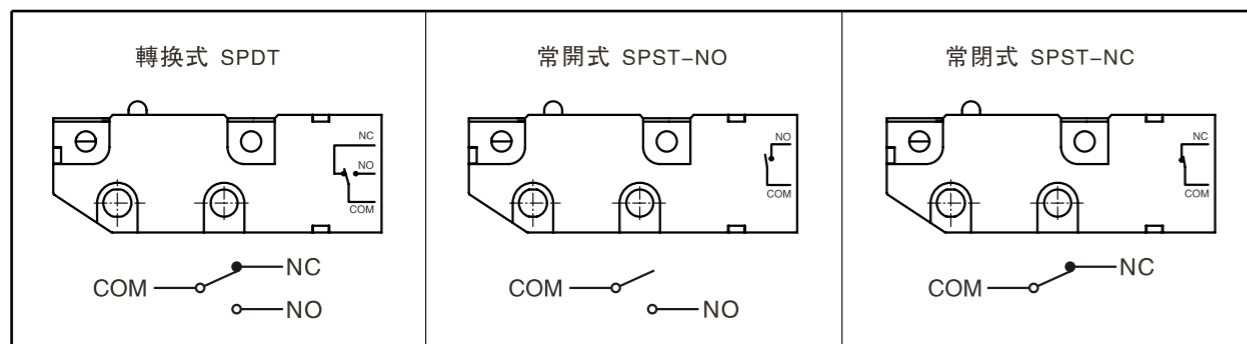
◆ 接線端尺寸 Terminal dimensions



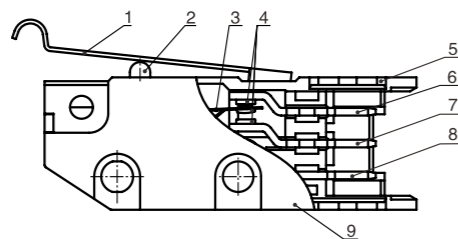
◆ 安裝孔尺寸 Mounting hole dimension



◆ 接觸形式說明圖 Circuit illustration



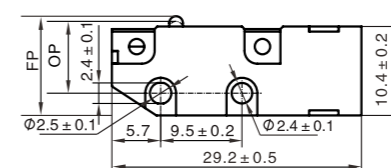
◆ 內部構造圖 Internal configuration drawing



- 1: 動臂 Lever
- 2: 按鈕 Plunger
- 3: 可動片 Moving piece
- 4: 電觸點 Contact
- 5: 底座 Case
- 6: 常閉端子 NO terminal
- 7: 常開端子 NC terminal
- 8: 支架 Support
- 9: 蓋 Contact

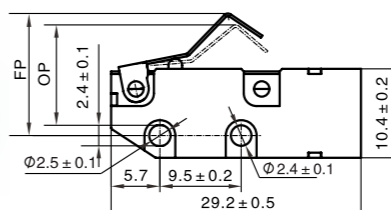
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS13-5Z0-X130
MS13-5Z0-X180



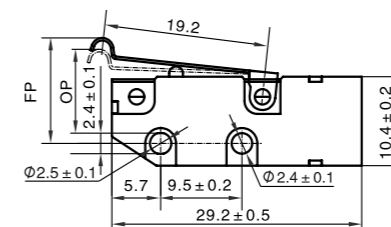
型號 Model	MS13-5Z0-X180	MS13-5Z0-X130
OF Max(N)	1.80	1.30
RF Min(N)	0.5	0.3
FP Max(mm)	9.0	
OT Min(mm)	0.4	
MD Max(mm)	0.1	
OP(mm)	8.4 ± 0.3	

MS13-5ZAA-X130
MS13-5ZAA-X180



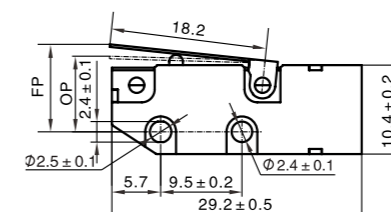
型號 Model	MS13-5ZAA-X180	MS13-5ZAA-X130
OF Max(N)	1.2	0.80
RF Min(N)	0.3	0.1
FP Max(mm)	14.5	
OT Min(mm)	1.0	
MD Max(mm)	0.5	
OP(mm)	12.8 ± 0.8	

MS13-5ZB-X130
MS13-5ZB-X180



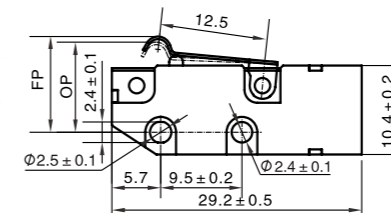
型號 Model	MS13-5ZB-X180	MS13-5ZB-X130
OF Max(N)	1.1	0.80
RF Min(N)	0.4	0.2
FP Max(mm)	12.2	
OT Min(mm)	0.6	
MD Max(mm)	0.5	
OP(mm)	10.6 ± 0.6	

MS13-5Z3-X130
MS13-5Z3-X180



型號 Model	MS13-5Z3-X180	MS13-5Z3-X130
OF Max(N)	1.1	0.80
RF Min(N)	0.4	0.2
FP Max(mm)	10.0	
OT Min(mm)	0.6	
MD Max(mm)	0.5	
OP(mm)	9 ± 0.6	

MS13-5Z6-X130
MS13-5Z6-X180



型號 Model	MS13-5Z6-X180	MS13-5Z6-X130
OF Max(N)	1.50	1.2
FP Max(mm)	0.5	0.3
RF Min(N)	11.2	
OT Min(mm)	0.6	
MD Max(mm)	0.3	
OP(mm)	10.5 ± 0.6	