東南爲您提供專業的微動開關解決方案
DONGNAN provide you professional micro switch solutions

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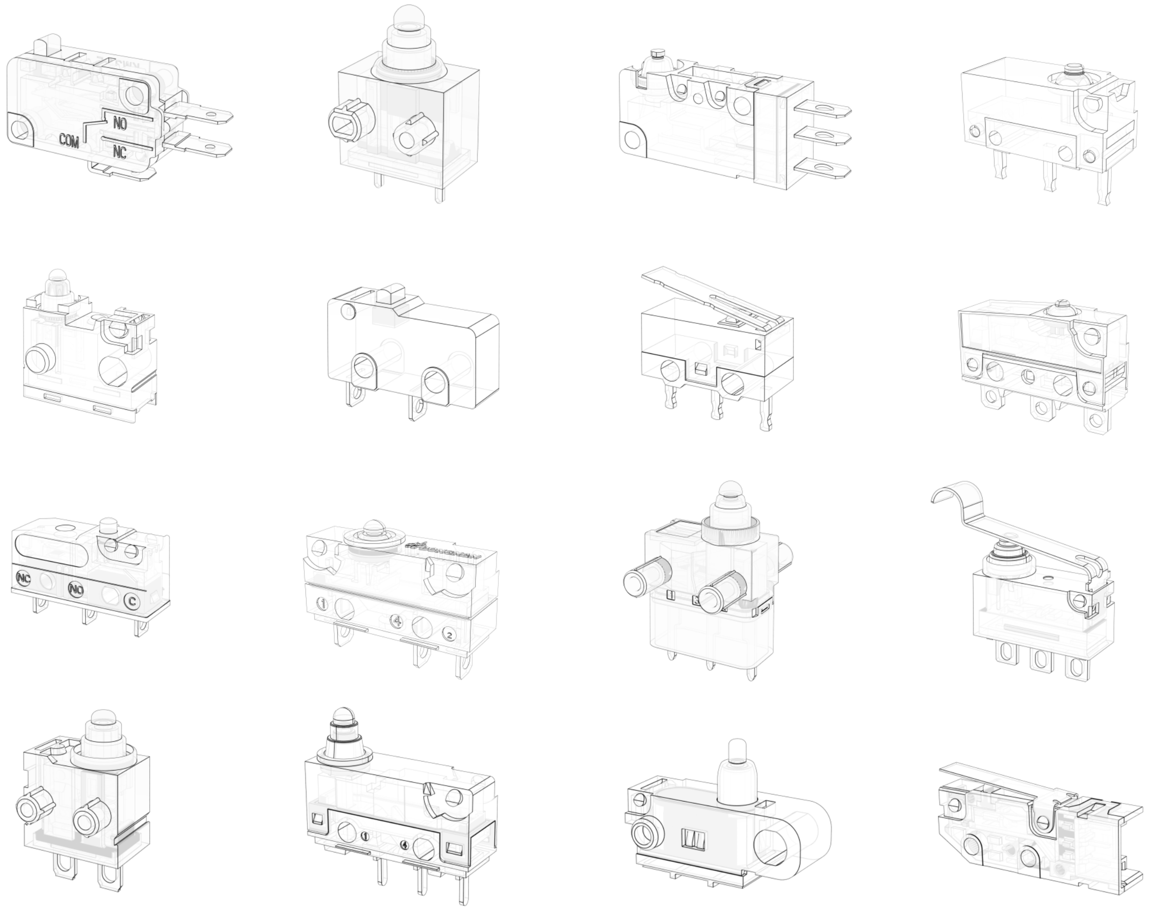
DONGNAN SINCE 1987, WE FOCUS ON SWITCHES

股票代码 Stock code | **301359**



Micro switch electronic catalog
微动开关电子目录

M微動開關 ICRO SWITCH

PRODUCT BROCHURE 產品目錄 **2024**

股票代码 Stock code **301359**

東南電子股份有限公司
DONGNAN ELECTRONICS CO., LTD.

企業願景 Our vision
造就開關行業的全球領先者。
To be the global leader of switch industry.

企業使命 Our mission
提供安全、可靠的通斷服务，讓電器更完美。
To provide a safe and reliable on-off service, let electric appliances more perfect.

企業價值觀 Our values
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Unity Integrity Innovation Development

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

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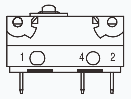

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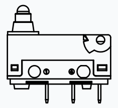

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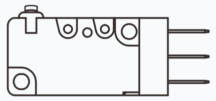

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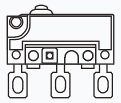

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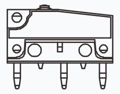

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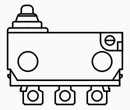

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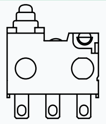

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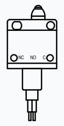

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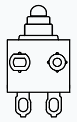

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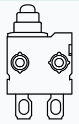

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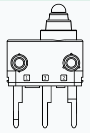

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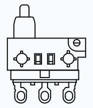

参考资料
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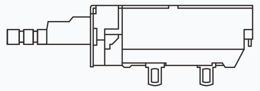

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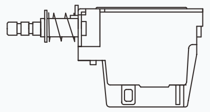

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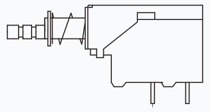

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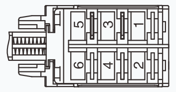

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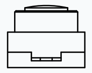

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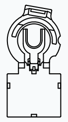

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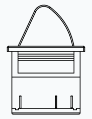

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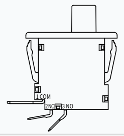

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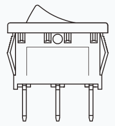

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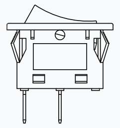

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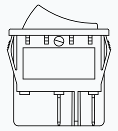

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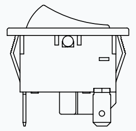

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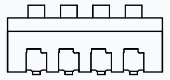

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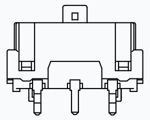

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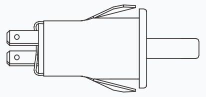

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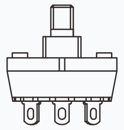

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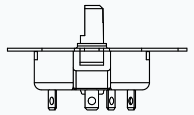

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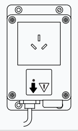

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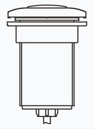

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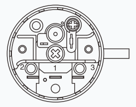

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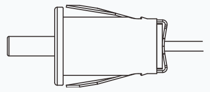

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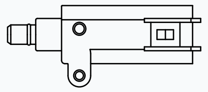

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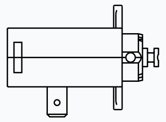

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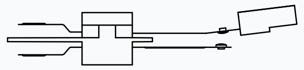


DNL101E P 235-236


KW3A 型微動開關系列 Micro switch series

◆ 安全可靠的基本開關 Safe, reliable basic switch

- 外形美觀，結構緊湊。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。
  Nice appearance,tight configuration.Characteristic:small contact clearance, quick action, high sensitivity and small operating travel.
- 長壽命，高可靠。
  Long life, high reliability.
- 接綫端子種類齊全
  A variety of contact terminals
- 動作力範圍寬
  Wide range of operating force
- 多種温度等級
  A variety of temperature degree
- 配備各種形式動臂
  A variety of levers
- 採用熱固性或熱塑性塑料
  Adopt thermosetting plastic or thermoplastic
- 廣泛應用于各種家用電器、電子設備、自動化設備、通訊設備、汽車電子、儀器儀表、電動工具等領域。
  Widely used in home appliance,electronic equipment,automatic machine,communication equipment,car electron,apparatus and instrument, electric motion tool etc.
- 可提供直流大間隙規格開關。
  Direct current large gap switch can be provided.

◆ 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
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		動作力OF > 0.75N：≤50 mΩ 動作力OF≤0.75N：≤100mΩ (初始值initial 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6.2g(無動臂型) Approx. 6.2g(No lever)
安全認證 Safety approvals		UL、CUL、VDE、ENEC、SEMKO、DEMKO、NEMKO、FIMKO、CE、EK、CQC

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

KW3A □– □ □ □ □ □– □ □ □ □ – (□)
1 2 3 4 5 6 7 8 9 10 11

1 温度等級 Degree of temperature	無標記 No mark: T85,10T105 T:T125 H:T150 G:T200	**2** 額定值 Ratings	KW3AT-10: 10A125VAC 10GPA125/250VAC 6A30VDC 10(3)A125/250VAC KW3AT-05: 5A125VAC 5GPA125/250VAC 4A30VDC 5(2)A125/250VAC KW3AT-01: 1A125VAC 1GPA125/250VAC 1(0.3)A125/250VAC KW3AH-22: 22GPA125/250VAC 22A125/250VAC KW3AH: 16GPA125/250VAC 16A125/250VAC KW3AH-10: 10.1A125VAC 10.1GPA125/250VAC 10(3)A125/250VAC KW3AH-05: 5A125VAC 5GPA125/250VAC 5(2)A125/250VAC 0.1/1A30VDC KW3AH-01: 1A125VAC 1GPA125/250VAC 1(0.3)A125/250VAC 0.1/1A30VDC KW3AG-22: 22GPA125/250VAC 22A125/250VAC KW3AG: 16GPA125/250VAC 16A125/250VAC KW3AG-10: 10.1A125VAC 10.1GPA125/250VAC 10(3)A125/250VAC KW3AG-05: 5A125VAC 5GPA125/250VAC 5(2)A125/250VAC 0.1/1A30VDC KW3AG-01: 1A125VAC 1GPA125/250VAC 1(0.3)A125/250VAC 0.1/1A30VDC KW3A–20E：20A 36VDC KW3A–16E：16A 36VDC KW3A–12E：12A 36VDC KW3A–10E：10A 36VDC KW3A–5E：5A 36VDC
2 額定值 Ratings	KW3A: 16A125VAC 16GPA125/250VAC 16(4)A125/250VAC 10A30VDC 1/3hp125VAC 16(10)A125/250VAC 16(8)A250VAC KW3A-25: 25RA125/250VAC 25(10)A125/250VAC 1hp125VAC 2hp250VAC KW3A-25(10): 1hp125VAC 2hp250VAC 25(10)A250VAC KW3A-21: 21GPA125/250VAC 21(4)A125/250VAC 12A30VDC 1hp125VAC 2hp250VAC KW3A-10: 10A125VAC 10GPA125/250VAC 10(3)A125/250VAC 6A30VDC 10(8)A125/250VAC 10(6)A250VAC KW3A-5: 5A125VAC 5GPA125/250VAC 5(2)A125/250VAC 4A30VDC KW3A-1: 1A125VAC 1GPA 125/250VAC 1(0.3)A125/250VAC KW3AT-21: 21A125VAC 21GPA125/250VAC 21(4)A125/250VAC 12A30VDC 1hp125VAC 2hp250VAC KW3AT-16: 16A125VAC 16GPA125/250VAC 10A30VDC 1/3hp125VAC 16(4)A125/250VAC		

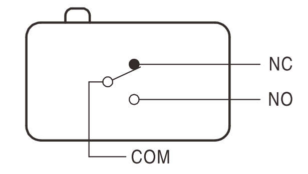
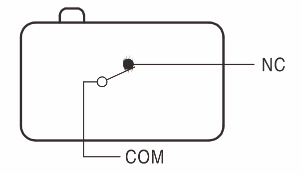
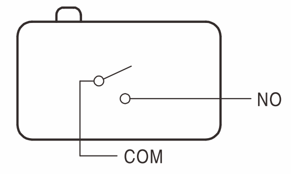
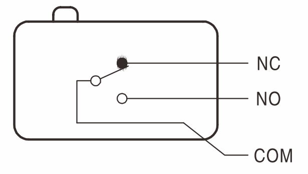
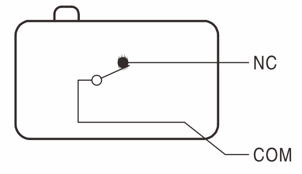
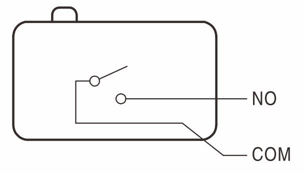
◆ 型號規格命名及含義 Model number legend and meanings

KW3A □– □ □ □ □ □– □ □ □ □ – (□)
1 2 3 4 5 6 7 8 9 10 11

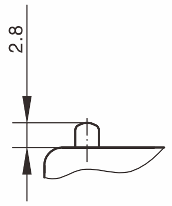
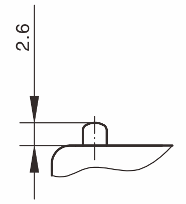
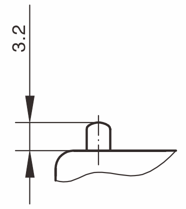
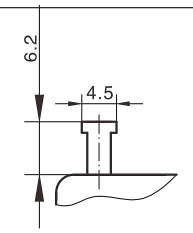
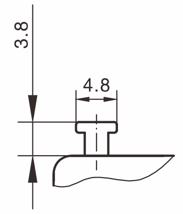
2 額定值 Ratings	KW3A–15F：15A 48VDC KW3A–10F：10A 48VDC KW3A–5F：5A 48VDC KW3A–20G：20A 60VDC KW3A–15G：15A 60VDC KW3A–25H：25A 84VDC KW3A–20H：20A 84VDC KW3A–5J：5A 250VDC ……
3 接觸形式 Circuit	Z: 轉换式 SPDT T: 常開(按通)式 SPST–NO D: 常閉(按斷)式 SPST–NC (見説明圖 See illustration)
4 驅動形式 Actuator forms	0:無動臂 No lever A1/1: 短動臂 Short lever A2/2: 長動臂 Long lever A3/3: 中動臂 Middle lever A4/4: 短滚輪臂 Short roller A5/5: 長滚輪臂 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 dimension drawings.
5 外殼材質 Case material	無標記 No mark 熱塑性 thermoplastic G：熱固性 thermosetting
6 外形特徵 Outline characteristic	無標記 No mark 基本形 basic form B：平端形 flat terminal C：公共端側面形 side common terminal D：平端卡扣形flat end buckle E：平端卡扣密封形flat end snap seal F：平端無卡扣鉚接形flat end riveting without snap （D、E、F專用于直流開關） （D,E and F are specially used for DC switch）
7 端子類型 Terminal types	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)

7 端子類型 Terminal types	D: 焊接/187共用端子 Solder/187 common terminal E: 螺孔端子 Screw terminal F: 焊接端子 Solder terminal L: 左側面PCB端子 Left side PCB terminal R: 右側面PCB端子 Right side PCB terminal H: 250快接端子之二 250Quick terminal No.2 Y: 非標準端子 Not standard terminal
8 動作力(max) Operating force	015: 0.15N 025: 0.25N 050: 0.5N 100: 1N 150: 1.5N 200: 2N 300: 3N 400: 4N 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.
9 按鈕規格 Plunger spec	無標記 No mark：標準按鈕 standard plunger A: 短按鈕 Short plunger B: 中長按鈕 Middle plunger C: 長按鈕 Long plunger D: 平端按鈕 Flat plunger (見説明圖 See illustration) 注：若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 other not standard plunger, then indicate with the new spec (confirmed by our company.)
10 觸點間隙 Contact gap	無標記 No mark: 0.5mm X: 1mm Y: 3mm
11 附加規格編號和外殼顏色代號，適用于： Additional specs numb–ers and case color code 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 terminals; 2)當顧客有特殊動作特性值或其它要求時； Whe customer has particular operating value or other requirements; 3)當開關外殼顏色不是默認的灰色時，如黑色用字母B表示。 When the case is not grey, for example,black shows as B. 附加規格編號用阿拉伯數字或拉丁字母表示，字母代號位于數字之後。在没有附加規格編號時，該位置空缺。 Additional specs number shows by Arabic numerals or Latin, color code after the numbers. If there is no additional numbers, the place is vacant.

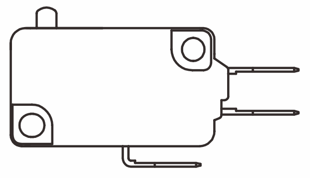
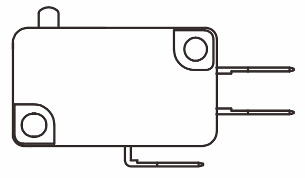
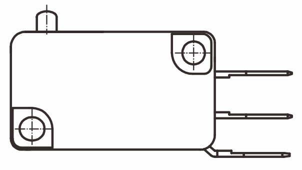
◆ 接觸形式説明圖 Circuit illustration

公共端類型 Common terminal types	轉换式 SPDT	常閉式 SPST–NC	常開式 SPST–NO
公共端在底部 Bottom common terminal			
公共端在側面 Side common terminal			

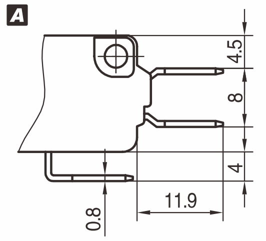
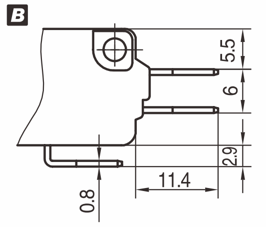
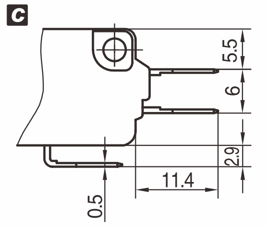
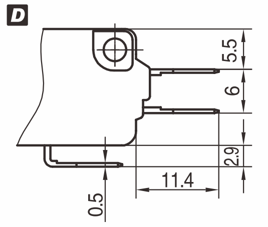
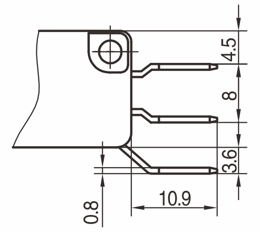
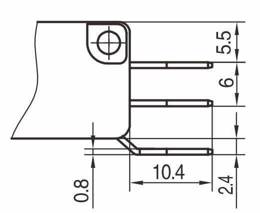
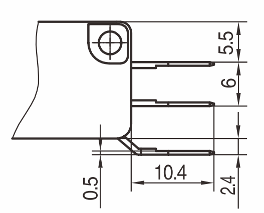
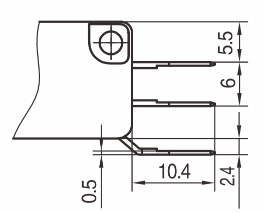
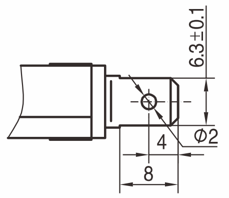
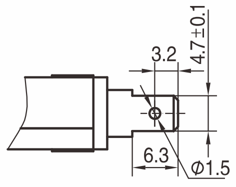
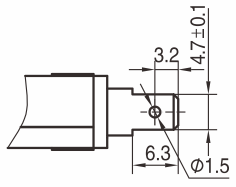
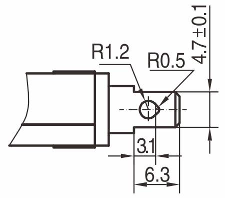
◆ 按鈕規格説明圖 Plunger spec illustration

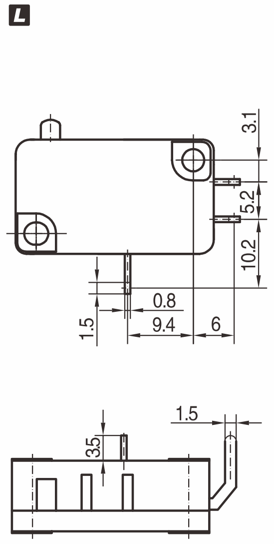
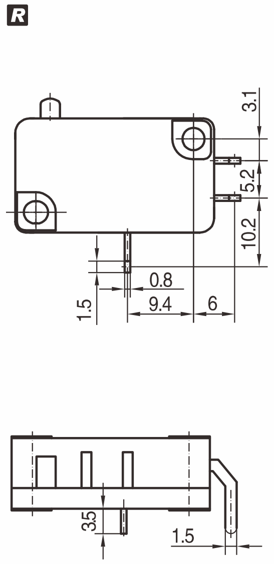
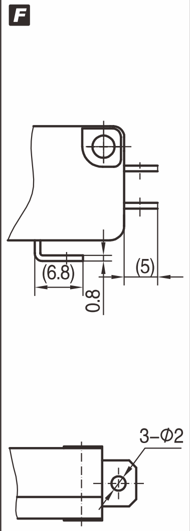
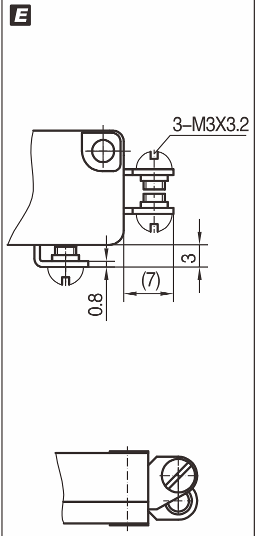
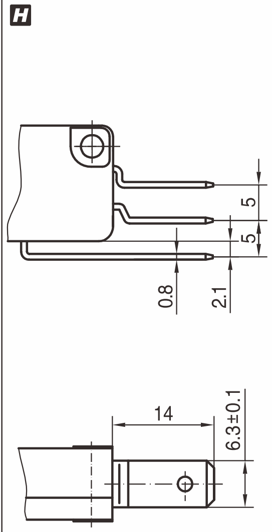
按鈕標記 Mark on plunger	無標記 No mark	A	B	C	D
按鈕尺寸 Plunger dimension					

◆ 外形特徵説明圖 Outline characteristic illustration

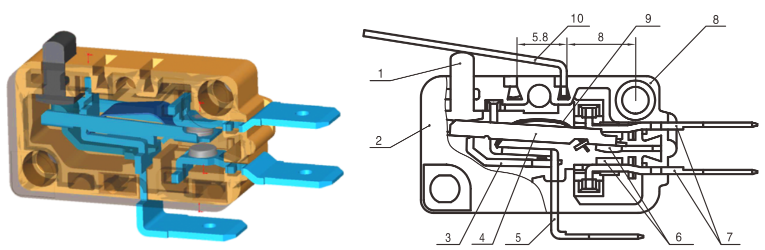
基本形 Basic form 	平端形 Flat form 	公共端側面形 Side common terminal 

◆ 接綫端尺寸 Connect terminal dimensions

端子種類 Terminal types	快接端子#250 Quick–connect terminal #250	快接端子#187(t=0.8) Quick–connect terminal #187	快接端子#187(t=0.5) Quick–connect terminal #187	焊接/快接#187共用端子 Solder/Quick–connect terminal #187
下公共端 Bottom common terminal				
側公共端 Side common terminal				
端子尺寸 Terminal dimenesions				

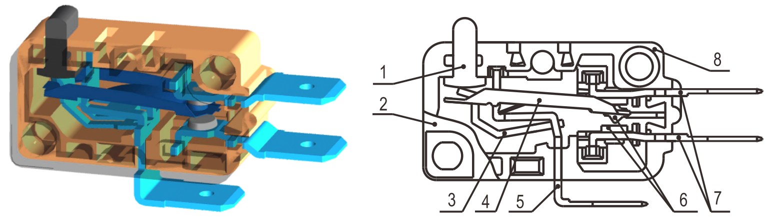
左側面PCB端子 Left side PCB terminal	右側面PCB端子 Right side PCB terminal	焊接端子 Solder terminal	螺孔端子 Screw terminal	快接端子#250之二 Quick connect terminal #250 No.2
				

◆ 內部構造圖 Internal configuration drawing



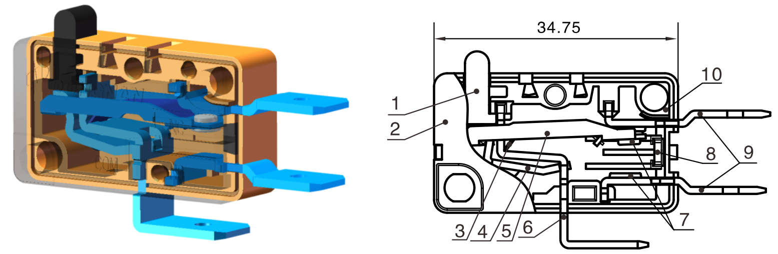
1 按鈕	Plunger
2 蓋	Cover
3 杠杆	Lever
4 可動片	Moving piece
5 支架	Support
6 電觸點	Contact
7 端子	Terminal
8 基座	Case
9 簧片	Spring sheet
10 動臂(杠杆)	lever

◆ KW3A輕動作力內部構造圖 Internal structure diagram of light operating force



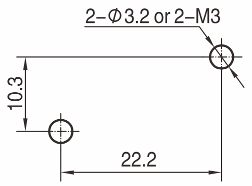
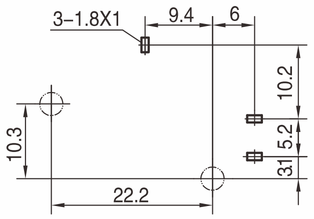
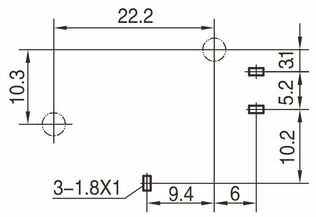
1 按鈕	Plunger
2 蓋	Cover
3 杠杆	Lever
4 可動片	Moving piece
5 支架	Support
6 電觸點	Contact
7 端子	Terminal
8 基座	Case

◆ KW3A直流大間隙內部構造圖 Internal structure diagram of DC large gap



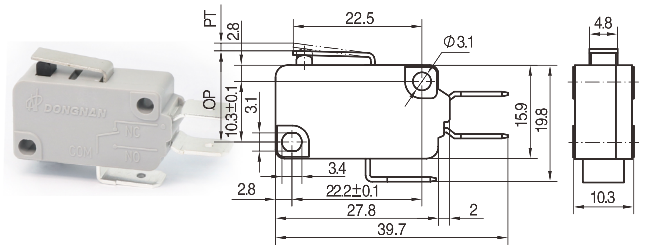
1 按鈕	Plunger
2 蓋	Cover
3 簧片	Spring sheet
4 杠杆	Lever
5 可動片	Moving piece
6 支架	Support
7 電觸點	Contact
8 磁鐵	Magnet
9 端子	Terminal
10 基座	Case

◆ 安裝孔尺寸 Mounting hole dimensions

	右側面PCB端子 Right side PCB terminal	左側面PCB端子 Left side PCB terminal
		

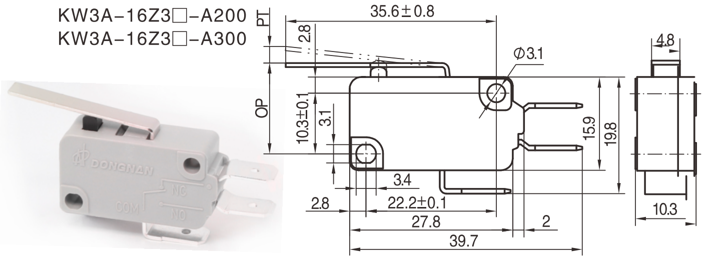
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW3A-16Z1□-A100
KW3A-16Z1□-A150
KW3A-16Z1□-A200
KW3A-16Z1□-A300



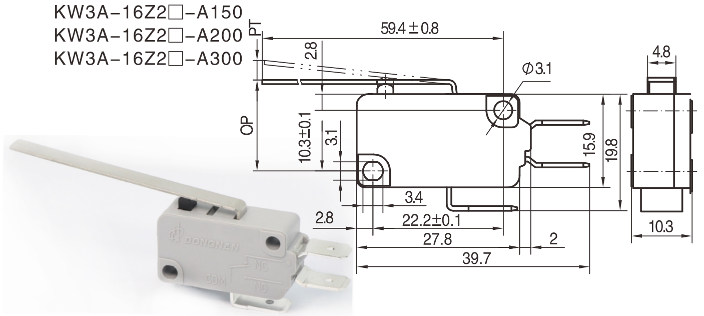
型 號 Model	KW3A-16Z1□-A100	KW3A-16Z1□-A150	KW3A-16Z1□-A200	KW3A-16Z1□-A300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.20	0.30	0.50	0.70
PT Max(mm)	1.4			
OT Min(mm)	1.0			
MD Max(mm)	0.5			
OP(mm)	15.8±0.5			

KW3A-16Z3□-A100
KW3A-16Z3□-A150
KW3A-16Z3□-A200
KW3A-16Z3□-A300



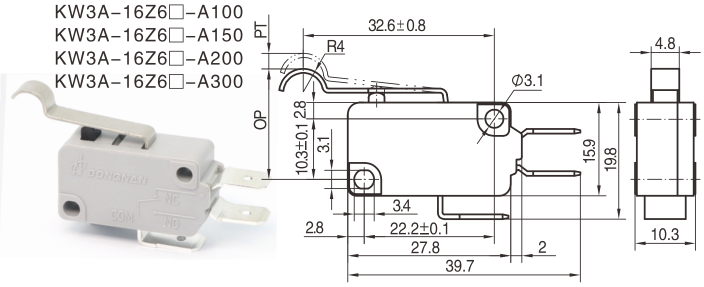
型 號 Model	KW3A-16Z3□-A100	KW3A-16Z3□-A150	KW3A-16Z3□-A200	KW3A-16Z3□-A300
OF Max(N)	0.50	0.70	0.90	1.30
RF Min(N)	0.10	0.15	0.20	0.30
PT Max(mm)	4.0			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	16.3±1.2			

KW3A-16Z2□-A100
KW3A-16Z2□-A150
KW3A-16Z2□-A200
KW3A-16Z2□-A300



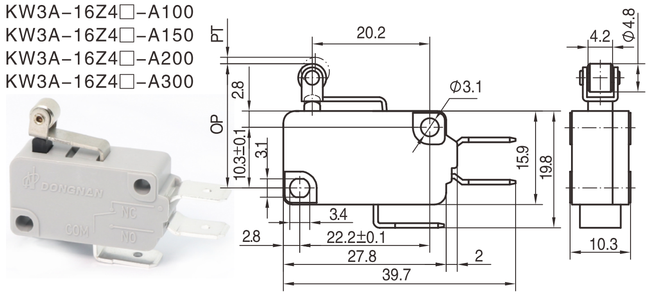
型 號 Model	KW3A-16Z2□-A100	KW3A-16Z2□-A150	KW3A-16Z2□-A200	KW3A-16Z2□-A300
OF Max(N)	0.25	0.37	0.50	0.75
RF Min(N)	0.05	0.10	0.15	0.20
PT Max(mm)	8.0			
OT Min(mm)	4.0			
MD Max(mm)	2.0			
OP(mm)	17.2±2.5			

KW3A-16Z6□-A100
KW3A-16Z6□-A150
KW3A-16Z6□-A200
KW3A-16Z6□-A300



型 號 Model	KW3A-16Z6□-A100	KW3A-16Z6□-A150	KW3A-16Z6□-A200	KW3A-16Z6□-A300
OF Max(N)	0.54	0.80	1.05	1.60
RF Min(N)	0.10	0.15	0.20	0.30
PT Max(mm)	4.0			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	19.5±1.2			

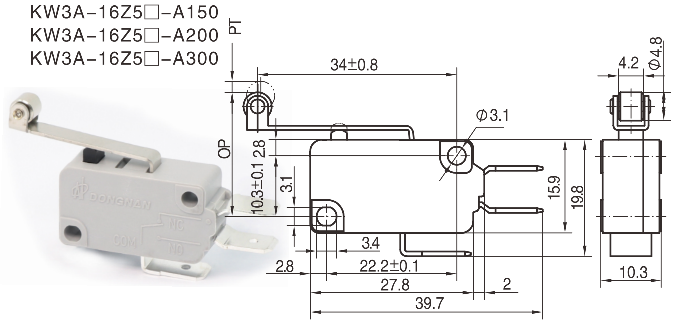
KW3A-16Z4□-A100
KW3A-16Z4□-A150
KW3A-16Z4□-A200
KW3A-16Z4□-A300



型 號 Model	KW3A-16Z4□-A100	KW3A-16Z4□-A150	KW3A-16Z4□-A200	KW3A-16Z4□-A300
OF Max(N)	1.10	1.60	2.20	3.20
RF Min(N)	0.15	0.30	0.40	0.60
PT Max(mm)	1.4			
OT Min(mm)	1.0			
MD Max(mm)	0.4			
OP(mm)	21.4±0.6			

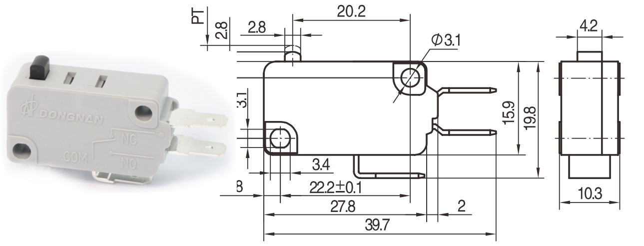
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW3A-16Z5□-A100
KW3A-16Z5□-A150
KW3A-16Z5□-A200
KW3A-16Z5□-A300



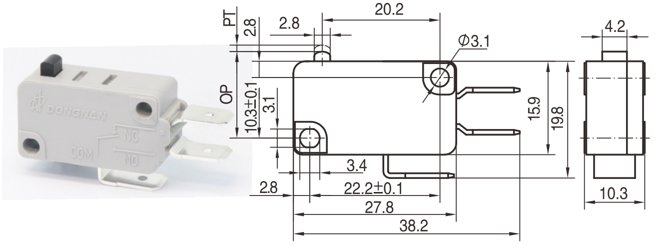
型 號 Model	KW3A-16Z5□-A100	KW3A-16Z5□-A150	KW3A-16Z5□-A200	KW3A-16Z5□-A300
OF Max(N)	0.50	0.80	1.10	1.60
RF Min(N)	0.10	0.15	0.20	0.30
PT Max(mm)	4.0			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	21.4±1.2			

KW3A-16Z0□-A100
KW3A-16Z0□-A150
KW3A-16Z0□-A200
KW3A-16Z0□-A300



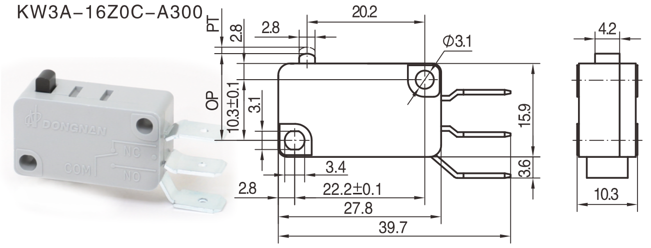
型 號 Model	KW3A-16Z0□-A100	KW3A-16Z0□-A150	KW3A-16Z0□-A200	KW3A-16Z0□-A300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.20	0.30	0.50	0.70
PT Max(mm)	1.4			
OT Min(mm)	1.0			
MD Max(mm)	0.4			
OP(mm)	14.9±0.4			

KW3A-16Z0B-A100
KW3A-16Z0B-A150
KW3A-16Z0B-A200
KW3A-16Z0B-A300



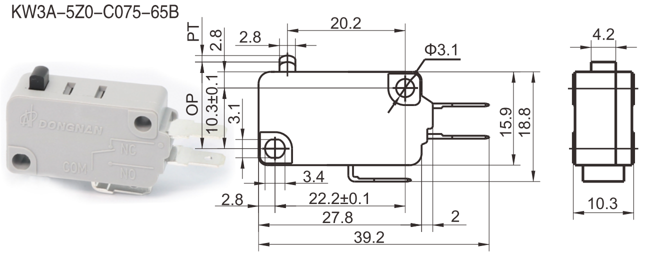
型 號 Model	KW3A-16Z0B-A100	KW3A-16Z0B-A150	KW3A-16Z0B-A200	KW3A-16Z0B-A300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.20	0.35	0.50	0.80
PT Max(mm)	1.2			
OT Min(mm)	1.0			
MD Max(mm)	0.4			
OP(mm)	14.9±0.4			

KW3A-16Z0C-A100
KW3A-16Z0C-A150
KW3A-16Z0C-A200
KW3A-16Z0C-A300



型 號 Model	KW3A-16Z0C-A100	KW3A-16Z0C-A150	KW3A-16Z0C-A200	KW3A-16Z0C-A300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.20	0.30	0.50	0.70
PT Max(mm)	1.4			
OT Min(mm)	1.0			
MD Max(mm)	0.4			
OP(mm)	14.9±0.4			

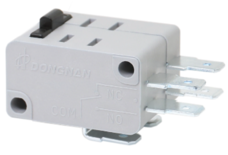
KW3A-5Z0-C020-65B
KW3A-5Z0-C050-65B
KW3A-5Z0-C075-65B

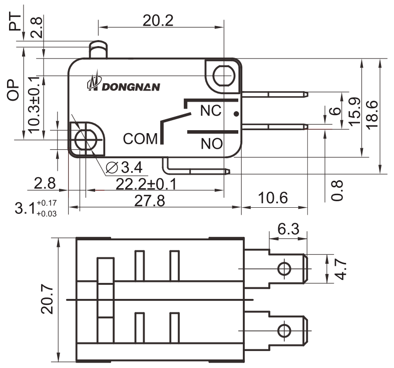


型 号 Model	KW3A-5Z0-C020-65B	KW3A-5Z0-C050-65B	KW3A-5Z0-C075-65B
OF Max (N)	0.20	0.50	0.75
RF Min (N)	0.05	0.10	0.20
PT Max (mm)	1.4		
OT Min (mm)	1.0		
MD Max (mm)	0.4		
OP (mm)	14.9±0.4		

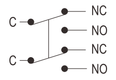
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW3A雙聯開關 Double switch
KW3A–16Z0B–B400–22



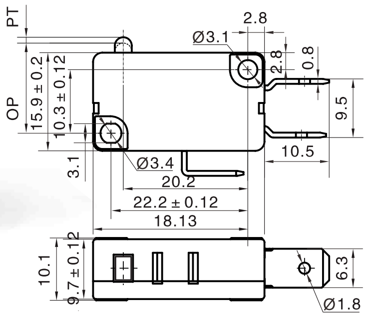


Schematic diagram



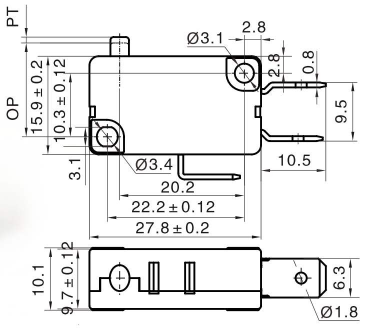
型 號 Model	KW3A–16Z0B–B400–22
OF Max (N)	4.00
RF Min (N)	1.00
PT Max (mm)	1.4
OT Min (mm)	1.0
MD Max (mm)	0.4
OP (mm)	14.9 ± 0.5

KW3A–15FZ0D–A750Z4
KW3A–15FZ0D–A1000Z4
直流開關　DC Switch



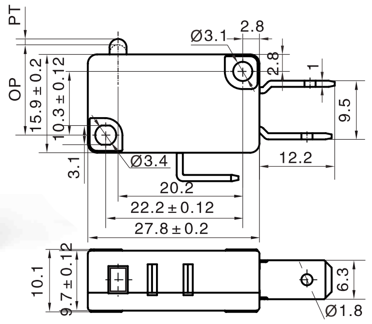
型 號 Model	KW3A–15FZ0D–A750Z4	KW3A–15FZ0D–A1000Z4
OF Max(N)	7.50	10.00
RF Min(N)	2.0	3.0
PT Max(mm)	1.2	
OT Min(mm)	1.0	
MD Max(mm)	0.8	
OP(mm)	14.3 ± 0.5	

KW3A–15FZ0E–A550Z5
KW3A–20FZ0E–A550Z5
直流開關　DC Switch



型 號 Model	KW3A–15FZ0E–A550Z5	KW3A–20FZ0E–A550Z5
OF Max(N)	5.50	5.50
RF Min(N)	1.50	1.50
PT Max(mm)	1.2	
OT Min(mm)	1.0	
MD Max(mm)	0.8	
OP(mm)	14.8 ± 0.5	

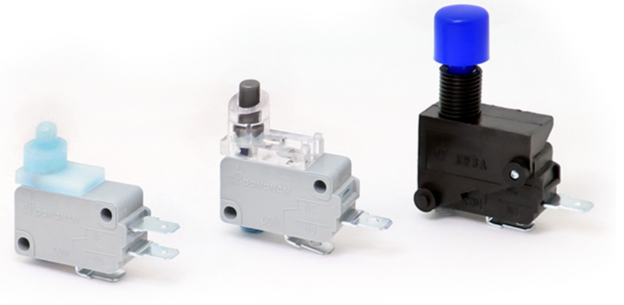
KW3A–15FZ0F–A550Z4
KW3A–15FZ0F–A850Z4
直流開關　DC Switch



型 號 Model	KW3A–15FZ0F–A550Z4	KW3A–15FZ0F–A850Z4
OF Max(N)	5.50	8.50
RF Min(N)	1.50	2.5
PT Max(mm)	1.2	
OT Min(mm)	1.0	
MD Max(mm)	1.0	
OP(mm)	14.6 ± 0.5	

KW3A 微動開關組件壹 Micro switch groupware

◆ 特點和用途 Characteristic and usage



- 自鎖式或按鈕式，大電流。
  Self locked or button type, big current
- 結構緊湊，體積小。
  Tight configuration, small size.
- 可直接用手操動
  Can be operated by hand
- 用于特殊場合的電源通斷和電氣控制
  Applied to power on/off and electric control in special situations

◆ 技術特性 Technical Characteristics

項 目 Item		特性值 Value	
		按鈕型 Button type	自鎖型 Self lock
温度等級 Degrees of temperature		T105	
額定電壓 Rated voltage		AC250V	
絕緣電阻 Insulation resistance		≥100MΩ (500VDC)	
接觸電阻 Contact resistance		≤30mΩ (初始值 initial 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	
電氣壽命 Electrical life		50,000次/cycles	10,000次/cycles

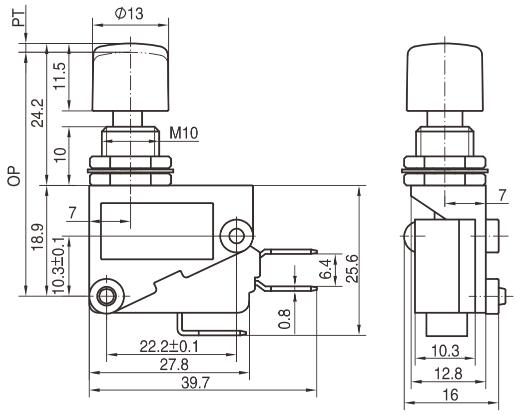
◆ 型號規格命名及含義 Model number legend and meanings

KW3A – □ □ □ □ □ – (□)
　　　 1 2 3 4 5　 6

1 結構型式 Configuration types	A: 按鈕型 Button type B: 自鎖型 Self lock	**4** 端子類型 Terminal types	見P13表格中7端子類型 Please see the 7 terminal types in the form of page 13
2 額定值 Ratings	見P12表格中額定值 Please see the rating in the form of Page12	**5** 按鈕顏色 Button color	R:紅色 Red G:綠色 Green B:藍色 Blue (僅適用于按鈕型 Only used in Button type)
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	**6** 附加規格編號 Additional spec numbers	適用于:當開關組件與標準規格有某些差別時。Apply to: When switch components have some difference with standard specifications. 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.

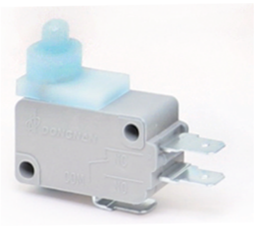
◆ 外形和安裝尺寸 Outline and mounting dimensions

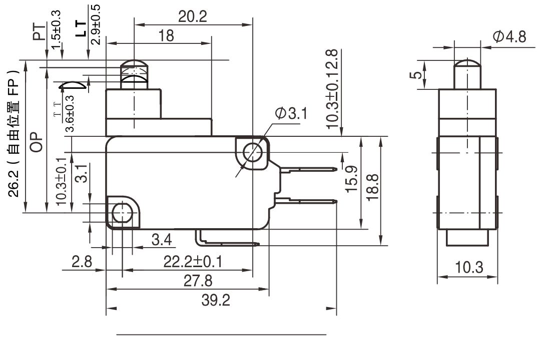
KW3A-A□ZA□



OF (N)	1.50–2.00
RF Min (N)	0.40
PT Max (mm)	1.2
OT Min (mm)	1.0
MD Max (mm)	0.4
OP (mm)	42 ± 0.5

KW3A-B□ZC

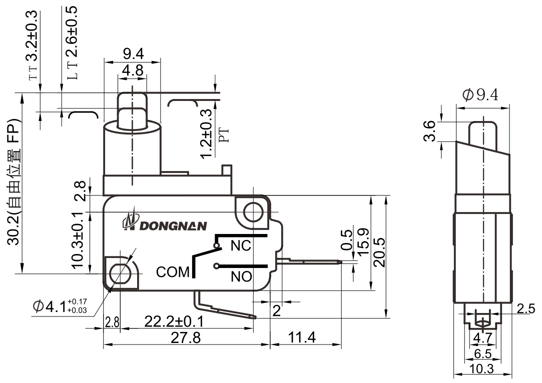




Total travel

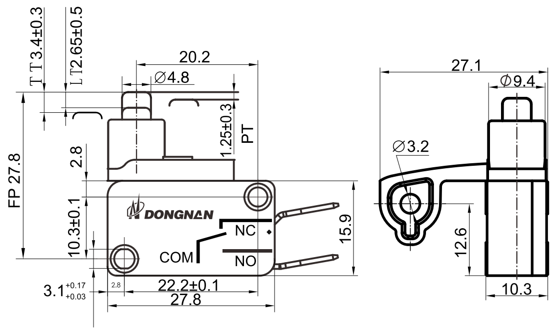
OF (N)	2.00-4.00
TT (mm)	3.6±0.3
LT (mm)	2.9±0.5
PT (mm)	1.5±0.3

KW3A-B16TD-02



OF (N)	2.00-4.00
TT (mm)	3.2±0.3
LT (mm)	2.6±0.5
PT (mm)	1.2±0.3

KW3A-B16TD-1003



OF (N)	2.00-4.00
TT (mm)	3.4±0.3
LT (mm)	2.65±0.5
PT (mm)	1.25±0.3

KW3A 微動開關組件貳 Micro switch groupware

◆ 特點和用途 Characteristic and usage

- 防傾倒式，大電流。
  Dumping prevention type, big current
- 可利用開關方向和位置的變化，實現電源通斷的自動切換。
  Using the change of switch direction and position then automatically control the power on or off.

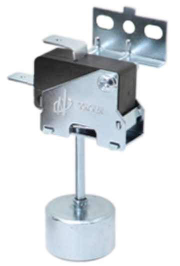
◆ 型號規格命名及含義 Model number legend and meanings

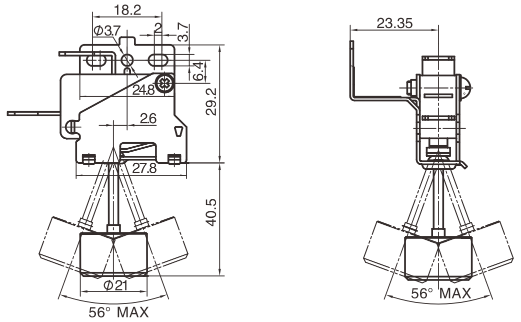
KW3A– □ □ □ □–□□□□— (□)
1 2 3 6 7 8 9 10 11

1 結構型式 Configuration types	2 額定值 Ratings	3 接觸形式 Circuit	6-11
C–防傾倒式 Ⅰ Dumping prevention type Ⅰ D– 防傾倒式 Ⅱ Dumping prevention type Ⅱ	見P3 表格中額定值 Please see the rating in the form of Page 3	Z: 轉換式 SPDT T: 常開(按通)式 SPST–NO D: 常閉(按斷)式 SPST–NC	含義同KW3A基本型相應編號6–11,見本目錄第8頁。 Same meaning with KW3A basic part number naming (6–11), see catalogue page 8.

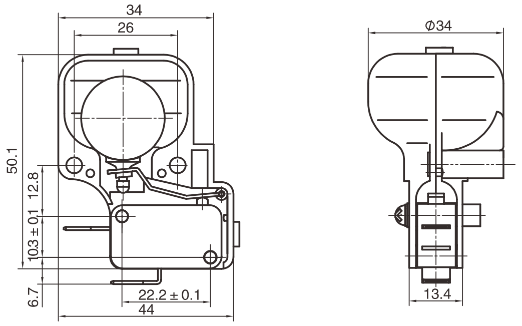
◆ 外形和安裝尺寸 Outline and mouting dimentions

KW3A–C□DB–A120A



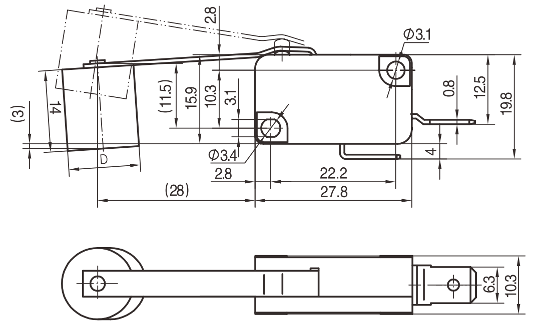


KW3A–D□DB–A 70B



防傾倒式 Safety type Ⅲ

KW3A–16TA□9B–A080A



KW3A-G型晾衣架開關組件 Clothes hanger switch assembly

◆ 特點和用途 Characteristic and usage

- 產品性能可靠，動作無异響
  Reliable product performance, no abnormal sound during the action
- 外形體積小巧，適合各個角度隨意安裝
  Small size, suitable for random installation at all angles
- 產品結構簡潔，安裝拆解方便
  Product structure is simple, easy to install and disassemble

◆ 技術特性 Specifications

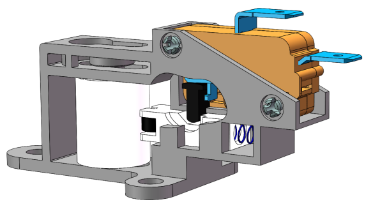
項目 Item		特性值 Value
工作速度 Operating speed		0.1mm ~ 1m/s (與驅動方式有關)(related with actuator forms)
工作頻率 Operatingf requency		機械 60次/min; 電氣 15次/min Mechanical 60 cycles/min; Electrical 15cycles/min
絶緣電阻 Insulation resistance		⩾100MΩ (500VDC)
接觸電阻 Contact resistance		⩽30mΩ (初始值 initial value)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V,50/60Hz，1min
	帶電金屬零件與外殼之間、接綫端與易觸及的不帶電金屬件之間 Between electrification mental parts and case , between connect terminal and non electrification mental 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—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：OP>0.5N—1000m/s^2 (approx.100G)max OP⩽0.5N—400m/s^2 (approx.40G)max Malfunction：OP>0.5N—200m/s^2 (approx.20G)max OP⩽0.5N—100m/s^2 (approx.10G)max
壽命Life		機械⩾200,000次; Mechanical ⩾2,00,000 cycles 電氣⩾50,000次 Electrical ⩾50,000 cycles
質量 Weight		約25g(無動臂型)Approx. 25g(No lever)
安全認證Safety approvals		UL、TUV、CE、CQC

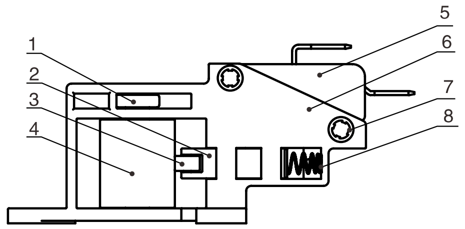
◆ 型號規格命名及含義 Model number legend and meanings

KW3A-G □
1 2

1 組件規格 Component specifications	G：晾衣架開關用組件 G: Components for clothes hanger switches
2 KW3A微動開關 KW3A Micro switch	同KW3A微動開關命名規則 Same as KW3A microswitch naming rules

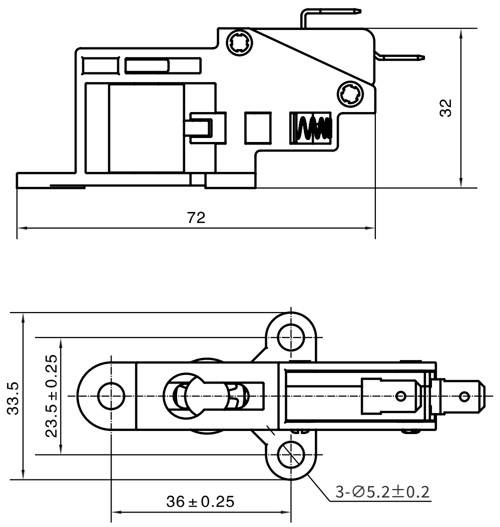
◆ 内部構造圖 Internal configuration drawing





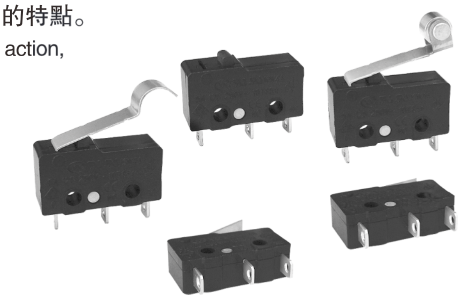
1: 銷軸	Pin
2: 推杆	Push rod
3: 滚子	Roller
4: 滚輪	Roller
5: 微動開關	Micro switch
6: 固定座	Fixed seat
7: 固定銷	Fixed pin
8: 復位彈簧	Reset spring

◆ 外形和安裝尺寸 Outline and mounting dimensions



KW4A型微動開關系列 Micro switch series

◆ 安全可靠的小型開關 Safe, reliable miniature switch



- 結構緊凑。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。
  Nice appearance, tight configuration. Characteristic: small contact gap, quick action, high sensitivity and small operating travel.
- 長壽命，高可靠。
  Long life, high reliability.
- 接綫端子種類齊全
  A variety of contact terminals
- 配備各種形式動臂
  A variety of levers.
- 采用熱固性或熱塑性塑料外殼
  Adopt thermosetting plastic or thermoplastic case.
- 廣泛應用于各種家用電器、電子設備、自動化設備、通訊設備、汽車電子、儀器儀表等領域。
  Widely used in home appliance,electronic equipment,automatic machine,communication equipment,car electron,apparatus and instrument etc.

◆ 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>0.5N: ≤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.	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(approx.100G)max OF≤0.5N: 500m/s^2(approx.50G)max Malfunction: OF>0.5N: 300m/s^2(approx.30G)max OF≤0.5N: 200m/s^2(approx.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
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

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

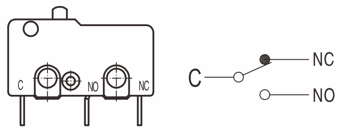
◆ 型號規格命名及含義 Model number legend and meanings

KW4A □– □ □ □ □ □ □ □ – (□)
1 2 3 4 5 6 7 8 9

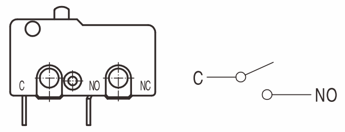
1 温度等級 Degrees of temperature	無標記 No mark: 10T85 10T105 25T125
2 額定值 Ratings	無標記 No mark: 5A125/250VAC 5(2)A250VAC 5(3)A125/250VAC 5GPA125/250VAC 1/4hp250VAC,4A30VDC KW4A–A: 10(4)A125/250VAC 10(3)A250VAC 10GPA125/250VAC 1/2hp250VAC 4A30VDC
3 接觸形式 Circuit	Z: 轉換式 SPDT T: 常開(按通)式 SPST–NO D: 常閉(按斷)式 SPST–NC (見説明圖 See illustration)
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: 滾輪臂 Roller 6: 弧形動臂 Arc lever □: 非標準動臂 Not standard lever 注:□表示非標準動臂的代號，詳見動臂外形尺寸圖。 Note: □ Indicate not standard lever, details see outline measurement drawings.
5 外殼材質 Case material	G: 熱固性 Thermosetting S: 熱塑性 Thermoplastic
6 端子類型 Terminal type	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 T: 110快接端子 Quick–connect terminal Y: 非標準端子 Not standard terminal
7 動作力(max) Operating force	050: 0.5N 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.
8 按鈕規格 Plunger spec	無標記: 標準按鈕 No mark: standard plunger A: 短按鈕 Short plunger B: 長按鈕 Long plunger D: 异形按鈕 Abnormal plunger (見説明圖 See illustration) 注：若采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 other not standard plunger,then indicate with the new spec (confirmed by our company).
9 附加規格編號適用于: 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.

◆ 接觸形式説明圖 Circuit illustration

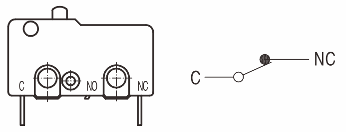
轉換式 SPDT



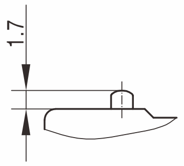
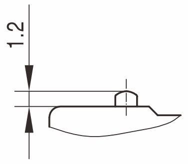
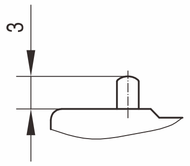
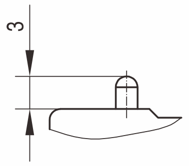
常開式 SPST–NO



常閉式 SPST–NC

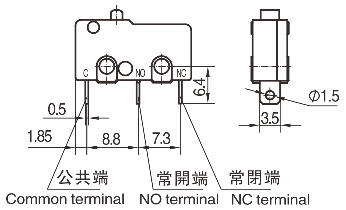


◆ 按鈕規格説明圖 Plunger spec illustration

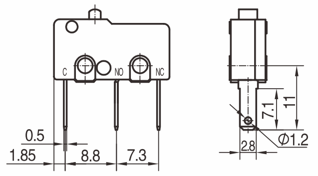
按鈕標記 Mark on plunger	無標記 No mark	A	B	D
按鈕尺寸 Plunger dimensions				

◆ 接綫端尺寸 Terminal dimensions

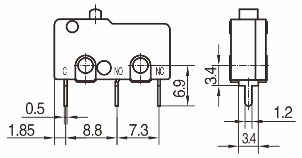
F 焊接端子
Solder terminal



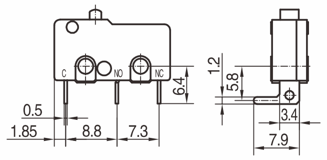
T 快接端子#110
Quick connect terminal #110



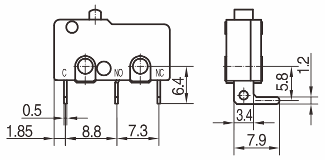
P PCB端子
PCB terminal



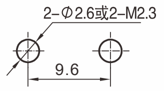
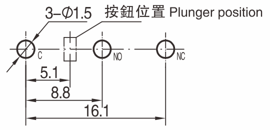
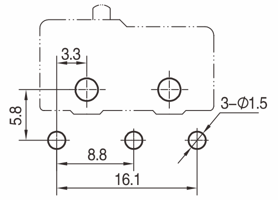
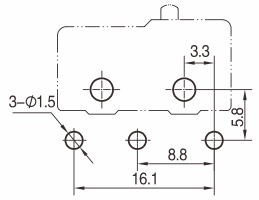
L 左側面PCB端子
Left side PCB terminal



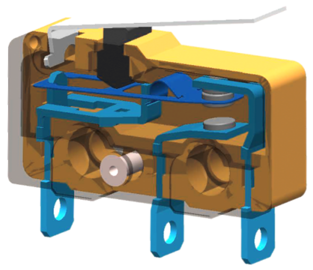
R 右側面PCB端子
Right side PCB terminal

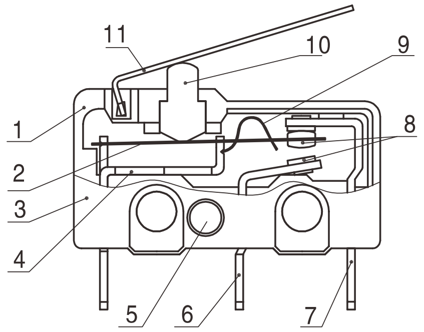


◆ 安裝孔尺寸 Mounting hole dimensions

	PCB端子 PCB terminal	左側面PCB端子 Left side PCB terminal	右側面PCB端子 Right side PCB terminal
			

◆ 内部構造圖 Internal configuration drawing

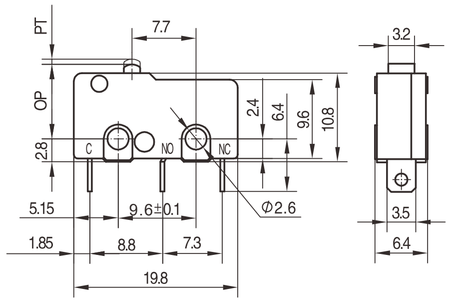




1	基座	Case
2	可動片	Moving piece
3	蓋	Cover
4	支架	Support
5	鉚釘	Rivet
6	常開端子	NO terminal
7	常閉端子	NC terminal
8	電觸點	Contact
9	簧片	Spring sheet
10	按鈕	Plunger
11	動臂(杠杆)	Lever

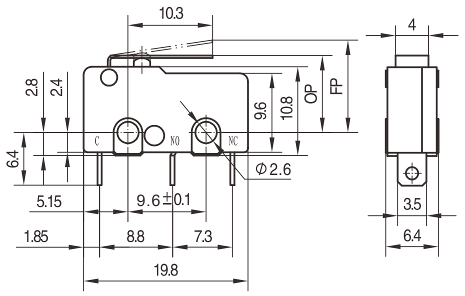
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4A–Z0□F100
KW4A–Z0□F150
KW4A–Z0□F200
KW4A–Z0□F300



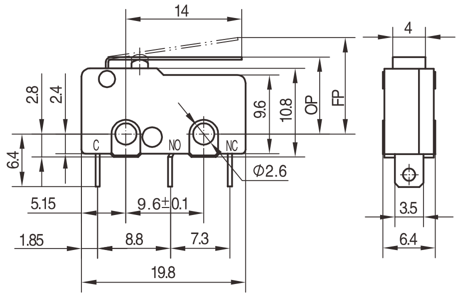
型號 Model	KW4A–Z0□F100	KW4A–Z0□F150	KW4A–Z0□F200	KW4A–Z0□F300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.20	0.35	0.50	0.80
PT Max(mm)	0.8			
OT Min(mm)	0.5			
MD Max(mm)	0.2			
OP(mm)	9.1±0.4			

KW4A–Z1□F100
KW4A–Z1□F150
KW4A–Z1□F200
KW4A–Z1□F300



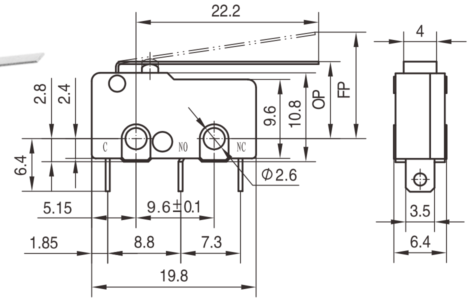
型號 Model	KW4A–Z1□F100	KW4A–Z1□F150	KW4A–Z1□F200	KW4A–Z1□F300
OF Max(N)	0.35	0.60	0.80	1.00
RF Min(N)	0.05	0.15	0.20	0.35
OT Min(mm)	1.5			
MD Max(mm)	0.6			
FP Max(mm)	12.0			
OP(mm)	9.5±0.8			

KW4A–Z3□F100
KW4A–Z3□F150
KW4A–Z3□F200
KW4A–Z3□F300



型號 Model	KW4A–Z3□F100	KW4A–Z3□F150	KW4A–Z3□F200	KW4A–Z3□F300
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)	1.0			
MD Max(mm)	0.8			
FP Max(mm)	13.0			
OP(mm)	9.8±1			

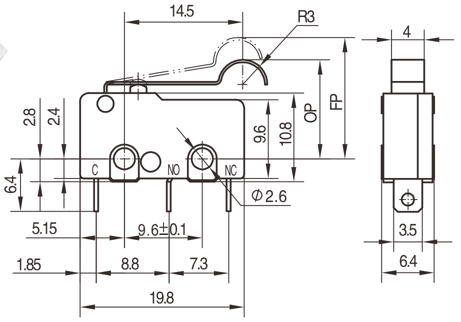
KW4A–Z2□F100
KW4A–Z2□F150
KW4A–Z2□F200
KW4A–Z2□F300



型號 Model	KW4A–Z2□F100	KW4A–Z2□F150	KW4A–Z2□F200	KW4A–Z2□F300
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			

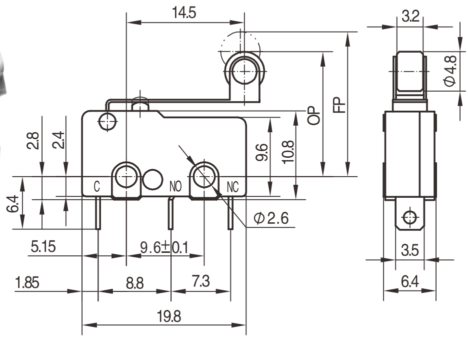
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4A–Z6□F100
KW4A–Z6□F150
KW4A–Z6□F200
KW4A–Z6□F300



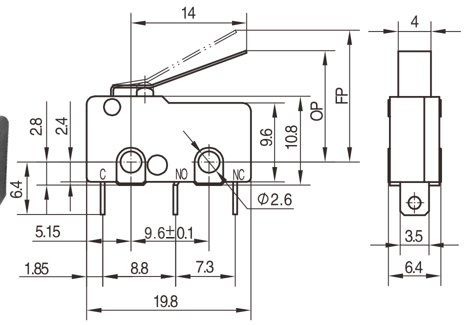
型號 Model	KW4A–Z6□F100	KW4A–Z6□F150	KW4A–Z6□F200	KW4A–Z6□F300
OF Max(N)	0.30	0.45	0.60	0.85
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	17.5			
OP(mm)	14.5 ± 1			

KW4A–Z5□F100
KW4A–Z5□F150
KW4A–Z5□F200
KW4A–Z5□F300



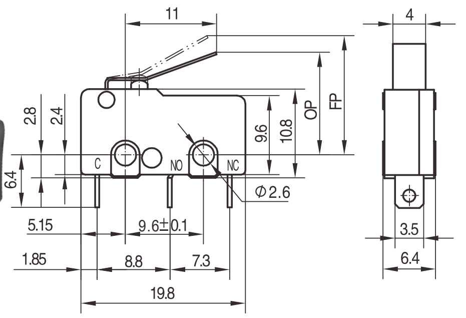
型號 Model	KW4A–Z5□F100	KW4A–Z5□F150	KW4A–Z5□F200	KW4A–Z5□F300
OF Max(N)	0.30	0.45	0.60	0.85
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	19.0			
OP(mm)	16.2 ± 1			

KW4A–ZE□F100
KW4A–ZE□F150
KW4A–ZE□F200
KW4A–ZE□F300



型號 Model	KW4A–ZE□F100	KW4A–ZE□F150	KW4A–ZE□F200	KW4A–ZE□F300
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			

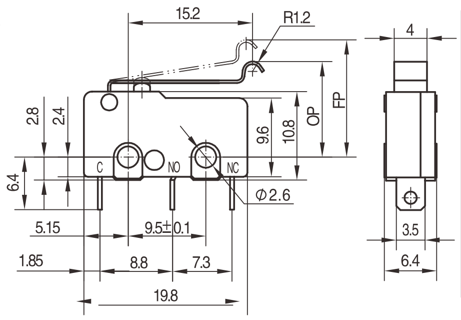
KW4A–ZQ□F100
KW4A–ZQ□F150
KW4A–ZQ□F200
KW4A–ZQ□F300



型號 Model	KW4A–ZQ□F100	KW4A–ZQ□F150	KW4A–ZQ□F200	KW4A–ZQ□F300
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			

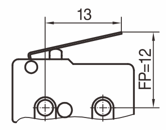
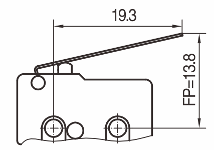
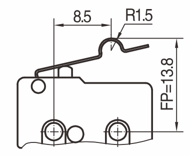
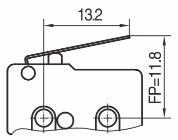
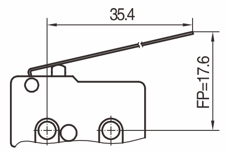
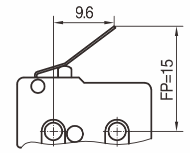
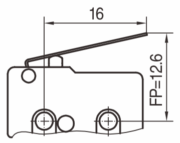
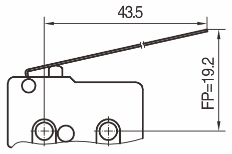
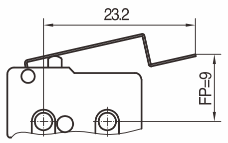
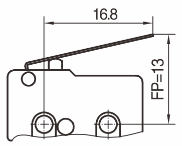
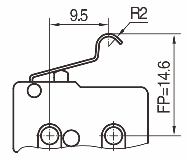
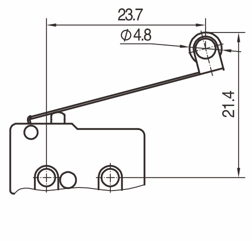
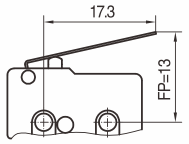
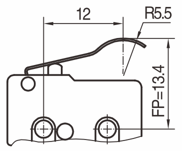
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4A–Z6B□F100
KW4A–Z6B□F150
KW4A–Z6B□F200
KW4A–Z6B□F300



型號 Model	KW4A–Z6B□F100	KW4A–Z6B□F150	KW4A–Z6B□F200	KW4A–Z6B□F300
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 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	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**			

◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關 頁

【 Note】please refer to related pages

- 關于和端子的連接 Concerning the connection with terminals

(1) 將導綫焊接到端子上時，請先將導綫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) 烙鐵的容量應爲60W以下，焊接時間在3s之内。若操作温度過高或時間過長，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) 請采用手工焊接。因爲如果采用焊槽焊接，焊錫可能進入開關内部而導致接觸不良。

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

(4) 對于快接式端子，插套插入插片時，應避免在端子的横向加力，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.

- 關于絶緣距離 Concerning insulation distance

根據IEC 61058–1/EN 61058–1/GB 15092.1之規定，本開關的最小絶緣層厚度爲1.1mm，端子和安裝板之間的最小空間距離爲1.6mm。如果無法確保零部件所要求的絶緣距離，請使用絶緣護罩或隔板來保證絶緣距離。

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.

- 關于安裝 Concerning installation

(1) 開關的安裝、拆卸和配綫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毁。

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，并請使用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.

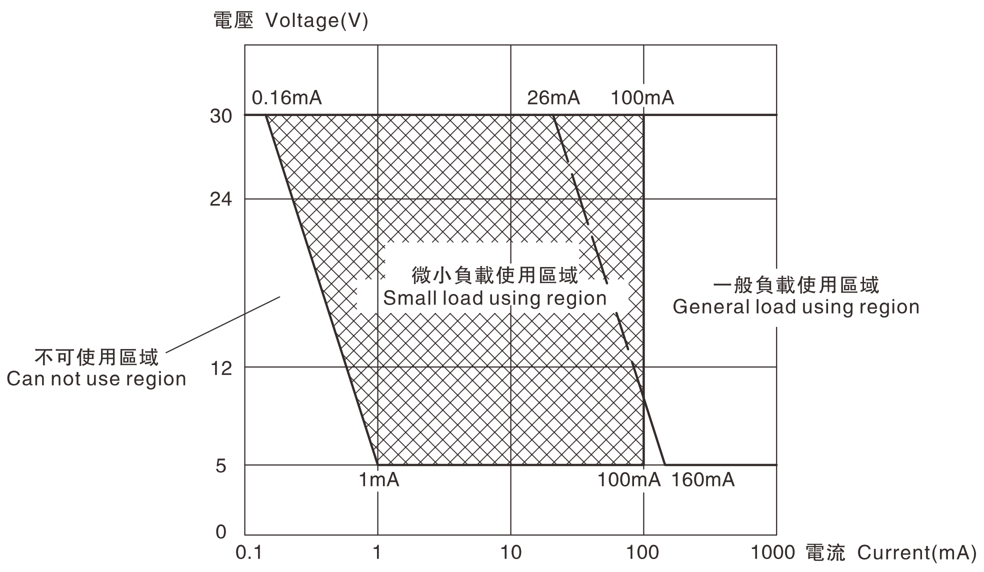
- 關于微小負載電路中的使用 Concerning use in small load circuit

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内使用開關，并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.



KW4A(S)型微動開關系列 Micro switch series

◆ 安全可靠的小型開關 Safe, reliable miniature switch

- 結構緊凑。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。
  Tight configuration. Characteristic: small contact gap, quick action, high sensitivity and small operating travel.
- 長壽命，高可靠。
  Long life, high reliability.
- 接綫端子種類齊全
  A variety of contact terminals
- 配備各種形式動臂
  A variety of levers
- 廣泛應用于各種家用電器、電子設備、自動化設備、通訊設備、汽車電子、儀器儀表等領域。
  Widely used in home appliance, electronic equipment, automatic machine, communication equipment, car electron, apparatus and instrument etc.

◆ 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
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		動作力>0.5N: ≤30mΩ (見注) OF>0.5N: ≤30mΩ (see note) 動作力≤0.5N: ≤50mΩ (見注) 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.	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/s²(約100G)max 動作力≤0.5N: 500m/s²(約50G)max 故障:動作力>0.5N: 300m/s²(約30G)max 動作力≤0.5N: 200m/s²(約20G)max Destruction: OF>0.5N: 1000m/s²(approx.100G)max OF≤0.5N: 500m/s²(approx.50G)max Malfunction: OF>0.5N: 300m/s²(approx.30G)max OF≤0.5N: 200m/s²(approx.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 電氣≥50,000次(TUV,CQC); Electrical ≥50,000 cycles(TUV,CQC)
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、SEMKO、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.

KW4A(S)

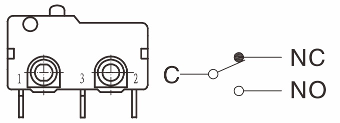
◆ 型號規格命名及含義 Model number legend and meanings

KW4A(S) □– □ □ □ □ □ □ – (□)
1 2 3 4 5 6 7 8

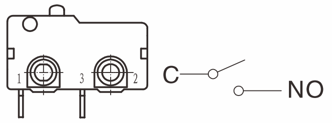
1 溫度等級 Degrees of temperature	無標記 No mark:10T85 T125	**5** 端子類型 Terminal type	F：焊接端子 Solder terminal P：PCB端子 PCB terminal L：左側面PCB端子 Left side PCB terminal R：右側面PCB端子 Right side PCB terminal T：110快接端子 Quick–connect terminal Y：非標準端子 Not standard terminal
2 額定值 Ratings	無標記 No mark: 5GPA125/250VAC 5A250VAC 5(2)A125/250VAC 1/4hp250VAC, 4A30VDC KW4A(S)–A: 10GPA125/250VAC 10A250VAC 10(3)A125/250VAC 1/2hp250VAC, 4A30VDC KW4A(S)–B: 3GPA125/250VAC 3A250VAC 3(1)A125/250VAC KW4A(S)–C: 1GPA125/250VAC,1A250VAC 1(0.5)A125/250VAC KW4A(S)–F: 0.1GPA125/250VAC 0.1A250VAC 0.1(0.05)A125/250VAC	**6** 動作力(max) operating force	050: 0.5N 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 (見説明圖 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 D: 异形按鈕 Abnormity plunger (見説明圖See illustration) 注：若采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 other 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: 滚輪臂 Roller lever 6: 弧形動臂 Arc lever □–非標準動臂 Not standard lever 注：□表示非標準動臂的代號，詳見動臂外形尺寸圖。 Note: □Indicate not standard lever,details see outline measurement drawings.	**8** 附加規格編號適用于： 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 stand ard 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，在没有附加規格編號時，該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

◆ 接觸形式説明圖 Circuit illustration

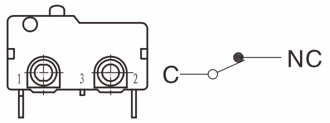
轉换式 SPDT



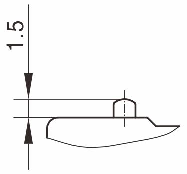
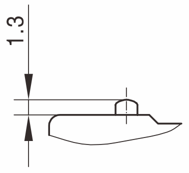
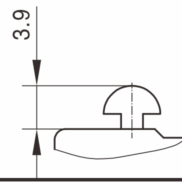
常開式 SPST–NO



常閉式 SPST–NC



◆ 按鈕規格説明圖 Plunger spec illustration

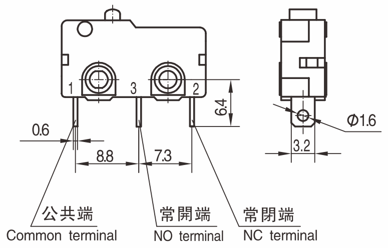
按鈕標記 Mark on plunger	無標記 No mark	A	D
按鈕尺寸 Plunger dimension			

KW4A(S)

◆ 接綫端尺寸 Terminal dimensions

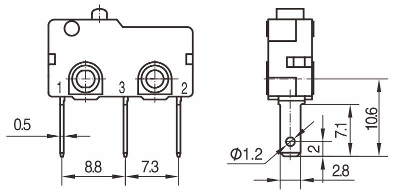
F

焊接端子
Solder terminal



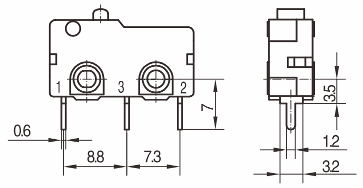
T

快接端子#110
Quick connect terminal #110



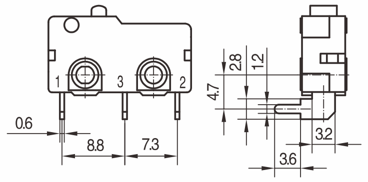
P

PCB端子
PCB terminal



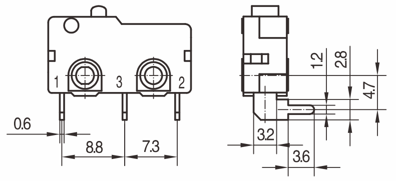
L

左側面PCB端子
Left side PCB terminal

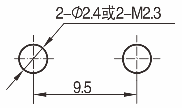
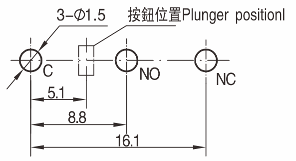
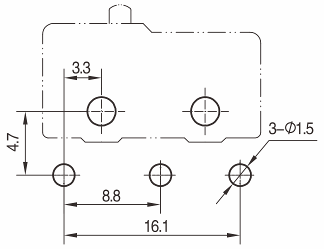
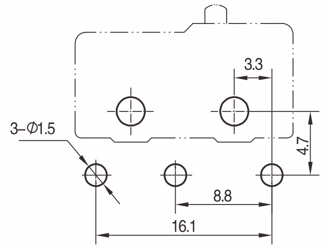


R

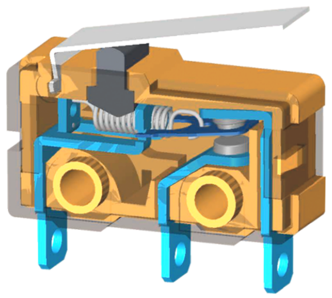
右側面PCB端子
Right side PCB terminal

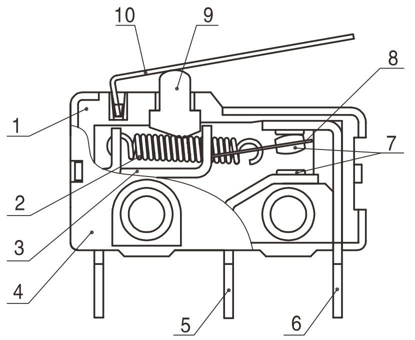


◆ 安裝孔尺寸 Mounting hole dimension

	PCB端子 PCB terminal	左側面PCB端子 Left side PCB terminal	右側面PCB端子 Right side PCB terminal
			

◆ 內部構造圖 Internal configuration drawing

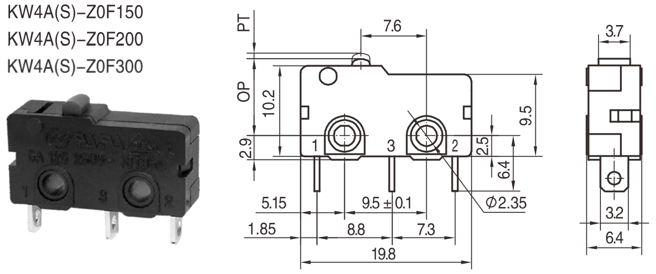




1:基座	Case
2:拉簧	Pull spring
3:支架	Support
4:蓋	Cover
5:常開端子	NO terminal
6:常閉端子	NC terminal
7:電觸點	Contact
8:可動片	Moving piece
9:按鈕	Plunger
10:動臂	Lever

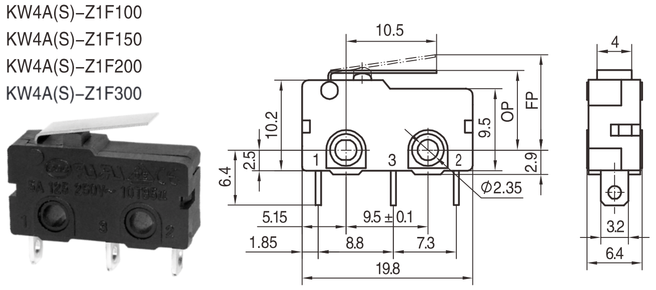
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4A(S)–Z0F100
KW4A(S)–Z0F150
KW4A(S)–Z0F200
KW4A(S)–Z0F300



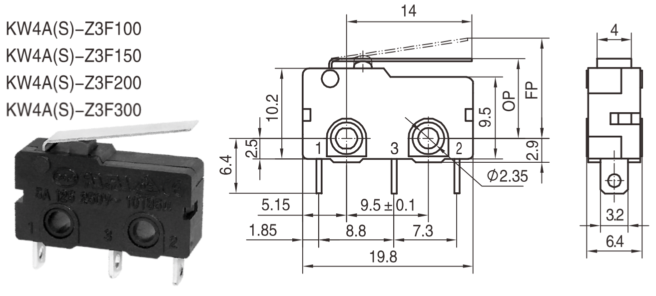
型 號 Model	KW4A(S)–Z0F100	KW4A(S)–Z0F150	KW4A(S)–Z0F200	KW4A(S)–Z0F300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.15	0.30	0.50	0.70
PT Max(mm)	0.8			
OT Min(mm)	0.5			
MD Max(mm)	0.2			
OP(mm)	8.6±0.4			

KW4A(S)–Z1F100
KW4A(S)–Z1F150
KW4A(S)–Z1F200
KW4A(S)–Z1F300



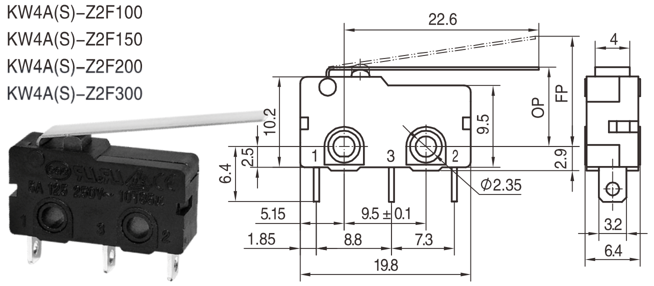
型 號 Model	KW4A(S)–Z1F100	KW4A(S)–Z1F150	KW4A(S)–Z1F200	KW4A(S)–Z1F300
OF Max(N)	0.35	0.55	0.75	1.00
RF Min(N)	0.10	0.15	0.20	0.30
OT Min(mm)	1.0			
MD Max(mm)	0.6			
FP Max(mm)	11.5			
OP(mm)	9±0.8			

KW4A(S)–Z3F100
KW4A(S)–Z3F150
KW4A(S)–Z3F200
KW4A(S)–Z3F300



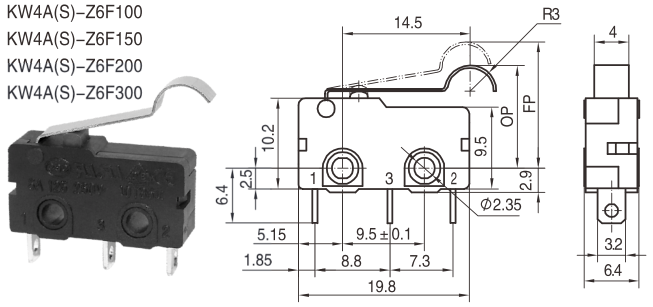
型 號 Model	KW4A(S)–Z3F100	KW4A(S)–Z3F150	KW4A(S)–Z3F200	KW4A(S)–Z3F300
OF Max(N)	0.25	0.40	0.50	0.80
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	0.8			
MD Max(mm)	0.8			
FP Max(mm)	12.5			
OP(mm)	8.9±1			

KW4A(S)–Z2F100
KW4A(S)–Z2F150
KW4A(S)–Z2F200
KW4A(S)–Z2F300



型 號 Model	KW4A(S)–Z2F100	KW4A(S)–Z2F150	KW4A(S)–Z2F200	KW4A(S)–Z2F300
OF Max(N)	0.20	0.30	0.35	0.45
RF Min(N)	0.03	0.08	0.10	0.15
OT Min(mm)	1.6			
MD Max(mm)	1.5			
FP Max(mm)	15.0			
OP(mm)	9±1.5			

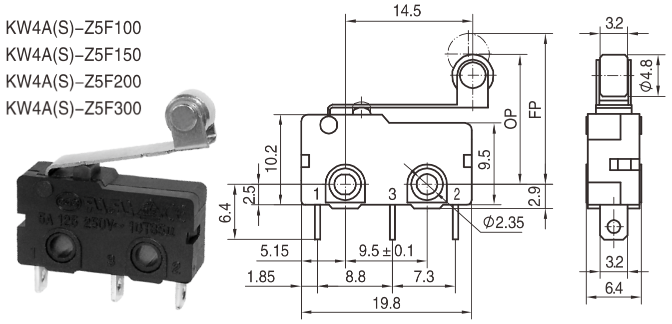
KW4A(S)–Z6F100
KW4A(S)–Z6F150
KW4A(S)–Z6F200
KW4A(S)–Z6F300



型 號 Model	KW4A(S)–Z6F100	KW4A(S)–Z6F150	KW4A(S)–Z6F200	KW4A(S)–Z6F300
OF Max(N)	0.25	0.40	0.50	0.80
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	1.5			
MD Max(mm)	0.8			
FP Max(mm)	16.5			
OP(mm)	13.4±1			

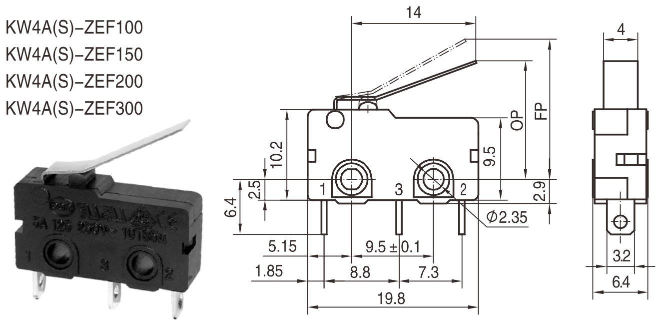
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4A(S)–Z5F100
KW4A(S)–Z5F150
KW4A(S)–Z5F200
KW4A(S)–Z5F300



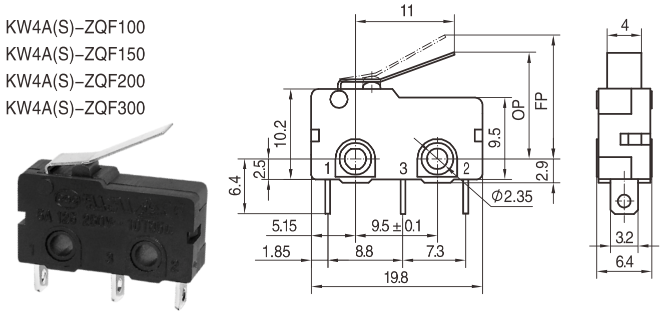
型 號 Model	KW4A(S)–Z5F100	KW4A(S)–Z5F150	KW4A(S)–Z5F200	KW4A(S)–Z5F300
OF Max(N)	0.25	0.40	0.50	0.80
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.9			
FP Max(mm)	19.0			
OP(mm)	15.2±1			

KW4A(S)–ZEF100
KW4A(S)–ZEF150
KW4A(S)–ZEF200
KW4A(S)–ZEF300



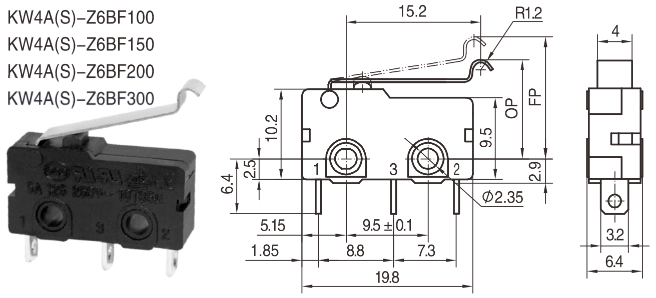
型 號 Model	KW4A(S)–ZEF100	KW4A(S)–ZEF150	KW4A(S)–ZEF200	KW4A(S)–ZEF300
OF Max(N)	0.25	0.40	0.50	0.80
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	16.5			
OP(mm)	13±1			

KW4A(S)–ZQF100
KW4A(S)–ZQF150
KW4A(S)–ZQF200
KW4A(S)–ZQF300



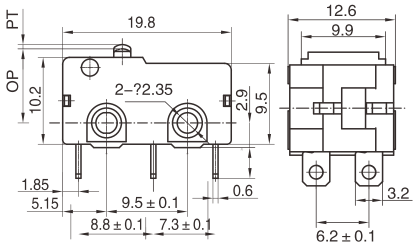
型 號 Model	KW4A(S)–ZQF100	KW4A(S)–ZQF150	KW4A(S)–ZQF200	KW4A(S)–ZQF300
OF Max(N)	0.32	0.50	0.65	1.00
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	1.0			
MD Max(mm)	0.8			
FP Max(mm)	15.0			
OP(mm)	12.2±0.8			

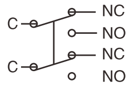
KW4A(S)–Z6BF100
KW4A(S)–Z6BF150
KW4A(S)–Z6BF200
KW4A(S)–Z6BF300



型 號 Model	KW4A(S)–Z6BF100	KW4A(S)–Z6BF150	KW4A(S)–Z6BF200	KW4A(S)–Z6BF300
OF Max(N)	0.25	0.40	0.50	0.80
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	15.5			
OP(mm)	12±1.2			

KW4A(S)雙聯開關 Double switch
KW4A(S)–Z0F200–22



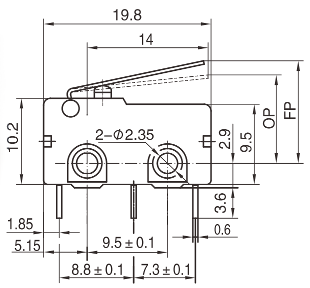


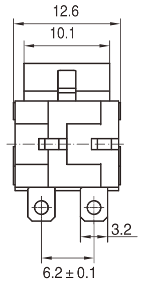
電路圖　Circuit diagram

型號 Model	KW4A(S)–Z0F200–22
OF Max(N)	3.5
RF Min(N)	1.2
PT Max(mm)	0.8
OT Min(mm)	0.5
MD Max(mm)	0.2
OP (mm)	8.6±0.4

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

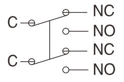
KW4A(S)–ZS7F200–22



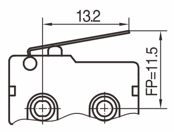
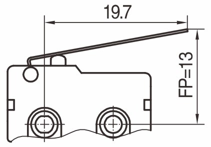
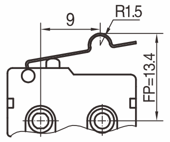
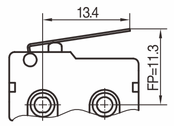
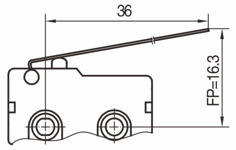
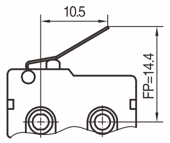
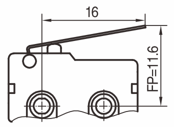
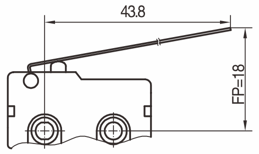
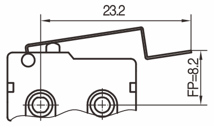
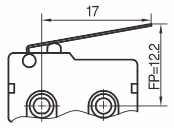
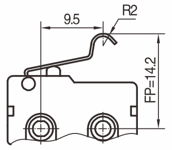
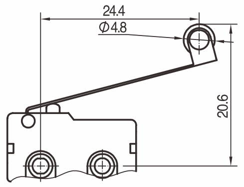
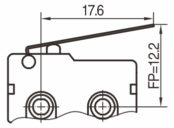
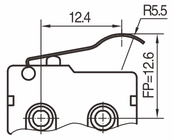


型號 Model	KW4A(S)–ZS7F200–22
OF Max(N)	1.00
RF Min(N)	0.30
PT Max(mm)	0.8
OT Min(mm)	1.0
MD Max(mm)	12.5
OP (mm)	8.9±1

電路圖 Circuit diagram



◆ 可供選擇的非標准動臂代號和外形特征尺寸 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**			

◆ 請正確使用 Please use it correctly

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

■ 關于和端子的連接 Concerning the connection with terminals

(1) 將導綫焊接到端子上時，請先將導綫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) 烙鐵的容量應爲60W以下，焊接時間在3s之内。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) 請采用手工焊接。因爲如果采用焊槽焊接，焊錫可能進入開關内部而導致接觸不良。
Please joint with hands. If joint with wave soldering, soldering tin may come inside the switch, then bad contact will happen.

(4) 對于快接式端子，插套插入插片時，應避免在端子的横向加力，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.

■ 關于絶緣距離 Concerning insulation distance

根據IEC 61058–1/EN 61058–1/GB 15092.1之規定，本開關的最小絶緣層厚度爲1.1mm，端子和安裝板之間的最小空間距離爲1.6mm。如果無法確保零部件所要求的絶緣距離，請使用絶緣護罩或隔板來保證絶緣距離。
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.

■ 關于安裝 Concerning installation

(1) 開關的安裝、拆卸和配綫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毁。
Please turn off the power when installing, disassembling, wiring work and maintenance check, otherwise, electric shock and burn will happen.

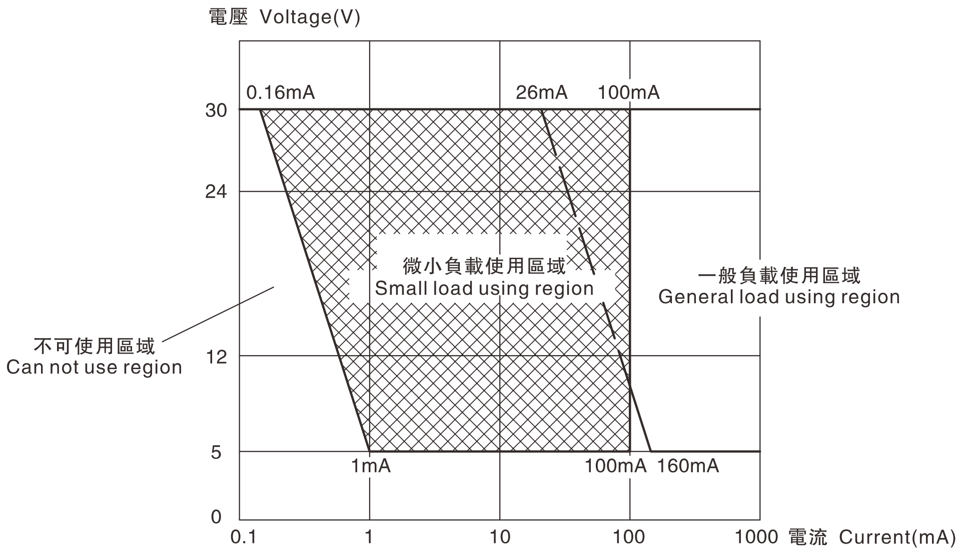
(2) 安裝時，使用2個M2.3螺釘，用平墊圈、彈簧墊圈等緊固，并請使用0.23～0.26N・m的緊固轉矩。
When installing,please use 2 M2.3 screws,then tight it with flat washer,spring washer,and also tight with 0.23~0.26N・m torque.

(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.

■ 關于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内使用開關，并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.



KW4B型微動開關系列 Micro switch series

◆ 特點和用途 Characteristic and usage

- 多種接綫端子型式

  A variety of contact terminals

- 廣泛應用于家用電器、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

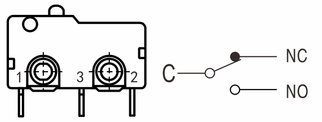
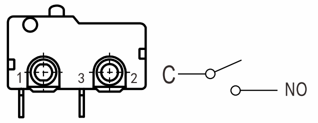
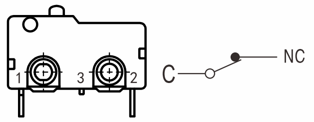
項目 Item		特性值 Value
工作速度 Operating speed		0.1mm～1m/s(與驅動方式有關）（Related with actuator forms)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ
耐電壓 Test voltage	同極不相接端子間 Between terminals 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.	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□（約100G）max 動作力≤0.5N：500m/s□（約50G）max 故障：動作力＞0.5N：300m/s□（約30G）max 動作力≤0.5N：200m/s□（約20G）max Destruction:OF＞0.5N：1000m/s□（約100G）max OF≤0.5N：500m/s□（約50G）max Malfunction:OF＞0.5N：300m/s□（約30G）max OF≤0.5N：200m/s□（約20G）max
壽命 Life		機械≥1,00,000次; 電氣≥10,000次 Mechanical ≥100,000 cycles Electrical ≥10,000 cycles
質量 Weight		約2.3g(無動臂型) Approx. 1.6g(No lever)
安全認證 Safety approvals		UL

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

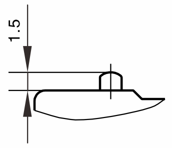
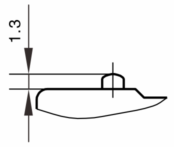
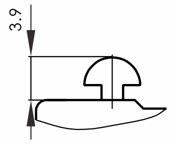
KW4B□－□□□□□□－(□)
1 2 3 4 5 6 7 8

1 溫度等級 Degrees of temperature	無標記No mark：25 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	无标记No mark： 5A 125/250VAC 5E4 5(3)A 250VAC 5E4 5A 36VDC 5E4 KW4B-A 10A 125/250VAC 5E4 10(4)A 250VAC 5E4 10A 36VDC 1E4	**6** 動作力(MAX) Operating force	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:轉换式 SPDT T:常開(按通)式 SPST–NO D:常閉(按斷)式 SPST–NC (見P31説明圖 See P31 illustration)	**7** 按鈕規格 Plunger specs	无标记:No mark:标准按钮Standard plunger A,B,C...非标准按钮A,B,C...indicate not standard plunger (见说明图See illustration) 注:若采用本表中未列入的非标准按钮,则用此新增按钮的规格代号(本公司确认)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:滚輪動臂Roller lever 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** 附加規格編號適用于：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 stand ard 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 repuirements. 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.

◆ 接觸形式説明圖 Circuit illustration

轉換式 SPDT	常開式 SPST–NO	常閉式 SPST–NC
		

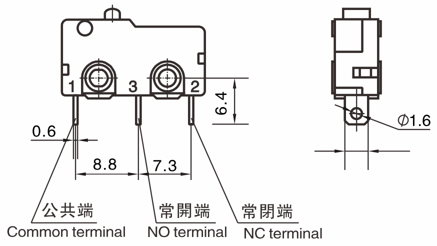
◆ 按鈕規格説明圖 Plunger spec illustration

按鈕標記 Mark on plunger	無標記 No mark	A	D
按鈕尺寸 Plunger dimensions			

◆ 接線端尺寸 Terminal dimensions

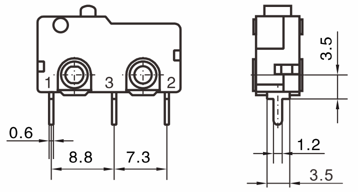
F

焊接端子
Solder terminal



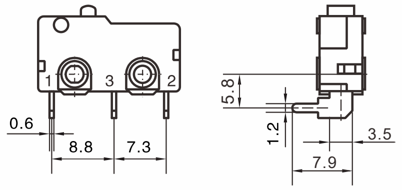
P

PCB端子
PCB terminal



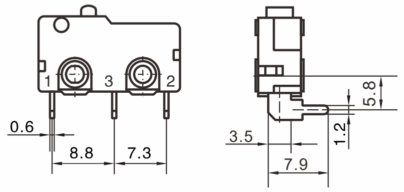
L

左側面PCB端子
Left side PCB terminal

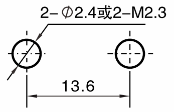
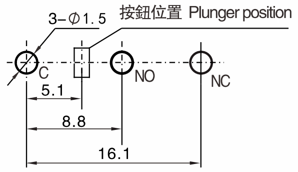
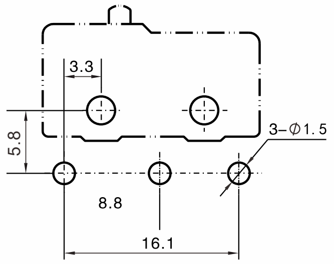
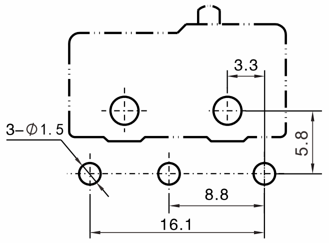


R

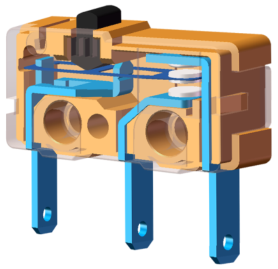
右側面PCB端子
Right side PCB terminal

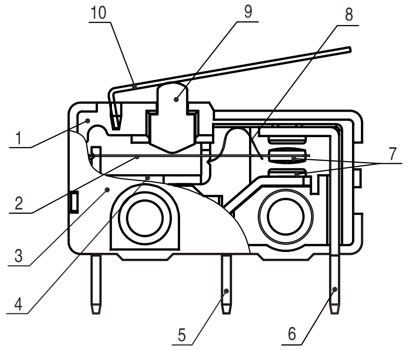


◆ 安裝孔尺寸 Mounting hole dimensions

	PCB端子 PCB terminal	左側面PCB端子 Left side PCB terminal	右側面PCB端子 Right side PCB terminal
			

◆ 内部構造圖 Internal configuration drawing

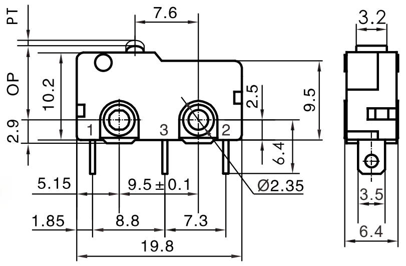




1: 外殼	Case
2:可動片	Moving piece
3: 蓋	Cover
4: 支架	Support
5: 常開端子	NO terminal
6: 常閉端子	NC terminal
7: 電觸點	Contact
8: 簧片	Spring sheet
9: 按鈕	Plunger
10: 動臂（杠杆）	Lever

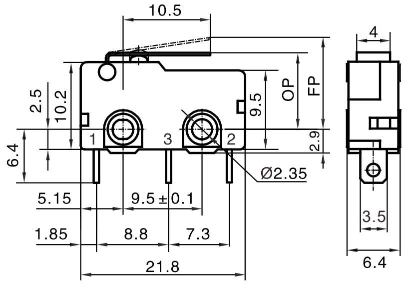
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4B–Z0F200
KW4B–Z0F300



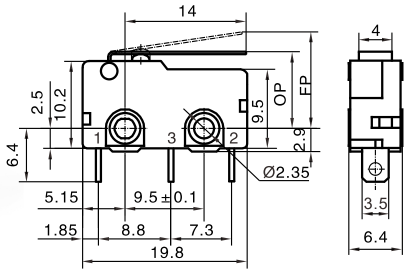
型 號 Model	KW4B–Z0F200	KW4B–Z0F300
OF Max(N)	2.00	3.00
RF Min(N)	0.1	0.2
PT Max(mm)	0.8	
OT Min(mm)	0.5	
MD Max(mm)	0.2	
OP(mm)	8.6±0.4	

KW4B–Z1F200
KW4B–Z1F300



型 號 Model	KW4B–Z1F200	KW4B–Z1F300
OF Max(N)	0.80	1.00
RF Min(N)	0.05	0.07
OT Min(mm)	1.00	
MD Max(mm)	0.6	
FP Max(mm)	12.0	
OP(mm)		

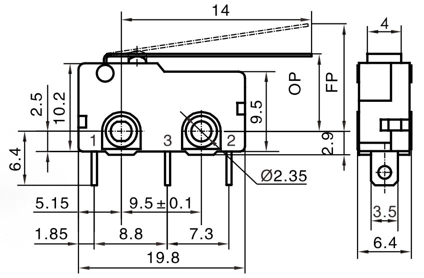
KW4B–Z3F200
KW4B–Z3F300



型 號 Model	KW4B–Z3F200	KW4B–Z3F300
OF Max(N)	0.60	0.85
RF Min(N)	0.04	0.06
OT Min(mm)	1.5	
MD Max(mm)	0.8	
FP Max(mm)	12	
OP(mm)	9±1	

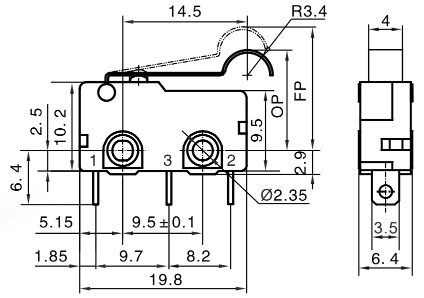
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4B–Z2F200
KW4B–Z2F300



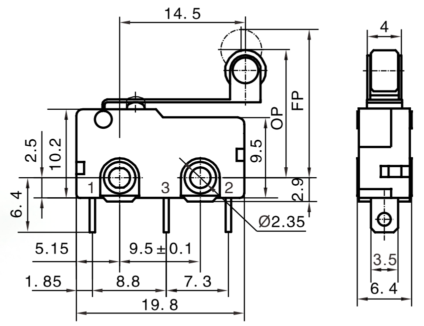
型 號 Model	KW4B–Z2F200	KW4B–Z2F300
OF Max(N)	0.40	0.60
RF Min(N)	0.02	0.04
OT Min(mm)	2.0	
MD Max(mm)	1.5	
FP Max(mm)	14.5	
OP(mm)	9.7±1.5	

KW4B–Z6F200
KW4B–Z6F300



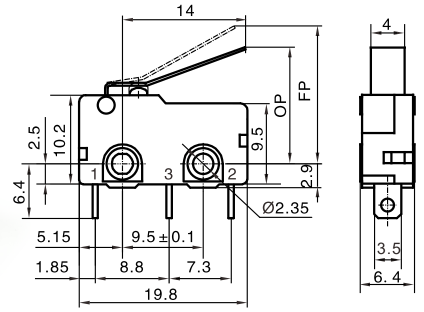
型 號 Model	KW4B–Z6F200	KW4B–Z6F300
OF Max(N)	0.60	0.85
RF Min(N)	0.04	0.06
OT Min(mm)	1.2	
MD Max(mm)	0.8	
FP Max(mm)	16	
OP(mm)	13.4±1	

KW4B–Z5F200
KW4B–Z5F300



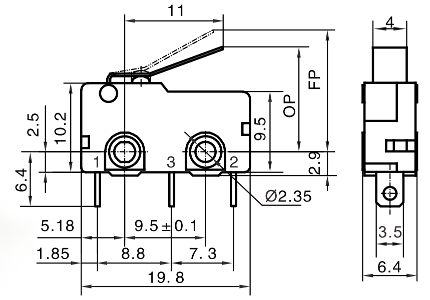
型 號 Model	KW4B–Z5F200	KW4B–Z5F300
OF Max(N)	0.60	0.85
RF Min(N)	0.04	0.06
OT Min(mm)	1.2	
MD Max(mm)	0.8	
FP Max(mm)	18	
OP(mm)	15.7±1	

KW4B–ZEF200
KW4B–ZEF300



型 號 Model	KW4B–ZEF200	KW4B–ZEF300
OF Max(N)	0.60	0.85
RF Min(N)	0.04	0.06
OT Min(mm)	1.2	
MD Max(mm)	0.8	
FP Max(mm)	17	
OP(mm)	13.5±1	

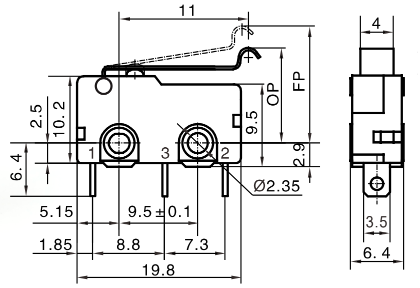
KW4B–ZQF200
KW4B–ZQF300



型 號 Model	KW4B–ZQF200	KW4B–ZQF300
OF Max(N)	0.65	1.00
RF Min(N)	0.05	0.07
OT Min(mm)	1.2	
MD Max(mm)	0.8	
FP Max(mm)	14.5	
OP(mm)	12.2±1	

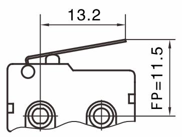
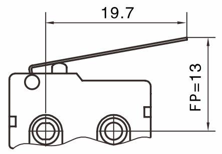
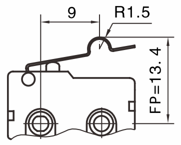
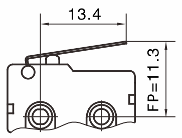
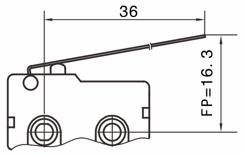
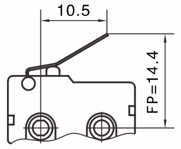
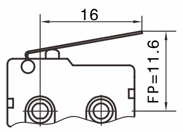
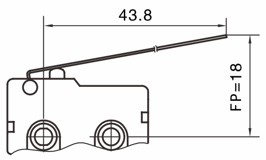
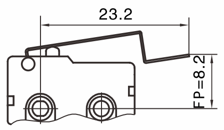
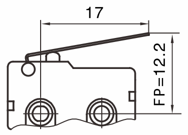
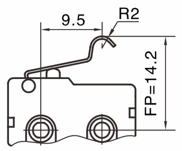
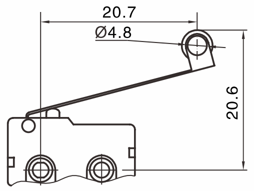
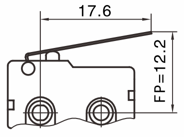
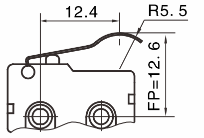
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4B–Z6BF200
KW4B–Z6BF300



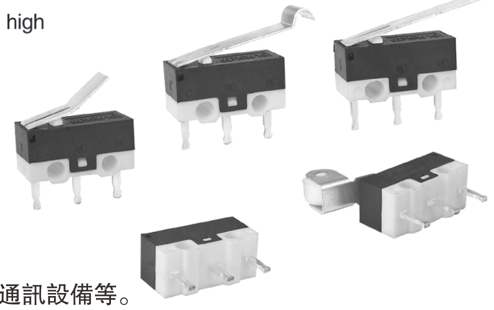
型 號 Model	KW4B–Z6BF200	KW4B–Z6BF300
OF Max(N)	0.50	0.75
RF Min(N)	0.02	0.03
OT Min(mm)	1.2	
MD Max(mm)	0.8	
FP Max(mm)	15.5	
OP(mm)	13±1.2	

◆ 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 dimensio

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
- 多種接綫端子
  A variety of contact terminals
- 多種形式動臂
  A variety of levers
- 適用于家用電器、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
絶緣電阻 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(see note)
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.	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/s²(約30G)max Malfunction:300m/s²(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.

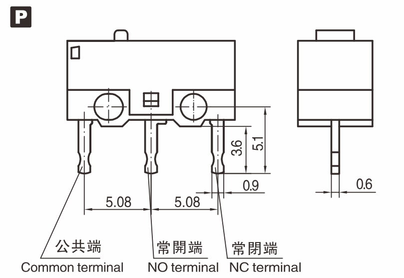
◆ 型號規格命名及含義 Model number legend and meanings

KW10 – □ □ □ □ □ – (□)
1 2 3 4 5 6

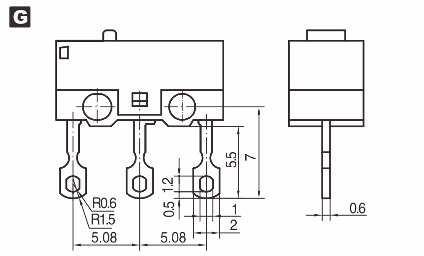
1 額定值 Ratings	無標記 No mark： 3(0.5)A125/250VAC,3(1)A125/250VAC 3GPA125/250VAC 3RA125/250VAC, 3A30VDC KW10–C： 1A125VAC, 1(0.5)A125/250VAC 1GPA125/250VAC 1RA125/250VAC, 1A30VDC KW10–D： 0.5A125VAC, 0.5(0.2)A125/250VAC 0.5GPA125/250VAC 0.5RA125/250VAC, 0.5A30VDC KW10–E： 0.3A125VAC, 0.3(0.1)A125/250VAC 0.3GPA125/250VAC 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：长焊接端子 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：非标准端子 Not standard terminal
		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.
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	**6** 附加規格編號, 適用于： 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.
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 lever		

◆ 接綫端尺寸 Terminal dimensions

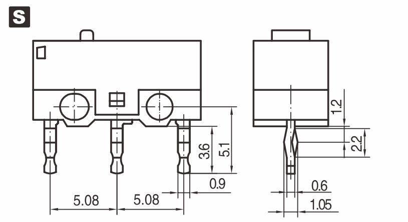
PCB端子
PCB terminal



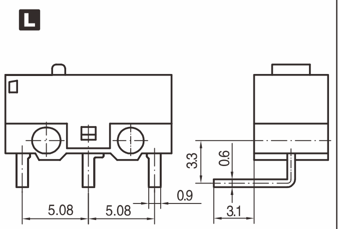
長焊接端子
Long solder terminal



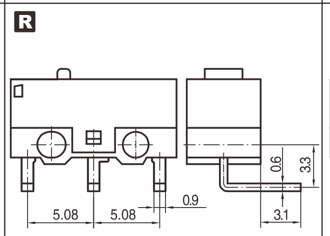
自固定PCB端子
Self–clinching PCB terminal



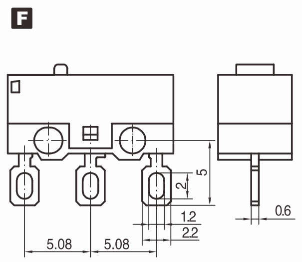
左側面PCB端子
Left side PCB terminal



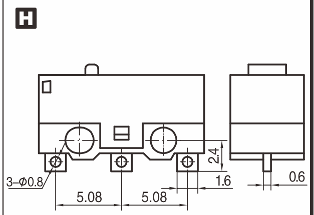
右側面PCB端子
Right side PCB terminal



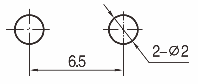
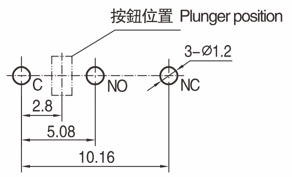
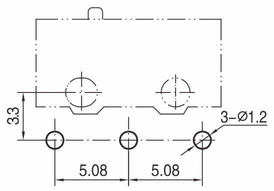
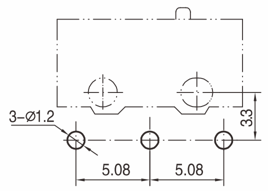
焊接端子
Solder terminal



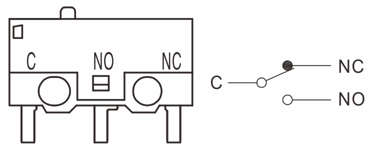
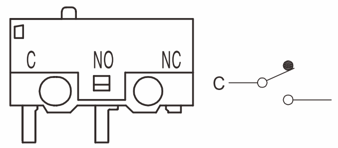
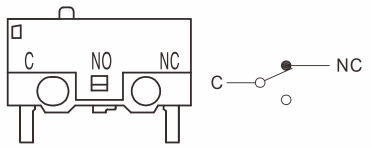
焊接小型端子
Minitype solder terminal



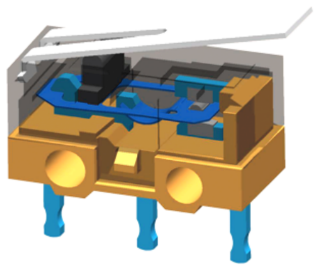
◆ 安裝孔尺寸 Mounting hole dimensions

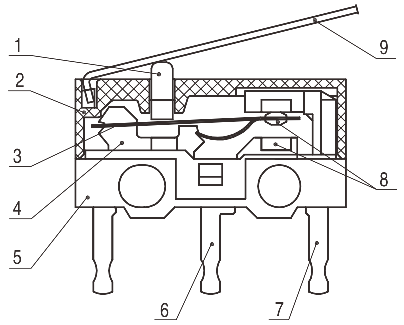
	PCB端子 PCB terminal	左側面PCB端子 Left side PCB terminal	右側面PCB端子 Right side PCB terminal
			

◆ 接觸形式說明圖 Circuit illustration

轉換式 SPDT	常開式 SPST–NO	常閉式 SPST–NC
		

◆ 內部構造圖 Internal configuration drawing

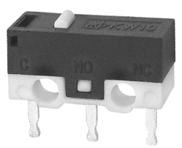


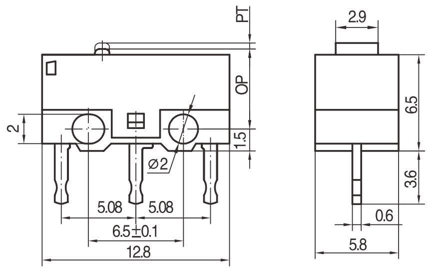


1:	按鈕	Plunger
2:	蓋	Cover
3:	可動片	Moving piece
4:	支架	Support
5:	基座	Case
6:	常開端子	NO terminal
7:	常閉端子	NC terminal
8:	電觸點	Contact
9:	動臂	Lever

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

KW10–Z0P075
KW10–Z0P150
KW10–Z0P250

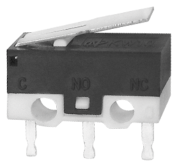


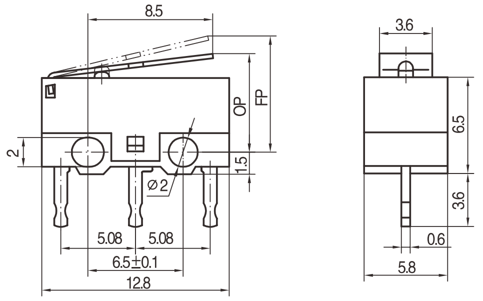


型號 Model	KW10–Z0P075	KW10–Z0P150	KW10–Z0P250
OF Max(N)	0.75	1.50	2.50
RF Min(N)	0.05	0.02	0.40
PT Max(mm)	0.5		
OT Min(mm)	0.2		
MD Max(mm)	0.2		
OP(mm)	5.5±0.3		

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

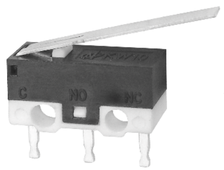
KW10–Z1P075
KW10–Z1P150
KW10–Z1P250

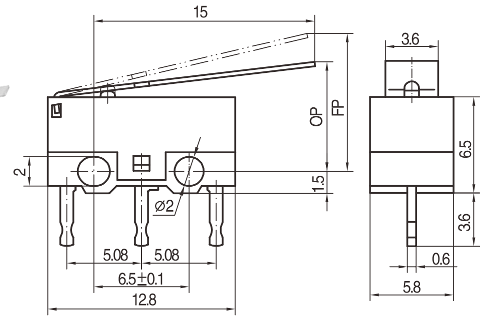




型號 Model	KW10–Z1P075	KW10–Z1P150	KW10–Z1P250
OF Max(N)	0.26	0.53	0.90
RF Min(N)	0.04	0.08	0.15
OT Min(mm)	0.6		
MD Max(mm)	0.6		
FP Max(mm)	9.0		
OP(mm)	6.7±1		

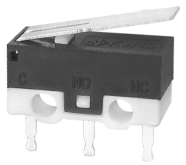
KW10–Z2P075
KW10–Z2P150
KW10–Z2P250

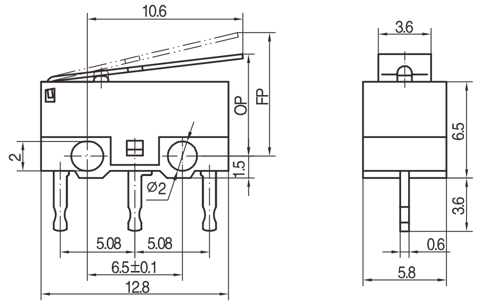




型號 Model	KW10–Z2P075	KW10–Z2P150	KW10–Z2P250
OF Max(N)	0.17	0.33	0.55
RF Min(N)	0.02	0.04	0.08
OT Min(mm)	1.0		
MD Max(mm)	1.0		
FP Max(mm)	10.0		
OP(mm)	7.6±1.5		

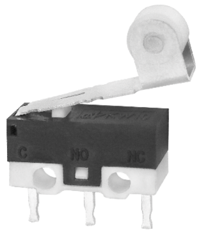
KW10–Z3P075
KW10–Z3P150
KW10–Z3P250

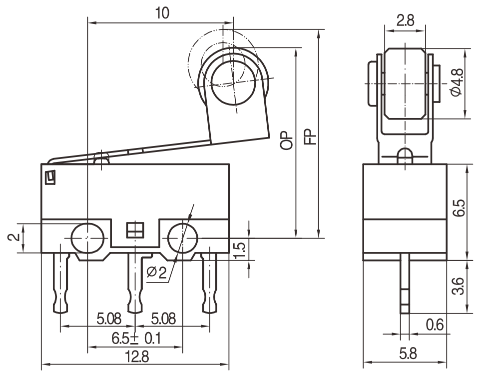




型號 Model	KW10–Z3P075	KW10–Z3P150	KW10–Z3P250
OF Max(N)	0.23	0.45	0.75
RF Min(N)	0.03	0.06	0.12
OT Min(mm)	0.7		
MD Max(mm)	0.7		
FP Max(mm)	9.5		
OP(mm)	7±1.2		

KW10–Z5P075
KW10–Z5P150
KW10–Z5P250

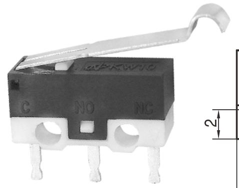


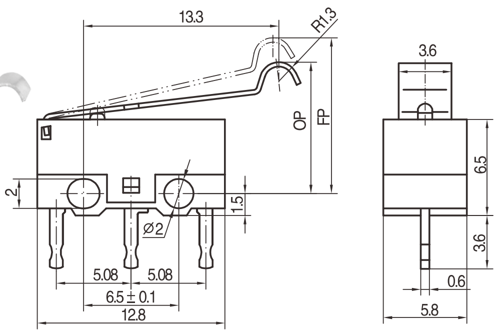


型號 Model	KW10–Z5P075	KW10–Z5P150	KW10–Z5P250
OF Max(N)	0.23	0.46	0.77
RF Min(N)	0.02	0.05	0.10
OT Min(mm)	0.7		
MD Max(mm)	0.7		
FP Max(mm)	16.5		
OP(mm)	13±1.5		

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

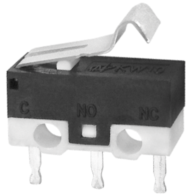
KW10-Z6P075
KW10-Z6P150
KW10-Z6P250

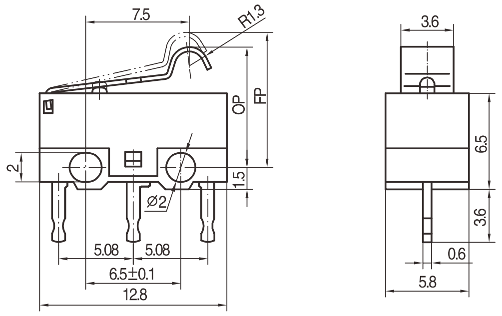




型 號 Model	KW10-Z6P075	KW10-Z6P150	KW10-Z6P250
OF Max(N)	0.18	0.36	0.60
RF Min(N)	0.02	0.05	0.10
OT Min(mm)	0.9		
MD Max(mm)	0.9		
FP Max(mm)	11.5		
OP(mm)	9.5±1		8.6±1

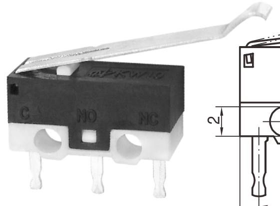
KW10-Z8P075
KW10-Z8P150
KW10-Z8P250

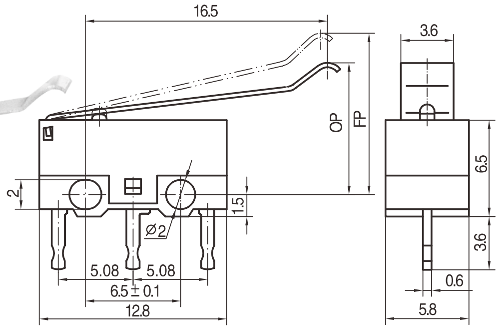




型 號 Model	KW10-Z8P075	KW10-Z8P150	KW10-Z8P250
OF Max(N)	0.30	0.60	1.00
RF Min(N)	0.03	0.06	0.12
OT Min(mm)	0.6		
MD Max(mm)	0.6		
FP Max(mm)	10.5		
OP(mm)	8.6±1		

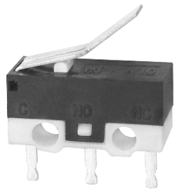
KW10-ZEP075
KW10-ZEP150
KW10-ZEP250

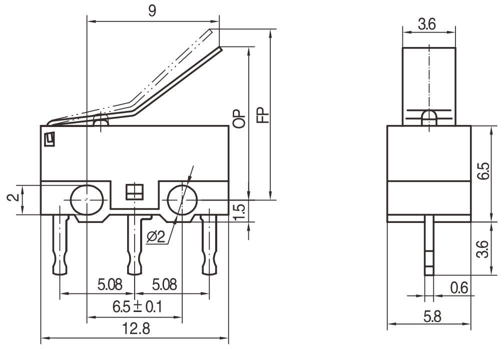




型 號 Model	KW10-ZEP075	KW10-ZEP150	KW10-ZEP250
OF Max(N)	0.15	0.30	0.50
RF Min(N)	0.02	0.05	0.10
OT Min(mm)	1.1		
MD Max(mm)	1.0		
FP Max(mm)	11.5		
OP(mm)	8.5±1.5		

KW10-ZBP075
KW10-ZBP150
KW10-ZBP250

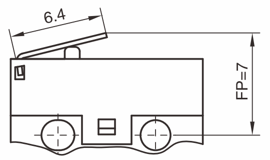
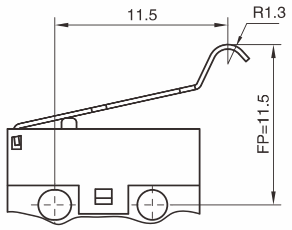
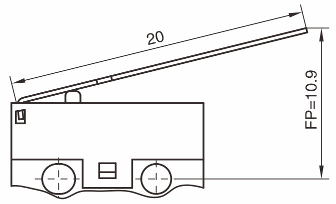
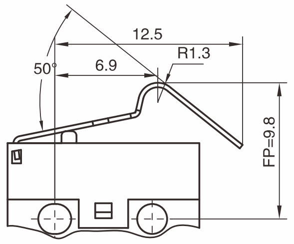
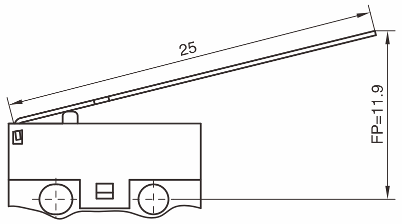
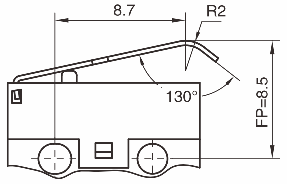
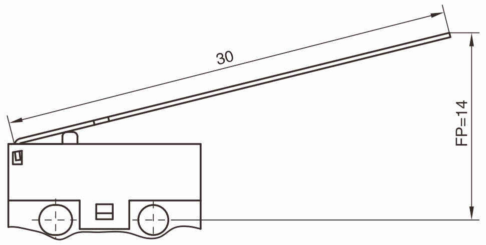
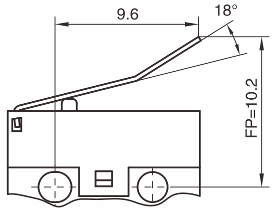
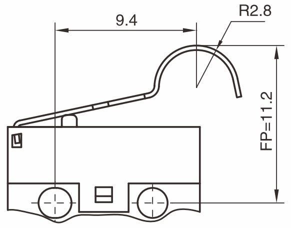
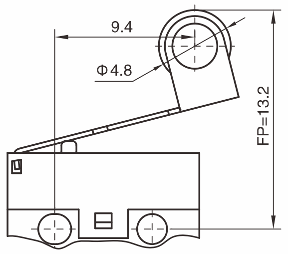




型 號 Model	KW10-ZBP075	KW10-ZBP150	KW10-ZBP250
OF Max(N)	0.25	0.50	0.80
RF Min(N)	0.02	0.05	0.10
OT Min(mm)	0.6		
MD Max(mm)	0.6		
FP Max(mm)	12.5		
OP(mm)	10.5±1.5		

◆ 可供選擇的非標準動臂代號和外形特徵尺寸

Not standard l ever 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
【Note】please refer to related pages

- 關于和端子的連接 Concerning the connection with terminals

(1) 將導綫焊接到端子上時，請先將導綫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) 烙鐵的容量應爲30W以下，烙鐵頭溫度在300℃左右(最大控制在350℃以下)，焊接時間在3s之內。焊接不良的情况下使用開關，可能導致异常發熱和燒損。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℃(maximum under 350℃),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。因爲如果采用焊槽焊接，焊錫可能進入開關内部而導致接觸不良。
Please joint with hands. If joint with wave soldering, soldering tin may come inside switch, then bad contact will happen.

(4) 對于快接式端子，插套插入插片時，應避免在端子的横向加力，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.

- 關于安裝 Concerning installation

(1) 開關的安裝、拆卸和配綫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毁。
Please turn off the power when installing, disassembling, wiring work and maintenance check, otherwise, electric shock and burn will happen.

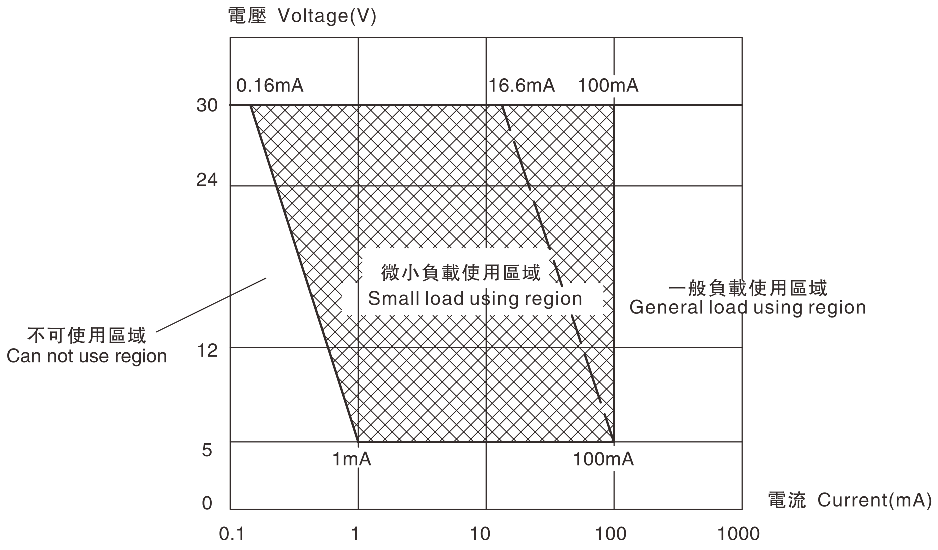
(2) 安裝時，使用2個M2螺釘，用平墊圈、彈簧墊圈等緊固，并請使用0.08～0.1N・m的緊固轉矩。
When installing, please use 2 M2 screws,then tight it with flat washer,spring washer,and also tight with 0.08~0.1N•m torque.

(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.

- 關于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.

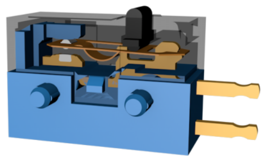
請參考下圖在使用區域的範圍内使用開關，并根據需要插入觸點保護電路。
Please refer to the chart below, use switch within using region, and insert contact to protect circuit according to the needs.



KW11微动开关系列 Micro switch series

◆ 特点和用途 Characteristics and usage

- 采用组合式结构设计，通过连接柱和连接孔的插接定位配合能够将两个（或多个）微动开关并排连接固定在一起。
  Adopting a combination structure design, two (or more) Micro switches can be connected and fixed together side by side through the insertion and positioning coordination of connecting columns and connecting holes.



- 配备各种形式动臂
  A variety of levers
- 可在汽车、家用电器等有耐环境性要求的场合使用。
  Can be used in environmental resistant requirements applications such as automobile, home appliances etc.

◆ 技術特性 Technical Characteristics

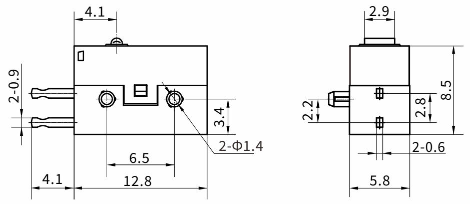
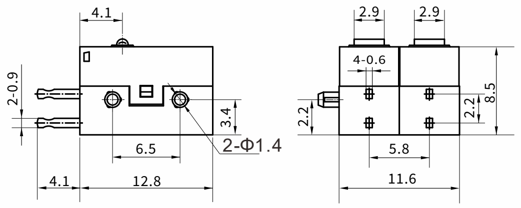
項目 Item		特性值 Value
工作速度Operating speed		1mm~500mm/s(與驅動方式有關) (Related with actuator forms)
工作頻率Operating frequency		機械60次/min;電氣25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絕緣電阻 Insulation resistance		⩾100MΩ (500VDC)
接觸電阻 Contact resistance		⩽50mΩ
工頻耐電壓 Test voltage	不相接端子間 Between non-continuous terminals	AC1000V,50/60Hz，1min
	端子與不帶電金屬件之間 端子與地（外殼）之間 Between each terminal and other exposed metal parts Between each terminal and ground	AC1000V,50/60Hz，1min
抗振动Vibration resistance		10～55Hz，总振幅1.5 Total amplitude
抗冲击Shock resistance		故障.: 300m/s²(约30G)max Malfunction: 300m/s²(approx.30G)max
壽命 Life		机械⩾1,000,000次 Mechanical ⩾1,000,000 cycles 电气⩾10,000次 Electrical ⩾10,000 cycles

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

KW11-□ □ □ □ □-□-(□)
1 2 3 4 5 6 7

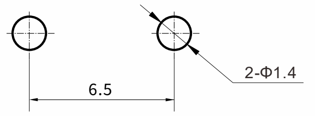
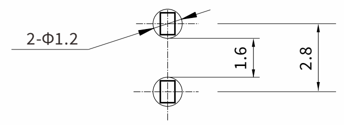
1 额定值 Ratings	无标记 Unmarked: 3(0.5)A 125/250VAC,3(1)A 125/250VAC, 3GPA 125/250VAC,3RA 125/250VAC, 3A 30VDC C:1A 125VAC,1(0.5)A 125/250VAC, 1GPA 125/250VAC,1RA 125/250VAC, 1A 30VDC F: 0.1A 125VAC,0.1(0.05)A 125/250VAC, 0.1GPA 125/250VAC,0.1RA 125/250VAC, 0.1A 30VDC	4 端子类型 Terminal type	L:左向PCB端子 Left side PCB terminal
		5 动作力 Operating force	075: 0.75N 150:1.5N 250: 2.5N 注:若是非标准动作力,用此动作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
2 接触形式 Circuit	T: 常開(按通)式 T-SPST-NO D:常閉(按斷)式D-SPST-NC		
3 驱动形式 Actuator forms	0:无动臂 No lever 1:短动臂 Short lever 2:长动臂 Long lever 3:中动臂 Middle lever 5:滚轮动臂 Roller lever 6:长弧形动臂 long arc lever 8:短弧形动臂 Short arc lever □:非标准动臂 Not standard lever 注: □ 表示非标准动臂的代号 Note:□ Indicate not standard lever.	6 多联个数 Multiple connections	1:单个开关 Single switch 2:双联开关 Double switch 3:三联开关 Triple switch 4:四联开关 Quadruple switch
		7 附加规格代号 Additional specs code	附加规格代号用两位阿拉伯数字表示,如01、02、03......用以表示有特殊要求。 Additional specs number shows as 01, 02, 03...... used to express special requirements.

◆ **接綫端尺寸** Terminal dimensions

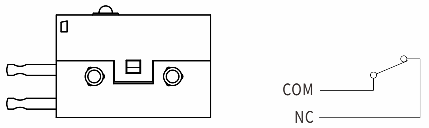
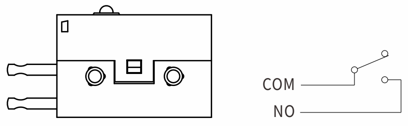
单个PCB端子 Single PCB terminal	双联PCB端子 Double PCB terminal
	

可以多联PCB端子 Multi-link PCB terminal

◆ **安裝孔尺寸** Mounting hole dimensions

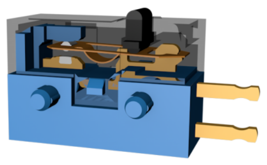
安装孔尺寸 Mounting hole dimensions	PCB端子 PCB terminal
	

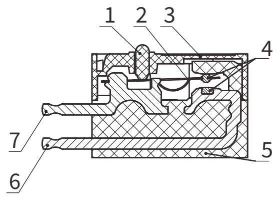
◆ **接觸形式説明圖** Circuit illustration

常閉式SPST-NC	常開式SPST-NO
	

◆ **内部构造图** Internal configuration drawing

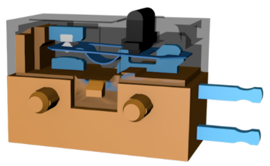
常開式SPST-NO

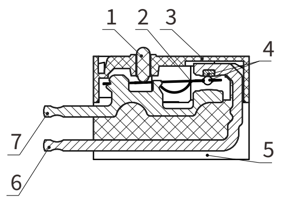




1、按钮	Plunger
2、可动片	Moving piece
3、盖	Cover
4、电触点	Contact
5、基座	Case
6、常开端子	NO Terminal
7、支架	Support

常閉式SPST-NC





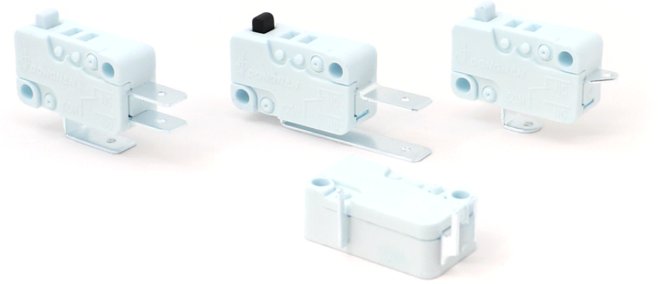
1、按钮	Plunger
2、可动片	Moving piece
3、盖	Cover
4、电触点	Contact
5、基座	Case
6、常闭端子	NC Terminal
7、支架	Support

◆ 動作特性operating characteristics
共用KW10所有动臂，动作特性和KW10一致，详见KW10动作特性

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.
- 接綫端子種類齊全
  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 degrees
- 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
絶緣電阻 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.	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.

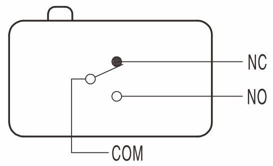
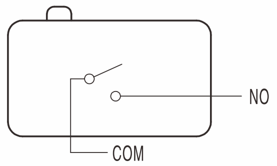
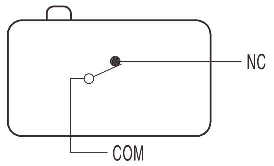
◆ 型號規格命名及含義 Model number legend and meanings

MS1 □–□ □ □–□ □ □ – (□)
1 2 3 4 5 6 7 8

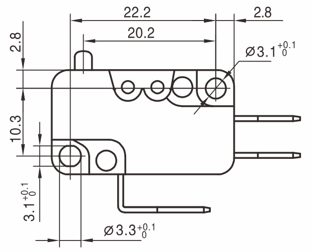
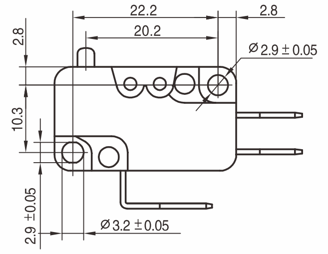
1 溫度等級 Degree sof temperature	無標記：10T125 No mark
2 額定值 Ratings	MS1–16: 16A125VAC,16GPA125/250VAC 16(4)A125/250VAC, 10A30VDC 1/2hp125/250VAC MS1–10: 10A125VAC,10GPA125/250VAC 10(3)A 125/250VAC, 6A30VDC 1/3hp125/250VAC MS1–06: 6A125VAC,6GPA125/250VAC 6(2)A125/250VAC, 4A30VDC 1/4hp125/250VAC MS1–03: 3A125VAC,3GPA125/250VAC 3(1)A125/250VAC MS1–01: 0.1A125VAC,0.1GPA125/250VAC 0.1(0.05)A125/250VAC
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)
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)若動臂爲内安裝式，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. 3)If lever is amounted inside.add letter “N” after the lever code.

5 端子類型 Terminal types	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
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
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，適用于： 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.

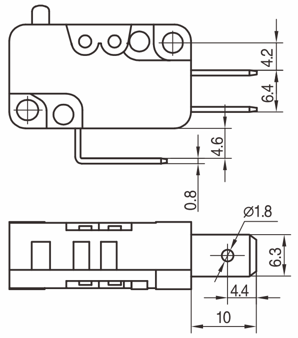
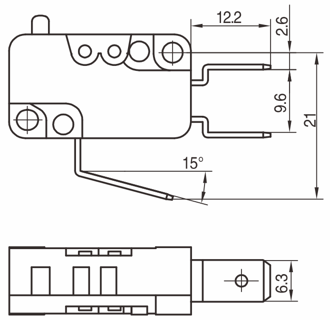
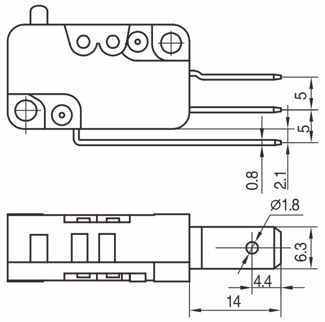
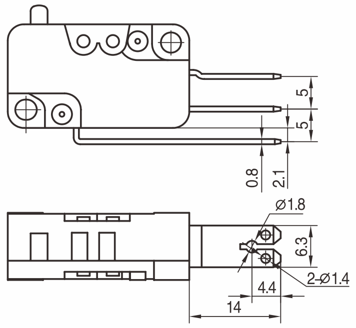
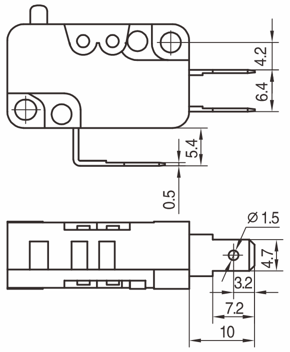
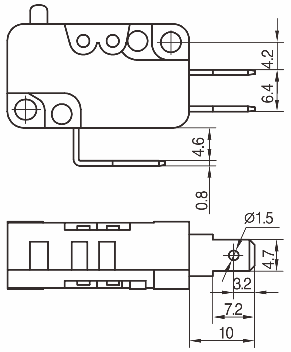
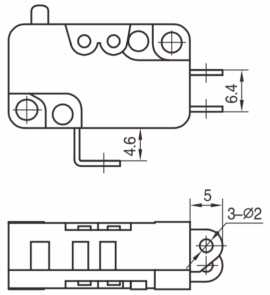
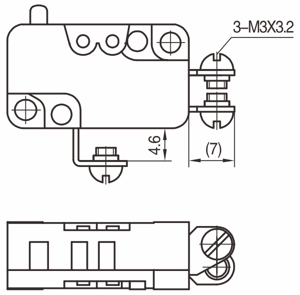
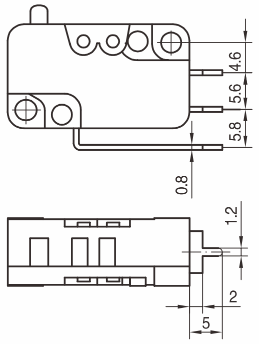
◆ 接觸形式說明圖 Circuit illustration

轉換式 SPDT	常開式 SPST–NO	常閉式 SPST–NC
		

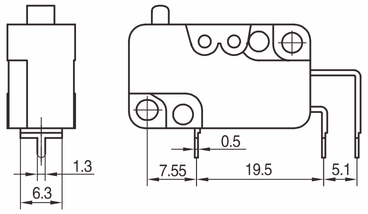
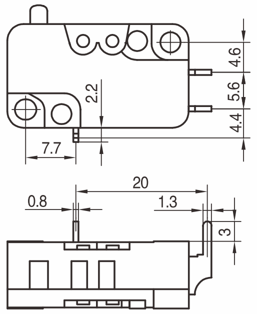
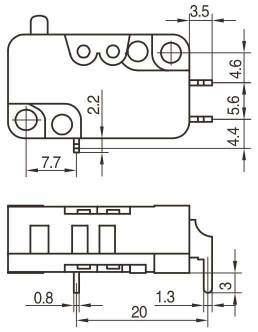
◆ 安裝孔特徵説明圖 Mounting hole characteristic illustration

國際型 International version	美國型 U.S. Version
	

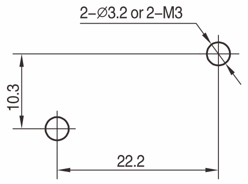
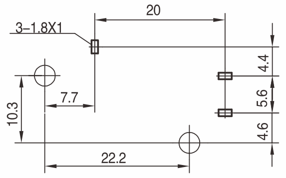
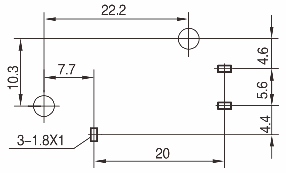
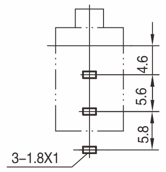
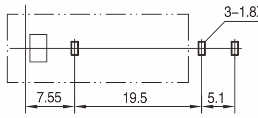
◆ 接綫端配置及尺寸 Connect terminals collocation and dimensions

A 快接端子#250之一 Quick–connect terminal #250 No.1	B 快接端子#250之二 Quick–connect terminal #250 No.2	C 快接端子#250之三 Quick–connect terminal #250 No.3
		
K 快接端子#250之四 Quick–connect terminal #250 No.4	D 快接端子#187(t=0.5) Quick–connect terminal #187(t=0.5)	E 快接端子#187(t=0.8) Quick–connect terminal #187(t=0.8)
		
F 焊接端子 Solder terminal	G 螺孔端子 Screw terminal	H 端面PCB端子 Upper PCB terminal
		

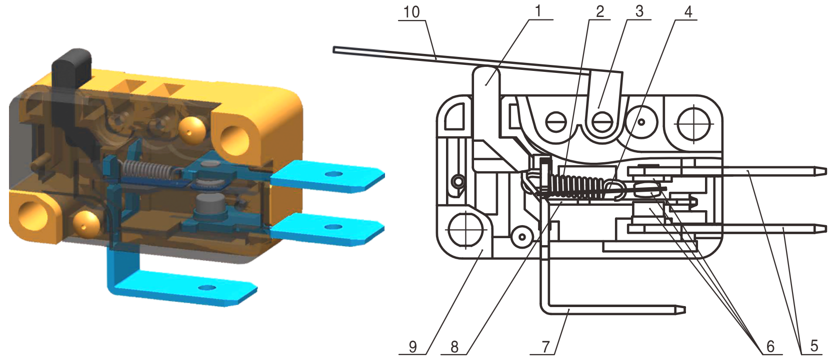
◆ 接綫端配置及尺寸 Connect terminals collocation and dimensions

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
		

◆ 安裝孔尺寸 Mounting hole dimensions

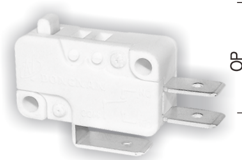
	右側面PCB端子 Right side PCB terminal	左側面PCB端子 Left side PCB terminal
		
	端面PCB端子 Upper PCB terminal	底面PCB端子 Botton PCB terminal
		

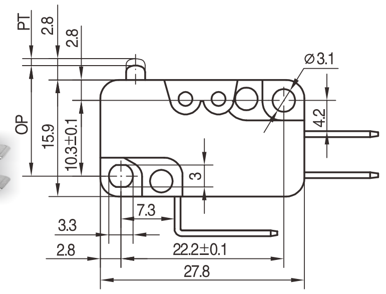
◆ 內部構造圖 Internal configuration drawing



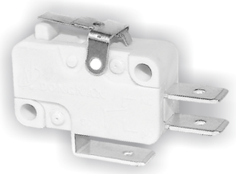
1:	按鈕	Plunger
2:	拉簧	Pull spring
3:	蓋	Cover
4:	可動片	Moving piece
5:	端子	Terminal
6:	電觸點	Contact
7:	支架	Support
8:	杠杆	Lever
9:	基座	Case
10:	動臂	Lever

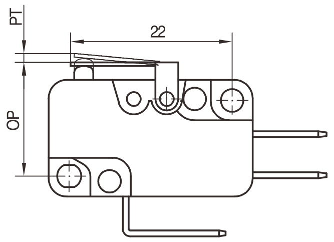
◆ 外形尺寸和動作特性 Dimensions and operating characteristics



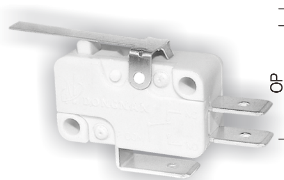


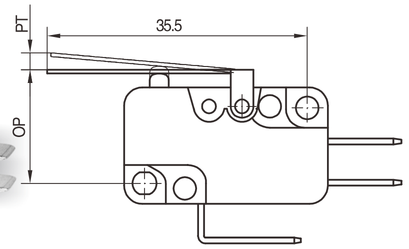
型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1–01Z0–A075	0.75	1.2	1.3	0.25	14.2–15.2
MS1–03Z0–A075	0.75				
MS1–06Z0–A170	1.70				
MS1–10Z0–A285	2.85				
MS1–16Z0–A400	4.00				
MS1–01Z0–A015	0.15				
MS1–03Z0–A015	0.15				
MS1–06Z0–A045	0.45				
MS1–10Z0–A075	0.75				
MS1–16Z0–A100	1.00				





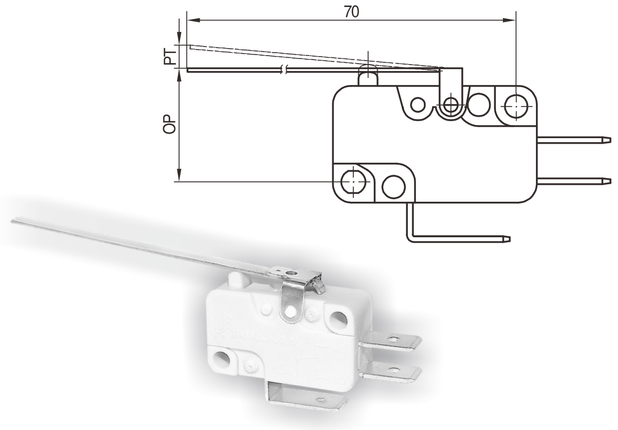
型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1–01Z1–A075	0.75	1.6	1.3	0.4	14.7–15.8
MS1–03Z1–A075	0.75				
MS1–06Z1–A170	1.70				
MS1–10Z1–A285	2.85				
MS1–16Z1–A400	4.00				
MS1–01Z1–A015	0.15				
MS1–03Z1–A015	0.15				
MS1–06Z1–A045	0.45				
MS1–10Z1–A075	0.75				
MS1–16Z1–A100	1.00				



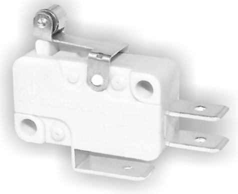


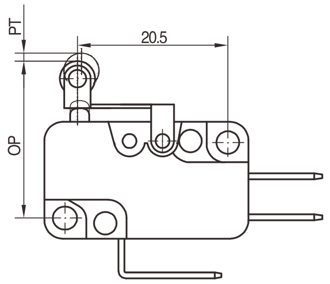
型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1–01Z3–A075	0.35	3.2	2.2	0.8	14.1–16.4
MS1–03Z3–A075	0.35				
MS1–06Z3–A170	0.86				
MS1–10Z3–A285	1.44				
MS1–16Z3–A400	2.00				
MS1–01Z3–A015	0.08				
MS1–03Z3–A015	0.08				
MS1–06Z3–A045	0.22				
MS1–10Z3–A075	0.37				
MS1–16Z3–A100	0.50				

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

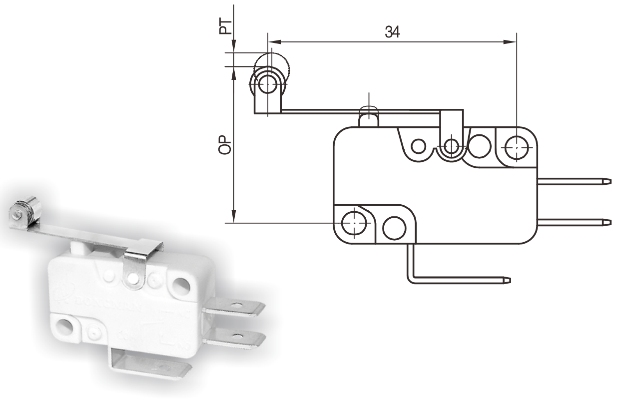


型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1–01Z2–A075	0.17	7.6	4.7	1.7	12.7–17.8
MS1–03Z2–A075	0.17				
MS1–06Z2–A170	0.38				
MS1–10Z2–A285	0.63				
MS1–16Z2–A400	0.90				
MS1–01Z2–A015	0.035				
MS1–03Z2–A015	0.035				
MS1–06Z2–A045	0.10				
MS1–10Z2–A075	0.17				
MS1–16Z2–A100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



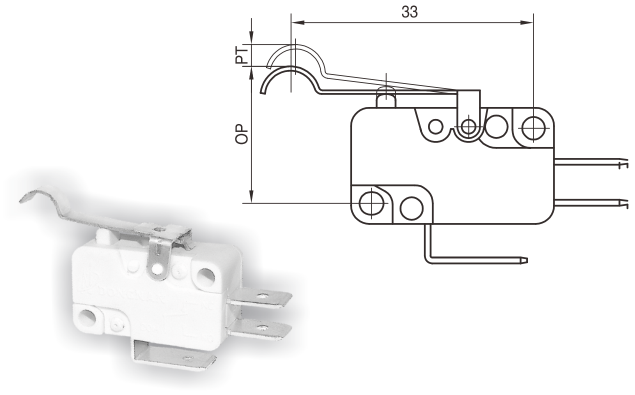


型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1–01Z4–A075	0.75	1.2	1.0	0.25	19.7–21.2
MS1–03Z4–A075	0.75				
MS1–06Z4–A170	1.70				
MS1–10Z4–A285	2.85				
MS1–16Z4–A400	4.00				
MS1–01Z4–A015	0.15				
MS1–03Z4–A015	0.15				
MS1–06Z4–A045	0.45				
MS1–10Z4–A075	0.75				
MS1–16Z4–A100	1.00				



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				

◆ 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　【Note】please refer to related pages

- 關于使用 Concerning the using

(1) 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.

(2) 對于低荷重型開關，由于其構造特殊，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.

- 關于安裝 Concerning the installation

(1) 開關的安裝、拆卸和配綫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M3螺釘，用平墊圈、彈簧墊圈等緊固，并請使用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.

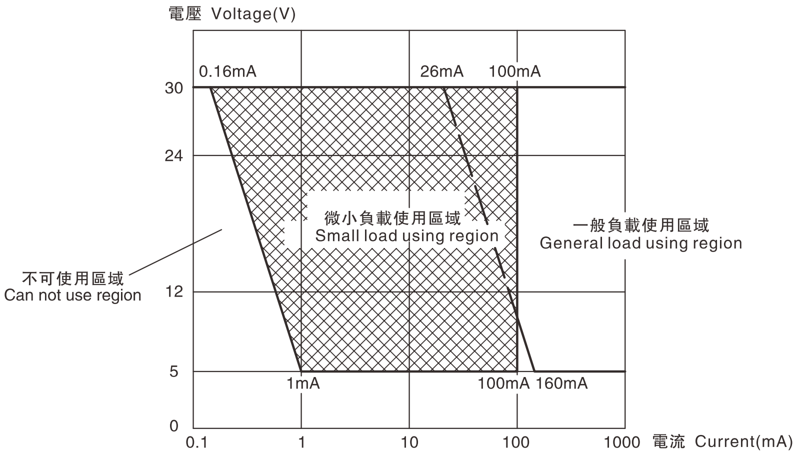
(3)開關請安裝在平面上。如果安裝面凹凸不平，可能導致開關歪斜、動作失常和外殼破損。
Please install switch on flat surface.If install it in uneven surface,switch deflection,malfunction and cover breakage will happen.

- 關于絕緣距離 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爲1.1mm，端子和安裝板之間的最小空間距離爲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 lay er 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.

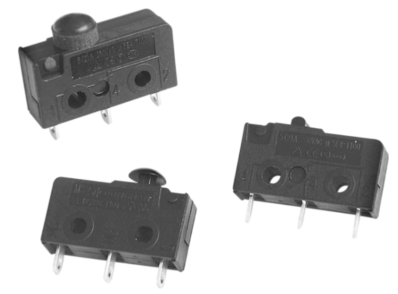
- 關于微小負載電路中的使用

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，并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.



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.
- 廣泛應用于各種家用電器，并可用于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

<table>
<tr><th colspan="2">項目 Item</th><th>特性值 Value</th></tr>
<tr><td colspan="2">工作速度 Operating speed</td><td>0.1mm ~ 1m/s (無動臂時 No lever)</td></tr>
<tr><td colspan="2">工作頻率 Operating frequency</td><td>機械 60次/min;電氣 25次/min Mechanical 60 cycles/min;Electrical 25 cycles/min</td></tr>
<tr><td colspan="2">絕緣電阻 Insulation resistance</td><td>≥100MΩ (500VDC)</td></tr>
<tr><td colspan="2">接觸電阻 Contact resistance</td><td>≤50mΩ</td></tr>
<tr><td rowspan="2">耐電壓 Test voltage</td><td>同極不相接端子間 Between not connect terminals of the same polarity</td><td>AC1000V,50/60Hz，1min</td></tr>
<tr><td>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.</td><td>AC1500V，50/60Hz，1min</td></tr>
<tr><td colspan="2">抗振動 Vibration resistance</td><td>10 ~ 55Hz，1.5mm 雙振幅 Double amplitude</td></tr>
<tr><td colspan="2">抗衝擊 Shock resistance</td><td>耐久 Endurance: 1000m/s²(約100G approx.100G)max
誤動作 Wrong action:300m/s²(約30G approx.30G)max</td></tr>
<tr><td colspan="2">防觸電保護等級 Electric shock proof protection degree</td><td>Ⅱ級 class</td></tr>
<tr><td colspan="2">外殼防護等級 Case protection degree</td><td>IEC IP60
(特定規格 specific specification)</td></tr>
<tr><td colspan="2">壽命 Life</td><td>機械≥1,000,000次; Mechanical ≥1,000,000 cycles
電氣≥50,000次; Electrical ≥50,000 cycles</td></tr>
<tr><td colspan="2">安全認證 Safety approvals</td><td>UL、CUL、TUV、SEMKO、CE</td></tr>
</table>

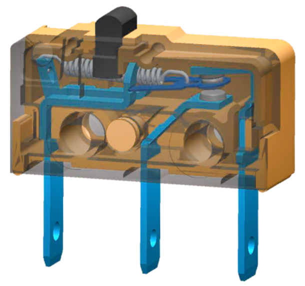
◆ 型號規格命名及含義 Model number legend and meanings

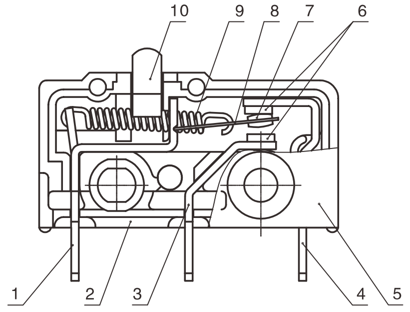
MS2 □-□□□□-□□□□-(□)
1 2 3 4 5 6 7 8 9 10

1 溫度等級 Degrees of temperature	無標記 No mark: T100
2 額定值 Ratings	無標記 No mark: 5A125VAC 5(2)A250VAC 1/10hp250VACa
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)
4 驅動形式 Actuator forms	0:無動臂 No lever 3:中動臂 Middle lever
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 With convexity upside (見說明圖See illustration)

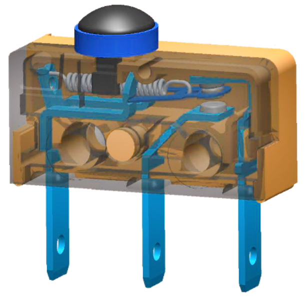
6 端子類型 Terminal types	F:焊接端子 Solder terminal P:PCB端子 PCB terminal H:PCB端子之二 PCB terminal No.2 S:PCB端子之三 PCB terminal No.3 L:左側面PCB端子 Left side PCB terminal R:右側面PCB端子 Right side PCB terminal T:110快接端子 110 quick-connect Y:非標準端子 Not standard terminal
7 動作力(MAX) Operating force	100: 1N 150: 1.5N 200: 2N 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.
8 按鈕規格 Plunger specs	無標記 No mark:標準按鈕Standard plunger A: 非圓形按鈕 Not round plunger
9 防護等級 Protection degree	無標記 No mark：不密封Unsealed S：密封Sealed IP60
10 附加規格代號 Additional specs code	適用于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.

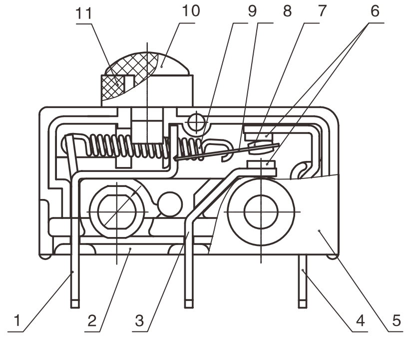
◆ 内部構造圖 Internal configuration drawing





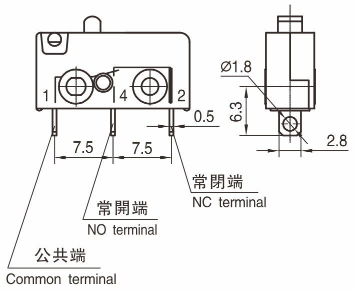
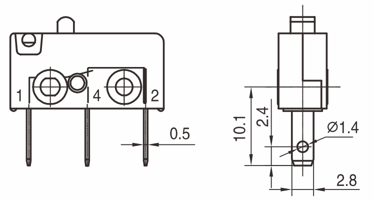
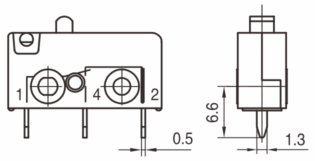
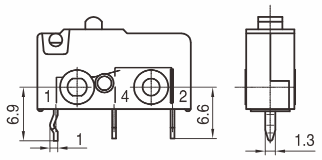
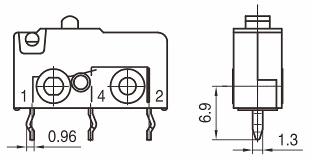
1：	支架	Support
2：	基座	Case
3：	常開端子	NO terminal
4：	常閉端子	NC terminal
5：	蓋	Cover
6：	電觸點	Contact
7：	電觸點	Contact
8：	可動片	Moving piece
9：	拉簧	Pull spring
10：	按鈕	Plunger



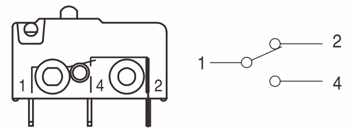
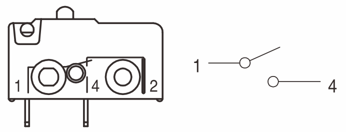
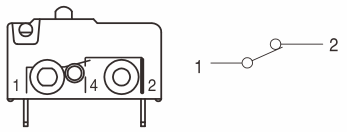


1：	支架	Support
2：	基座	Case
3：	常開端子	NO terminal
4：	常閉端子	NC terminal
5：	蓋	Cover
6：	電觸點	Contact
7：	電觸點	Contact
8：	可動片	Moving piece
9：	拉簧	Pull spring
10：	按鈕	Plunger
11：	防塵圈	Dustproof ring

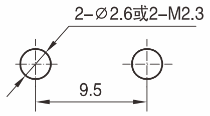
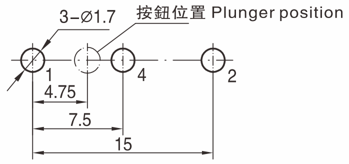
◆ 接綫端尺寸 Terminal dimensions

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
		

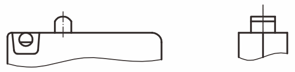
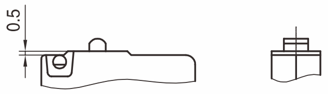
◆ 接觸形式說明圖 Circuit illustration

轉換式 SPDT	常閉式 SPST-NO	常閉式 SPST-NC
		

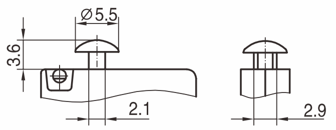
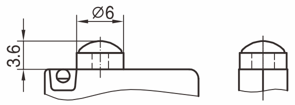
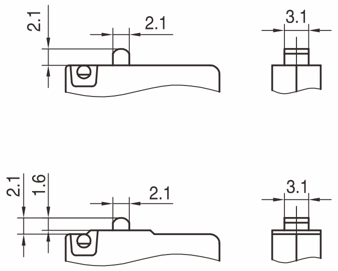
◆ 安裝孔尺寸 Mounting hole dimensions

	PCB端子 PCB terminal
	

◆ 外殼類型圖 Cover types drawing

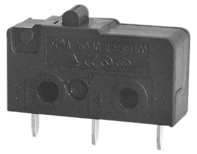
無凸臺 No convexity	有凸臺With convexity
	

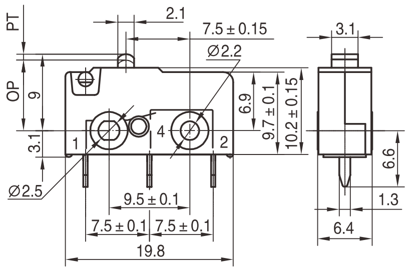
◆ 按鈕規格說明圖 Plunger spec illustration

標準按鈕 Standard plunger	標準按鈕(帶防塵圈) Standard plunger(with dustproof ring)	非圓形按鈕 Not round plunger
		

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

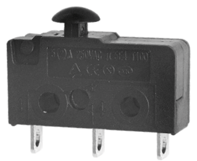
MS2-□Z0C-P100A
MS2-□Z0C-P150A
MS2-□Z0C-P200A
MS2-□Z0C-P300A

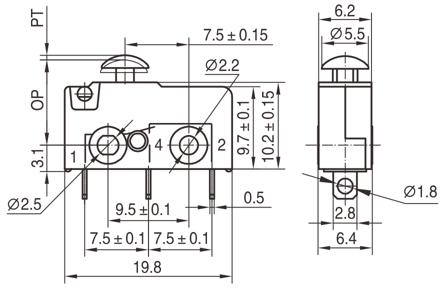




型 號 Model	MS2-□Z0C-P100A	MS2-□Z0C-P150A	MS2-□Z0C-P200A	MS2-□Z0C-P300A
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.25	0.40	0.60	0.80
PT Max(mm)	0.8			
OT Min(mm)	0.5			
MD Max(mm)	0.2			
OP(mm)	8.5±0.4			

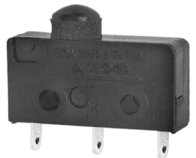
MS2-□Z0C-F100
MS2-□Z0C-F150
MS2-□Z0C-F200
MS2-□Z0C-F300

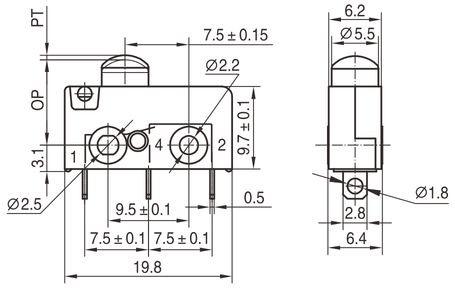




型 號 Model	MS2-□Z0C-F100	MS2-□Z0C-F150	MS2-□Z0C-F200	MS2-□Z0C-F300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.25	0.40	0.60	0.80
PT Max(mm)	0.8			
OT Min(mm)	0.5			
MD Max(mm)	0.2			
OP(mm)	9.8±0.4			

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		

◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

【Note】please refer to related pages

- 關于和端子的連接 Concerning the connection with terminals

(1) 將導綫焊接到端子上時，請先將導綫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) 烙鐵的容量應爲60W以下，焊接時間在3s之内。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) 請采用手工焊接。因爲如果采用焊槽焊接，焊錫可能進入開關内部而導致接觸不良。

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

(4) 對于快接式端子，插套插入插片時，應避免在端子的横向加力，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.

- 關于絶緣距離 Concerning insulation distance

根據IEC 61058–1/EN 61058–1/GB 15092.1之規定，本開關的最小絶緣層厚度爲1.1mm，端子和安裝板之間的最小空間距離爲1.6mm。如果無法確保零部件所要求的絶緣距離，請使用絶緣護罩或隔板來保證絶緣距離。

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.

- 關于安裝 Concerning installation

(1) 開關的安裝、拆卸和配綫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，并請使用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.

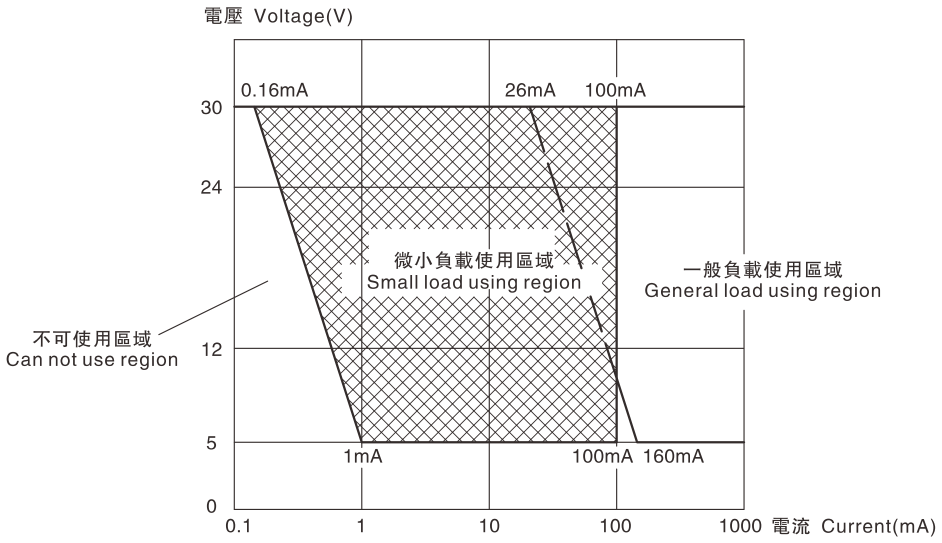
- 關于微小負載電路中的使用 Concerning use in small load circuit

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内使用開關，并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.



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

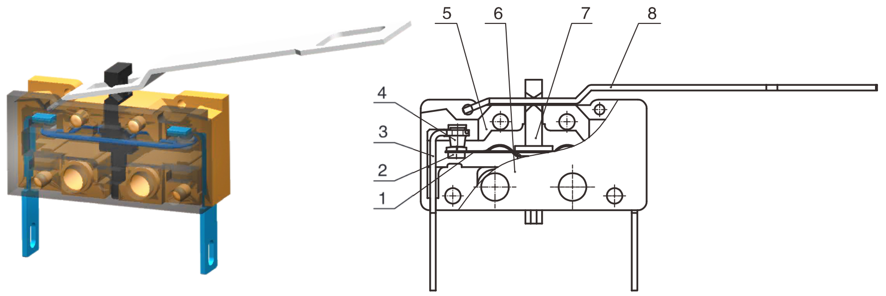
項目 Item		特性值 Value
工作速度 Operating speed		0.1mm～1m/s (無動臂時 No lever)
工作頻率 Operating frequency		機械 60次/min;電氣 25次/min Mechanical 60 cycles/min;Electrical 25 cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ
耐電壓 Test voltage	同極不相接端子間 Between not connect terminals of the same polarity	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30 G) 最大 Wrong action：300m/S^{2}(approx.30G) max
防觸電保護等級 Electric shock proof protection degree		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

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

MS3 □–□ □ □ □–□ □ □–□
1 2 3 4 5 6 7 8 9

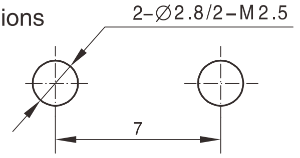
1 溫度等級 Degrees of temperature	無標記 No mark: T85
2 額定值 Ratings	無標記 No mark: 6A125V/250VAC 6GPA125/250VAC 6(3)A125/250VAC 6RA125/250VAC 1/4hp250VAC 1/8hp125VAC
3 接觸形式 Circuit	Z:轉換式 SPDT T:常開(按通)式 SPST–NO D:常閉(按斷)式 SPST–NC
4 驅動形式 Actuator forms	0:無動臂 No lever 1:標準動臂 Short lever □非標準動臂 Not standard lever 注：□ 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: □ Indicate not standard lever, B indicate the lever far away from the plunger
5 端子位置 Terminal position	A:下面 Below
6 端子類型 Terminal types	T:快接端子 Quick–connect terminal Y:非標準端子 Not standard terminal
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.
8 按鈕規格 Plunger specs	無標記 No mark: 標準按鈕Standard lever
9 附加規格代號 Additional specs code	適用于 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

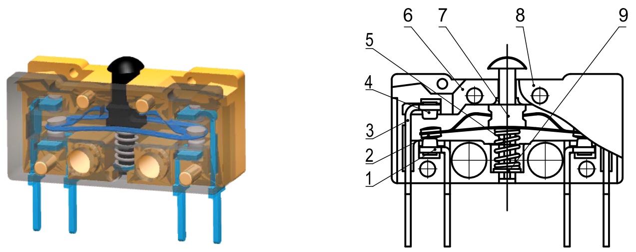


1：可動片	Moving piece
2：電觸點	Contact
3：常開端子	NO terminal
4：電觸點	Contact
5：基座	Case
6：蓋	Cover
7：按鈕	Plunger
8：動臂(杠杆)	Lever

◆ 安裝孔尺寸 Mounting hole dimensions

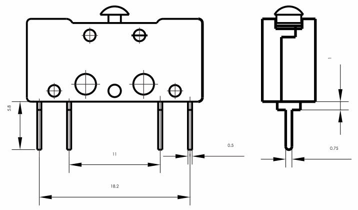
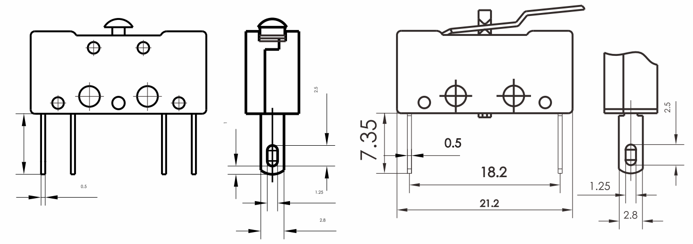


◆ 內部構造圖 Internal configuration drawing

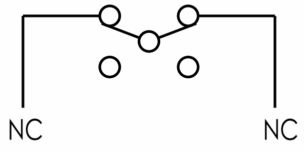
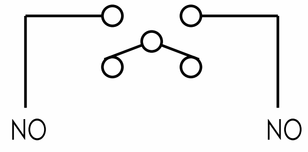
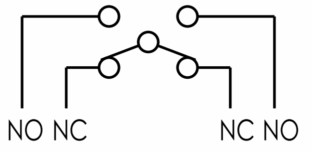


1:	常閉端子	NC terminal
2:	電觸點	Contact
3:	常開端子	NO terminal
4:	電觸點	Contact
5:	彈簧	Spring
6:	基座	Case
7:	按鈕	Plunger
8:	蓋	Cover
9:	墊圈	Cushion ring

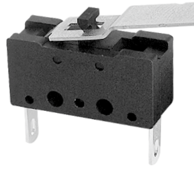
◆ 接綫端配置及尺寸 Connect terminals collocation and dimensions

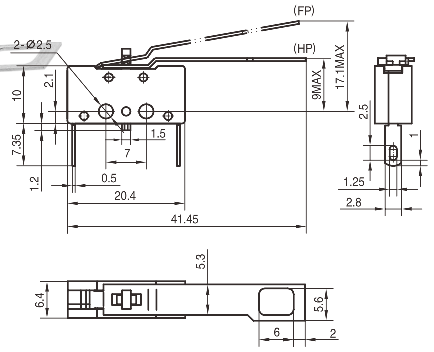
P PCB端子 PCB terminal	T 快接端子 Quick connect terminal
	 7.35 0.5 18.2 21.2 1.25 2.8

◆ 接觸形式說明圖 Circuit illustration

常閉式 SPST–NC	常開式 SPST–NO	轉換式 SPDT
 NC NC	 NO NO	 NO NC NC NO

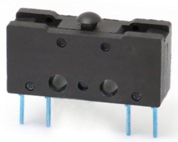
MS3-D1A-T050

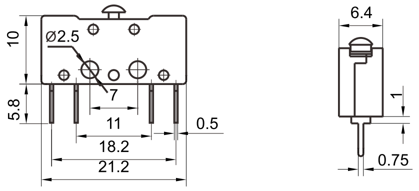




型 號 Model	MS3-D1A-T050
正向動作力 Positive direction operating force	0.10N MAX
反向動作力 Negative direction operating force	0.07N MAX
正向行程 Positive direction travel	7mm MAX
反向行程 Negative direction travel	5.5mm MAX
正向自由位置 Positive direction free position	17.1mm MAX
反向自由位置 Negative direction free position	9mm MAX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

MS3–Z0A–P160B





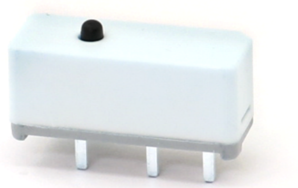
型 號 Model	MS3–Z0A–P160B
OF MAX(N)	1.60
RF MIN(N)	0.40
PT MAX(mm)	1.0
OP(mm)	8.4±0.4

MS5型微動開關系列 Micro switch series

◆ 用途 Usage

主要應用于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

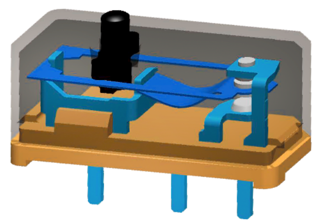
MS5 –□– (□)
1 2

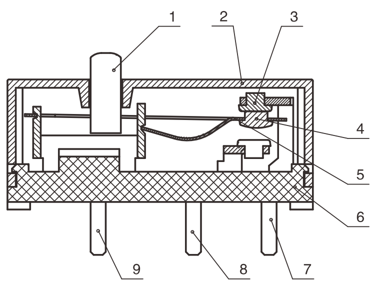
1 額定值 Ratings	2 附加代號 Additional specs code
3： 3A 12VDC 6： 6A 12VDC 10： 10A 12VDC	適用于 apply to: 当顧客有特殊要求時 When customers need special requirements 附加代號用拉丁字母表示,在没有附加時,該位置空缺。 Additional spec number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
環境温度 Environment temperature		-40~+85℃
相對濕度 Relative humidity		45%~85%,40℃
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
絶緣電阻 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.	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30 G)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

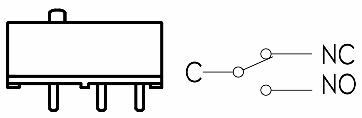
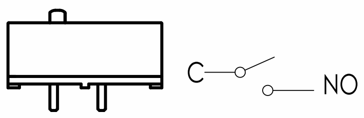
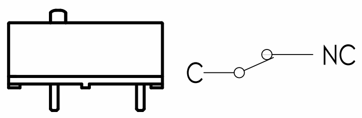
◆ 内部構造圖 Internal configuration drawing



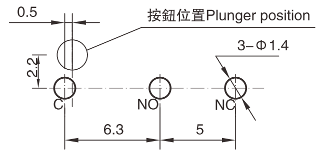


1.	按鈕	Plunger
2.	蓋	Cover
3.	電觸點	Contact
4.	電觸點	Contact
5.	可動片	Moving piece
6.	基座	Case
7.	常閉端子	NC terminal
8.	常開端子	NO terminal
9.	支架	Support

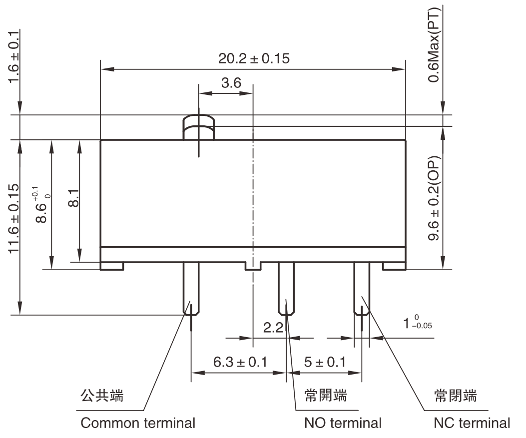
◆ 接觸形式説明圖 Circuit illustration

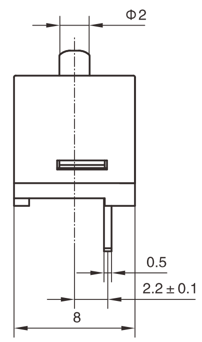
轉換式 SPDT	常開式 SPST–NO	常閉式 SPST–NC
		

◆ 安裝孔尺寸 Mounting hole dimension



◆ 外形尺寸 Dimensions

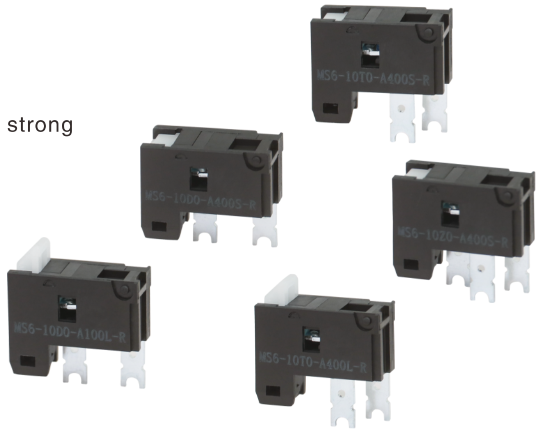




MS6 型微動開關系列 Micro switch series

◆ 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。
  Can be used in automobile and other fields.



◆ 技術特性 Specifications

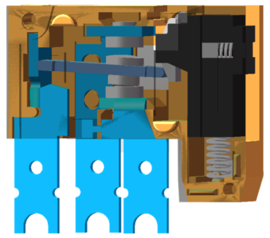
項目 Item		特性值 Value
工作速度 Operating speed		0.1mm～1m/s (無動臂時no lever)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤50MΩ
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC660V,50/60Hz，1min
	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.	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
防觸電保護等級 Electric shock proof protection degree		Ⅱ 級 class
壽命 Life		機械≥ 500,000 次; Mechanical ≥ 500,000 cycles 電氣≥250,000 次; Electrical ≥ 250,000 cycles

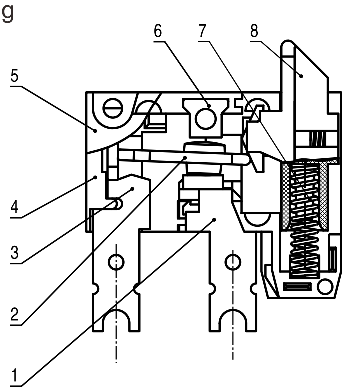
◆ 型號規格命名及含義 Model number legend and meanings

MS6 □–□□□–□□□–□–(□)
1 2 3 4 5 6 7 8 9

1 温度等級 Degree of temperature	無標記 No mark：40T85	**6** 動作力(MAX) Operating force	200: 2N 400: 4N 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 No mark: 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 Long plunger S 短按鈕 Short plunger □ 非標按鈕代號 (用字母表示) □ Not standard plunger code(shows by letter)
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 (見説明圖 See illustration)	**8** 復位代號 Reset code	R 有復位 Reset N 無復位 No reset
4 驅動形式 Actuator forms	0：無動臂 No lever □ 動臂代號 (用A、B、C……表示) □ Lever code(shows by A、B、C...)	**9** 附加規格編號 Additional specs numbers	適用于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，在没有附加規格編號時，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 A:250 Quick–connect terminal □ 動臂代號 (用B、C……表示) □ Terminal code(shows by B、C...)		

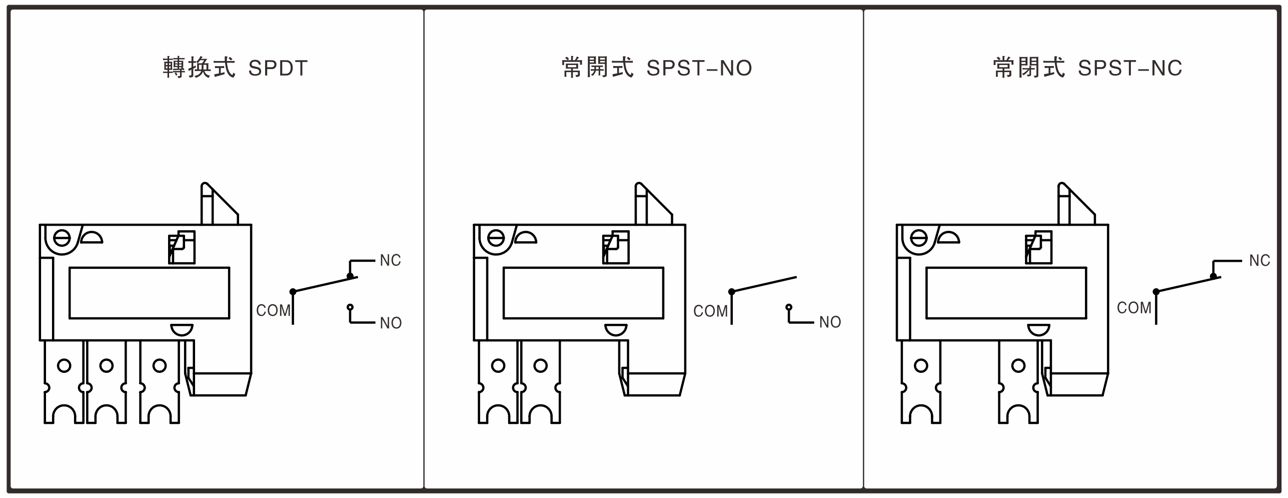
◆ 内部構造圖 Internal configuration drawing





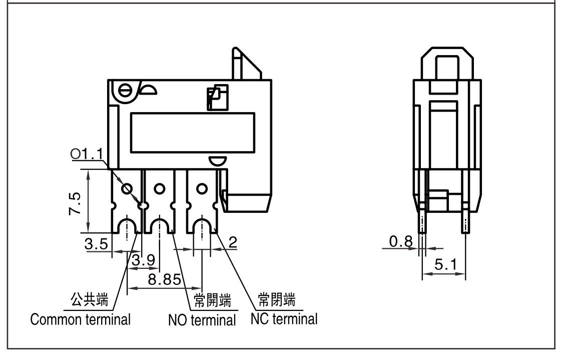
1:	常閉端子	NC terminal
2:	可動片	Moving piece
3:	支架	Support
4:	基座	Case
5:	蓋	Cover
6:	止動板	Stopper
7:	彈簧	Spring
8:	按鈕	Plunger

◆ 接觸形式説明圖 Circuit illustration


轉換式 SPDT
常開式 SPST–NO
常閉式 SPST–NC

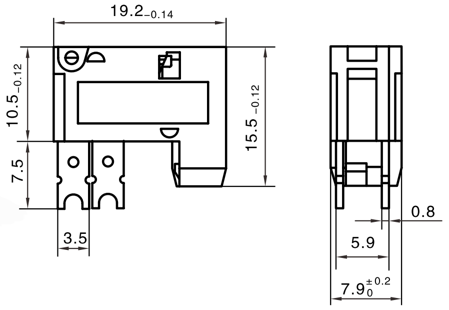
◆ 接綫端尺寸 Terminal dimensions

焊接端子
Solder terminal



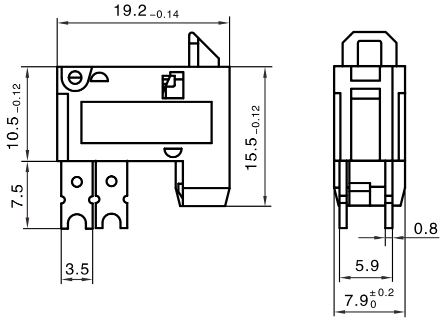
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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

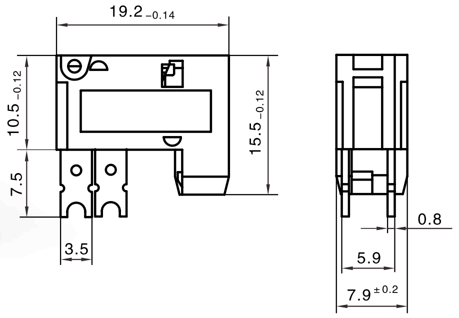
MS6–□ZO–A400L–R



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

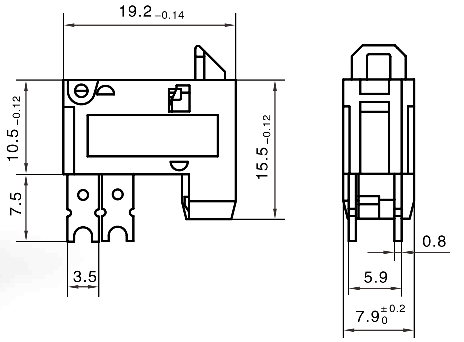
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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

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

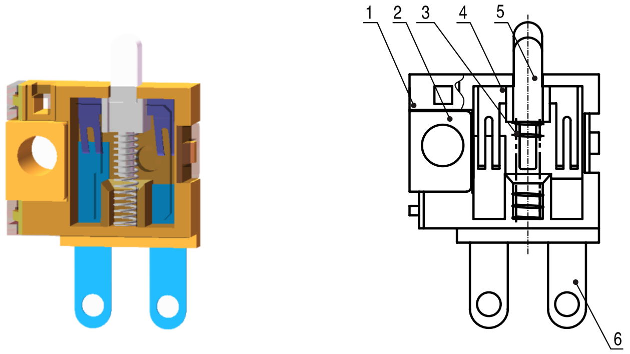
項目 Item	特性值 Value
温度等級 Degree of temperature	25T85
動作位置 Operating position	4.3±0.4 mm
動作力 Operating force	0.39±0.25N(40±25gf)
絶緣電阻 Insulation resistance	⩾100MΩ (500VDC)
接觸電阻 Contact resistance	⩽200mΩ
耐電壓 Test voltage	AC250V
壽命 Life	電氣⩾30,000次 Electrical ⩾30,000 cycles

◆ 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) □Terminal code(shows by A、B、C...)
2 驅動形式 Actuator forms	0：無動臂 No lever □動臂代號 (用A、B、C……表示) □Lever code(shows by A、B、C...)	**4** 附加規格代號 Additional 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.

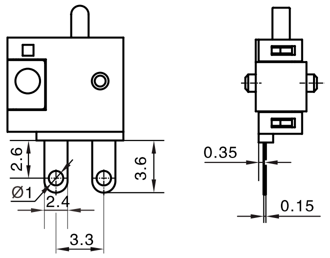
◆ 内部構造圖 Internal configuration drawing



1：	蓋	Cover
2：	底座	Case
3：	彈簧	Spring
4：	簧片	Spring sheet
5：	按鈕	Plunger
6：	端子	Terminal

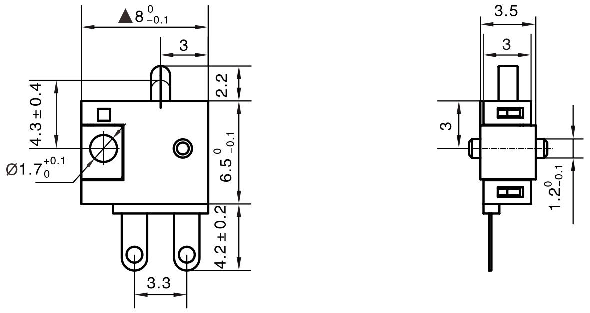
◆ 接綫端尺寸 Terminal dimensions

A 端子 A Terminal

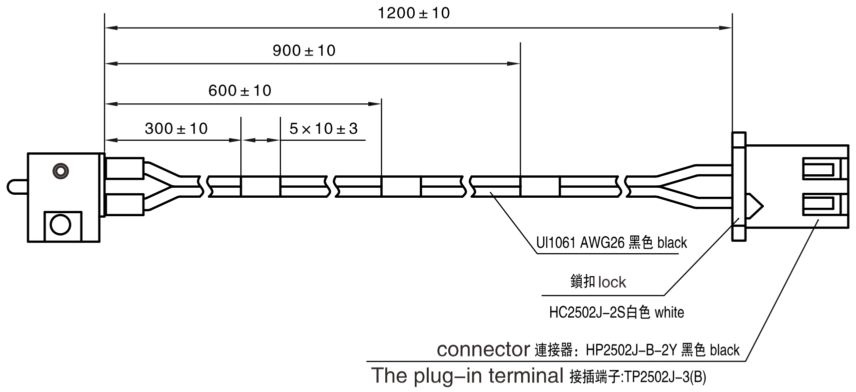


◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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；廣泛應用于家用電器、電動工具、玩具、傳真機和報警器等。
  Compact structure, stable and reliable contact, widely used in home 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
- 接綫端子種類齊全，可配備各種導綫。
  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

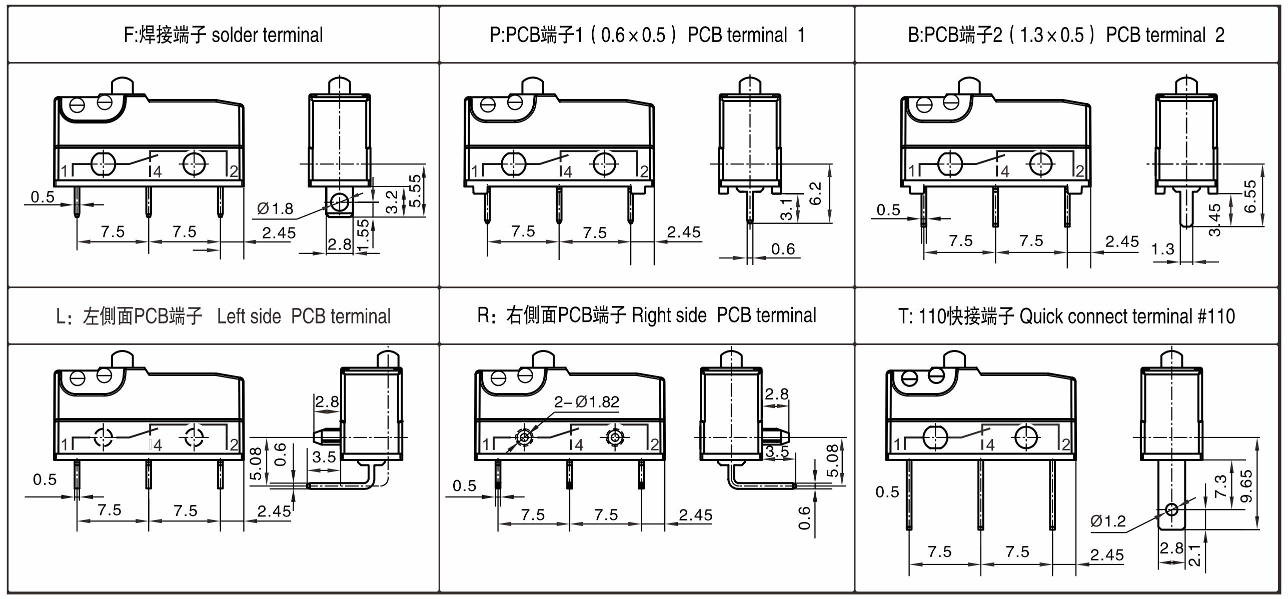
項目 Item		特性值 Value
環境溫度 Environment temperature		–40～+125℃
工作速度 Operating speed		30mm～600mm/s (無動臂時No lever)
工作頻率 Operating frequency		機械 60次/min; 電氣 15次/min Mechanical 60 cycles/min; Electrical 15cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ
耐電壓 Test voltage	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.	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 Case protection degree		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

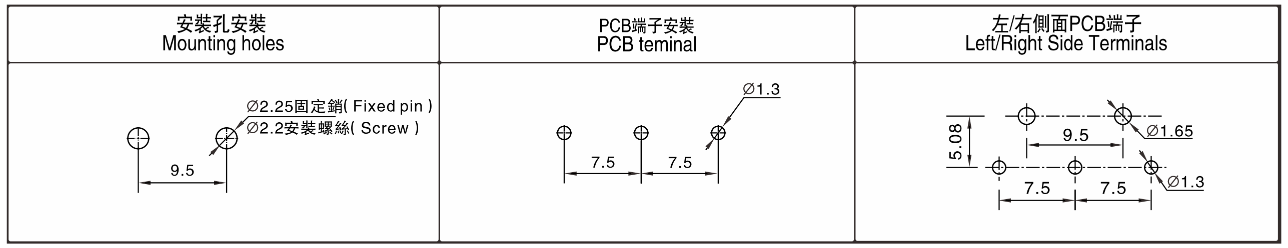
MS9 –□ □ □ –□ □ □ –(□)
1 2 3 4 5 6 7

1 額定值 Ratings	A: 10.1AGP 125/250VAC 1/4hp 125VAC(UL) 10(4)A 250VAC(EN) 1E4 40T125 B: 6AGP 125/250VAC(UL) 6A 250VAC(EN) 5E4 40T125 C: 1AGP 125/250VAC(UL) 1A 250VAC(EN) 5E4 40T125 D: 0.1AGP 125/250VAC(UL) 0.1A 250VAC(EN) 5E4 40T125
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 (見説明圖 See illustration)
3 驅動形式 Actuator forms	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 □ 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 1（0.6×0.5） PCBterminal 1（0.6×0.5） B：PCB端子 2（1.3×0.5） PCBterminal 2（1.3×0.5） L: 左側面PCB端子 Left side PCB terminal
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
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.
6 安裝構造 installation structure	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
7 附加規格編號 Arabic numerals	特殊要求（用兩位阿拉伯數字表示） Special Requirements (Shows by two Arabic numerals)

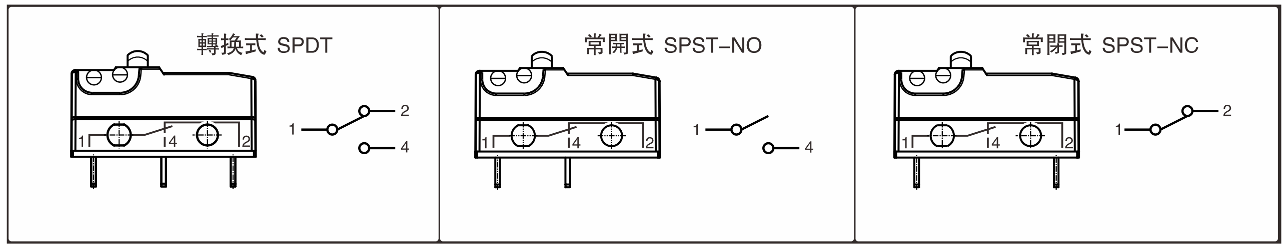
◆ 接綫端尺寸 Terminal dimensions



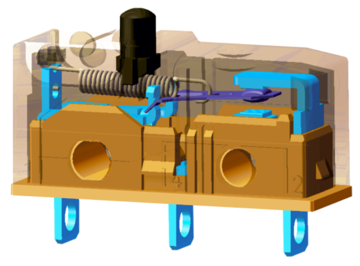
◆ 安裝孔尺寸 Mounting hole dimension

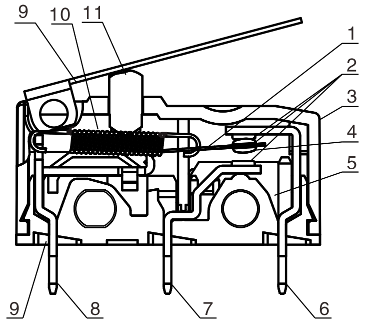


◆ 接觸形式説明圖 Circuit illustration



◆ 内部構造圖 Internal configuration drawing

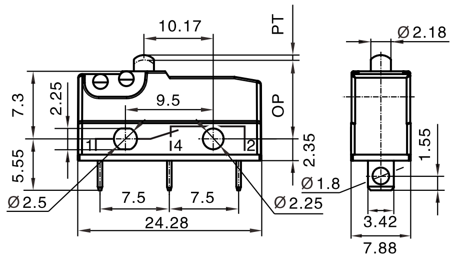




1:	可動片	Moving piece
2:	電觸點	Contact
3:	蓋	Cover
4:	基座	Case
5:	常閉端子	NC terminal
6:	常開端子	NO terminal
7:	支架	Support
8:	環氧樹脂	Epoxy resin
9:	動臂	Lever
10:	拉簧	Pull spring
11:	按鈕	Plunger

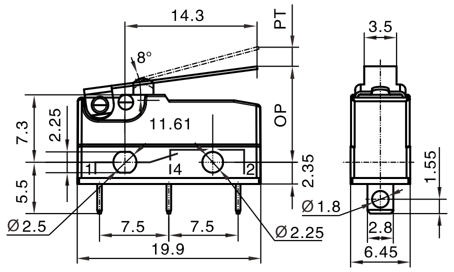
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS9–□ Z0–F100
MS9–□ Z0–F150
MS9–□ Z0–F250
MS9–□ Z0–F300



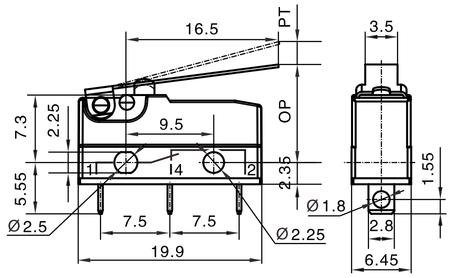
型 號 Model	MS9–□Z0–F100	MS9–□Z0–F150	MS9–□Z0–F250	MS9–□Z0–F300
OF Max(N)	1.00	1.50	2.50	3.00
RF Min(N)	0.10	0.35	0.40	0.60
PT Min(mm)	1.1			
OT Min(mm)	0.6			
MD Max(mm)	0.2			
OP(mm)	8.4 ± 0.3			

MS9–□ Z3–F100
MS9–□ Z3–F150
MS9–□ Z3–F250
MS9–□ Z3–F300



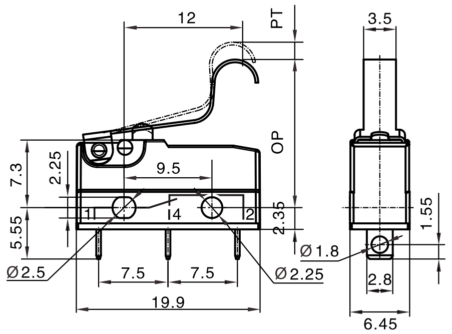
型 號 Model	MS9–□Z3–F100	MS9–□Z3–F150	MS9–□Z3–F250	MS9–□Z3–F300
OF Max(N)	0.45	0.60	1.00	1.20
RF Min(N)	0.03	0.08	0.10	0.15
PT Min(mm)	4.00	4.00	4.50	4.50
OT Min(mm)	2.00	2.00	1.50	1.50
MD Max(mm)	0.80	0.80	0.80	0.80
OP(mm)	10.7 ± 1.3	10.7 ± 1.3	10.7 ± 1.6	10.7 ± 1.6

MS9–□ Z2–F100
MS9–□ Z2–F150
MS9–□ Z2–F250
MS9–□ Z2–F300



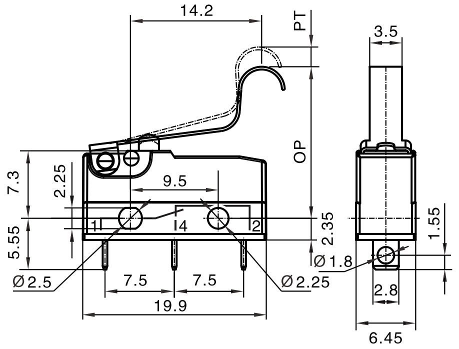
型 號 Model	MS9–□Z2–F100	MS9–□Z2–F150	MS9–□Z2–F250	MS9–□Z2–F300
OF Max(N)	0.40	0.50	0.85	1.10
RF Min(N)	0.02	0.06	0.08	0.12
PT Min(mm)	4.50	4.50	5.00	5.00
OT Min(mm)	2.00	2.00	1.50	1.50
MD Max(mm)	1.20	1.20	1.20	1.20
OP(mm)	11.1 ± 1.5	11.1 ± 1.5	11.1 ± 1.8	11.1 ± 1.8

MS9–□ Z6–F100
MS9–□ Z6–F150
MS9–□ Z6–F250
MS9–□ Z6–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–□ ZA–F100
MS9–□ ZA–F150
MS9–□ ZA–F250
MS9–□ ZA–F300

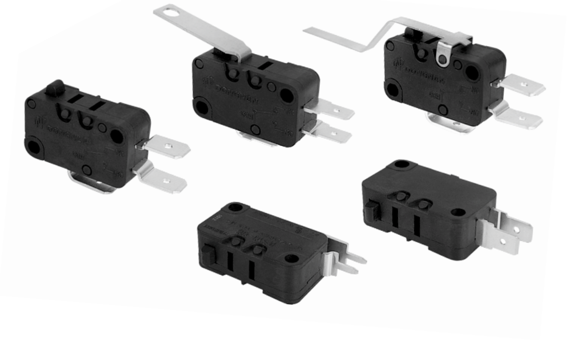


型 號 Model	MS9–□ZA–F100	MS9–□ZA–F150	MS9–□ZA–F250	MS9–□ZA–F300
OF Max(N)	0.45	0.60	0.95	1.20
RF Min(N)	0.03	0.08	0.11	0.15
PT Min(mm)	4.50	4.50	5.00	5.00
OT Min(mm)	2.00	2.00	1.50	1.50
MD Max(mm)	1.00	1.00	1.00	1.00
OP(mm)	16.4 ± 1.5	16.4 ± 1.5	16.4 ± 1.8	16.4 ± 1.8

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
- 接綫端子種類齊全
  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 withactuator forms)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絶緣電阻 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.	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

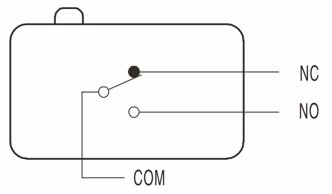
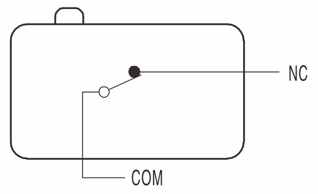
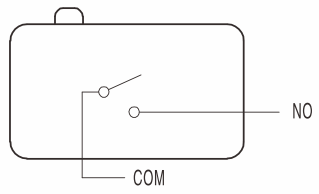
注：指無動臂時按鈕上的動作力。 Note: Refers to the operating force of no lever.

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

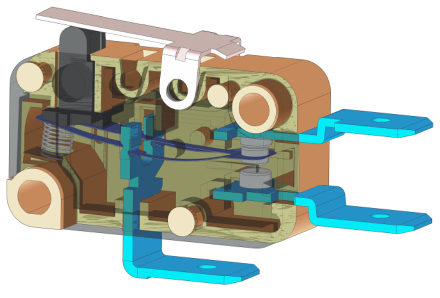
MS10 □–□ □ □–□ □– (□)
1 2 3 4 5 6 7

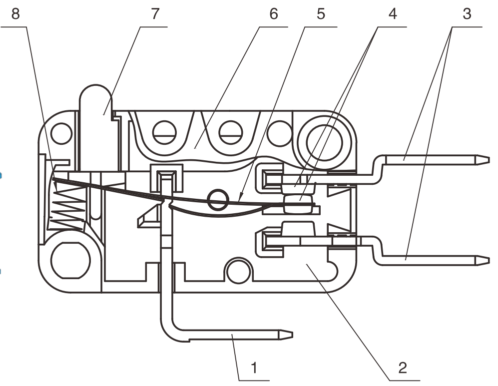
1 溫度等級 Degrees of temperature	無標記 No mark：25T125
2 額定值 Ratings	MS10–16： 16(4)A125/250VAC 16GPA125/250VAC 1/2hp125/250VAC 10A30VDC MS10–10： 10A125/250VAC 10(3)A125/250VAC 10GPA125/250VAC 1/4hp250VAC 1/2hp125VAC 1/3hp125/250VAC 8A30VDC MS10–06： 6A125/250VAC 6(2)A125/250VAC 6GPA125/250VAC 1/4hp125/250VAC 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
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 (見説明圖 See illustration)
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) 若動臂爲内安裝式，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.
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	適用于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，在没有附加規格編號時，該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

◆ 接觸形式説明圖 Circuit illustration

轉換式 SPDT	常閉式 SPST–NC	常開式 SPST–NO
		

◆ 内部構造圖 Internal configuration drawing

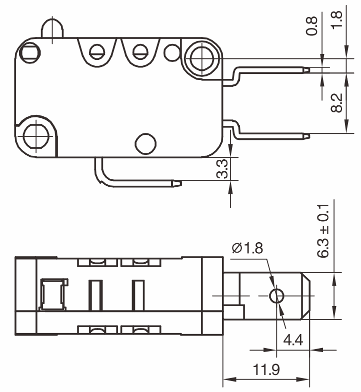




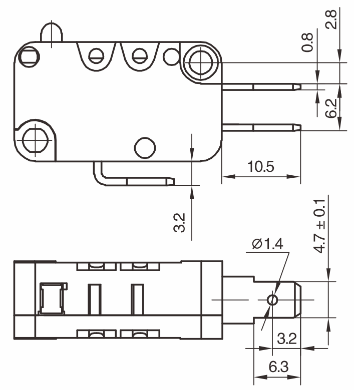
1：	支架	Support
2：	基座	Case
3：	端子	Terminal
4：	電觸點	Contact
5：	可動片	Moving piece
6：	蓋	Cover
7：	按鈕	Plunger
8：	彈簧	Spring

◆ 接綫端配置及尺寸 Connect terminals collocation and dimensions

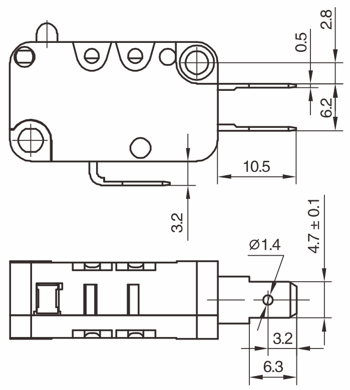
A 快接端子#250
Quick connect terminal #250



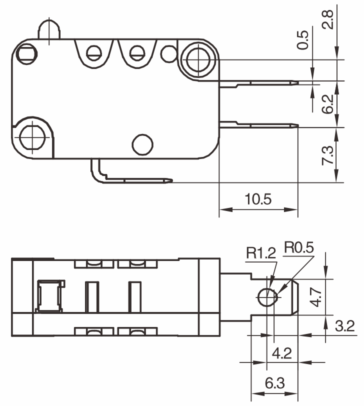
B 快接端子#187 (t=0.8)
Quick connect terminal #187 (t=0.8)



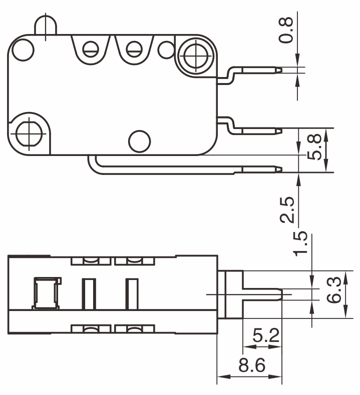
C 快接端子#187 (t=0.5)
Quick connect terminal #187 (t=0.5)



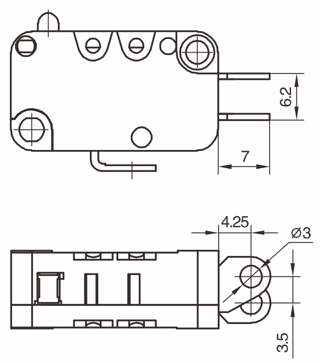
D 焊接/快接#187 共用端子
Solder/Quick connect terminal #187



H 端面PCB端子
Upper PCB terminal

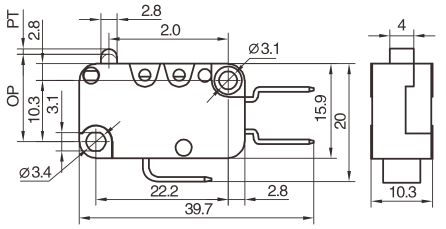


F 焊接端子
Solder terminal



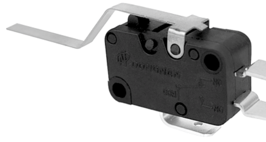
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

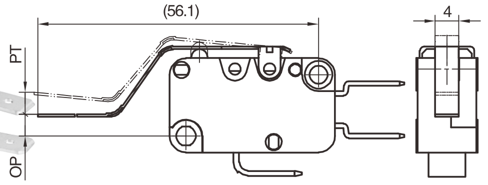
MS10-□Z0-A015
MS10-□Z0-A025
MS10-□Z0-A050
MS10-□Z0-A100



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			

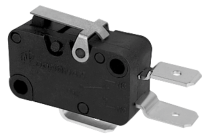
MS10-□ZB1-A015
MS10-□ZB1-A025
MS10-□ZB1-A050
MS10-□ZB1-A100

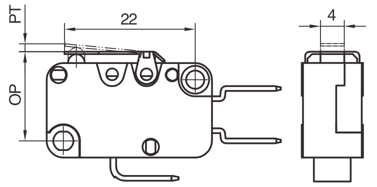




型 號 Model	MS10-□ZB1-A015	MS10-□ZB1-A025	MS10-□ZB1-A050	MS10-□ZB1-A100
OF Max(N)	0.05	0.065	0.2	0.4
RF Min(N)	0.005	0.015	0.03	0.08
PT Max(mm)	6.2			
OT Min(mm)	2.5			
MD Max(mm)	1.7			
OP(mm)	3.2±2			

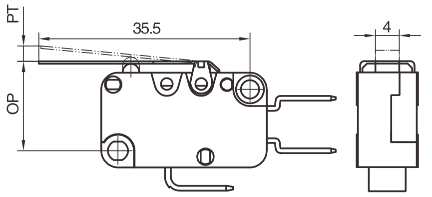
MS10-□Z1-A015
MS10-□Z1-A025
MS10-□Z1-A050
MS10-□Z1-A100





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			

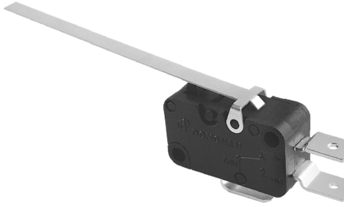
MS10-□Z3-A015
MS10-□Z3-A025
MS10-□Z3-A050
MS10-□Z3-A100

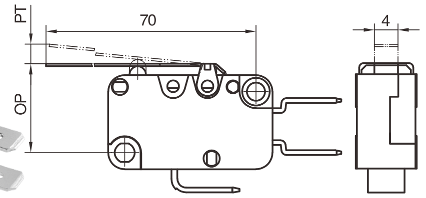


型 號 Model	MS10-□Z3-A015	MS10-□Z3-A025	MS10-□Z3-A050	MS10-□Z3-A100
OF Max(N)	0.10	0.15	0.25	0.50
RF Min(N)	0.015	0.025	0.06	0.12
PT Max(mm)	3.5			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	15±1.2			

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

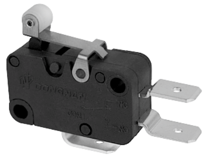
MS10–□Z2–A015
MS10–□Z2–A025
MS10–□Z2–A050
MS10–□Z2–A100

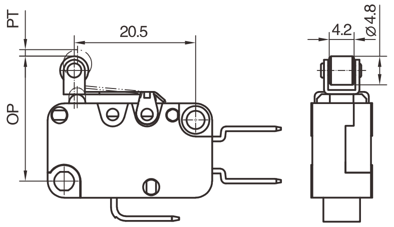




型 號 Model	MS10–□Z2–A015	MS10–□Z2–A025	MS10–□Z2–A050	MS10–□Z2–A100
OF Max(N)	0.05	0.07	0.14	0.25
RF Min(N)	0.005	0.015	0.025	0.05
PT Max(mm)	7.6			
OT Min(mm)	4.0			
MD Max(mm)	1.8			
OP(mm)	15.2 ± 2.5			

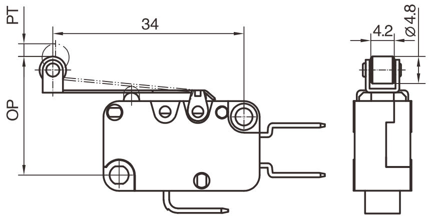
MS10–□Z4–A015
MS10–□Z4–A025
MS10–□Z4–A050
MS10–□Z4–A100





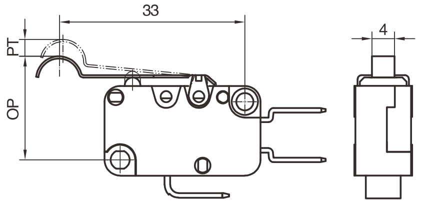
型 號 Model	MS10–□Z4–A015	MS10–□Z4–A025	MS10–□Z4–A050	MS10–□Z4–A100
OF Max(N)	0.15	0.25	0.50	1.00
RF Min(N)	0.02	0.05	0.12	0.25
PT Max(mm)	1.3			
OT Min(mm)	1.0			
MD Max(mm)	0.4			
OP(mm)	20.3 ± 0.8			

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

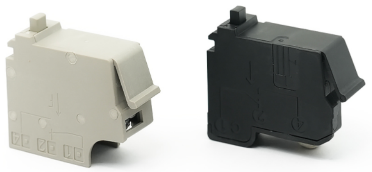


型 號 Model	MS10–□Z6–A015	MS10–□Z6–A025	MS10–□Z6–A050	MS10–□Z6–A100
OF Max(N)	0.10	0.15	0.25	0.50
RF Min(N)	0.015	0.025	0.06	0.12
PT Max(mm)	3.5			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	18.6 ± 1.2			

MS11 型微動開關系列 Micro switch series

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

- 可靠性高、接觸穩定
  High reliability and stable contact.
- 為智能斷路器輔助觸點，主要監控斷路器分斷情況，觸點脫扣指示及斷路器接地故障報警等信號指示用。
  As an auxiliary contact for intelligent circuit breakers, it is mainly used to monitor the breaking situation of the circuit breaker, indicate contact tripping, and provide signal indications for circuit breaker grounding fault alarms.



◆ 技術特性 Technical Characteristics

項目 Item	特性值 Value
環境溫度Environment temperature	-5℃～+40℃
使用類別下的各額定工作電壓Ue/電流Ie Rated working voltage Ue/current Ie under the usage category	AC-12:AC480V/10A
	AC-12:AC480V/5A,AC600V/3A; DC-12:DC48V/2.5A,DC125V/0.6A,DC250V/0.3A
額定絕緣電壓 Ui Rated insulation voltage Ui	600V
額定衝擊耐受電壓 Uimp Rated impulse withstand voltage Uimp	6kV
外殼防護等級 Case protection degree	IP00
汙染等級 Pollution degree	3
約定發熱電流 Ith Conventional thermal current Ith	10A
絕緣電阻 Insulation resistance	⩾100MΩ (500VDC)
接觸電阻 Contact resistance	⩽50mΩ
工頻耐電壓Test voltage	AC1890V,50/60Hz，1min
抗振動 Vibration resistance	10～55Hz，1.5mm 雙振幅 double amplitude
抗衝擊Shock resistance	最小Min.：294m/s²(30G) 接觸故障持續時間不超過1ms Contact opening max. 1 msec.
接線端子連接導線能力 Capacity of terminal to connect wires	導線截面積Wire cross-sectional area：0.5mm²~1.5mm² 螺紋直徑Thread diameter：M3.5×8 擰緊力矩Tightening torque：0.8N·m
電氣壽命 Electrical Life	⩾6,000次cycles
機械壽命 Mechanical Life	⩾100,000次cycles
安全認證 Safety approvals	UL、TUV、3C

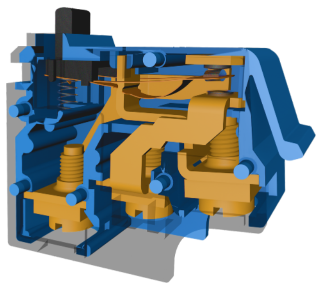
◆ 型號規格命名及含義 Model number legend and meanings

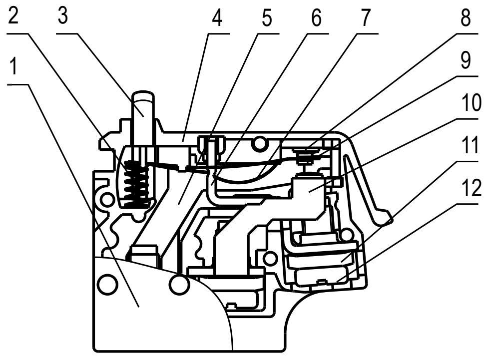
MS11 □-□ □-□ □ □- (□)
1 2 3 4 5 6 7

1 溫度等級 Degrees of temperature	5T40
2 額定值 Ratings	10:10A 480VAC 05: 5A 480VAC; 3A 600VAC; 2.5A 48VDC; 0.6A 125VDC; 0.3A 250DC
3 接觸形式 Circuit	Z:轉換式Z-SPDT T: 常開（按通）式 T-SPST-NO D:常閉（按斷）式D-SPST-NC
4 端子類型 Terminal types	E:螺孔端子 Screw terminal C:插拔端子 Plug-in terminal
5 動作力（max） Operating force	200:2N 150:1.5N 120:0.7N-1.2N
6 外形結構 Contour structure	無標記：螺釘結構 No standard :screw structure A：卡簧快接結構 A：Circlip quick connection structure
7 附加規格編號 Additional specs numbers	適用于 Apply to: 1）當開關使用了非標准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是其他要求； 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.

◆ 内部构造图 Internal configuration drawing

MS11-10

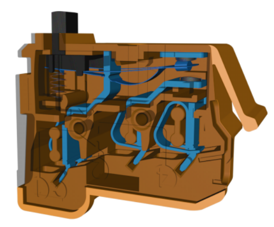


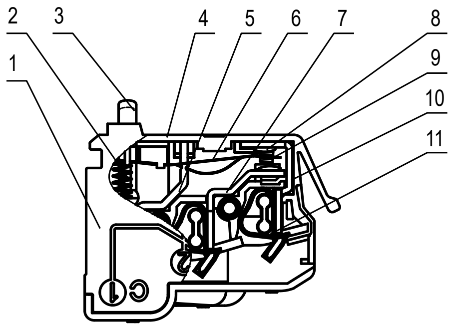


1、盖	Cover
2、弹簧	Spring
3.按钰	Plunger
4.基座	Case
5.常闭端子	Nc Terminal
6.支架	Support
7.可动片	Moving Piece
8.静触点	Static Contact
9.动触点	Moving Contact
10.常开端子	no Terminal
11.垫圈	Washer
12.十字槽盘头螺钉	Cross Recessed Pan Head Screw

◆ 内部構造圖 Internal configuration drawing

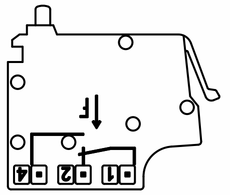
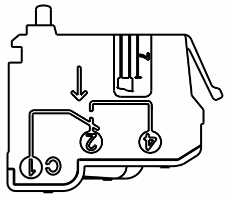
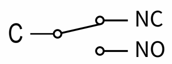
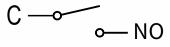
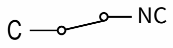
MS11-05





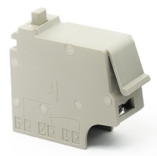
1、蓋	Cover
2、彈簧	Spring
3、按鈕	Plunger
4、基座	Case
5、支架	Support
6、可動片	Moving piece
7、常開端子	No terminal
8、靜觸點	Static contact
9、動觸點	Moving contact
10、常閉端子	Nc terminal
11、卡簧	Spring

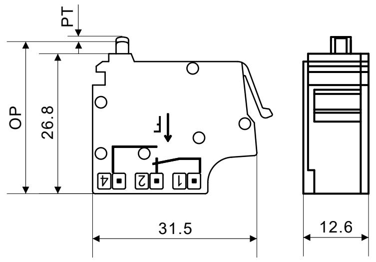
■ 接觸形式說明圖 Circuit illustration

	接觸形式說明圖 Circuit illustration		
 MS11-10  MS11-05	转换式SPDT  	常開式SPST-NO  	常閉式SPDT-NC 

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

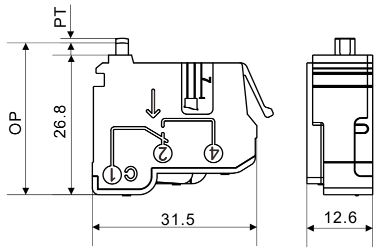
MS11-10





型號Model	MS11-10Z-E200	MS11-10Z-E150
OF Max(N)	2.0	1.5
RF Min(N)	0.5	0.3
PT Max(mm)	1.5	
OT Min(mm)	1	
MD Max(mm)	0.5	
OP (mm)	29±0.3	

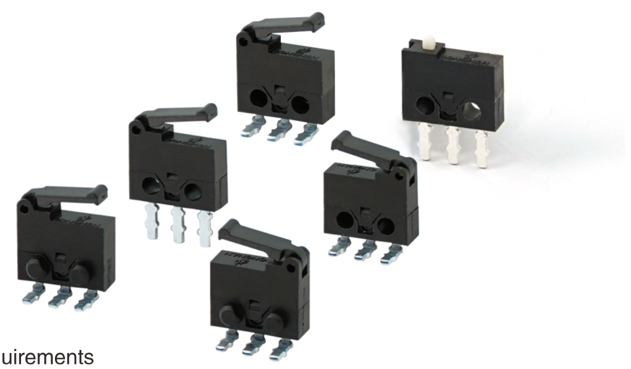
MS11-05



型號Model	MS11-10Z-E200	MS11-10Z-E150
OF Max(N)	1.5	1.2
RF Min(N)	0.3	0.2
PT Max(mm)	1.5	
OT Min(mm)	1	
MD Max(mm)	0.5	
OP (mm)	29±0.3	

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，結構緊凑，具備良好的電氣性能。
  Super small size, compact structure, with good electrical performance.
- 可垂直和水平安裝在印制電路板上
  Can be installed vertically and horizontally on the printed circuit board
- 可選有無動臂型
  Whether with lever is both available
- 可用于安裝空間極其有限和高可靠性要求的應用場合
  Suitable for applications with limited installation space and high reliability requirements

◆ 技術特性 Specifications

項目 Item		特性值 Value
工作速度 Operating speed		0.1mm～0.5m/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
絶緣電阻 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	AC500V,50/60Hz，1min
	帶電金屬零件與地(外殻)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.	AC500V，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: 200m/ (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℃ to ＋85℃ 60%環境以下（無結冰、無凝露） −25℃ to ＋85℃ At ambient humidity of 60% max. （with no icing or condensation）
使用環境濕度 Ambient operation humidity		35% to 85% RH (for +5℃ to ＋35)
外殼防護等級 Cover protection degree		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

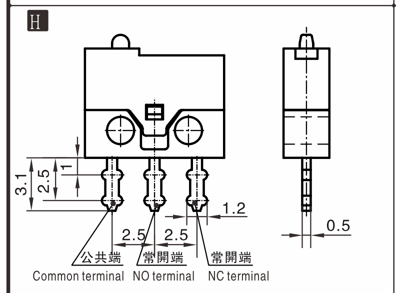
MS12–□ □ □ –□ □ –(□)
1 2 3 4 5 6

1 額定值 Ratings	A：50～500mA 30VDC 3E4 25T70(默認銀觸點) (Default silver contact) B： 5～50mA 30VDC 3E4 25T70(默認鍍金觸點) (Default gold plated contact)
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 (見説明圖 See illustration)
3 驅動形式 Actuator forms	0: 無動臂 No lever 1: 短動臂 Short lever
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

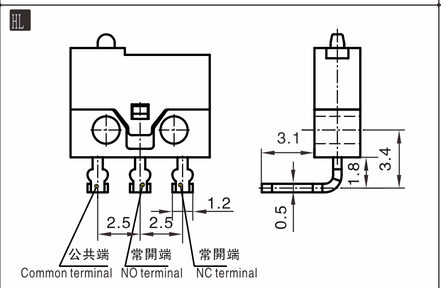
4 端子類型 Terminal types	L：左側面PCB端子 Left side PCB terminal R：右側面PCB端子 Right side PCB terminal Y: 非標準端子Not standard terminal
5 動作力(MAX) Operating force	050: 0.5N 100: 1.0N 注：若是非標準動作力，用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
6 附加規格代號 Additional specs code	附加代號用兩位阿拉伯數字表示，如01、02、03……在没有附加規格編號時，該位置空缺。 Additional spec number shows by two Arabic numerals such as 01, 02, 03……If there is no additional numbers, the place is vacant.

◆ 接綫端尺寸 Terminal dimensions

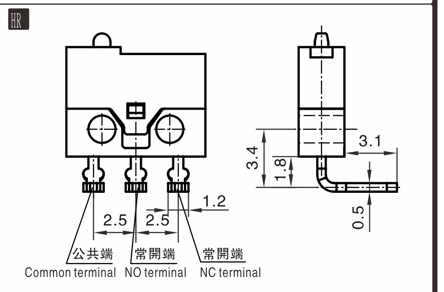
焊接端子 Solder terminal



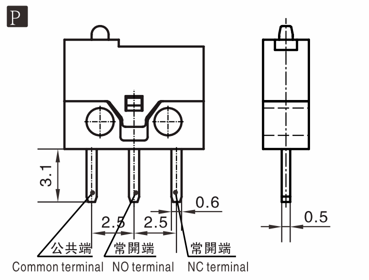
左側面焊接端子 Left side solder terminal



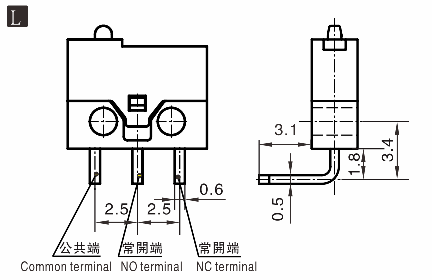
右側面焊接端子 Right side solder terminal



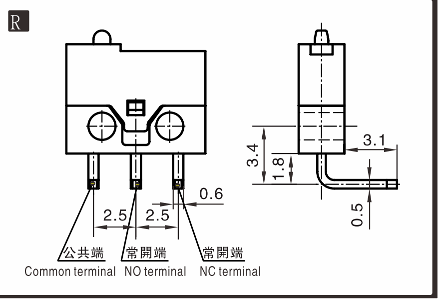
PCB端子 PCB terminal



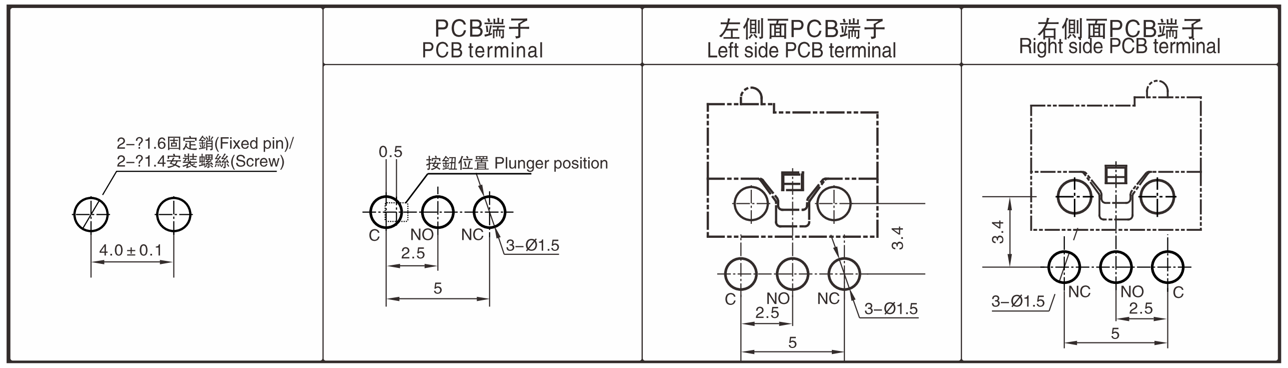
左側面PCB端子 Left side PCB terminal



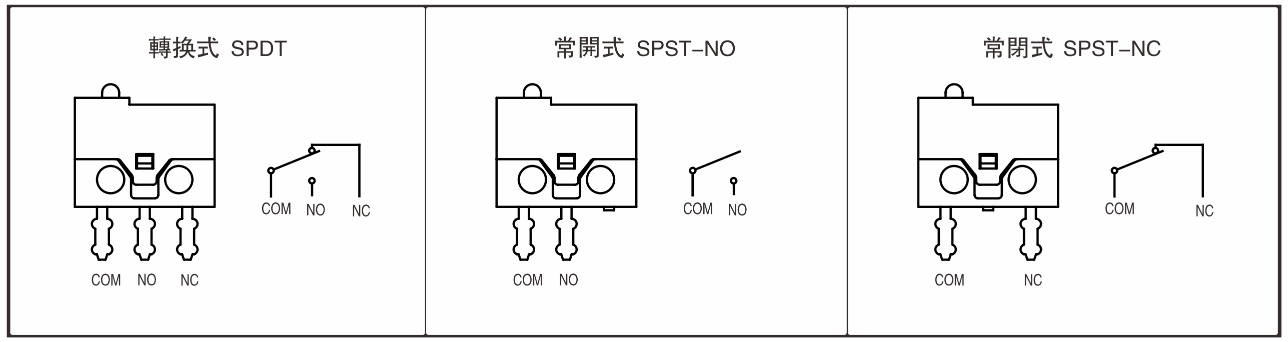
右側面PCB端子 Right side PCB terminal



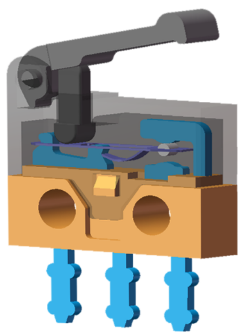
◆ 安裝孔尺寸 Mounting hole dimensions

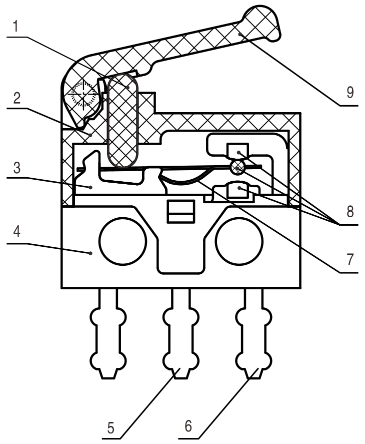


◆ 接觸形式說明圖 Circuit illustration



◆ 內部構造圖 Internal configuration drawing



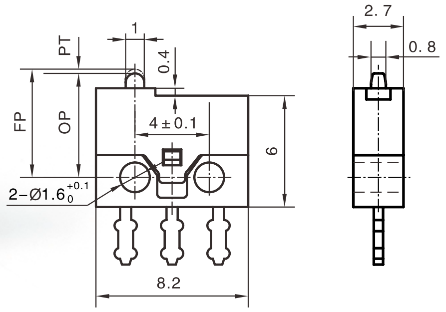


1: 按鈕	Plunger
2: 蓋	Cover
3: 支架	Support
4: 基座	Case
5: 常開端子	NO terminal
6: 常閉端子	NC terminal
7: 可動片	Moving piece
8: 電觸點	Contact
9: 動臂	Lever

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

按鈕型 Pin Plunger Models

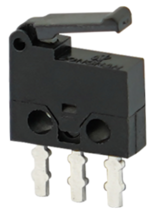
MS12–AZ0–H100
MS12–AZ0–HL100
MS12–AZ0–HR100
MS12–AZ0–L100
MS12–AZ0–P100
MS12–AZ0–R100

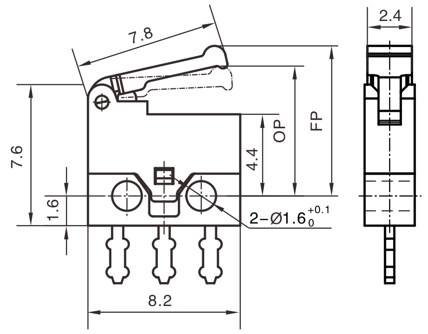


OF Max(N)	1.0
RF Min(N)	0.2
PT Max(mm)	0.4
OT Min(mm)	0.1
MD Max(mm)	0.1
OP(mm)	5.7±0.2

動臂型 Lever Models

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



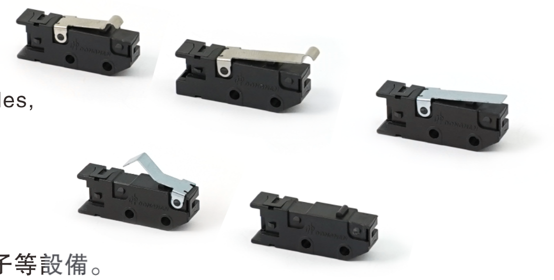


OF Max(N)	0.5
RF Min(N)	0.06
PT Max(mm)	1.6
OT Min(mm)	0.3
MD Max(mm)	0.25
FP Max(mm)	8.3
OP(mm)	7.0±0.5

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 more environmentally .
- 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 KW4A(S) series and can be used interchangeably.
- 廣泛應用于辦公設備、家電設備、兒童座椅、智能游戲機及汽車電子等設備。
  Widely used in office equipment, home appliances, child seats, intelligent game machines and automotive electronics and other equipments.



◆ 技術特性 Specifications

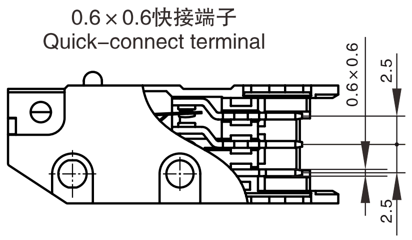
項目 Item		特性值 Value
工作速度(無負載)Operating speed (No load)		0.1mm～1m/s(針狀按鈕位置)(Needle button position)
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤100mΩ(初始值Initial value)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V,50/60Hz，1min
	帶電金屬零件與地(外殼)之間、接綫端與不帶電金屬件之間 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（誤動作振動） Vibration resistance(Misoperation vibration)		單振幅0.75mm，10Hz～55Hz(觸點開離爲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（在静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)
防護等級 Protection degree		IP40
壽命 Life	機械壽命 Mechanical life	≥500,000（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)
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

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

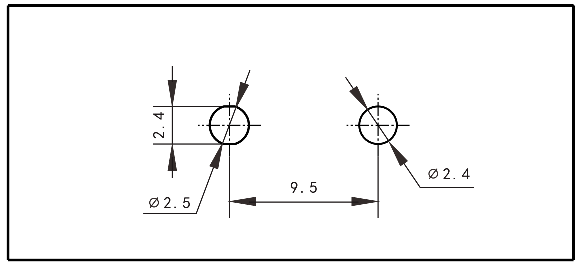
MS13□－□□□－□□－(□)
1 2 3 4 5 6 7

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(按通)式 SPST–NO D:常閉(按斷)式 SPST–NC (見説明圖 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 lever A5/5–長滾輪臂 Long roller lever 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	適用于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. 3)當外殼和按鈕顏色不是默認的黑色時。 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。 When the cover and plunger color is not the default black. Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

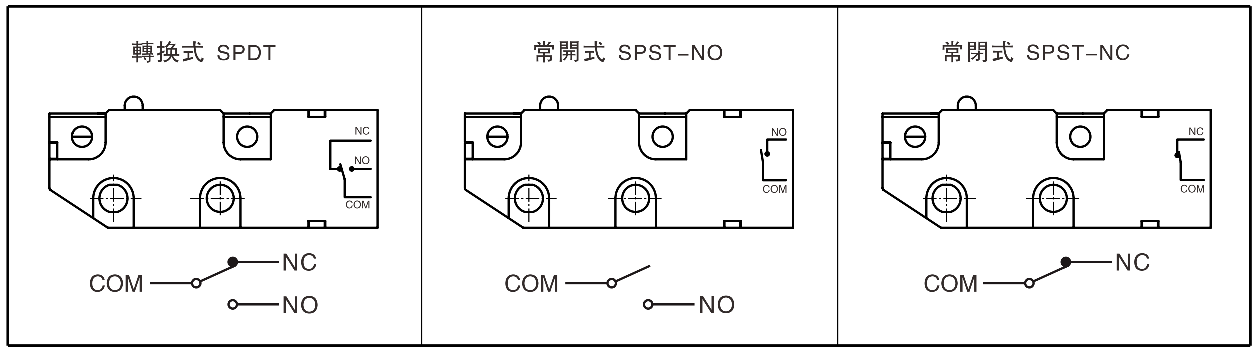
◆ 接綫端尺寸 Terminal dimensions



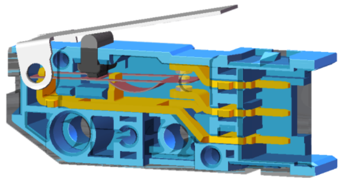
◆ 安裝孔尺寸 Mounting hole dimension

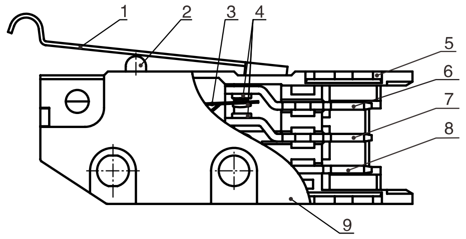


◆ 接觸形式説明圖 Circuit illustration



◆ 内部構造圖 Internal configuration drawing

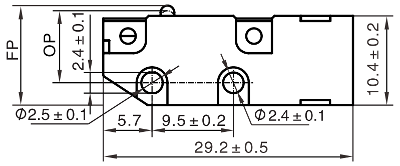




1: 動臂	Lever
2: 按鈕	Plunger
3: 可動片	Moving piece
4: 電觸點	Contact
5: 底座	Case
6: 常閉端子	NO terminal
7: 常開端子	NC terminal
8: 支架	Support
9: 蓋	Contact

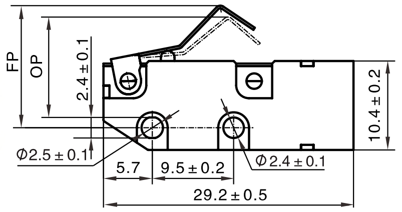
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



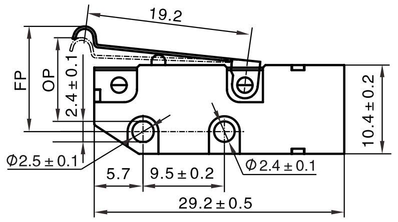
型 號Model	MS13-5Z0-X180	MS13-5Z0-X130
OF Max(N)	1.80	1.30
RF Min(N)	0.5	0.3
FP Max(mm)	9.0	
OT Min(mm)	0.4	
MD Max(mm)	0.1	
OP(mm)	8.4±0.3	

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



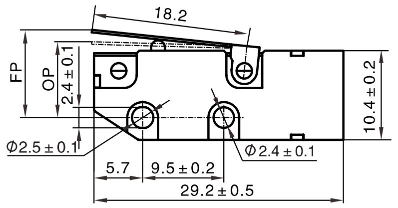
型 號 Model	MS13-5ZAA-X180	MS13-5ZAA-X130
OF Max(N)	1.2	0.80
RF Min(N)	0.3	0.1
FP Max(mm)	14.5	
OT Min(mm)	1.0	
MD Max(mm)	0.5	
OP(mm)	12.8±0.8	

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



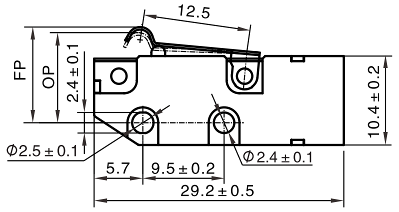
型 號 Model	MS13-5ZB-X180	MS13-5ZB-X130
OF Max(N)	1.1	0.80
RF Min(N)	0.4	0.2
FP Max(mm)	12.2	
OT Min(mm)	0.6	
MD Max(mm)	0.5	
OP(mm)	10.6±0.6	

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

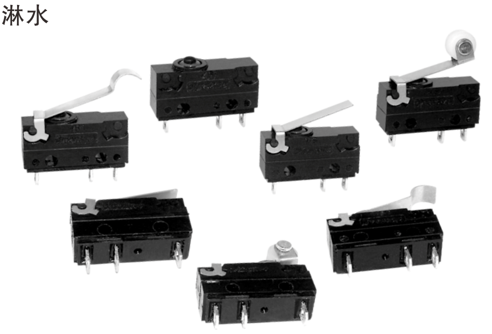


型 號 Model	MS13-5Z6-X180	MS13-5Z6-X130
OF Max(N)	1.50	1.2
FP Max(mm)	0.5	0.3
RF Min(N)	11.2	
OT Min(mm)	0.6	
MD Max(mm)	0.3	
OP(mm)	10.5±0.6	

WS1型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristics and usage

- 通過橡膠密封圈和環氧樹脂填封達到穩定的密封性。可以在會淋水或多塵埃的地方使用。
  To be stably sealed by sealed rubber ring and epoxy resin.
  Can be used in wet or dusty places.
- 接綫端子種類齊全，可配備各種導綫。
  A variety of contact terminals, provide with a variety kinds of wires.
- 配備各種形式動臂
  A variety of levers.
- 可在汽車、自動售貨機、冰箱、制冰機、浴室設備、熱水器、空調等有耐環境性要求的場合及户外設備、儀器使用。
  Can be used in environmental resistant requirements application,outdoor equipments such as automobile,vendingmachine, refrigerator, ice machine, bath equipment, wa ter heater and air–conditioner etc.



◆ 技術特性 Technical Characteristics

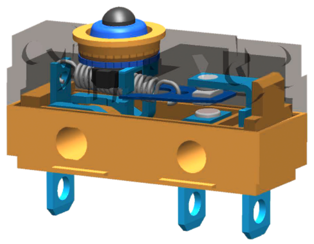
項目 Item		特性值 Value
工作速度 Operating speed		0.1mm～1m/s (無動臂時 No lever)
工作頻率 Operating frequency		機械60次/min;電氣25次/min Mechanical 60 cycles/min;Electrical 25 cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		端子型 Terminal type ≤50mΩ 導綫型 Wire type ≤100mΩ
耐電壓 Test voltage	同極不相接端子間 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：1000m/S^2(約100G) 最大 Endurance：1000m/S^2(approx 100G) max 誤動作：300m/S^2(約30 G) 最大 Wrong action：300m/S^2(approx.30G) max
防觸電保護等級 Electric shock proof protection degree		Ⅰ級 class
外殼防護等級 Case protection degree		IEC IP67 (端子型的端子部位除外 Except terminal part of terminal type)
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、CE、ENEC、DEMKO、EK、CQC

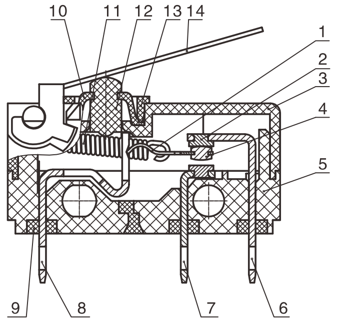
◆ 型號規格命名及含義 Model number legend and meanings

WS1 □–□ □ □–□ □ □ □ □–(□)
1 2 3 4 5 6 7 8 9 10

1 温度等級 Degrees of temperature	無標記 No mark: 20T85 T:25T125
2 額定值 Ratings	無標記 No mark： 5A125VAC,5GPA125/250VAC 5(2)A125/250VAC 4A30VDC,1/4hp250VAC WS1–B： 3A125VAC,3GPA125/250VAC 3(1)A125/250VAC WS1–C： 1A125VAC,1GPA125/250VAC 1(0.3)A125/250VAC WS1–F： 0.1A125/250VAC 0.1GPA125/250VAC
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 (見説明圖 See illustration)
4 驅動形式 Actuator forms	0:無動臂 No lever 1/B1:短動臂 Short lever 2/B2:長動臂 Long lever 3/B3:中動臂 Middle lever 4/B4:短滾輪臂 Short roller lever 5/B5:長滾輪臂 Long roller lever 6/B6:弧形動臂 Arc lever □/B□:非標準動臂 Not standard lever 注：□ 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: □ Indicate not standard lever,B indicate the lever far away from the plunger
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 T:110快接端子 110 quick–connect Y:非標準端子 Not standard terminal W:導綫型 Wire type
6 動作力(max) Operating force	050: 0.5N 100: 1N 150: 1.5N 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.
7 按鈕規格 Plunger specs	無標記 No mark: 標準按鈕 Standard plunger □:非標準按鈕 Not standard plunger 注：□表示非標準按鈕的代號 Note:□Indicate not standard plunger
8 導綫方向及長度 Wire direction and length	R□:導綫在按鈕遠端引出 Wire be educed at the distance of plunger L□:導綫在按鈕近端引出 Wire be educed at the close of plunger D□:導綫在開關下方引出 Wire be educed at the lower part of switch (□爲導綫長度毫米數) (□ Is the length number– “mm” of the wire)
9 防護等級 Protection degree	無標記 No mark：IP67 IP□□:其它等級 Other degrees
10 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	適用于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. 3)當導綫顏色不是默認的配置顏色時。 When the wire color is not the default color. ■ 附加規格代號用阿拉伯數字表示，在没有附加規格編號時，該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant. ■ 導綫顏色配置代號：用三個英文字母按COM、NC、NO順序表示；若是常開式或常閉式開關，空缺位置用字母O表示。(顏色代號：紅–R、白–W、黑–B、緑–G、藍–L、黄–M、灰–H、紫–P)。 Wire color code:indicate with 3 letters,the order is COM、NC、NO;If NO or NC,vacant place shows 0. (Color code:red–R,white–W,black–B,green–G, blue–L,yellow–Y,grey–H,purple–P) 示例example：BWR，BOR，RWO ■ 若同時有附加規格代號和導綫顏色配置代號，則導綫顏色配置代號位于附加規格代號之後。 If there are append specs code and wire color code at the same time,then the wire color code should be after the append specs code. 示例 example：02BWR

◆ 內部構造圖 Internal configuration drawing

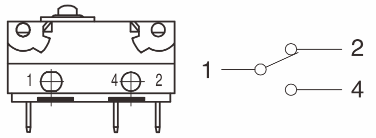




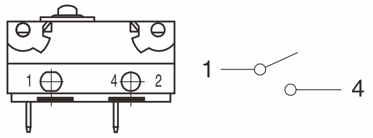
1：	可動片	Moving piece
2：	電觸點	Contact
3：	蓋	Cover
4：	電觸點	Contact
5：	基座	Case
6：	常閉端子	NC terminal
7：	常開端子	NO terminal
8：	支架	Support
9：	環氧樹脂	Epoxy resin
10：	密封圈	Hermetic loop
11：	拉簧	Pull spring
12：	按鈕	Plunger
13：	壓環	Clasp ring
14：	動臂	Lever

◆ 接觸形式説明圖 Circuit illustration

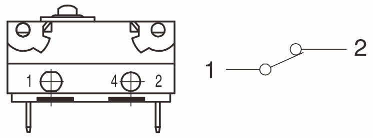
轉換式 SPDT



常開式 SPST–NO

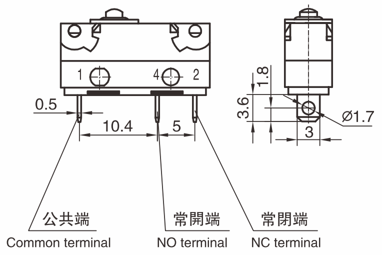


常閉式 SPST–NC

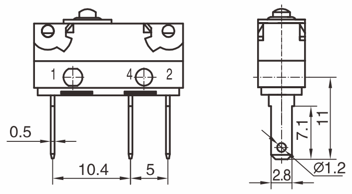


◆ 接綫端尺寸 Terminal dimensions

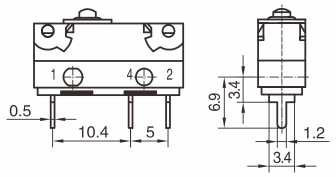
焊接端子
Solder terminal



快接端子#110
Quick connect terminal #110

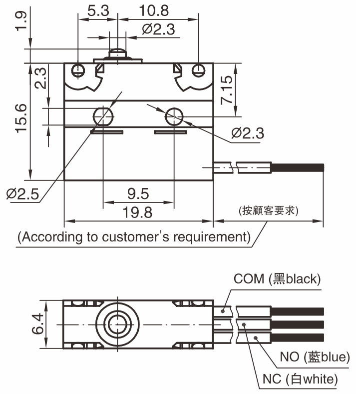


PCB端子
PCB terminal

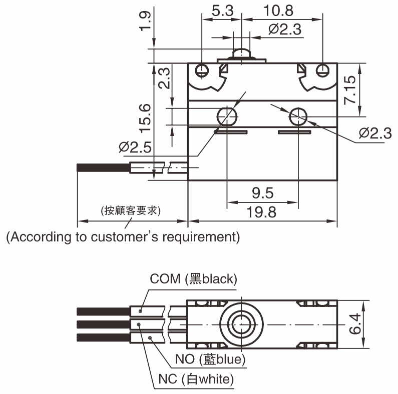


◆ 導綫型外形圖 Outline drawing of wire type

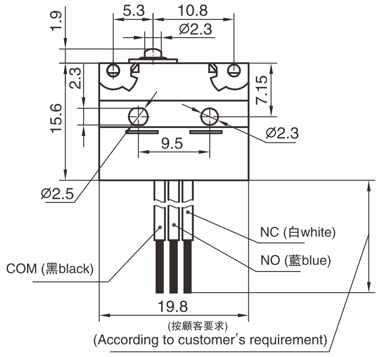
WS1□–□Z0–W□R□



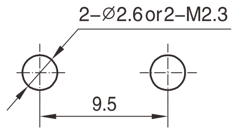
WS1□–□Z0–W□L□



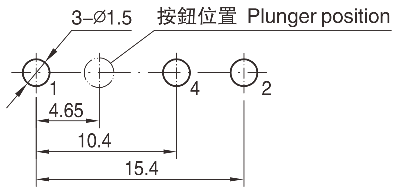
WS1□–□Z0–W□D□



安裝孔尺寸 Mounting hole dimensions

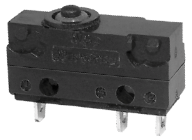


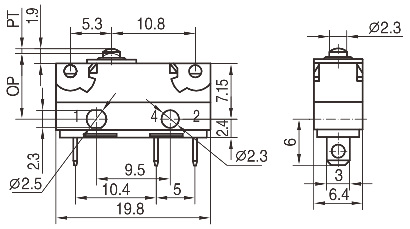
PCB端子 PCB terminal



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

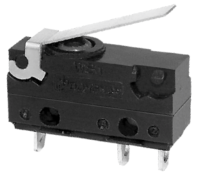
WS1–□Z0–F100
WS1–□Z0–F150
WS1–□Z0–F200

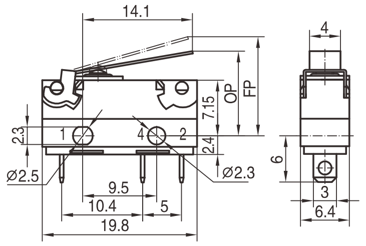




型 號 Model	WS1–□Z0–F100	WS1–□Z0–F150	WS1–□Z0–F200
OF Max(N)	1.00	1.50	2.00
RF Min(N)	0.20	0.30	0.60
PT Max(mm)	0.8		
OT Min(mm)	0.4		
MD Max(mm)	0.1		
OP(mm)	8.4±0.4		

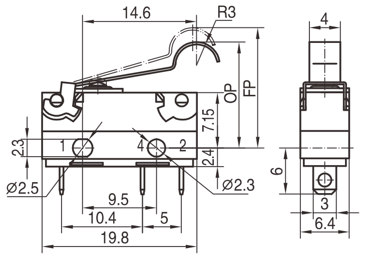
WS1–□Z3–F100
WS1–□Z3–F150
WS1–□Z3–F200





型 號 Model	WS1–□Z3–F100	WS1–□Z3–F150	WS1–□Z3–F200
OF Max(N)	0.45	0.55	0.75
RF Min(N)	0.10	0.15	0.20
OT Min(mm)	1.0		
MD Max(mm)	0.8		
FP Max(mm)	14.5		
OP(mm)	10.7±0.8		

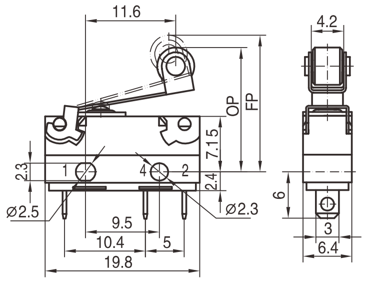
WS1–□Z6A–F100
WS1–□Z6A–F150
WS1–□Z6A–F200



型 號 Model	WS1–□Z6A–F100	WS1–□Z6A–F150	WS1–□Z6A–F200
OF Max(N)	0.38	0.50	0.70
RF Min(N)	0.08	0.15	0.20
OT Min(mm)	1.0		
MD Max(mm)	0.8		
FP Max(mm)	16.5		
OP(mm)	13.7±0.8		

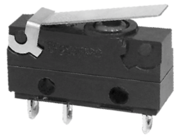
◆ **外形尺寸和動作特性** Dimensions and operating characteristics

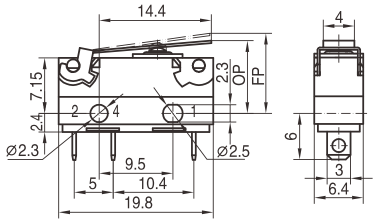
WS1–□Z5–F100
WS1–□Z5–F150
WS1–□Z5–F200



型 號 Model	WS1–□Z5–F100	WS1–□Z5–F150	WS1–□Z5–F200
OF Max(N)	0.50	0.60	0.80
RF Min(N)	0.12	0.15	0.20
OT Min(mm)	1.0		
MD Max(mm)	0.8		
FP Max(mm)	18.5		
OP(mm)	16.6±0.8		

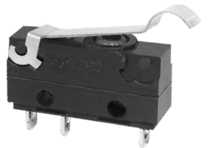
WS1–□ZB3–F100
WS1–□ZB3–F150
WS1–□ZB3–F200

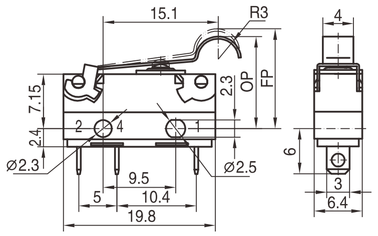




型 號 Model	WS1–□ZB3–F100	WS1–□ZB3–F150	WS1–□ZB3–F200
OF Max(N)	0.70	1.05	1.40
RF Min(N)	0.20	0.30	0.40
OT Min(mm)	0.8		
MD Max(mm)	0.4		
FP Max(mm)	11.5		
OP(mm)	9.3±0.5		

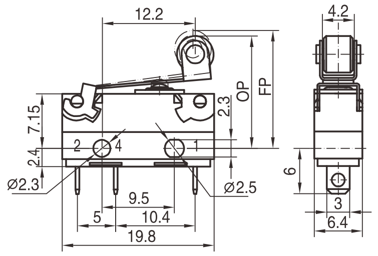
WS1–□ZB6–F100
WS1–□ZB6–F150
WS1–□ZB6–F200





型 號 Model	WS1–□ZB6–F100	WS1–□ZB6–F150	WS1–□ZB6–F200
OF Max(N)	0.65	1.00	1.35
RF Min(N)	0.20	0.30	0.40
OT Min(mm)	0.8		
MD Max(mm)	0.6		
FP Max(mm)	14.0		
OP(mm)	11.4±0.6		

WS1–□ZB5–F100
WS1–□ZB5–F150
WS1–□ZB5–F200



型 號 Model	WS1–□ZB5–F100	WS1–□ZB5–F150	WS1–□ZB5–F200
OF Max(N)	0.80	1.20	1.60
RF Min(N)	0.25	0.40	0.50
OT Min(mm)	0.6		
MD Max(mm)	0.6		
FP Max(mm)	17.0		
OP(mm)	15±0.6		

◆ **請正確使用** Please use it correctly

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

■ 注意事項 Attention items

(1) 關于保護構造 Concerning protection structure

請勿在水中使用。開關雖然滿足IP67的試驗條件，但這些試驗是在水中放置一段時間後確定進水程度的試驗，而并非在水中進行開閉動作的試驗。

Do not use switch in the water. Although the switch meets the test requirement of IP67， these tests are to test the degree of influx of the switch after placing in water for a period of time,it is not test the ON /OFF operation in the water.

當處于經常有水滴的狀態，以及溫度急劇變化情況下由于冷凝，都可能發生水分侵入開關內部的情況，請引起充分注意。

When usually under the condition of dropped water and temperature changed rapidly condensation water may enter into the switch because of condensation, please take note.

請避免油污、化學品的附着。否則可能出現使用材質變質及引起老化。

Please avoid the greasy dirt & chemical adhesion. Otherwise, the quality of using material may deteriorate and aging.

若在含硅粘合劑、油脂等環境下使用，可能因生成氧化硅而產生接觸不良。

If used under the condition of which contains silicon bond , grease environment , bad contact may happen because of the oxidation silica created.

根據開關負荷種類、周圍環境、設置條件等的不同，耐環境性能會有所不同。請務必在實際使用環境下進行實機確認。

Environment resistance will be different in relation to load types,ambient environment and setup condition.Please confirm it with exact machine under exact using environment.

(2) 關于端子的接綫 Concerning terminal connecting wire

焊接時的烙鐵溫度350～400℃, 焊接時間在3s之内。過高溫度下的作業、長時間的過熱容易引起開關老化。

The soldering iron temperature should at 350–400℃, time in 3s. If operate temperature is too high or too long time in excess of heating, switch aging may happen.

對于快接式端子，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 the insert piece into the slet, please do not exert transverse press to the terminal, in order to avoid terminal distort and cover breakage.

使用自動焊接槽時，建議在260±5℃下5s内進行作業。印制板的焊接，應注意焊劑及焊接的液面不要超過印制板。

Soldering with automatic wave soldering, we suggest to operate at 260±5℃, within 5s. Soldering the printed board, please pay attention to soldering dosage and soldering tin do not exceed the printed circuit board

- 關于使用 Concerning using

使用過程中應充分注意不要損壞按鈕處的密封橡膠。

Please do not damage the sealed rubber around the button in the process of usage.

- 關于安裝 Concerning the installation

(1) 開關的安裝、拆卸和配綫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，并請使用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.

- 關于導綫型的布綫 Concerning wiring of wire type

布綫時應注意不要出現外力施加于導綫或從導綫引出部直接進行彎曲等現象。

When wiring, please do not exert external force to the wire or curve directly from the place where the wire draws out.

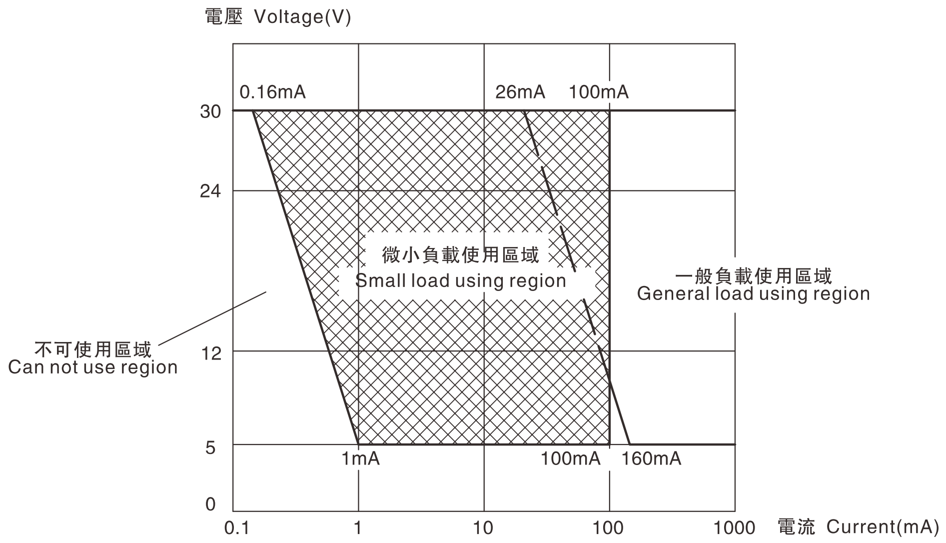
- 關于微小負載電路中的使用 Concerning use in small load circuit

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，并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.



WS1L型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristics and usage

- 通過橡膠密封圈和環氧樹脂填封達到穩定的密封性。可以在會淋水或多塵埃的地方使用。
  To be stably sealed by sealed rubber ring and epoxy resin.
  Can be used in wet or dusty places.
- 接綫端子種類齊全，可配備各種導綫。
  A variety of contact terminals, provide with a variety of wires.
- 配備各種形式動臂
  A variety of levers.
- 可在汽車、自動售貨機、冰箱、制冰機、浴室設備、熱水器、空調等有耐環境性要求的場合及户外設備、儀器使用。
  Can be used in environmental resistant requirements application,outdoor equipments such as automobile,vending machine, refrigerator, ice machine, bath equipment, water heater and air–conditioner etc.

◆ 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
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		端子型 Terminal type ≤50mΩ 導綫型 Wire type ≤100mΩ
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：1000m/S^2(約100G) 最大 Endurance：1000m/S^2(approx 100G) max 誤動作：300m/S^2(約30 G) 最大 Wrong action：300m/S^2(approx.30G) max
防觸電保護等級 Electric shock proof protection degree		Ⅰ級 class
外殼防護等級 Case protection degree		IEC IP67 (端子型的端子部位除外 Except terminal part of terminal type)
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、ENEC、DEMKO

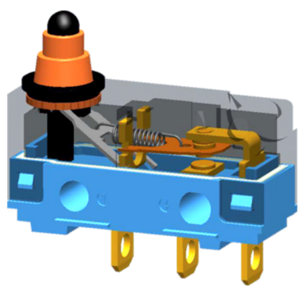
◆ 型號規格命名及含義 Model number legend and meanings

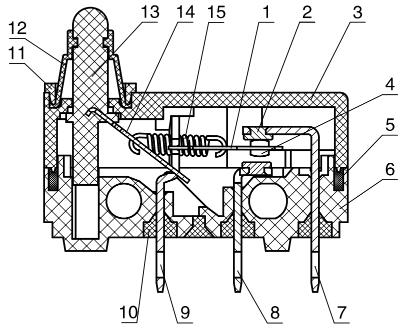
WS1L □-□□□-□□□□□-(□)
1　2 3 4　5 6 7 8 9　10

1 溫度等級 Degrees of temperature	無標記 No mark: 20T85 T:40T85
2 額定值 Ratings	無標記 No mark: 5A125VAC 5GPA125/250VAC 5(2)A125/250VAC 4A30VDC 1/4hp250VAC WS1L–B: 3A125VAC 3GPA125/250VAC 3(1)A125/250VAC WS1L–C: 1A125VAC 1GPA125/250VAC 1(0.3)A125/250VAC WS1L–F: 0.1A125/250VAC 0.1GPA125/250VAC
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)
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 4:短滾輪臂 Short Roller lever 5:長滾輪臂 Long Roller lever 6:弧形動臂 Arc Lever □:標準動臂 Not standard lever 注：□表示非標準動臂的代號 Note: □indicate not standard lever
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 T:110快接端子 110 quick–connect Y:非標準端子 Not standard terminal W:導綫型 Wire type

6 動作力(max) Operating force	050: 0.5N 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.
7 按鈕規格 Plunger specs	無標記 No mark: 標準按鈕 Standard plunger □:非標準按鈕 Not standard plunger 注：□表示非標準按鈕的代號 Note:□Indicate not standard plunger
8 導綫方向及長度 Wire direction and length	R□:導綫在按鈕遠端引出 Wire be educed at the distance of plunger L□:導綫在按鈕近端引出 Wire be educed at the close of plunger D□:導綫在開關下方引出 Wire be educed at the lower part of switch (□爲導綫長度毫米數) (□ Is the length number– “mm” of the wire)
9 防護等級 Protection degree	無標記 No mark：IP67 IP□□:其它等級 Other degrees
10 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	適用于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. 3)當導綫顏色不是默認的配置顏色時。 When the wire color is not the default color. ■ 附加規格代號用阿拉伯數字表示，在没有附加規格編號時，該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant. ■ 導綫顏色配置代號：用三個英文字母按COM、NC、NO順序表示；若是常開式或常閉式開關，空缺位置用字母O表示。(顏色代號：紅–R、白–W、黑–B、綠–G、藍–L、黃–M、灰–H、紫–P)。 Wire color code:indicate with 3 letters,the order is COM、NC、NO;If NO or NC,vacant place shows 0.(Color code:red–R,white–W,black–B,green–G,blue–L,yellow–Y,grey–H,purple–P) 示例example：BWR，BOR，RWO ■ 若同時有附加規格代號和導綫顏色配置代號，則導綫顏色配置代號位于附加規格代號之後。 If there are append specs code and wire color code at the same time,then the wire color code should be after the append specs code. 示例 example：02BWR

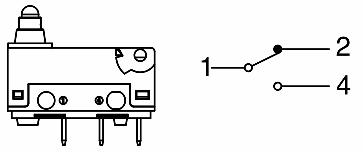
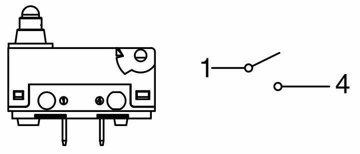
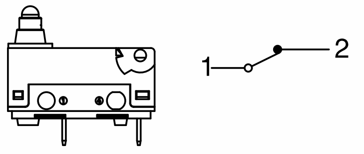
◆ 內部構造圖 Internal configuration drawing



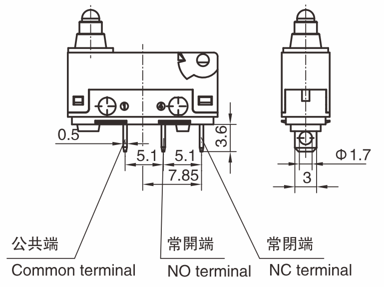
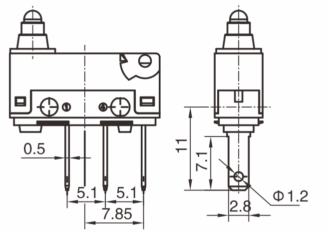
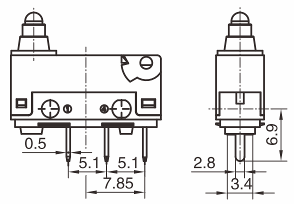


1：	可動片	Moving piece
2：	電觸點	Contact
3：	蓋	Cover
4：	電觸點	Contact
5：	橡膠	Rubber
6：	基座	Case
7：	常閉端子	NC terminal
8：	常開端子	NO terminal
9：	支架	Support
10：	環氧樹脂	Epoxlde resin
11：	壓環	Clasp ring
12：	密封圈	Hermetic loop
13：	按鈕	Plunger
14：	杠杆	Lever
15：	拉簧	Pull spring

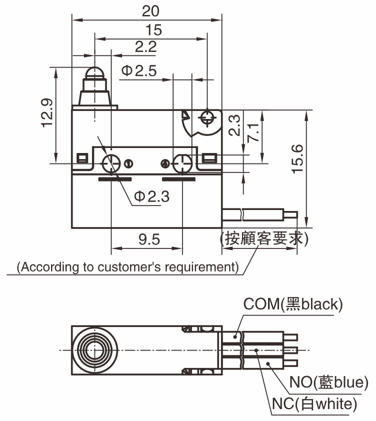
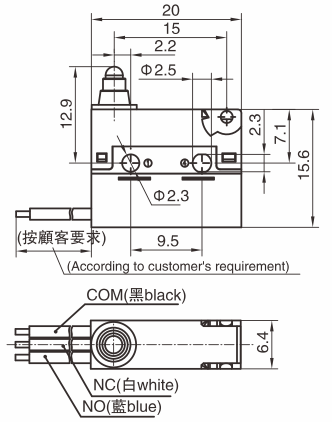
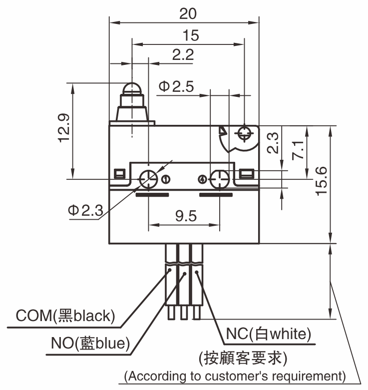
◆ 接觸形式說明圖 Circuit illustration

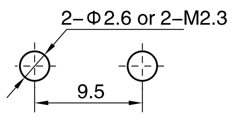
轉換式 SPDT	常開式 SPST–NO	常閉式 SPST–NC
		

◆ 接綫端尺寸 Terminal dimensions

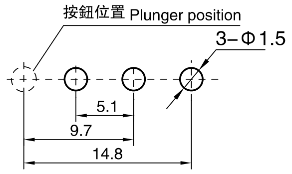
焊接端子 Solder terminal	快接端子#110 Quick connect terminal #110	PCB端子 PCB terminal
		

◆ 導綫型外形圖 Outline drawing of wire type

WS1L□–□Z0–W□R□	WS1L□–□Z0–W□L□	WS1L□–□Z0–W□D□
		

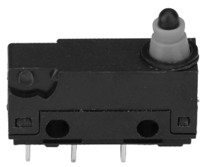


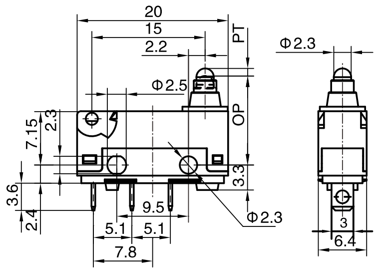
PCB端子 PCB terminal



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

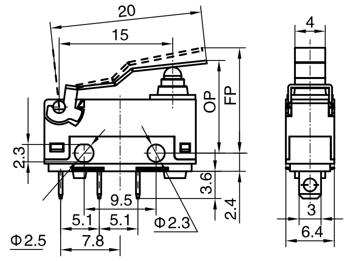
WS1L–□Z0–F150
WS1L–□Z0–F200





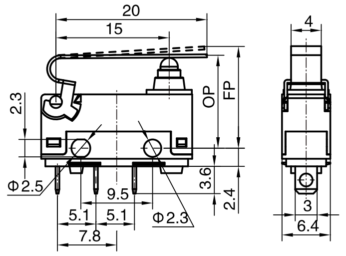
型號 Model	WS1L–□Z0–F150	WS1L–□Z0–F200
OF Max(N)	1.50	2.00
RF Min(N)	0.30	0.40
PT Max(mm)	1.6	
OT Min(mm)	1.8	
MD Max(mm)	1.9	
OP (mm)	11.7 ± 0.4	

WS1L–□ZE–F150
WS1L–□ZE–F200



型號 Model	WS1L–□ZE–F150	WS1L–□ZE–F200
OF Max(N)	1.50	2.00
RF Min(N)	0.30	0.40
OT Min(mm)	2.0	
MD Max(mm)	1.0	
FP Max(mm)	14.5	
OP (mm)	12.6 ± 0.8	

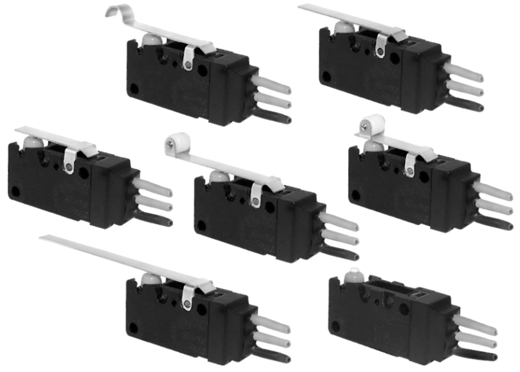
WS1L–□ZF–F150
WS1L–□ZF–F200



型號 Model	WS1L–□ZF–F150	WS1L–□ZF–F200
OF Max(N)	1.50	2.00
RF Min(N)	0.30	0.40
OT Min(mm)	2.0	
MD Max(mm)	1.0	
FP Max(mm)	13.5	
OP (mm)	12.3 ± 0.8	

WS2型防水開闗系列 Waterproof switch series

◆ **特點和用途** Characteristics and usage



- 通過橡膠密封圈和環氧樹脂填封達到穩定的密封性。
  可以在會淋水或多塵埃的地方使用。
  To be stably sealed by sealed rubber ring and epoxy resin.
  Can be used in wet or dusty places.
- 配備焊接端子和帶導綫端子
  Provide solder terminal and wire terminal
- 配備各種形式動臂
  A variety of levers
- 可在汽車、農業機械、大型家電、辦公設備等有耐環境性要求的場合使用。
  Can be used in environmental resistant requirements application such as automobile,agricultural machine,large home applicance,office equipment etc

◆ **技術特性** Technical Characteristics

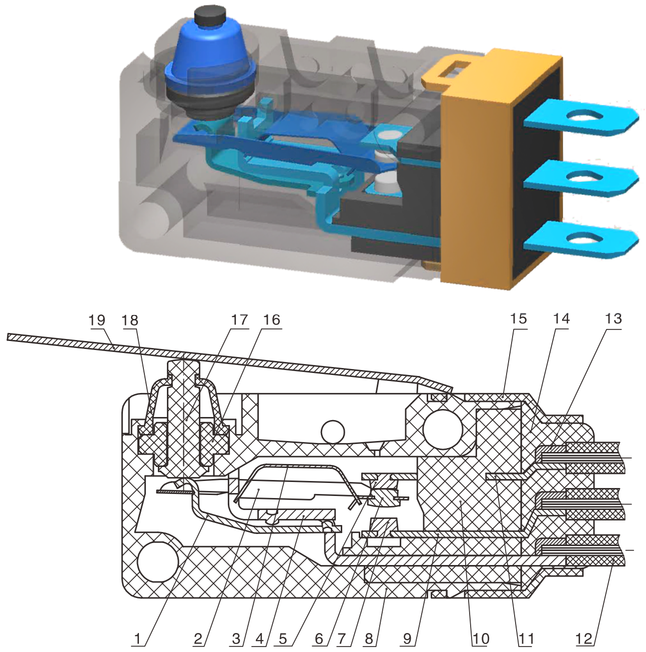
項目 Item		特性值 Value
工作速度 Operating speed		0.1mm～1m/s (無動臂時 No lever)
工作頻率 Operating frequency		機械 60次/min;電氣 25次/min Mechanical 60 cycles/min;Electrical 25 cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤30mΩ(初始值 Initial value)
耐電壓 Test voltage	同極不相接端子間 Between not connect 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：1000m/S^2(約100G) 最大 endurance：1000m/S^2(approx 100G) max 誤動作：300m/S^2(約30 G) 最大 Wrong action：300m/S^2(approx.30G) max
防觸電保護等級 Electric shock proof protection degree		Ⅰ 級 class
外殼防護等級 Case protection degree		IEC IP67 (端子型的端子部位除外 Except terminal part of terminal type)
壽命 Life		機械≥1,000,000次; Mechanical ≥1,000,000 cycles 電氣≥50,000次; Electrical ≥10,000 cycles
安全認證 Safety approvals		UL、CUL、ENEC、DEMKO、CE、CQC

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

WS2 □–□ □ □–□ □ □–□ □–(□)
1 2 3 4 5 6 7 8 9 10

1 溫度等級 Degrees of temperature	無標記 No mark: T85 T:25T125
2 額定值 Ratings	WS2–10: 10.1GPA125/250VAC 10.1RA125/250VAC 10(3)A125/250VAC, 6A30VDC 1/3hp125/250VAC WS2–05: 5A125VAC 5GPA125/250VAC 5RA125/250VAC 5(2)A125/250VAC,5A30VDC 1/4hp125/250VAC WS2–01: 0.1GPA125/250VAC 0.1RA125/250VAC,0.1A30VDC
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 (見説明圖 See illustration)
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 lever A5/5:長滾輪臂 Long roller lever A6/6:弧形動臂 Arc lever A□/□:非標準動臂 Not standard lever 注：1)A表示動臂安裝在離按鈕的近端。 2)□表示非標準動臂的代號。 Note:1）A indicate the lever near to the plunger, 2)□Indicate not standard lever.
5 端子類型 Terminal types	F:端子型 Terminal type W:導綫型 Wire type Y:非標準端子 Not standard terminal
6 動作力(max) Operating force	050: 0.5N 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.
7 按鈕規格 Plunger specs	無標記 No mark: 標準按鈕 standard plunger □:非標準按鈕 not standard plunger 注：□表示非標準按鈕的代號 Note:□Indicate not standard plunger
8 導綫長度 Wire length	用毫米數表示 Indicate with number– “mm”
9 防護等級 Protection degree	無標記 No mark：IP67 IP□□:其它等級 Other degrees
10 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	適用于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. 3)當導綫顏色不是默認的配置顏色時。 When the wire color is not the default color. ■ 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. ■ 導綫顏色配置代號：用三個英文字母按COM、NC、NO順序表示；若是常開式或常閉式開關，空缺位置用字母O表示。(顏色代號：紅–R、白–W、黑–B、綠–G、藍–L、黃–M、灰–H、紫–P)。 Wire color code:indicate with 3 letters,the order is COM、NC、NO;If NO or NC,vacant place shows 0.(Color code:red–R,white–W,black–B,green–G,blue–L,yellow–Y,grey–H,purple–P) 示例example：BWR，BOR，RWO ■ 若同時有附加規格代號和導綫顏色配置代號，則導綫顏色配置代號位于附加規格代號之後。 If there are append specs code and wire color code at the same time,then the wire color code should be after the append specs code. 示例 example：02BWR

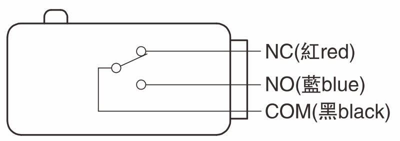
◆ 内部構造圖 Internal configuration drawing



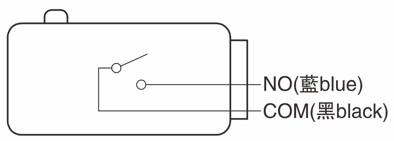
1:	杠杆	Lever
2:	可動片	Moving piece
3:	簧片	Spring sheet
4:	支架	Support
5:	電觸點	Contact
6:	電觸點	Contact
7:	電觸點	Contact
8:	基座	Case
9:	端子	Terminal
10:	固定塊	Fixed piece
11:	端子	Terminal
12:	導綫	Wire
13:	焊錫	Soldering tin
14:	環氧樹脂	Epoxy resin
15:	護罩	Cover
16:	護套	Annulus
17:	按鈕	Plunger
18:	密封圈	Hermetic loop
19:	動臂	lever

◆ 接觸形式説明圖 Circuit illustration

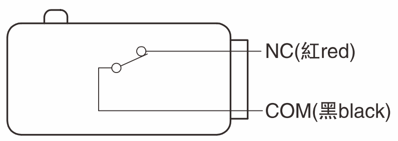
轉換式 SPDT



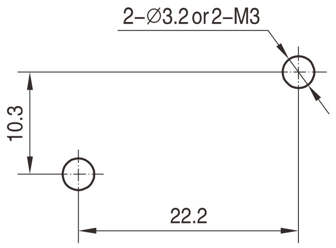
常開式 SPST–NO



常閉式 SPST–NC



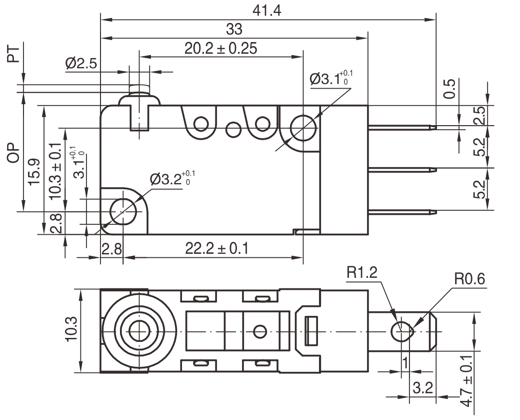
◆ 安裝孔尺寸 Mounting hole dimensions



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

■ 端子型 Terminal type

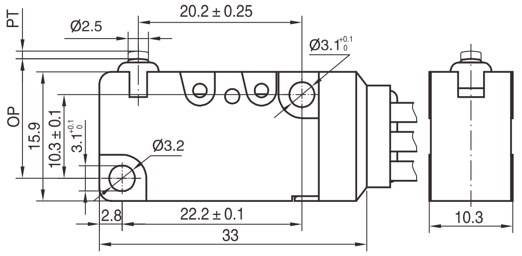
WS2-□Z0-F200-□



OF Max(N)	2.00
RF Min(N)	0.30
PT Max(mm)	1.2
OT Min(mm)	1.0
MD Max(mm)	0.4
OP(mm)	14.7±0.4

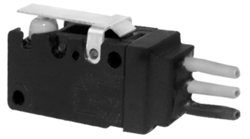
■ 導綫型 Wire type

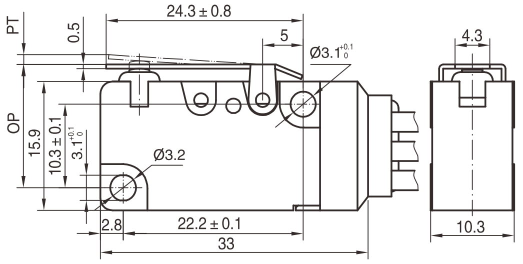
WS2-□Z0-W200-□



OF Max(N)	2.00
RF Min(N)	0.30
PT Max(mm)	1.2
OT Min(mm)	1.0
MD Max(mm)	0.4
OP(mm)	14.7±0.4

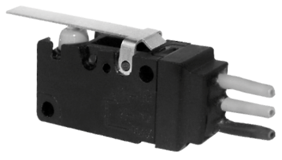
WS2-□Z1-W200-□

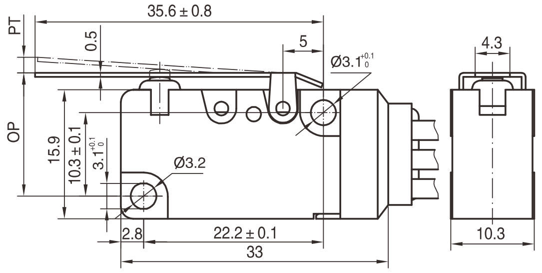




OF Max(N)	2.00
RF Min(N)	0.20
PT Max(mm)	1.6
OT Min(mm)	0.8
MD Max(mm)	0.5
OP(mm)	15.2±0.5

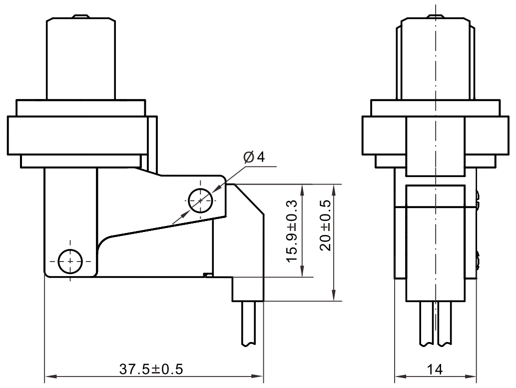
WS2-□Z3-W200-□





OF Max(N)	1.20
RF Min(N)	0.15
PT Max(mm)	4.0
OT Min(mm)	1.6
MD Max(mm)	0.8
OP(mm)	15.2±1.2

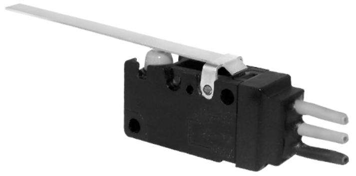
WS2-1Z10T0-W130-150

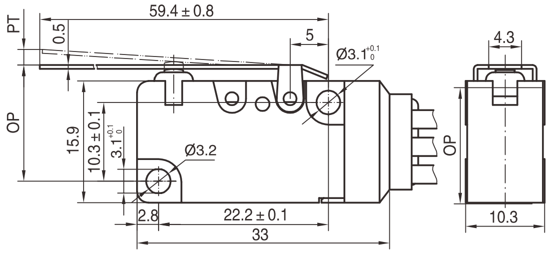


OF Max(N)	1.3
RF Min(N)	0.1
PT Max(mm)	XXX
OT Min(mm)	XXX
MD Max(mm)	0.4
OP(mm)	15.1±0.8

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

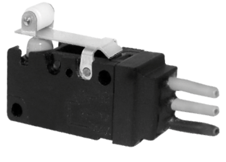
WS2-□Z2-W200-□

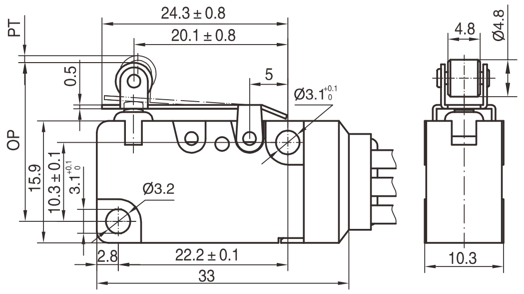




OF Max(N)	0.60
RF Min(N)	0.05
PT Max(mm)	9.0
OT Min(mm)	3.2
MD Max(mm)	2.0
OP(mm)	15.2±2.6

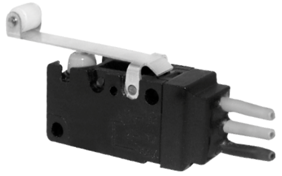
WS2-□Z4-W200-□

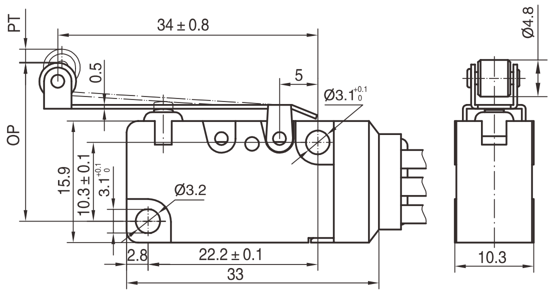




OF Max(N)	2.25
RF Min(N)	0.20
PT Max(mm)	1.6
OT Min(mm)	0.8
MD Max(mm)	0.5
OP(mm)	20.7±0.6

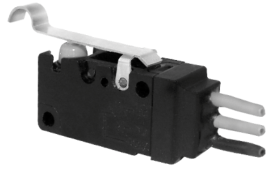
WS2-□Z5-W200-□

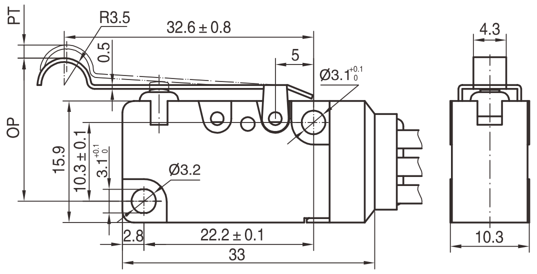




OF Max(N)	1.20
RF Min(N)	0.15
PT Max(mm)	4.0
OT Min(mm)	1.6
MD Max(mm)	0.8
OP(mm)	20.7±1.2

WS2-□Z6-W200-□





OF Max(N)	1.20
RF Min(N)	0.15
PT Max(mm)	4.0
OT Min(mm)	1.6
MD Max(mm)	0.8
OP(mm)	18.7±1.2

注：以上外形尺寸中，未注公差爲±0.4mm。 Note:above dimension, general tolerance: ±0.4mm.

◆ **請正確使用** Please use it correctly

【共通注意事項】請參閱相關頁

【Note】please refer to related pages

- 注意事項 Attention items

(1) 關于保護構造 Concerning protection structure

請勿在水中使用。開關雖然滿足IP67的試驗條件，但這些試驗是在水中放置一段時間後確定進水程度的試驗，而并非在水中進行開閉動作的試驗。

Do not use switch in the water. Although the switch meets the test requirement of IP67， these tests are to test the degree of influx of the switch after placing in water for a period of time,it is not test the ON /OFF operation in the water.

(2) 關于油污、化學品的附着 Concerning greasy dirt, chemical attachment

請避免油污、化學品的附着。否則可能出現使用材質變質及引起老化。

Please avoid the greasy dirt & chemical adhesion. Otherwise, the quality of using material may deteriorate and aging.

- 關于使用 Concerning using

使用過程中應充分注意不要損壞按鈕處的密封橡膠。

Please do not damage the sealed rubber around the button in the process of usage.

- 關于安裝 Concerning installation

(1) 開關的安裝、拆卸和配綫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M3螺釘，用平墊圈、彈簧墊圈等緊固，并請使用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.

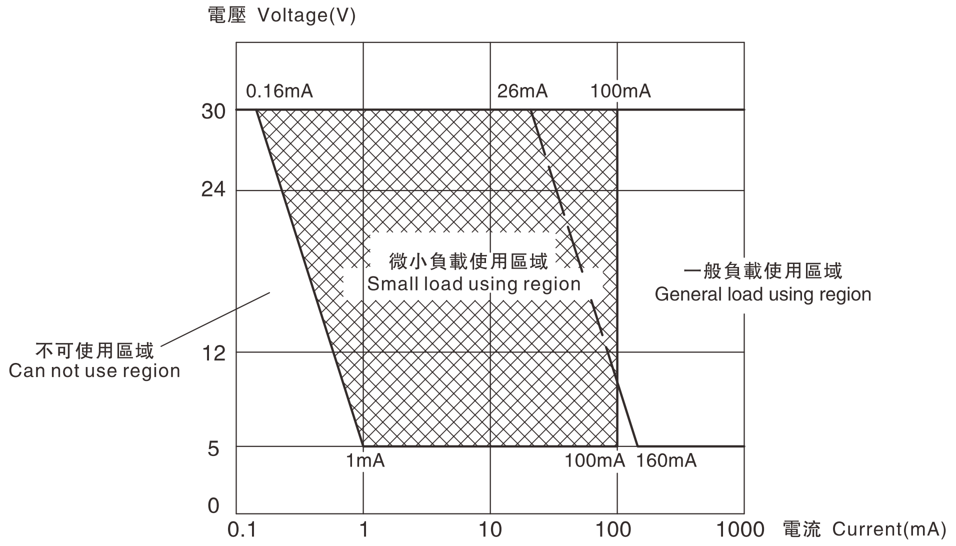
- 關于微小負載電路中的使用 Concerning use in small load circuit

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内使用開關，并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.



WS3型防水開關系列 Waterproof switch series

◆ **特點和用途** Characteristics and usage

- 通過橡膠密封圈和環氧樹脂填封達到穩定的密封性。可以在會淋水或多塵埃的地方使用。
  To be stably sealed by sealed rubber ring and epoxy resin.Can be used in wet or dusty places.
- 配備焊接端子、PCB端子和帶導綫端子
  Provide solder terminal，PCB terminal and wire terminal.
- 配備各種形式動臂 A varity of levers
- 可在汽車、農業機械、大型家電、辦公設備等有耐環境性要求的場合使用。
  Can be used in environmental resistant requirements application such as automobile, agricultural machine,large home applicance,office equipment etc

◆ **技術特性** Technical Characteristics

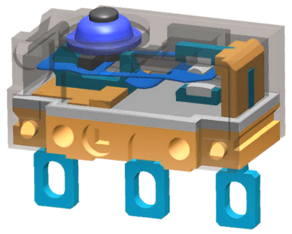
項目 Item		特性值 Value
工作速度 Operating speed		1mm～500mm/s (無動臂時 No lever)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25 cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ (不帶導綫型 Without wire)
耐電壓 Test voltage	不相接端子間 Between non–continuous terminals	AC600V,50/60Hz，1min
	端子與不帶電金屬件之間 端子與地(外殼)之間 Between each terminal and other exposed metal parts Between each terminal and ground	AC1500V，50/60Hz，1min
抗振動 Vibration resistance		10～55Hz，1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance		最小Min.: 294m/s²(30G) 接觸故障持續時間不超過1ms Contact opening max. 1 msec.
防觸電保護等級 Electric shock proof protection degree		Ⅰ級 class
外殼防護等級 Case protection degree		IEC IP50 (端子型 Terminal type) IEC IP67 (導綫型 Wire type)
壽命 Life		機械≥100,000次 Mechanical ≥100,000 cycles 電氣≥10,000次 Electrical ≥10,000 cycles
安全認證 Safety approvals		UL、CUL、ENEC、DEMKO

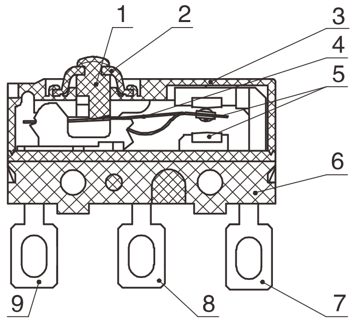
◆ 型號規格命名及含義 Model number legend and meanings

WS3 □–□ □ □–□ □ □–□ □–(□)
1 2 3 4 5 6 7 8 9 10

1 溫度等級 Degrees of temperature	無標記 No mark: 40T85
2 額定值 Ratings	無標記No mark: 2GPA125V/250VAC 2RA125/250VAC 3A30VDC WS3–F: 0.1GPA125V/250VAC 0.1RA125/250VAC 5mA30VDC
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 (見説明圖See illustration)
4 驅動形式 Actuator forms	0:無動臂 No lever 3:直動臂 Straight lever 5:滚輪動臂 Roller lever 6:弧形動臂 Arc lever 8:葉片形動臂 Leaf lever L:長行程式驅動 Long stroke type □:非標準動臂 Not standard lever 注:□ 表示非標準動臂的代號 Note:□ Indicate not standard lever.
5 端子類型 Terminal type	F:焊接端子 Solder terminal P:PCB端子 PCB terminal B:底部導綫型 Bottom wire leads type L:左面導綫型 Left side wire leads type R:右面導綫型 Right side wire leads type Y:非標準端子 Not standard terminal
6 動作力(max) Operating force	150：1.5N 200：2.0N 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 not standard operating force, indicate with the upper limit.
7 安裝孔尺寸代號 Mounting hole dimension code	A:Ø1.2 B:Ø2.3 C:Ø3 L:左側面固定銷 Left side fixed pin type R:右側面固定銷 Rihgt side fixed pin type D:雙側面固定銷 Both sides fixed pin type
8 導綫長度 Wire length	用毫米數表示 Indicate with number– “mm”
9 防護等級 Case protection degree	無標記 No mark： IP50(端子型Terminal type) IP67(導綫型Wire type) IP□□：其它等級 Other degrees
10 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	適用于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. 3) 當導綫顏色不是默認的配置顏色時。 When the wire color is not the default color. ■ 附加規格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. ■ 導綫顏色配置代號:用三個英文字母按COM、NC、NO順序表示；若是常開式或常閉式開關，空缺位置用字母O表示。(顏色代號:紅–R、白–W、黑–B、绿–G、藍–L、黄–M、灰–H、紫–P)。 Wire color code: indicate with 3 letters , the order is COM、NC、NO; If NO or NC, vacant place shows o. (Color code: red–R, white–W, black–B, green–G, blue–L, yellow–Y, grey–H, purple–P) 示例 example：BWR，BOR，RWO ■ 若同時有附加規格代號和導綫顏色配置代號，則導綫顏色配置代號位于附加規格代號之後。 If there are append specs code and wire color code at the same time, then the wire color code should be after the append specs code. 示例 example：02BWR

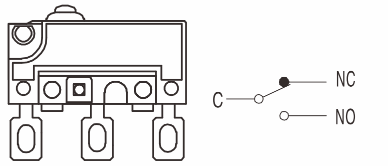
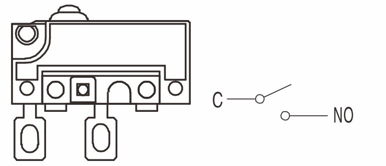
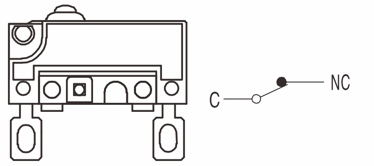
◆ 内部構造圖 Internal configuration drawing





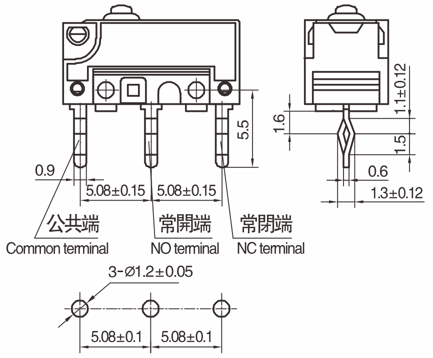
1	按鈕	Plunger
2	密封圈	Hermetic loop
3	蓋	Cover
4	可動片	Moving piece
5	電觸點	Contact
6	底座	Case
7	常閉端子	NC terminal
8	常開端子	NO terminal
9	支架	Support

◆ 接觸形式説明圖 Circuit illustration

轉換式 SPDT	常開式 SPST–NO	常閉式 SPST–NC
 C NC NO	 C NO	 C NC

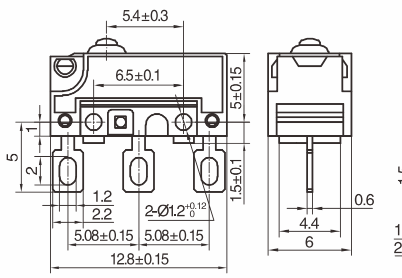
◆ 端子類型及安裝尺寸説明圖 Terminai types and mounting dimension illustration

PCB端子 PCB terminal

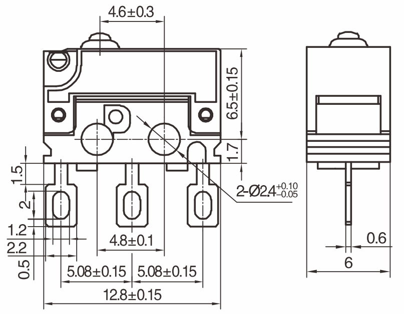


焊接端子 Solder terminal

安裝孔Ø1.2 Mounting hole Ø1.2

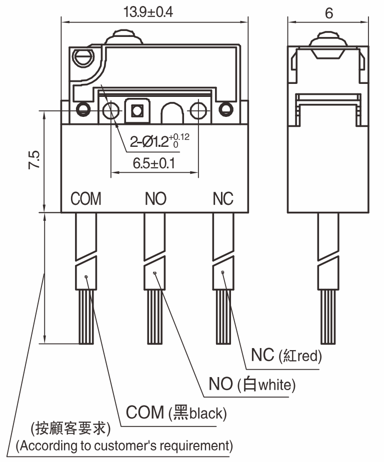


安裝孔Ø2.3 Mounting hole Ø2.3

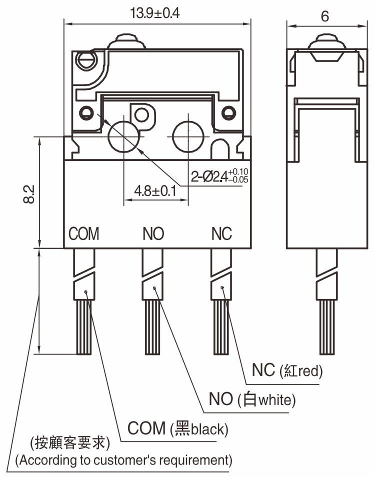


底部導綫型 Bottom wire type

安裝孔Ø1.2 Mounting hole Ø1.2

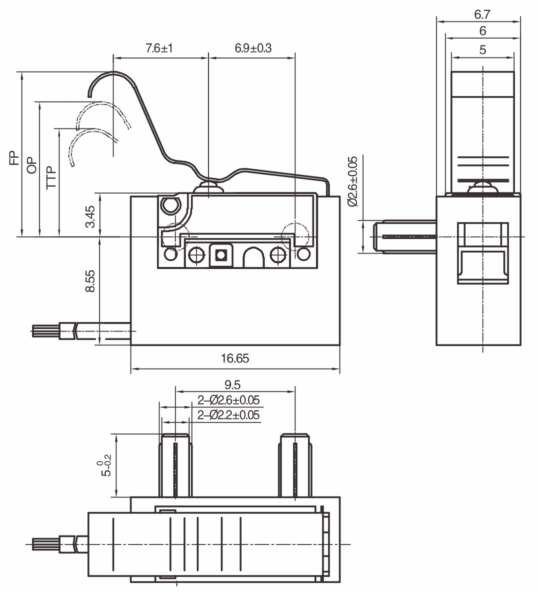


安裝孔Ø2.3 Mounting hole Ø2.3

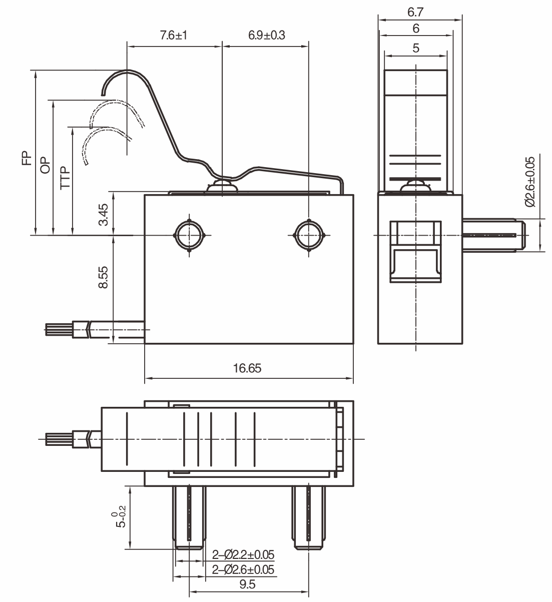


◆ 端子類型及安裝尺寸説明圖 Terminai types and mounting dimension illustration

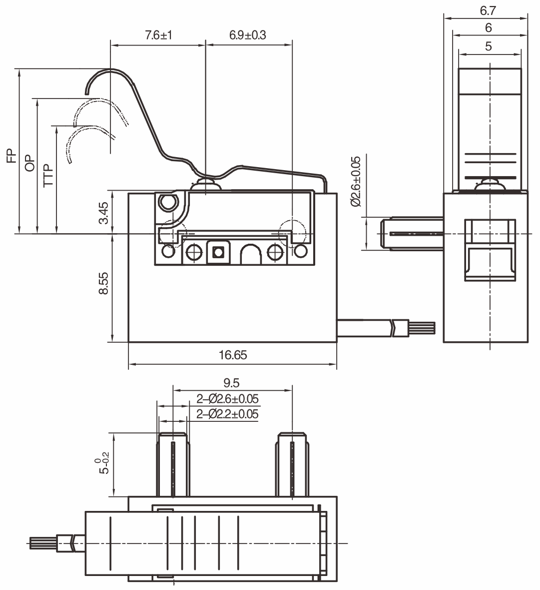
左側面導綫 Left side wire type
左側面固定銷 Left side fixed pin type



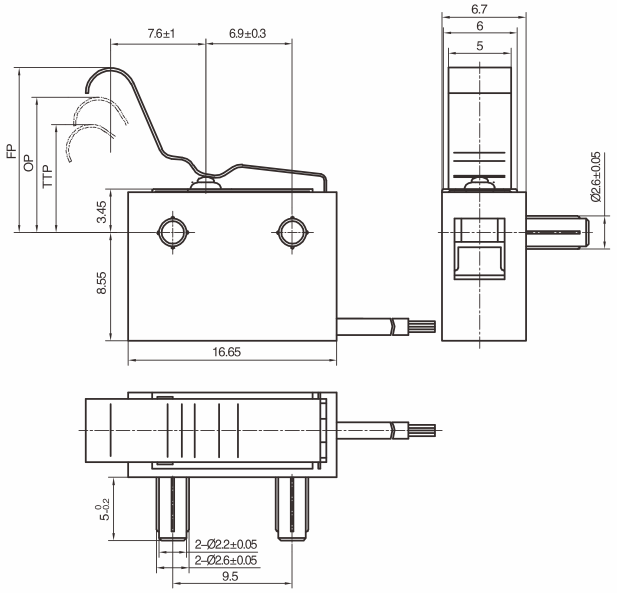
左側面導綫 Left side wire type
右側面固定銷 Rihgt side fixed pin type



右側面導綫 Right side wire type
左側面固定銷 Left side fixed pin type

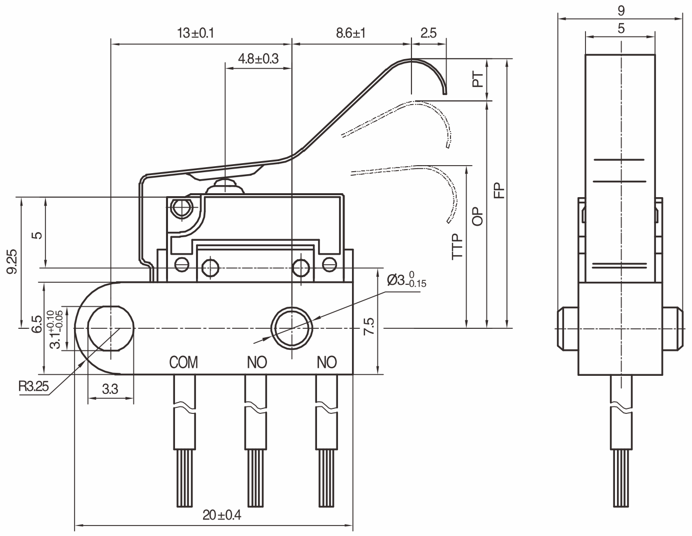


右側面導綫 Right side wire type
右側面固定銷 Right side fixed pin type

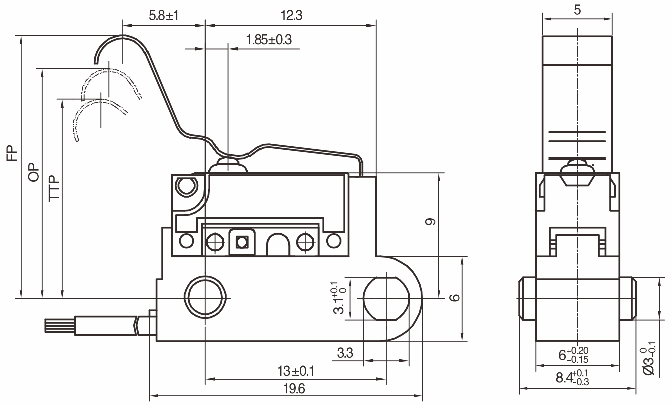


◆ 端子類型及安裝尺寸説明圖 Terminai types and mounting dimension illustration

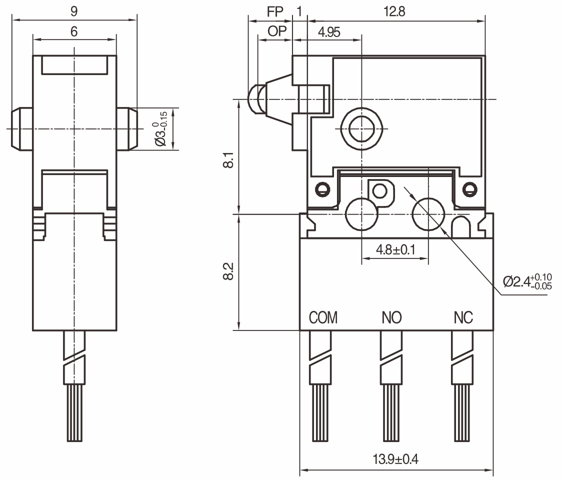
底部導綫型
Bottom wire type
安裝孔Φ3
Mounting holeΦ3
葉片形動臂
Leaf lever



左側面導綫
Left side wire type
安裝孔Φ3
Mounting holeΦ3

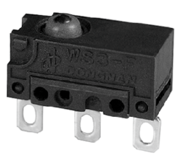


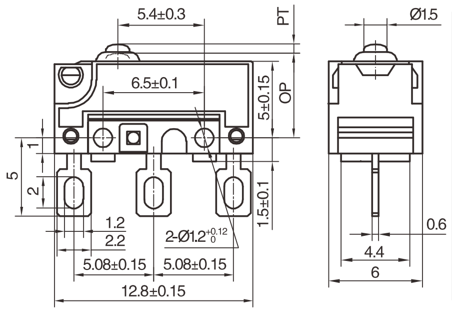
底部導綫型
Bottom wire type
安裝孔Φ2.3
Mounting holeΦ2.3
長行程型
Long stroke type



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

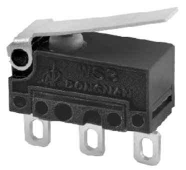
WS3–□Z0–F150
WS3–□Z0–F200
WS3–□Z0–F250

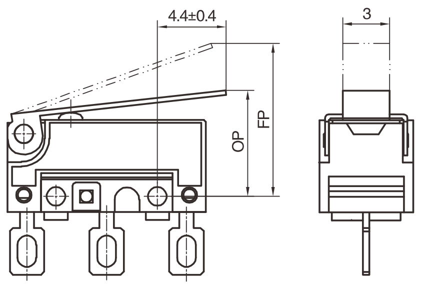




型 號 Model	WS3–□Z0–F150	WS3–□Z0–F200	WS3–□Z0–F250
OF Max(N)	1.50	2.00	2.50
RF Min(N)	0.10	0.20	0.30
PT Max(mm)	0.6		
OT Min(mm)	0.2		
MD Max(mm)	0.2		
OP(mm)	5.5 ± 0.3		

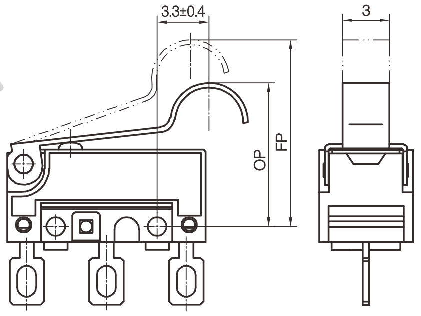
WS3–□Z3–F150
WS3–□Z3–F200
WS3–□Z3–F250





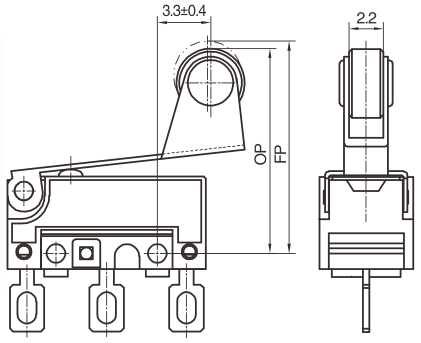
型 號 Model	WS3–□Z3–F150	WS3–□Z3–F200	WS3–□Z3–F250
OF Max(N)	0.50	0.80	1.00
RF Min(N)	0.05	0.10	0.15
OT Min(mm)	0.5		
MD Max(mm)	0.6		
FP Max(mm)	11.0		
OP(mm)	6.8 ± 1.2		

WS3–□Z6–F150
WS3–□Z6–F200
WS3–□Z6–F250



型 號 Model	WS3–□Z6–F150	WS3–□Z6–F200	WS3–□Z6–F250
OF Max(N)	0.50	0.80	1.00
RF Min(N)	0.05	0.10	0.15
OT Min(mm)	0.5		
MD Max(mm)	0.6		
FP Max(mm)	14.0		
OP(mm)	9.8 ± 1.2		

WS3–□Z5–F150
WS3–□Z5–F200
WS3–□Z5–F250



型 號 Model	WS3–□Z5–F150	WS3–□Z5–F200	WS3–□Z5–F250
OF Max(N)	0.50	0.80	1.00
RF Min(N)	0.05	0.10	0.15
OT Min(mm)	0.5		
MD Max(mm)	0.6		
FP Max(mm)	17.0		
OP(mm)	13.1 ± 1.2		

◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

【Note】please refer to related pages

- 注意事項 Attention items

(1) 關于保護構造 Concerning protection structure

請勿在水中使用。開關雖然滿足IP67的試驗條件，但這些試驗是在水中放置一段時間後確定進水程度的試驗，而并非在水中進行開閉動作的試驗。

Do not use switch in the water. Although the switch meets the test requirement of IP67， these tests are to test the degree of influx of the switch after placing in water for a period of time,it is not test the ON /OFF operation in the water.

(2) 關于油污、化學品的附着 Concerning greasy dirt, chemical attachment

請避免油污、化學品的附着。否則可能出現使用材質變質及引起老化。

Please avoid the greasy dirt & chemical adhesion. Otherwise, the quality of using material may deteriorate and aging.

- 關于使用 Concerning using

使用過程中應充分注意不要損壞按鈕處的密封橡膠。

Please do not damage the sealed rubber around the button in the process of usage.

- 關于安裝 Concerning installation

(1) 開關的安裝、拆卸和配綫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M3螺釘，用平墊圈、彈簧墊圈等緊固，并請使用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.

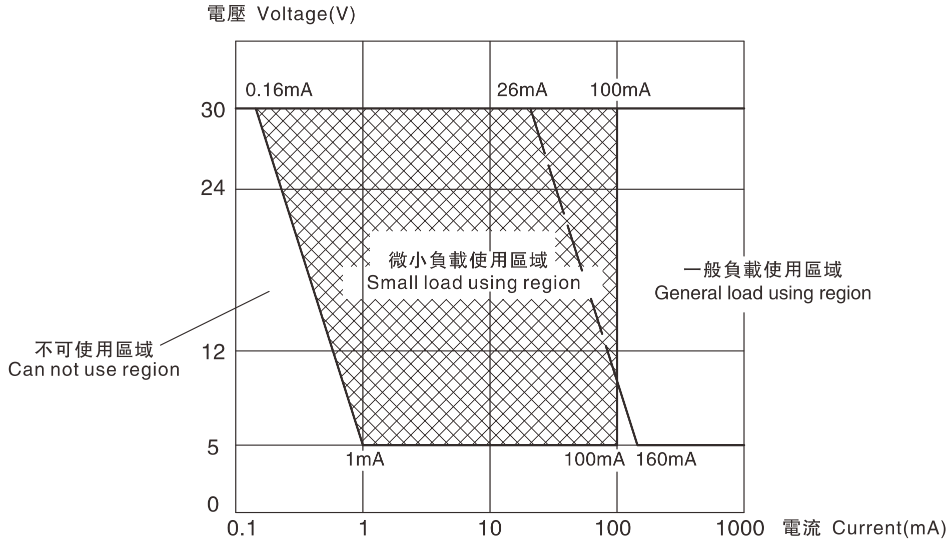
- 關于微小負載電路中的使用 Concerning use in small load circuit

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内使用開關，并根據需要插入觸點保護電路。

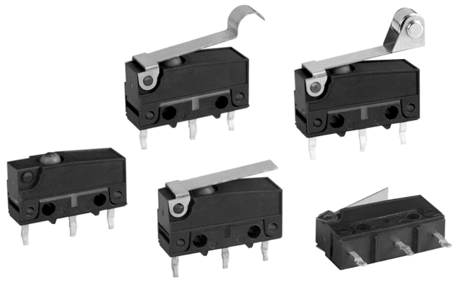
Please refer to the chart below, use switch within using region, and insert contact to protect circuit according to the needs.



WS4型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristics and usage

- 超小尺寸 Subminiature size
- 通過橡膠密封圈和環氧樹脂填封達到穩定的密封性。可以在會淋水或多塵埃的地方使用。
  To be stably sealed by sealed rubber ring and epoxy resin.Can be used in wet or dusty places.
- 配備焊接端子、PCB端子和帶導綫端子
  Provide solder terminal，PCB terminal and wire terminal.
- 配備各種形式動臂 A varity of levers
- 可在汽車、家用電器等有耐環境性要求的場合使用。
  Can be used in environmental resistant requirements applications such as car, home appliances, etc.



◆ 技術特性 Technical Characteristics

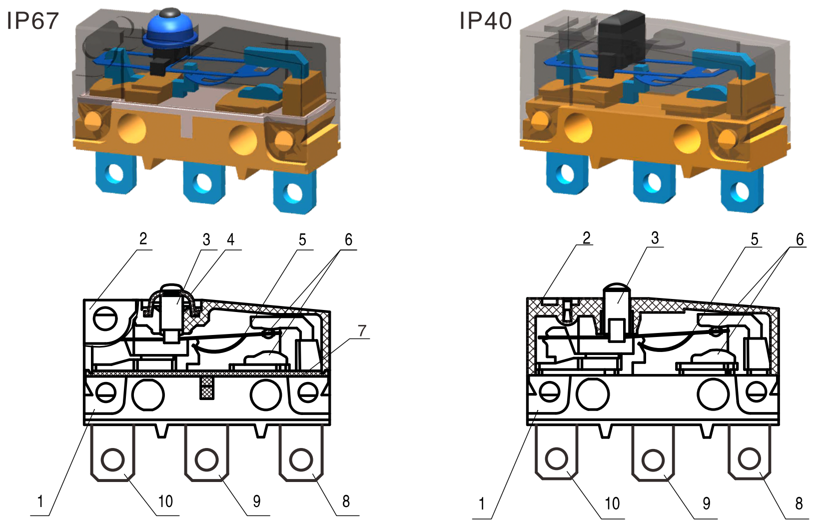
項目 Item		特性值 Value
工作速度 Operating speed		1mm ~ 500mm/s (無動臂時 No lever)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25 cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ (不帶導綫型 Without wire)
耐電壓 Test voltage	不相接端子間 Between non–continuous terminals	AC1000V,50/60Hz，1min
	端子與不帶電金屬件之間 端子與地(外殼)之間 Between each terminal and other exposed metal parts Between each terminal and ground	AC1500V，50/60Hz，1min
抗振動 Vibration resistance		10 ~ 55Hz，1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance		最小 Min.: 294m/s²(30G) 接觸故障持續時間不超過1ms Contact opening max. 1 msec.
防觸電保護等級 Electric shock proof protection degree		Ⅰ級 class
外殼防護等級 Case protection degree		IEC IP65 (端子型 Terminal type) IEC IP67 (導綫型 Wire type)
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

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

WS4 □–□ □ □–□ □ □–□ □–(□)
1 2 3 4 5 6 7 8 9 10

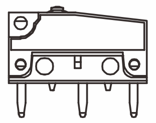
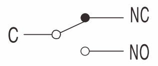
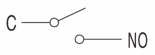
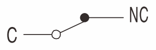
1 温度等級 Degrees of temperature	無標記 No mark: 25T105
2 額定值 Ratings	無標記No mark: 3GPA125V/250VAC 3RA125/250VAC 3(1)A125/250VAC 3A30VDC WS4–A: 5GPA125V/250VAC 5RA125/250VAC 5(2)A125/250VAC 1/4hp 250VAC 4A30VDC WS4–F: 0.1GPA125V/250VAC 0.1RA125/250VAC 0.1(0.05)A125/250VAC 0.1A30VDC
3 接觸形式 Circuit	Z:轉換式 SPDT T:常開(按通)式 SPST–NO D:常閉(按斷)式 SPST–NC (見説明圖 See illustration)
4 驅動形式 Actuator forms	0：無動臂 No lever 3：直動臂 Straight lever 5：滚輪動臂 Roller lever 6：弧形動臂 Arc lever 8：葉片形動臂 Leaf lever L：長行程式驅動 Long stroke type □: 非標準動臂 Not standard lever 注: □表示非標準動臂的代號 Note: □ Indicate not standard lever.
5 端子類型 Terminal type	T:110快接端子 110 quick–connect H:焊接端子 Solder terminal P:PCB端子 PCB terminal S: PCB端子之二 PCB terminall No. 2 L:左側面端子 Left side terminal R:右側面端子 Right side terminal W:導綫型 Wire type
6 動作力(max) Operating force	100：1.0N 160：1.6N 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 導綫型出綫方向 Wire type wire direction	B:底部導綫型 Bottom wire type L:左面導綫型 Left side wire type R:右面導綫型 Right side wire type
8 導綫長度 Wire length	用毫米數表示 Indicate with number– “mm”
9 防護等級 Protection degree	無標記 No mark： IP50 (端子型 Terminal type) IP67 (導綫型 Wire type) IP□□：其它等級 Other degrees
10 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	適用于 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. 3) 當導綫顏色不是默認的配置顏色時。 When the wire color is not the default color. ■ 附加規格代號用兩位阿拉伯數字表示，如01、02、03……在没有附加規格編號時，該位置空缺。 Additional spec number shows as 01, 02, 03…… If there is no additional numbers, the place is vacant. ■ 導綫顏色配置代號：用三個英文字母按COM、NC、NO順序表示；若是常開式或常閉式開關，空缺位置用字母O表示。(顏色代號：紅–R、白–W、黑–B、緑–G、藍–L、黃–M、灰–H、紫–P）。 Wire color code: indicate with 3 letters , the order is COM、NC、NO; If NO or NC, vacant place shows o. (Color code: red–R, white–W, black–B, green–G, blue–L, yellow–Y, grey–H, purple–P) 示例 example：BWR，BOR，RWO ■ 若同時有附加規格代號和導綫顏色配置代號，則導綫顏色配置代號位于附加規格代號之後。 If there are append specs code and wire color code at the same time, then the wire color code should be after the append specs code. 示例 example：02BWR

◆ 内部構造圖 Internal configuration drawing

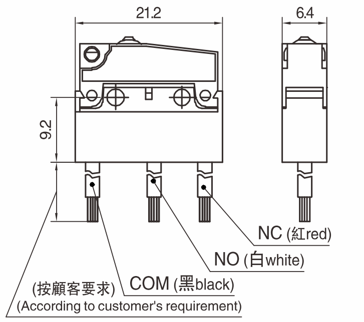
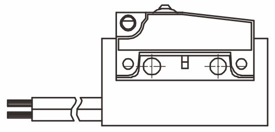
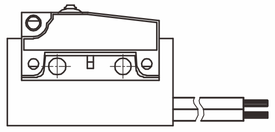


1 基座	Case
2 蓋	Cover
3 按鈕	Plunger
4 密封圈	Hermetic loop
5 可動片	Moving piece
6 電觸點	Contact
7 密封條	Sealing strip
8 常閉端子	NC terminal
9 常開端子	NO terminal
10 支架	Support

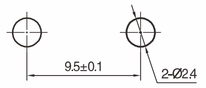
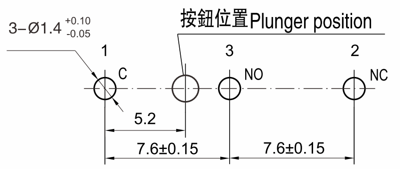
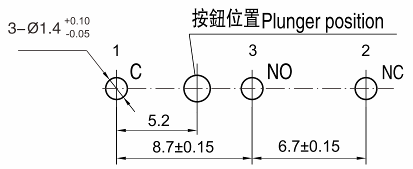
◆ 接觸形式說明圖 Circuit illustration

	電路圖 Schematic diagram		
	轉換式 SPDT	常開式 SPST–NO	常閉式 SPST–NC
			

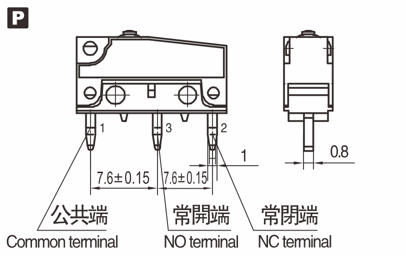
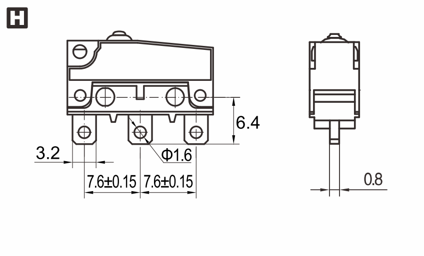
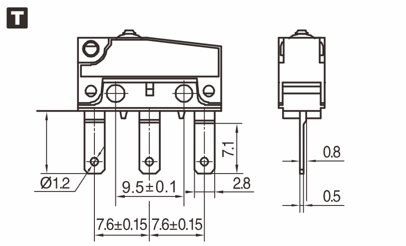
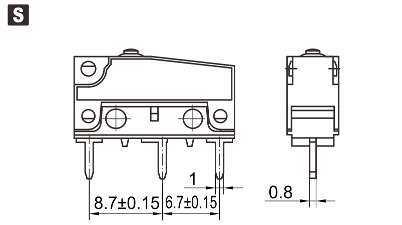
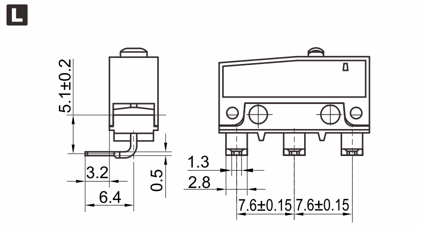
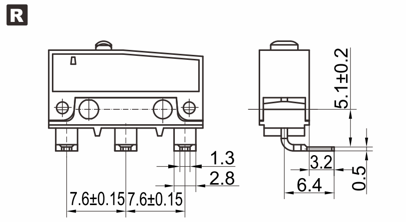
◆ 導綫型外形圖 Outline drawing of wire type

底部導綫型 Bottom wire type	左面導綫型 Left side wire type	右面導綫型 Right side wire type
B 	L 	R 

◆ 安裝孔尺寸 Mounting hole dimensions

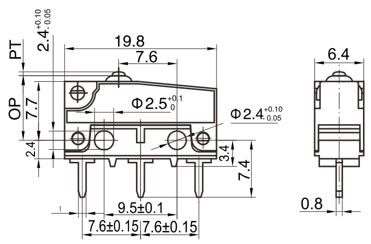
	PCB端子 PCB terminal	PCB端子之二 PCB terminal No. 2
		

◆ 接綫端尺寸 Terminal dimensions

PCB端子 PCB terminal	焊接端子 Solder terminal	快接端子 #110 Quick connect terminal #110
P 	H 	T 
PCB端子之二 PCB terminal No. 2	左側面PCB端子 Left side PCB terminal	右側面PCB端子 Right side PCB terminal
S 	L 	R 

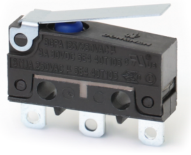
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

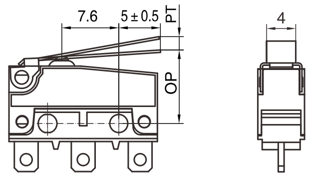
WS4–□Z0–P100
WS4–□Z0–P160



型 號 Model	WS4–□Z0–P100	WS4–□Z0–P160
OF Max(N)	1.00	1.60
RF Min(N)	0.20	0.30
PT Max(mm)	0.6	
OT Min(mm)	0.4	
MD Max(mm)	0.1	
OP(mm)	8.4±0.3	

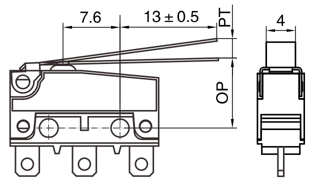
WS4–□Z1–H100
WS4–□Z1–H160





型 號 Model	WS4–□Z1–H100	WS4–□Z1–H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.05
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	12.5	
OP(mm)	9.6±0.8	

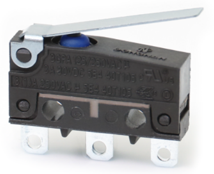
WS4–□Z2–H100
WS4–□Z2–H160

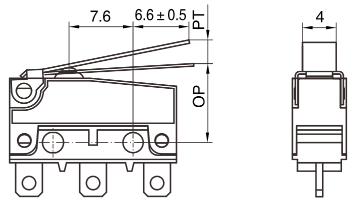


型 號 Model	WS4–□Z2–H100	WS4–□Z2–H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
PT Max(mm)	0.8	
OT Min(mm)	0.5	
MD Max(mm)	14.5	
OP(mm)	10.5±1	

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

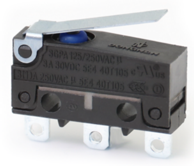
WS4–□ZB–H100
WS4–□ZB–H160

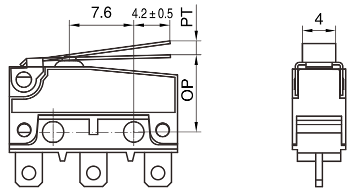




型號 Model	WS4–□ZB–H100	WS4–□ZB–H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	13.0	
OP(mm)	10.0±1	

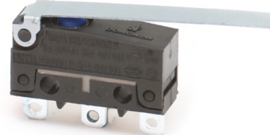
WS4–□ZH–H100
WS4–□ZH–H160

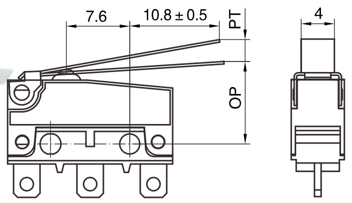




型號 Model	WS4–□ZH–H100	WS4–□ZH–H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	12.0	
OP(mm)	9.4±0.8	

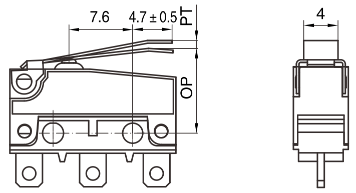
WS4–□ZJ–H100
WS4–□ZJ–H160





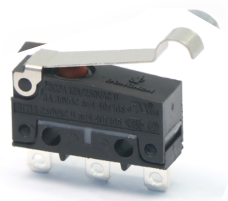
型號 Model	WS4–□ZJ–H100	WS4–□ZJ–H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	13.5	
OP(mm)	9.9±0.7	

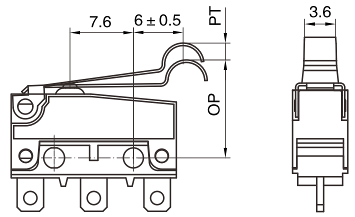
WS4–□ZN–H100
WS4–□ZN–H160



型號 Model	WS4–□ZN–H100	WS4–□ZN–H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	12.5	
OP(mm)	10.1±0.8	

WS4–□Z6–H100
WS4–□Z6–H160



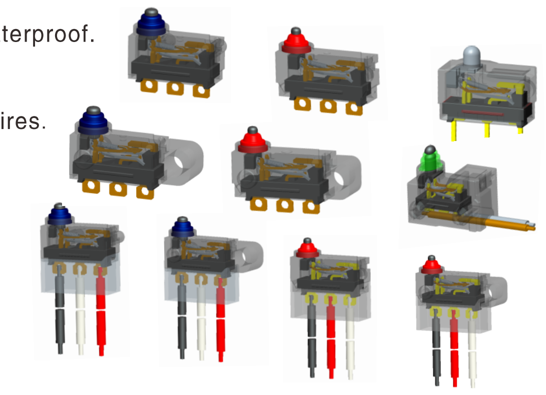


型號 Model	WS4–□Z6–H100	WS4–□Z6–H160
OF Max(N)	0.40	0.50
RF Min(N)	0.05	0.05
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	14.5	
OP(mm)	11.6±1.2	

WS5型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristics and usage

- 體形小巧，結構緊湊；長行程，防塵，防水。
  Small size, compact structure, long travel, dustproof, waterproof.
- 接綫端子種類齊全，可配備各種導綫。
  A variety of contact terminals, provide with a variety of wires.
- 配備各種形式動臂
  A varity of levers
- 可在汽車、家用電器、工業控制設備等有耐環境性能要求的場合及户外設備、儀器中使用。
  Can be used in environmental resistant requirements application,outdoor equipments such as automobile, home appliances,industrial control equipment etc.



◆ 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 25cycles/min
絶緣電阻 Insulation resistance		⩾100MΩ (500VDC)
接觸電阻 Contact resistance		端子型Terminal type ⩽50mΩ 導綫型Wire type ⩽100mΩ (24#, L⩽200mm)
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.	AC1000V，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/s2(約100G approx.100G)max 誤動作Wrong action:300m/ s2(約30G approx.30G)max
防触电保护等级 Electric shock proof protection degree		Ⅰ級class
外殼防護等級 Case protection degree		IEC IP67（端子型的端子部位除外Except terminal part of terminal type）或其它等級Or other degrees
壽命 life		機械⩾500,000次 Mechanical ⩾500,000 cycles 電氣⩾100,000次　Electrical ⩾100,000 cycles
安全認證 Safety approvals		UL/CUL、TUV、CE、CQC

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

WS5□-□ □ □-□ □ □-□ □- (□)
1 2 3 4 5 6 7 8 9 10

1 溫度等級 Degree of temperature	無標記No mark: 40T130
2 額定值 Ratings	無標記No mark: 0.1A48VDC 125/250VAC； 3A 12VDC
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 （見説明圖See illustration)
4 驅動形式 Actuator forms	0:無動臂No lever 3:直動臂Straight lever 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。 2) 若動臂爲内安裝式，則在動臂代號後加注字母N。 Note: 1) □ Indicate not standard lever. 2) If lever is amoundard inside, add letter “N” after the lever code.
5 端子類型 Terminal types	F:焊接端子(長2.4)Solder terminal(L2.4) FC:長焊接端子(長3.5)Solder terminal (L3.5) P:PCB端子PCB terminal PD:短PCB端子Short PCB terminal PL:左PCB端子Left PCB terminal PR:右PCB端子Right PCB terminal B:底部導綫型Bottom wire type L:左面導綫型(左右的定義見圖示) Left side wire type (definition of right and left is shown in diagram) R:右面導綫型Right side wire type Y:非標準端子Not standard terminal
6 動作力(max) Operating force	100: 1.00N 130:1.30N 195:1.95N 220:2.20N 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 安裝構造 Mounting construction	A:定位銷(雙面各1)；dowel pin (each one for double sides); AL:左2定位銷；left 2dowel pin; AR:右2定位銷；right 2dowel pin; AA:雙面各2定位銷each 2 for double sides dowel pin AC:左1定位銷 left 1 dowel pin AD:右1定位銷 right 1 dowel pin B:M3螺釘固定 M3 screw fixed L:左固定銷 left side fixing pin R:右固定銷 right side fixing pin W:無孔無銷 without hole and pin CL:外形Ⅱ左固定銷；shapeⅡ left side fixing pin (外形Ⅱ用于WS5–30 shape Ⅱ for WS5–30) CR:外形Ⅱ右固定銷；shapeⅡ right side fixing pin (外形Ⅱ用于WS5–30 shape Ⅱ for WS5–30) DL:外形Ⅱ左定位銷；shapeⅡ left dowel pin (外形Ⅱ用于WS5–30 shape Ⅱ for WS5–30 DR:外形Ⅱ右定位銷；shapeⅡ right dowel pin (外形Ⅱ用于WS5–30 shape Ⅱ for WS5–30 CW:外形Ⅱ無孔無銷；shapeⅡ without hole and pin (外形Ⅱ用于WS5–30 shape Ⅱ for WS5–30 E:外形ⅡM3螺釘固定；shapeⅡ M3 screw fixed (外形Ⅱ用于WS5–30 shape Ⅱ for WS5–30 DD:外形Ⅱ雙面各2定位銷；shapeⅡeach 2 for double sides(外形Ⅱ用于WS5–30) (外形Ⅱ用于WS5–30 shape Ⅱ for WS5–30 FL:外形Ⅲ左固定銷；shapeⅢ left side fixing pin (外形Ⅲ用于WS5–40 shape Ⅲ for WS5–40) 注：原外形：長14.7/寬5.4/高6.8； 外形Ⅱ：長13.3/寬5.3/高6.5； 外形Ⅲ：長20/寬6.95/高12.3 Note: original shape:Lenth14.7/ width:5.4/ height:6.8 shapeⅡ :Lenth13.3/ width:5.3 /height:6.8 shapeⅢ:Lenth20 /width:6.95 /height:12.3
8 導綫型端子的導綫長度(毫米數) Wire length of wire type terminal (mm)	非導綫型該位置空缺 Vacant for non–wire type
9 防護等級 Protection degree	無標記No mark：IP67 (端子型,端子處除外Except terminal part of terminal type) IP67（導綫型 Wire leads type) IP□□：其它等級 Other degrees

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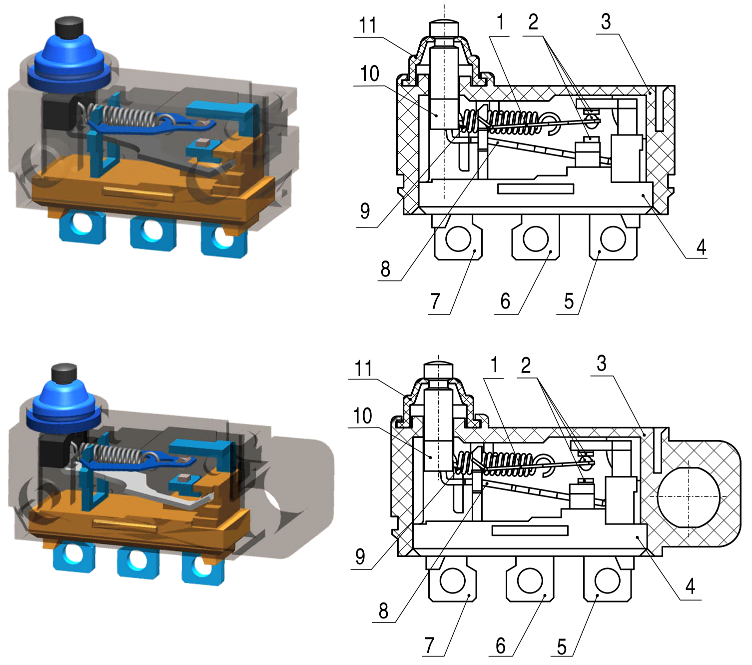
◆ 型號規格命名及含義 Model number legend and meanings

WS5□-□ □ □-□ □ □-□ □-□
1 2 3 4 5 6 7 8 9 10

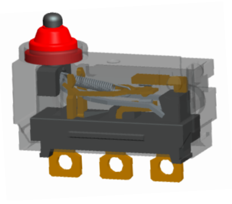
10 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	適用于apply to： 1）當開關使用了非標準零件如非標準端子時； When used not standard parts such as not standard terminal. 2）當顧客有特殊動作特性值或其它要求時； When customer has particular operating value or other requirements. 3）當導綫顏色不是默認的配置顏色時。 When the wire color is not the default color. ■ 附加規格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. ■ 導綫顏色配置代號：用三個英文字母按COM、NC、NO順序表示；若是常開式或常閉式開關，空缺位置用字母O表示。（顏色代號：紅–R、白–W、黑–B、緑–G、藍–L、黄–M、灰–H、紫–P）。	**10** 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	Wire color code: indicate with 3 letters , the order is COM、NC、NO; If NO or NC, vacant place shows 0. (Color code: red–R, white–W, black–B, green–G, blue–L, yellow–Y, grey–H, purple–P)示例example：BWR，BOR，RWO ■ 若同時有附加規格代號和導綫顏色配置代號，則導綫顏色配置代號位于附加規格代號之後。If there are append specs code and wire color code at the same time, then the wire color code should be after the append specs code. 示例example：02BWR ■導綫型開關的引綫顏色默認配置規定如下Wire color of wire type switch is as follows: 公共端引綫COM：黑色 Common terminal wire COM: Black 常閉端引綫NC：紅色 Normally closed terminal wire NC: Red 常開端引綫NO：白色 Normally opened terminal wire NO: white

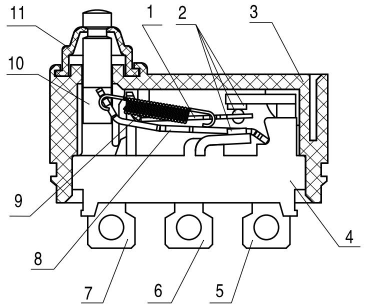
◆ 内部構造圖 Internal configuration drawing

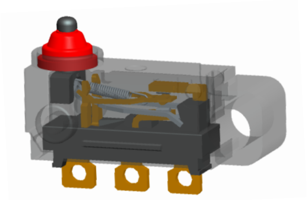


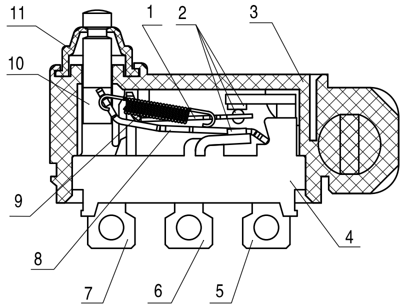
1: 可動片	Moving piece
2: 電觸點	Contact
3: 外殻	Base
4: 底座	Case
5: 常閉端子	NC terminal
6: 常開端子	NO terminal
7: 支架	Support
8: 杠杆	Lever
9: 拉簧	Pull spring
10: 按鈕	Plunger
11 密封圈	Hermetic loop

◆ 內部構造圖 Internal configuration drawing



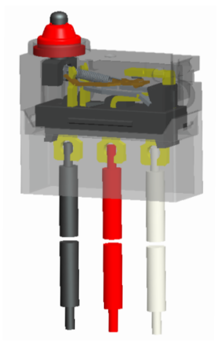


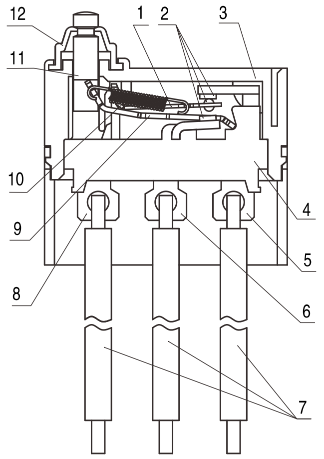


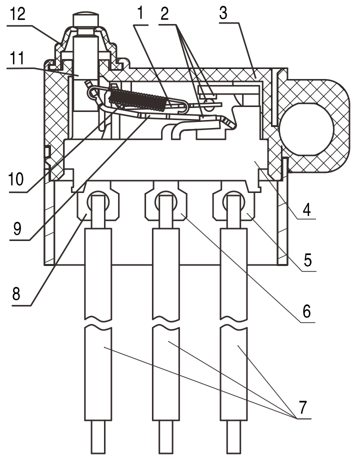


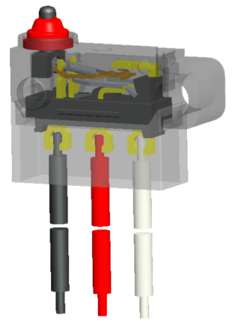
1.可動片	Moving piece
2.電觸點	Contact
3.外殼	Base
4.底座	Case
5.常閉端子	NC terminal
6.常開端子	NO terminal
7.支架	Support
8.杠杆	Lever
9.拉簧	Pull spring
10.按鈕	Plunger
11.密封圈	Hermetic loop

◆ WS5-2055 第二代防水罩灌膠型 Second-generation



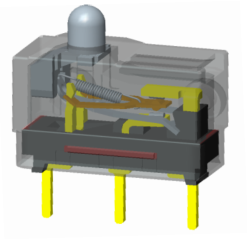


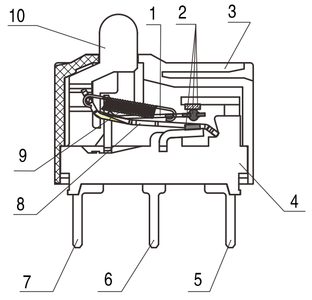




1.可動片	Moving piece	7.導綫	Wire
2.電觸點	Contact	8.支架	Support
3.外殼	Base	9.杠杆	Lever
4.底座	Case	10.拉簧	Pull spring
5.常閉端子	NC terminal	11.按鈕	Plunger
6.常開端子	NO terminal	12.密封圈	Hermetic loop

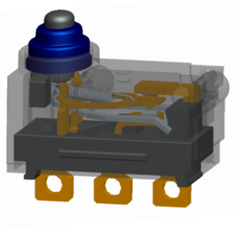
◆ WS5-IP40-2041 第二代IP40不防水型 Second-generation IP40

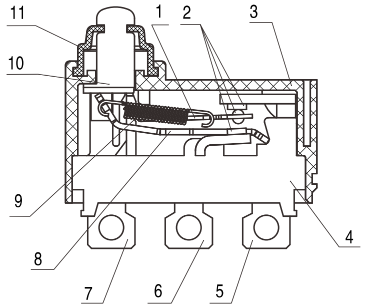


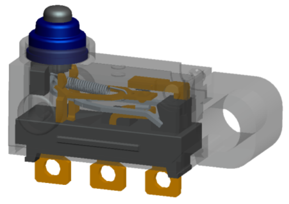


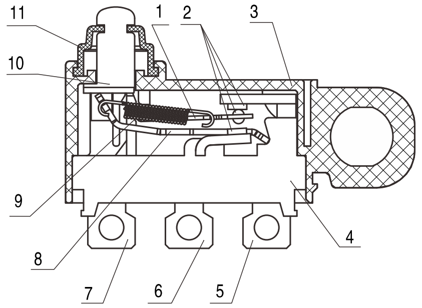
1.可動片	Moving piece
2.電觸點	Contact
3.外殼	Base
4.底座	Case
5.常閉端子	NC terminal
6.常開端子	NO terminal
7.支架	Support
8.杠杆	Lever
9.拉簧	Pull spring
10.按鈕	Plunger

◆ WS5-30 第三代基本型 Third-generation



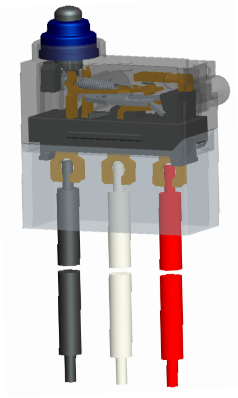


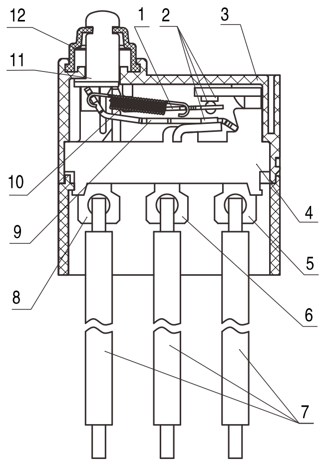


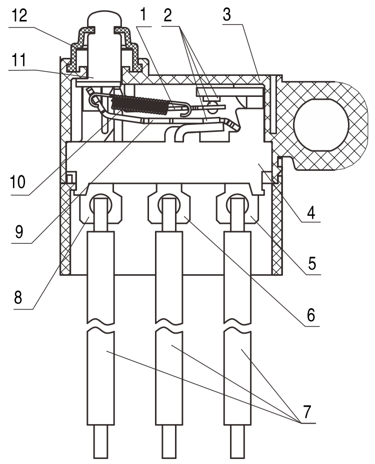


1.可動片	Moving piece
2.電觸點	Contact
3.外殼	Base
4.底座	Case
5.常閉端子	NC terminal
6.常開端子	NO terminal
7.支架	Support
8.杠杆	Lever
9.拉簧	Pull spring
10.按鈕	Plunger
11.密封圈	Hermetic loop

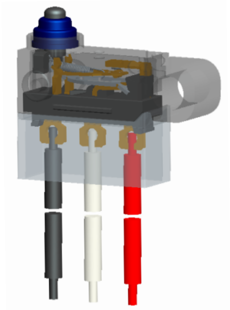
◆ WS5-3055 第三代防水罩灌膠型 Third-generation





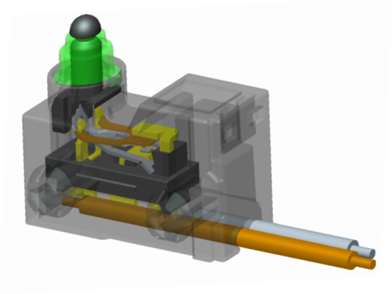


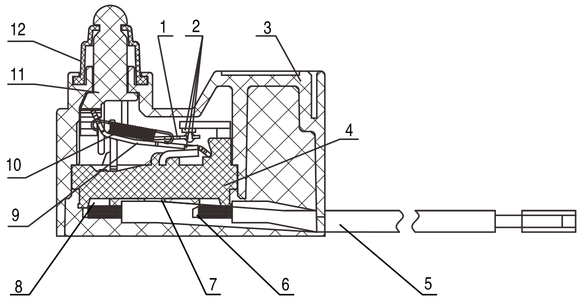
◆ WS5-3055 第三代防水罩灌膠型 Third-generation



1.可動片	Moving piece	7.導綫	Wire
2.電觸點	Contact	8.支架	Support
3.外殼	Base	9.杠杆	Lever
4.底座	Case	10.拉簧	Pull spring
5.常閉端子	NC terminal	11.按鈕	Plunger
6.常開端子	NO terminal	12.密封圈	Hermetic loop

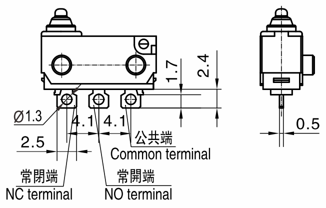
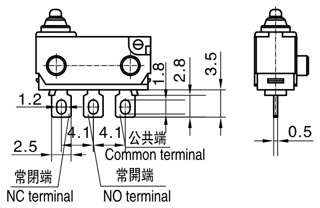
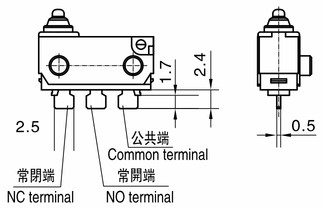
■ WS5-40 第四代灌膠型 Fourth-generation

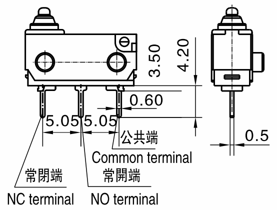
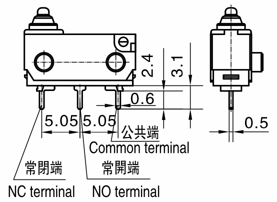
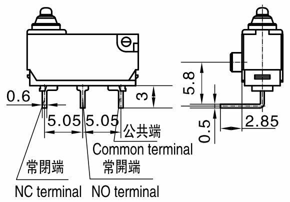
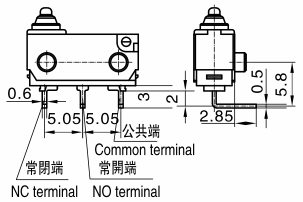




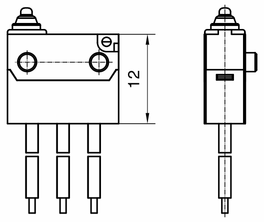
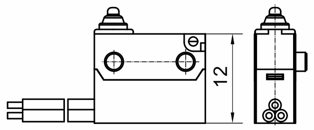
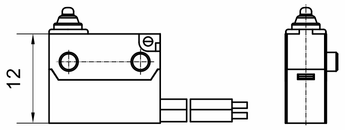
1.可動片	Moving piece	7.常開端子	NO terminal
2.電觸點	Contact	8.支架	Support
3.外殼	Base	9.杠杆	Lever
4.底座	Case	10.拉簧	Pull spring
5.導綫	Wire	11.按鈕	Plunger
6.常開端子	NO terminal	12.密封圈	Hermetic loop

◆ 接綫端尺寸 Terminal dimensions

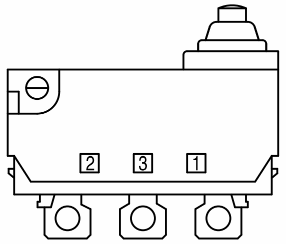
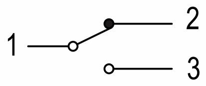
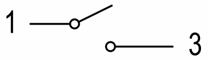
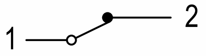
F:焊接端子(L2.4) F:Solder terminal(L2.4)	FC:長焊接端子(L3.5) FC:Long Solder terminal(L3.5)	FW:焊接端子(無孔) FW:Solder terminal(without hole)
		

P:PCB端子(L4.2) P:PCB terminal(L4.2)	PD:短PCB端子(L3.1) PD:Short PCB terminal(L3.1)	PL:左PCB端子 PL:Left side PCB terminal	PR:右PCB端子 P:Right side PCB terminal
			

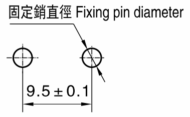
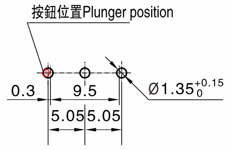
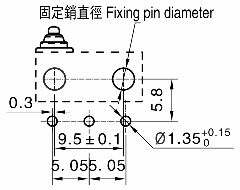
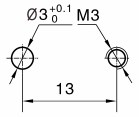
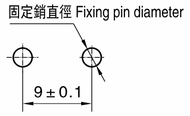
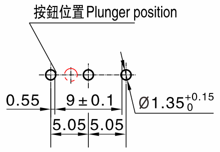
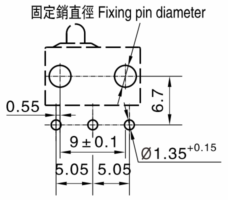
◆ 接綫端尺寸 Terminal dimensions

B:底部導綫型 B:Bottom wire type	L:左面導綫型 L:Left side wire type	R:右面導綫型 R:Right side wire type
		

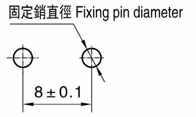
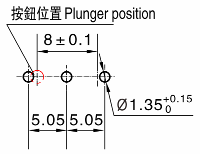
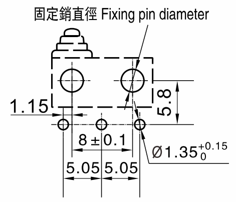
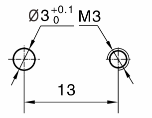
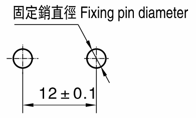
◆ 接觸形式説明圖 Circuit illustration

	Z:转换式 SPDT	T:常開式 SPST-NO	D:常閉式 SPST-NC
			

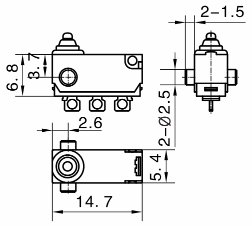
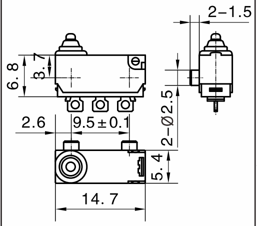
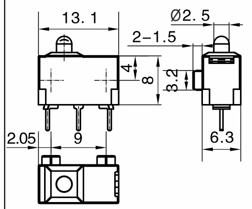
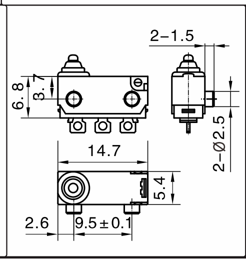
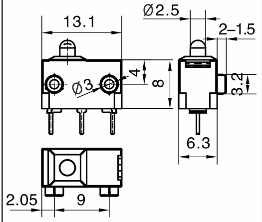
◆ 安裝孔尺寸 Mounting hole dimension

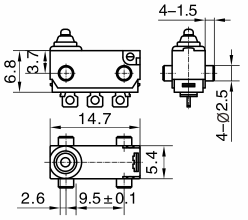
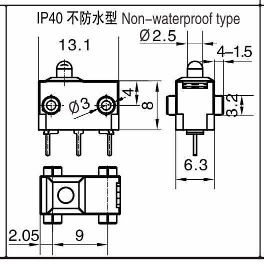
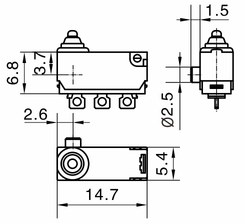
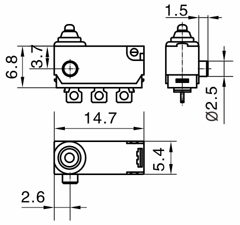
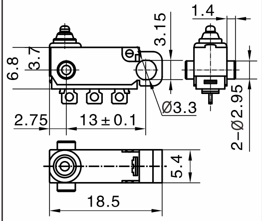
	定位銷/固定銷間距 Dowel pin / fixing pin distance	直PCB端子安裝孔 Straight PCB terminal mounting hole	左右PCB端子安裝孔 Left and right PCB terminal mounting hole	M3螺釘安裝孔 M3 screw mounting hole
WS5 WS5-20				
WS5-IP40 -2041				

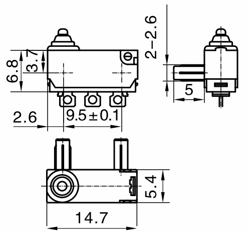
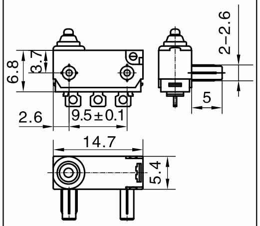
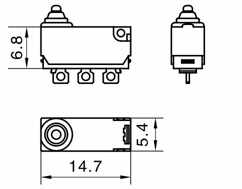
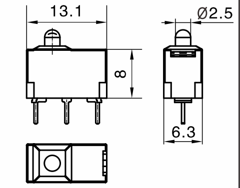
◆ 安裝孔尺寸 Mounting hole dimension

	定位銷/固定銷間距 Dowel pin / fixing pin distance	直PCB端子安裝孔 Straight PCB terminal mounting hole	左右PCB端子安裝孔 Left and right PCB terminal mounting hole	M3螺釘安裝孔 M3 screw mounting hole
WS5 WS5-20				
WS5-IP40 -2041				

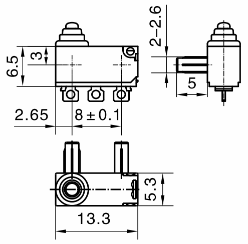
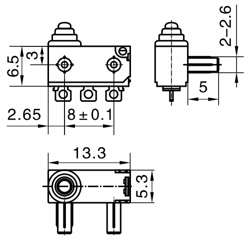
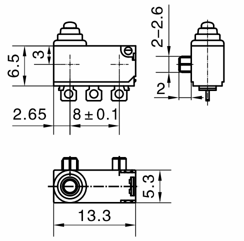
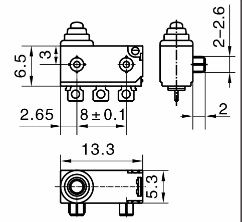
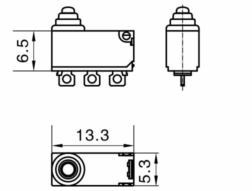
◆ 安裝構造說明圖 Mounting construction illustration

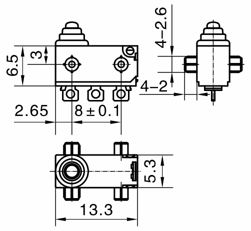
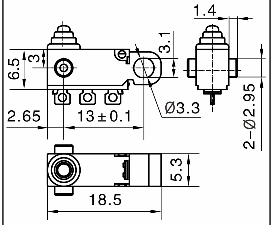
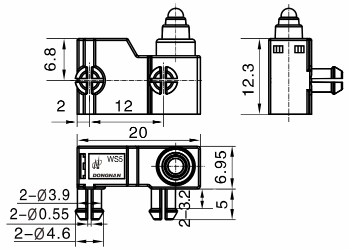
A	AL		AR	
		IP40 不防水型 Non-waterproof type 		IP40 不防水型 Non-waterproof type 

AA		AC	AD	B
	IP40 不防水型 Non-waterproof type 			

L	R	W		
				

◆ 安裝構造說明圖 Mounting construction illustration

CL	CR	DL	DR	CW
				

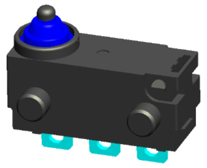
DD	E		FL
			

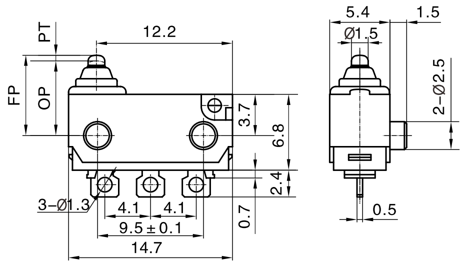
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS5 第一代和WS5-20 第二代 WS5 first-generation and WS5-20 second-generation

定位銷型 Dowel pin type

WS5-Z0-□130□-□□

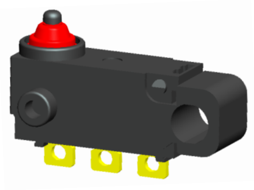


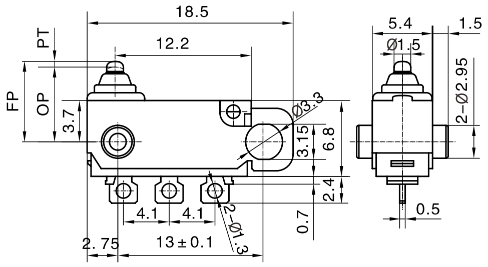


型號 Model	安裝柱型 with posts
FP Max(mm)	7.35
OP (mm)	6.75±0.2
PT Max(mm)	0.8
OT Min(mm)	0.8
MD Max(mm)	0.2
OF Max(N)	1.30
RF Min(N)	0.13

M3螺釘固定型 M3 screw fixed type

WS5-Z0-□130B-□□



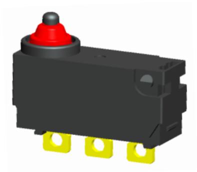


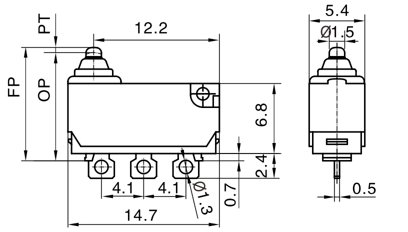
型號 Model	M3螺釘固定型M3 screw fixed
FP Max(mm)	7.35
OP (mm)	6.75±0.2
PT Max(mm)	0.8
OT Min(mm)	0.8
MD Max(mm)	0.2
OF Max(N)	1.30
RF Min(N)	0.13

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

無孔無銷型 Without hole and pin type

WS5-Z0-□130W-□□

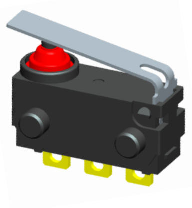


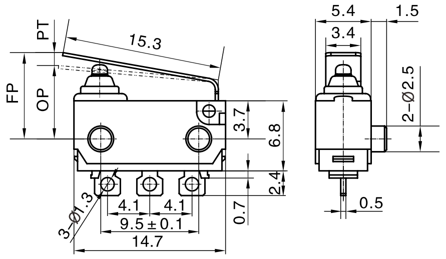


型號 Model	無安裝柱型 without posts
FP Max(mm)	11.2
OP (mm)	10.55±0.2
PT Max(mm)	0.8
OT Min(mm)	0.8
MD Max(mm)	0.2
OF Max(N)	1.30
RF Min(N)	0.13

3N動臂型 Models with 3N Lever

WS5-Z3N-□130□-□□

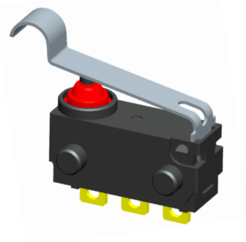


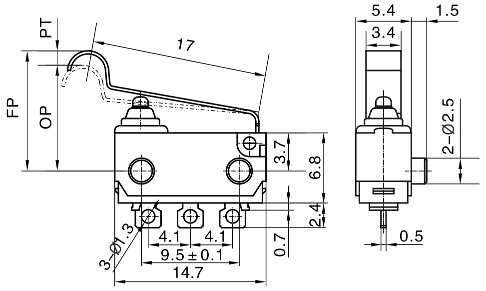


型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	10.5		14.3
OP (mm)	7.4±0.6		11.2±0.6
PT Max(mm)	3.5		
OT Min(mm)	1.35		
MD Max(mm)	0.6		
OF Max(N)	1.95		
RF Min(N)	0.25		

6N動臂型 Models with 6N Lever

WS5-Z6N-□130□-□□

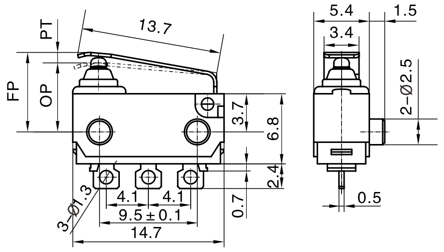




型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	13.5		17.3
OP (mm)	10.7±0.7		14.5±0.7
PT Max(mm)	3.8		
OT Min(mm)	1.5		
MD Max(mm)	0.7		
OF Max(N)	1.8		
RF Min(N)	0.2		

AN動臂型 Models with AN Lever

WS5-ZAN-□130□-□□

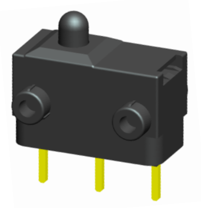


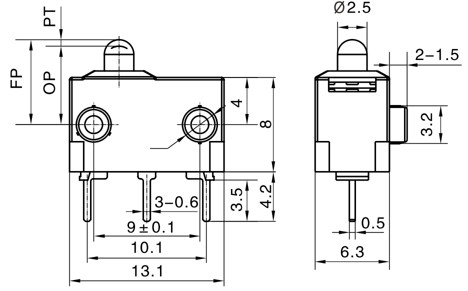
型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	9.4		13.2
OP (mm)	7.1±0.5		10.9±0.5
PT Max(mm)	3.0		
OT Min(mm)	0.8		
MD Max(mm)	0.5		
OF Max(N)	2.20		
RF Min(N)	0.30		

WS5-20 第二代IP40不防水型 Second-generation IP40 Non-waterproof type

定位銷型 Dowel pin type

WS5-Z0-□100□-IP40-2041-□



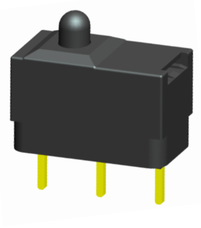


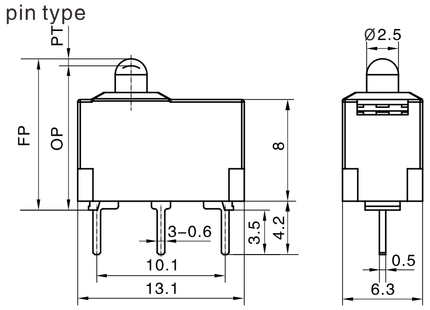
型號 Model	安裝柱型 with posts
FP Max(mm)	7.3
OP (mm)	6.2±0.3
PT Max(mm)	1.5
OT Min(mm)	0.5
MD Max(mm)	0.25
OF Max(N)	1.00
RF Min(N)	0.08

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

無孔無銷型 Without hole and pin type

WS5-Z0-□100W-IP40-2041-□



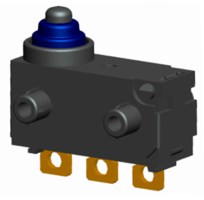


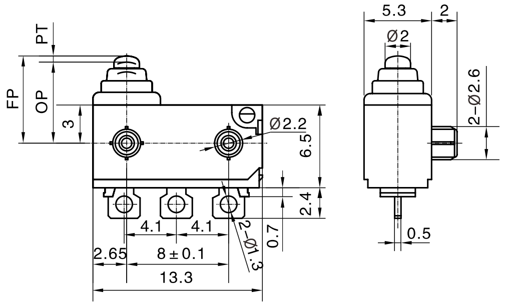
型號 Model	無安裝柱型 without posts
FP Max(mm)	12.0
OP (mm)	10.9±0.3
PT Max(mm)	1.5
OT Min(mm)	0.5
MD Max(mm)	0.25
OF Max(N)	1.00
RF Min(N)	0.08

WS5-30 第三代 Third-generation

固定銷型 Models with posts

WS5-Z0-□130□-□-30□

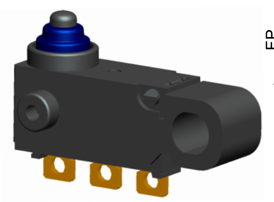


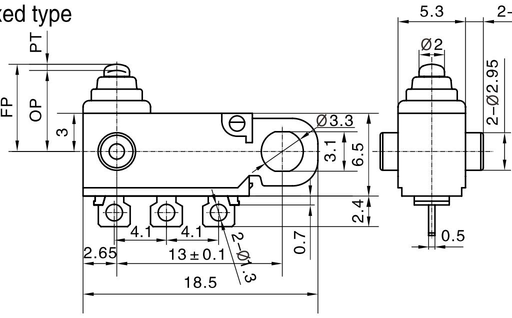


型號 Model	安裝柱型 with posts
FP Max(mm)	7.2
OP (mm)	6.4±0.2
PT Max(mm)	1.0
OT Min(mm)	0.8
MD Max(mm)	0.25
OF Max(N)	1.30
RF Min(N)	0.13

M3螺釘固定型 M3 screw fixed type

WS5-Z0-□130E-□-30□

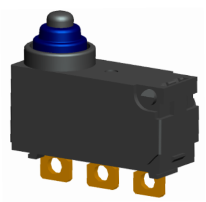


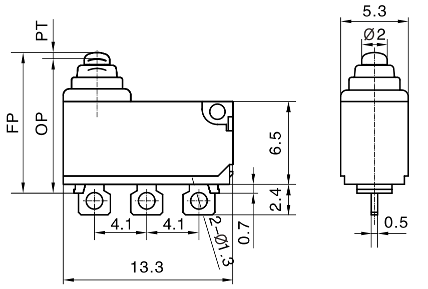


型號 Model	M3螺釘固定型M3 screw fixed
FP Max(mm)	7.2
OP (mm)	6.4±0.2
PT Max(mm)	1.0
OT Min(mm)	0.8
MD Max(mm)	0.25
OF Max(N)	1.30
RF Min(N)	0.13

無孔無銷型 Without hole and pin type

WS5-Z0-□130CW-□-30□

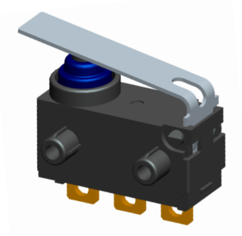


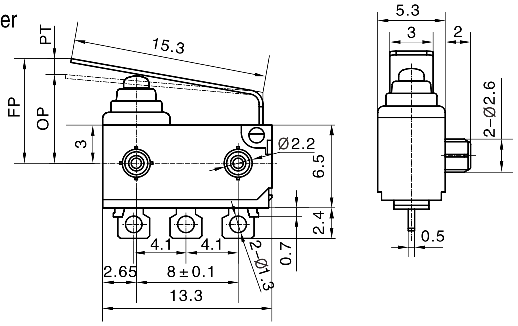


型號 Model	無安裝柱型 without posts
FP Max(mm)	11.4
OP (mm)	10.6±0.2
PT Max(mm)	1.0
OT Min(mm)	0.8
MD Max(mm)	0.25
OF Max(N)	1.30
RF Min(N)	0.13

3N動臂型 Models with 3N Lever

WS5-Z0-□130□-□-30□

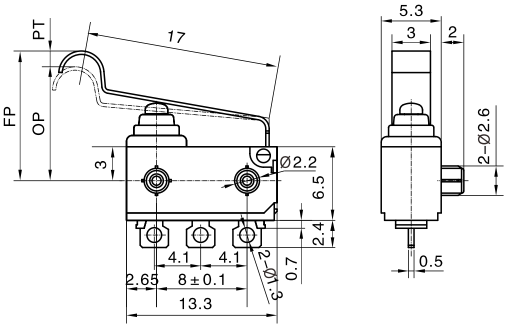




型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	10.0		14.2
OP (mm)	7.3±0.6		11.5±0.6
PT Max(mm)	3.5		
OT Min(mm)	1.35		
MD Max(mm)	0.6		
OF Max(N)	1.95		
RF Min(N)	0.25		

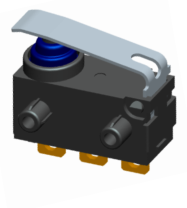
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

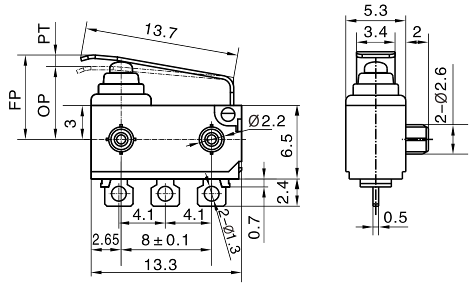
6N動臂型 Models with 6N Lever
WS5-Z6N-□130□-□-30□



型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	12.8		17.0
OP (mm)	10.6±0.7		14.8±0.7
PT Max(mm)	3.8		
OT Min(mm)	1.5		
MD Max(mm)	0.7		
OF Max(N)	1.8		
RF Min(N)	0.2		

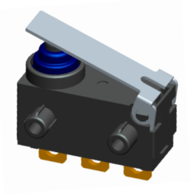
AN動臂型 Models with AN Lever
WS5-ZAN-□130□-□-30□

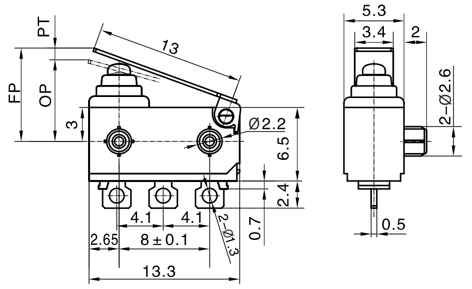




型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	8.6		12.8
OP (mm)	7.0±0.5		11.2±0.5
PT Max(mm)	3.0		
OT Min(mm)	0.8		
MD Max(mm)	0.5		
OF Max(N)	2.20		
RF Min(N)	0.30		

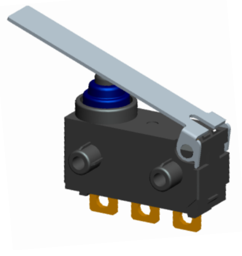
Q動臂型 Models with Q Lever
WS5-ZQ-□130□-□-30□

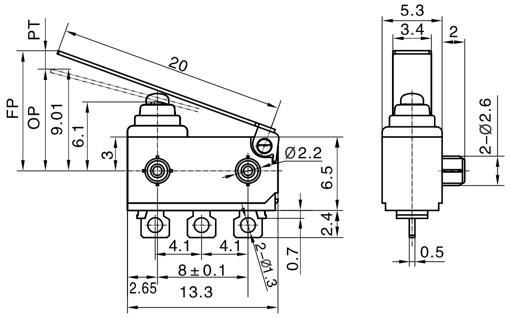




型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	8.8		13.0
OP (mm)	7.5±0.5		11.7±0.5
PT Max(mm)	1.8		
OT Min(mm)	0.8		
MD Max(mm)	0.5		
OF Max(N)	1.3		
RF Min(N)	0.13		

Q1動臂型 Models with Q1 Lever
WS5-ZQ1-□130□-□-30□

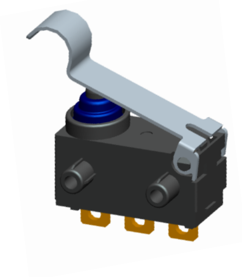


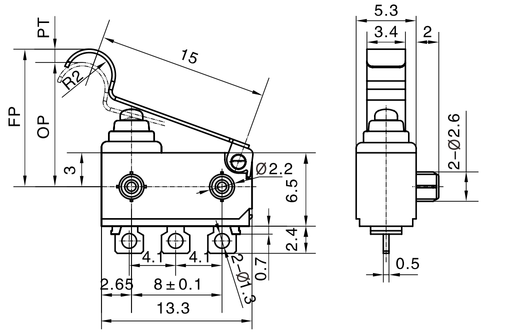


型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	11.5		15.7
OP (mm)	9.3±0.8		13.5±0.8
PT Max(mm)	3.0		
OT Min(mm)	1.5		
MD Max(mm)	0.8		
OF Max(N)	0.7		
RF Min(N)	0.05		

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

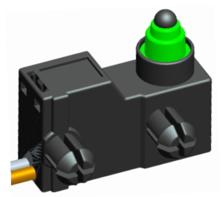
R 動臂型 Models with R Lever
WS5-ZR-□130□-□-30□

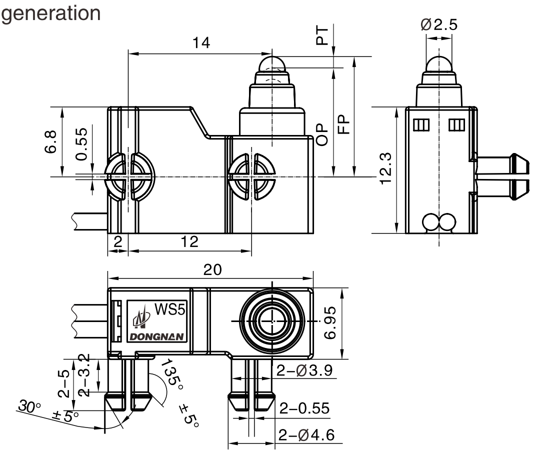




型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	12.5		16.7
OP (mm)	11.2±0.5		15.4±0.5
PT Max(mm)	2.0		
OT Min(mm)	1.0		
MD Max(mm)	0.5		
OF Max(N)	1.0		
RF Min(N)	0.8		

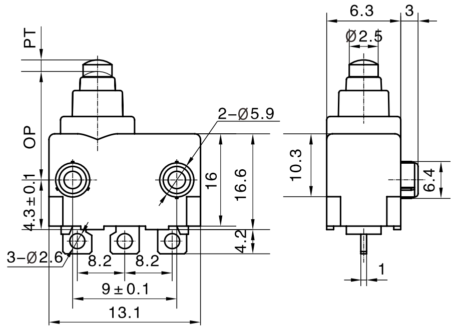
WS5-40 第四代　Forth-generation
固定銷型　Dowel pin type
WS5-D0-□195FL-□-40□





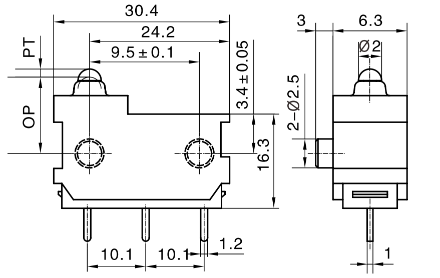
型號 Model	安裝柱型 with posts
FP Max(mm)	12.5
OP (mm)	10.6±0.4
PT Max(mm)	1.5
OT Min(mm)	0.7
MD Max(mm)	0.6
OF Max(N)	1.95
RF Min(N)	0.25

WS5 特殊外型　Special type
WS5-Z0-F100AR-□



型號 Model	WS5-Z0-F100-X
OF Max(N)	1.5
RF Min(N)	0.3
PT Max(mm)	1.5
OT Min(mm)	0.7
MD Max(mm)	0.25
OP (mm)	9.4±0.3

WS5-Z0-P100AL-□

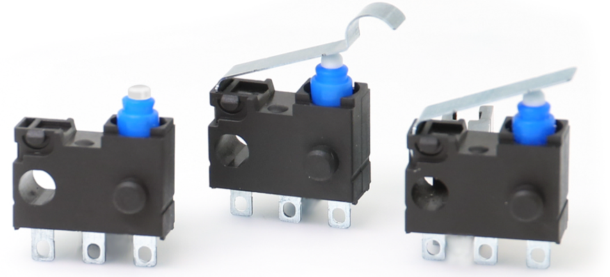


型號 Model	WS5-Z0-P100-X
OF Max(N)	1.00
RF Min(N)	0.13
PT Max(mm)	0.8
OT Min(mm)	0.8
MD Max(mm)	0.2
OP (mm)	6.8±0.2

WS6型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristics and usage

- 通過橡膠密封圈和環氧樹脂填封達到穩定的密封性。可以在會淋水或多塵埃的地方使用。
  To be stably sealed by sealed rubber ring and epoxy resin. Can be used in wet or dusty places.
- 開關超行程在2mm以上
  Switch over travel more than 2mm
- 滑動觸點的靜音構造
  Mute structure of sliding contact
- 接綫端子種類齊全，可配備各種導綫。
  A variety of contact terminals, provide with a variety of wires.
- 配備各種形式動臂
  A varity of levers
- 可在汽車、農業機械、大型家電、辦公設備等有耐環境性要求的場合使用。
  It can be used in environmental resistant requirements applications such as automobile, agricultural machine, large home appliances, office equipment etc.



◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
環境温度 Environment temperature		-40～+85℃
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 25次/min Mechanical 60 cycles/min; electrical 25cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤500mΩ
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.	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：1000m/S²（約100G）最大 Endurance：1000m/S²（approx 100G）max 誤動作：300m/S²（約30 G）最大 Wrong action：300m/S²（approx.30G）max
防觸電保護等級 Electric shock proof protection degree		Ⅰ級class
外殼防護等級 Cover protection degree		IEC IP67（端子型的端子部位除外Except terminal part of terminal type）或其它等級Or other degrees
電氣壽命 Electrical Life		≥500,000次cycles（1mADC5V, 50mADC16V) ≥200,000次cycles（50mADC 30V

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

WS6□-□ □ □-□ □ □-□ □-□
1 2 3 4 5 6 7 8 9 10

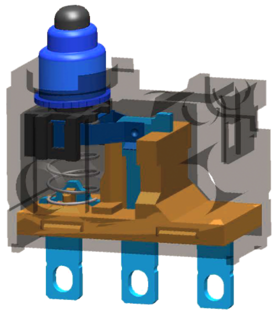
1 温度等級 Degrees of temperature	無標記No mark: 40T85	**6** 動作力(max) Operating force	150: 1.5N 注：若是非標準動作力，用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
2 額定值 Rating	無標記No mark: 1mA 5VDC；50 mA 16VDC；100mA30VDC		
3 接觸形式 Circuit	Z:轉換式SPDT T:常開（按通）式SPST-NO D:常閉（按斷）式SPST-NC （見説明圖See illustration)	**7** 安裝構造 Mounting construction	A:安裝孔Φ3標準型 Mounting holeΦ3 standard type C:左側面固定銷（僅限F端子）left side fixed pin (only F terminal) D:右側面固定銷（僅限F端子）right side fixed pin(only F terminal) E:左側面定位銷（僅限F端子）Left side dowel pin(only F terminal) F:右側面定位銷（僅限F端子）Right side dowel pin(only F terminal)
4 驅動形式 Actuator forms	0:無動臂No lever 3:直動臂Straight lever 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。 2) 若動臂爲内安裝式，則在動臂代號後加注字母N。 Note: 1) □ Indicate not standard lever. 2) If lever is amoundard inside, add letter “N” after the lever code.	**8** 導綫型端子的導綫長度（毫米數） Wire length of wire type terminal (mm)	非導綫型，該位置空缺。 Vacant for non-wire type
		9 防護等級 protection degree	無標記No mark：IP67
5 端子類型 Terminal types	F:焊接端子Solder terminal P:PCB端子PCB terminal PL:左側面PCB端子Left side PCB terminal PR:右側面PCB端子Right side PCB terminal B:底部(向下)導綫型Bottom (downward) wire type L:左面導綫型(左右的定義見圖示) Left side wire type (definition of right and left is shown in diagram) R:右面導綫型 Right side wire type Y:非標準端子Not standard terminal	**10** 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	適用于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 operatingvalue or other requirements. 3）當導綫顏色不是默認的配置顏色時。 When the wire color is not the default color. ■ 附加規格代號用兩位阿拉伯數字表示，如01、02、03……在没有附加規格編號時，該位置空缺。 Additional spec number shows as 01, 02, 03……If there is no additional numbers, the place is vacant.

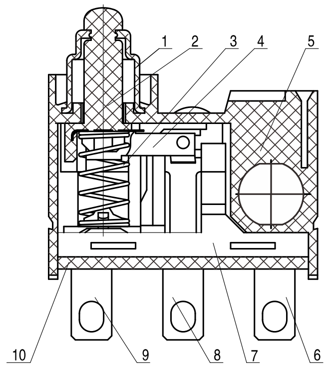
◆ 型號規格命名及含義 Model number legend and meanings

WS6□-□ □ □-□ □ □-□ □-□
1 2 3 4 5 6 7 8 9 10

		10 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	■ 導綫顏色配置代號：用三個英文字母按COM、NC、NO順序表示；若是常開式或常閉式開關，空缺位置用字母O表示。（顏色代號：紅–R、白–W、黑–B、綠–G、藍–L、黃–M、灰–H、紫–P）。 Wire color code: indicate with 3 letters , the order is COM、NC、NO; If NO or NC, vacant place shows 0. (Color code: red–R,white–W, black–B, green–G, blue–L, yellow–Y, grey–H, purple–P) 示例example：BWR，BOR，RWO ■ 若同時有附加規格代號和導綫顏色配置代號，則導綫顏色配置代號位于附加規格代號之後。 If there are append specs code and wire color code at thesame time, then the wirecolor code should be after the append specs code. 示例example：02BWR ■導綫型開關的引綫顏色默認配置規定如下Wire color of wire type switch is as follows: 公共端引綫COM：黑色 Common terminal wire COM: Black 常閉端引綫NC:紅色 Normally closed terminal wire NC:Red 常開端引綫NO:白色 Normally opened terminal wire NO:White

◆ 内部構造圖 Internal configuration drawing

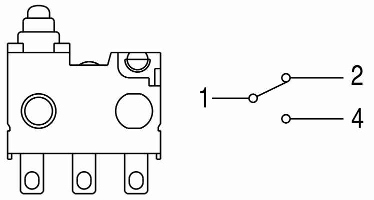




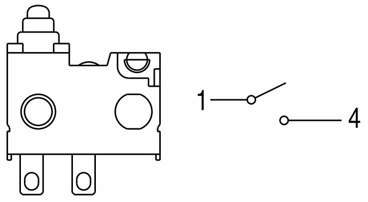
1 密封圈	Hermetic loop
2 按鈕	Plunger
3 彈簧	Spring
4 簧片	Spring sheet
5 外殼	Base
6 常閉端子	Nc terminal
7 底座	Case
8 常開端子	No terminal
9 支架	Support
10 環氧樹脂	Epoxlde resin

◆ 接觸形式説明圖 Circuit illustration

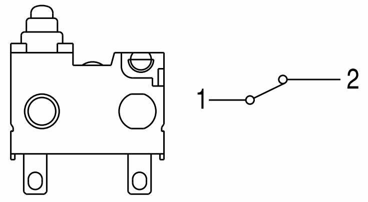
轉換式 SPDT



常開式 SPST–NO

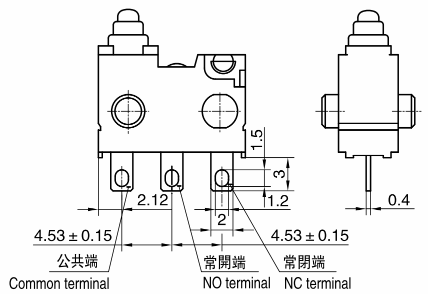


常閉式 SPST–NC



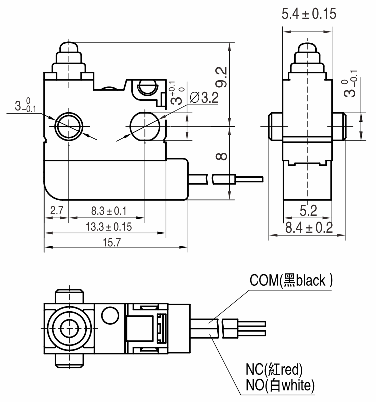
◆ 接綫端尺寸 Terminal dimensions

焊接端子
Solder terminal



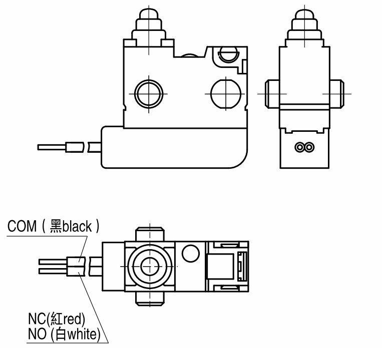
◆ 導綫型外形圖 Outline drawing of wire type

WS6 □–□ T0–R150A–□
WS6 □–□ D0–R150A–□



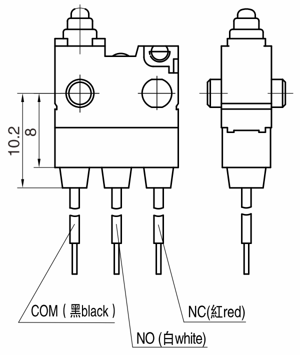
注：僅用于常開、常閉型
Note: only for normally open and normally closed type

WS6□-□ T0-L150A-□
WS6□-□ D0-L150A-□

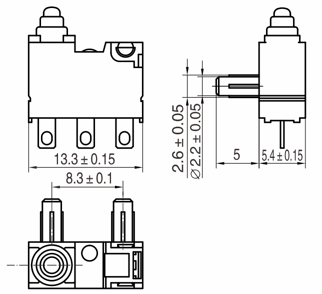
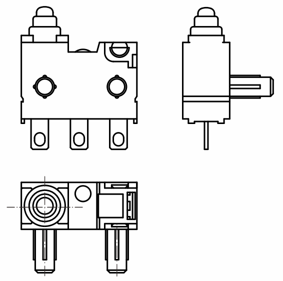
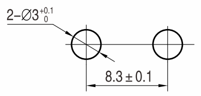
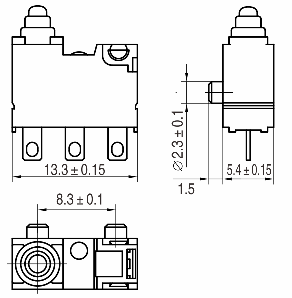
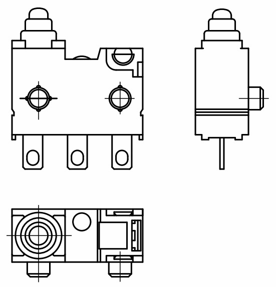


注：僅用于常開、常閉型
Note: only for normally open and normally closed type

WS6 □-□ Z0-B150A-□

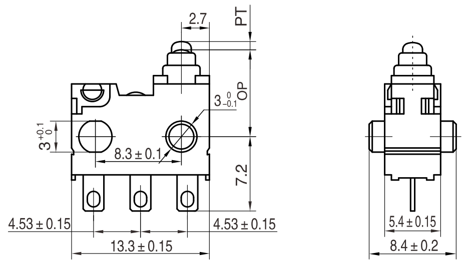


◆ 外殼類型及安裝尺寸說明圖 Illustration of cover type and mounting dimension

左側面固定銷 Left side fixed pin	右側面固定銷 Right side fixed pin	標準型安裝孔尺寸 Mounting hole dimension
		
左側面定位銷 Left side dowel pin	右側面定位銷 Right side dowel pin	
		

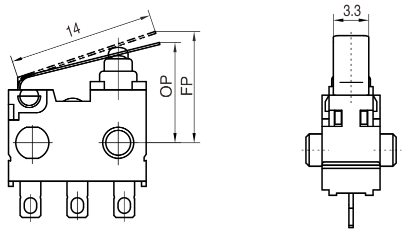
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS6–□Z0–F150A



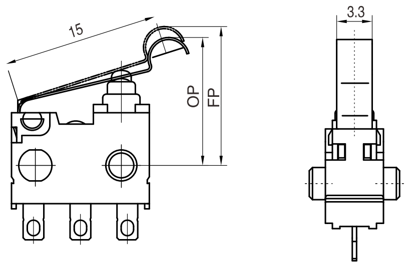
型號 Model		WS6–ZO–F150A
OF Max(N)		1.5
PT Max(mm)		1.1
NC側	OP (mm)	8.7±0.3
	RP (mm)	8.8±0.3
	OT (mm)	2.5
NO側	OP (mm)	8.4±0.3
	RP (mm)	8.5±0.3
	OT (mm)	2.2

WS6–□Z3N–F150A



型號 Model		WS6–Z3N–F150A
OF Max(N)		1.7
FP Max(mm)		11.5
NC側	OP (mm)	9.8±0.5
	RP (mm)	10.1±0.5
	OT (mm)	3.1
NO側	OP (mm)	9.3±0.5
	RP (mm)	9.6±0.5
	OT (mm)	2.6

WS6–□Z6N–F150A



型號 Model		WS6–Z6N–F150A
OF Max(N)		1.5
FP Max(mm)		14.4
NC側	OP (mm)	12.5±0.5
	RP (mm)	12.9±0.5
	OT (mm)	3.3
NO側	OP (mm)	12±0.5
	RP (mm)	12.4±0.5
	OT (mm)	2.8

WS7型防水開關系列　Waterproof switch series

◆ 特點和用途　Characteristics and usage

- 產品結構簡單可靠，防塵、防水。

  Simple and reliable product structure, dustproof and waterproof.

- 可配備各種導綫

  Provide with a variety of wires.

- 可在建築物門窗控制裝置、工業控制設備中使用。

  Can be used in door and window control devices of building and in industrial control equipments.

◆ 技術特性　Technical Characteristics

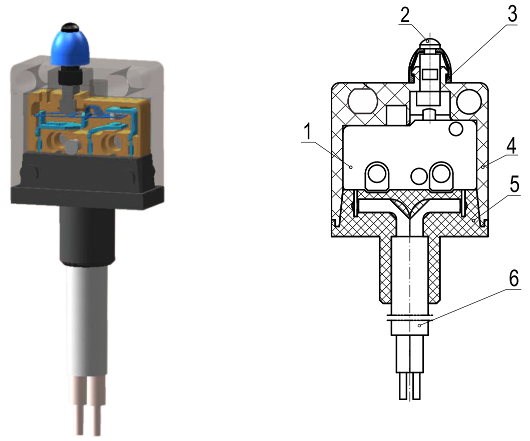
項目 Item		特性值 Value
環境溫度 Environment temperature		–40～+85℃
相對濕度 Relative humidity		95%,40℃
額定值 Ratings		10(4)A 250VAC μ , 10GPA 125/250VAC μ , 4A 30VDC 1/2hp 250VAC μ
動作力 Operating force		≤2N
工作速度 Operating speed		0.1mm～1m/s (無動臂時No lever)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		端子型Terminal type ≤50mΩ 導綫型wire type ≤100mΩ
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：1000m/S^2(約100G)最大 Endurance：1000m/S^2(approx 100G) max 誤動作：300m/S^2(約30 G)最大 Wrong action：300m/S^2(approx.30G) max
防觸電保護等級 Electric shock proof protection degree		Ⅰ級 I class
外殼防護等級 Cover protection degree		IEC IP67
壽命 life		機械≥1,000,000次 Mechanical ≥1,000,000 cycles 電氣≥10,000次 Electrical ≥10,000 cycles

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

WS7 – □ □ □ □– □
1 2 3 4 5

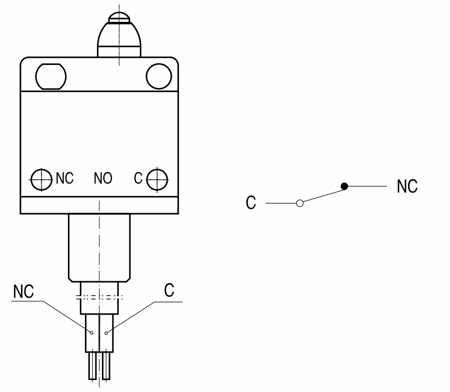
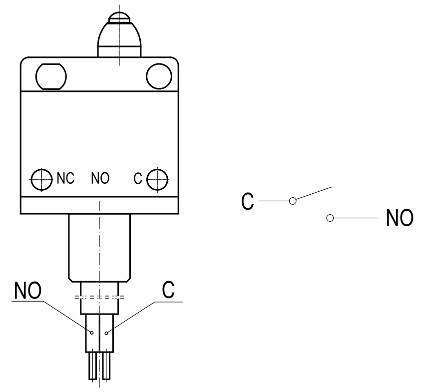
1 接觸形式 Circuit	Z:轉換式SPDT T:常開（按通）式SPST–NO D:常閉（按斷）式SPST–NC （見説明圖See illustration)	***5*** 附加規格代號及導綫顏色配置代號 Additional specs code and wire color code	適用于apply to： 1）當開關使用了非標準零件如非標準端子時；When used not standard parts such as not standard terminal. 2）當顧客有特殊動作特性值或其它要求時；When customer has particular operating value or other requirements. 3）當導綫顏色不是默認的配置顏色時。When the wire color is not the default color. ■ 附加規格代號用兩位阿拉伯數字表示，如01、02、03……在没有附加規格編號時，該位置空缺。 Additional spec number shows as 01, 02, 03……If there is no additional numbers, the place is vacant. ■ 導綫顏色配置代號：用三個英文字母按COM、NC、NO順序表示；若是常開式或常閉式開關，空缺位置用字母O表示。（顏色代號：紅–R、白–W、黑–B、綠–G、藍–L、黄–M、灰–H、紫–P）。 Wire color code: indicate with 3 letters , the order is COM、NC、NO; If NO or NC, vacant place shows 0. (Color code: red–R, white–W, black–B, green–G, blue–L, yellow–Y, grey–H, purple–P) 示例example：BWR，BOR，RWO ■ 若同時有附加規格代號和導綫顏色配置代號，則導綫顏色配置代號位于附加規格代號之後。If there are append specs code and wire color code at the same time, then the wire color code should be after the append specs code. 示例example：02BWR ■導綫型開關的引綫顏色默認配置規定如下： Wire color of wire type switch is as follows: 公共端引綫COM：黑色 Common terminal wire COM: Black 常閉端引綫NC:藍色 Normally closed terminal wire NC:Blue 常開端引綫NO:白色 Normally opened terminal wire NO:White
2 外形特徵 (導綫出綫方向) Shape characteristics (wire direction)	L: 左方導綫Left side wire R: 右方導綫Right side wire D: 底面導綫Bottom wire type		
3 導綫規格 Wire specifications	A:灰色護套綠白電綫Gray jacket with green and white wires 2X0.75mm 300V –40–+90℃ B:灰色護套綠白電綫Gray jacket with green and white wires 2X1.0mm 300V –40–+90℃ □:其它規格 Other specifications		
4 導綫長度 Wire length	用毫米數表示 Indicate with number–“mm”		

◆ 內部構造圖 Internal configuration drawing

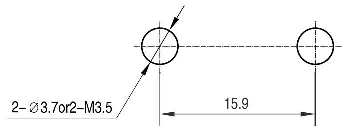


1: KW4A微動開關	KW4A Micro switch
2: 按鈕	Plunger
3: 密封圈	Hermetic loop
4: 外殼	Case
5: 熱熔膠	Hot melt adhesive
6: 護套綫	Sheathed wire

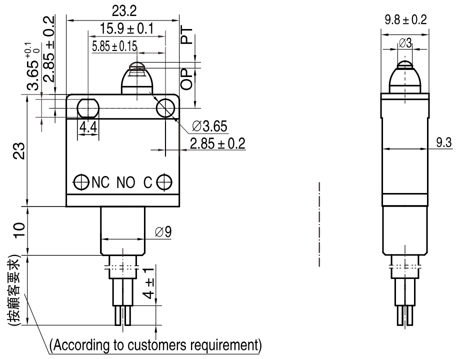
◆ 接觸形式説明圖 Circuit illustration

常閉式 SPST–NC	常開式 SPST–NO
	

◆ 安裝孔尺寸 Mounting hole dimension



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



OF Max(N)	2.00
RF Min(N)	0.50
PT Max(mm)	0.8
OT Min(mm)	0.8
MD Max(mm)	0.2
OP (mm)	8.4±0.5

WS8型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristic and usage

- 業界産品體形最小、防塵、防水。采用雙面滑動接觸結構，接觸可靠、抗衝擊能力强。
  Smallest size in micro–switch industry, dustproof, waterproof. Double–sided sliding contact structure, reliable contact, strong impact resistance .
- 外殼備有無柱、單側和雙側柱子，可滿足不同的安裝要求。
  The case is equipped with columnless, single side and double side columns to meet different installation requirements.
- 接綫端子種類齊全，可配備符合負載要求的導綫。
  All kinds of wiring terminals can be equipped with wires that meet the load requirements.
- 可在汽車側門、後備箱、引擎蓋和家電中使用。
  Can be used in car side doors, trunk, hood and home appliance.

◆ 技術特性 Specifications

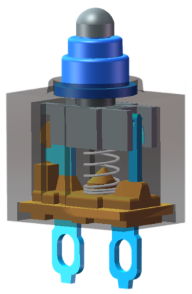
項目 Item		特性值 Value
環境温度 Environment temperature		40T85
相對濕度 Relative humidity		95%,40℃
額定值 Rating		0.1A 12V DC；50μA 5V DC
工作速度 Operating speed		1mm～500mm/s (無動臂時No lever)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (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	AC500V,50/60Hz，1min
	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.	AC500V,50/60Hz，1min
抗振動 Vibration resistance		10～55Hz，1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance		最小Min.: 294m/s^2(30G) 接觸故障持續時間不超過1ms Contact opening max. 1 msec.
防觸電保護等級 Electric shock proofprotection degree		Ⅰ級class
外殼防護等級 Cover protection degree		IEC IP67（不包括外露端子部分） IEC IP67 (except exposed terminals)
電氣壽命 Electrical life		機械≥300,000次 Mechanical ≥300,000cycles 電氣≥300,000次 Electrical ≥300,000cycles
安全認證 Safety approvals		UL,TUV,CQC

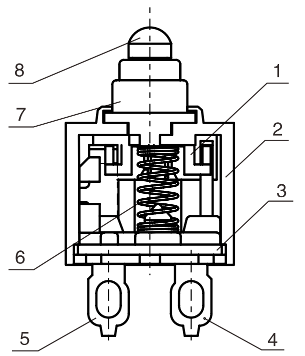
◆ 型號規格命名及含義 Model number legend and meanings

WS8 –□–□ □ □–□–(□)
1 2 3 4 5 6

<table>
<tr><td>1
接觸形式
Circuit</td><td>T:常開(按通)式 SPST–NO
D:常閉(按斷)式 SPST–NC
(見説明圖 See illustration)</td><td>4
安裝構造
Installation structure</td><td>C:雙面各有2凸臺
There are 2 convex platform on both sides
D:無柱無凸臺,底部4個小脚
No column and no convex platform，4 small feet at the bottom.
（見説明圖See illuminations)</td></tr>
<tr><td>2
端子類型
Terminal types</td><td>F:焊接端子
Solder terminal
P:PCB端子
PCB terminal
A:側面端子之一
One of the side terminal
B:側面端子之二
The other of the side terminal
Y:非標準端子
Non–standard terminal
W:導綫型
Wire type
C:壓入式
（見説明圖See illuminations)</td><td>5
導綫型端子導綫方向及長度
Direction and length of conductor type terminal</td><td>D□:導綫在開關下方引出；
The wire leads out below the switch
L□:導綫在開關左側引出；
The wire leads out to the left of the switch
R□:導綫在開關右側引出。
The wire leads out to the right of the switch
(□爲導綫長度毫米數)
(□shows the wire lenth mm)</td></tr>
<tr><td>3
動作力(MAX)
Operating force</td><td>150：1.5N（ 0.5N—1.5N ）
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.</td><td rowspan="2">6
附加規格代號及導綫顏色配置代號
Additional specs code and wire color code</td><td rowspan="2">適用于apply to：
■ 表示有特殊要求，如非標準端子，特殊的動作特性值等。用二位阿拉伯數字表示。
■ indicates that there are special requirements, such as not standard terminals and special operation characteristic values, which are shows as two Arabic numerals.
■ 導綫配置爲非默認顏色：用二個英文字母按NC、NO順序表示導綫顏色配置（顏色代號見表1）
■Non–default color for the wire configuration: shows as two letters NC.NO to indicate the wire color configuration (see sheet 1 for color codes).
<table>
<tr><td>顏色 color</td><td>紅</td><td>白</td><td>藍</td><td>黑</td><td>緑</td><td>黄</td><td>灰</td><td>紫</td></tr>
<tr><td>代號 code</td><td>R</td><td>W</td><td>L</td><td>B</td><td>G</td><td>M</td><td>H</td><td>P</td></tr>
</table>
導綫型開關的引綫顏色默認配置規格如下：
The insidious color of wire type switches is configured as follows
常閉端引綫NC： X色 (待定)To be determined
常開端引綫NO： X色 (待定)To be determined
■ 若同時有附加規格代號和導綫顏色代號，則導綫顏色代號位于附加規格代號之後。
If both additional specification code and wire color code exist, the wire color code comes after the additional specification code</td></tr>
<tr><td>4
安裝構造
Installation structure</td><td>A:單面有2固定柱
There are 2 fixed columns on one side.
B:無柱無凸臺
No column and no convex platform.</td></tr>
</table>

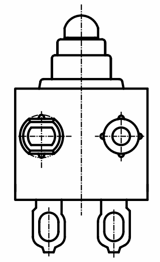
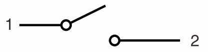
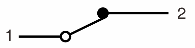
◆ 内部構造圖 Internal configuration drawing



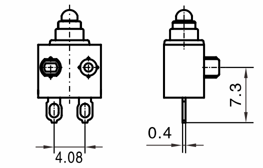
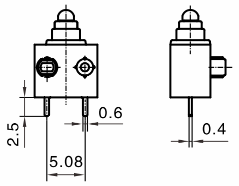
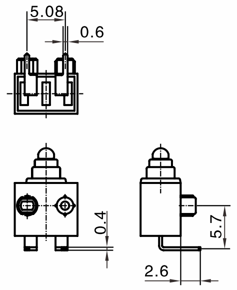
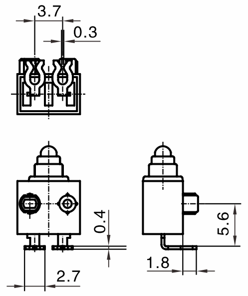


1:	可動片	Moving piece
2:	外殼	Base
3:	底座	Case
4:	端子	Terminal
5:	常開/常閉端子	NO terminal/NC terminal
6:	彈簧	Spring
7:	密封圈	Hermetic loop
8:	按鈕	Plunger

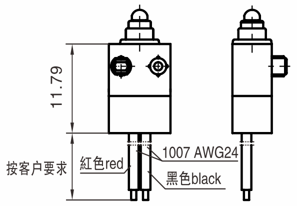
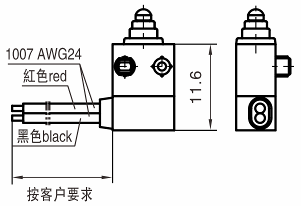
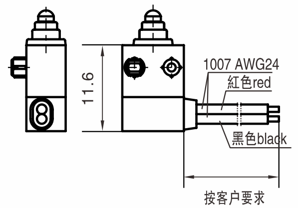
◆ 接觸形式說明圖 Circuit illustration

	常開式 SPST–NO	常閉式 SPST–NC
		

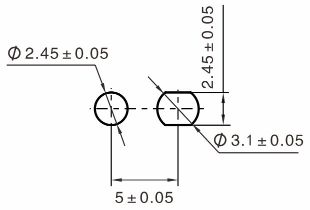
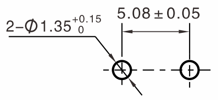
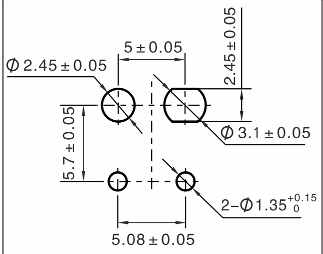
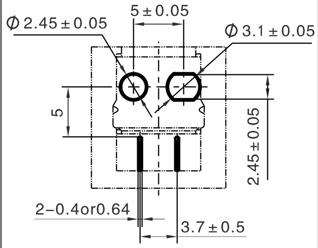
◆ 接線端尺寸 Terminal dimensions

焊接端子 Solder terminal	PCB端子 PCB terminal		壓入式端子 Press fit terminal
			

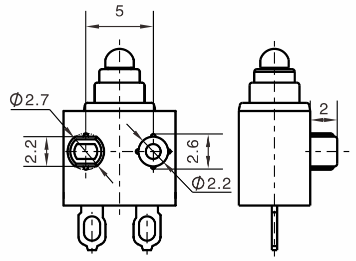
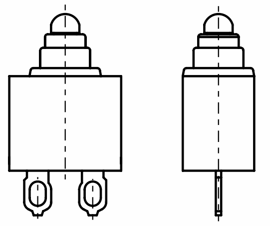
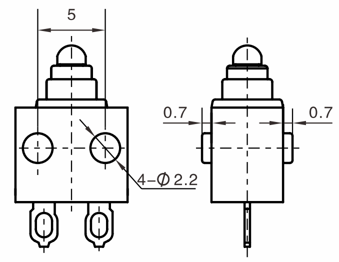
◆ 導綫型外形圖 Outline drawing of wire type

D底部導綫型 Bottom wire type	L左面導綫型 Left side wire type	R右面導綫型 Right side wire type
 According to customer's requirements	 According to customer's requirements	 According to customer's requirements

◆ 安裝孔尺寸 Mounting hole dimensions

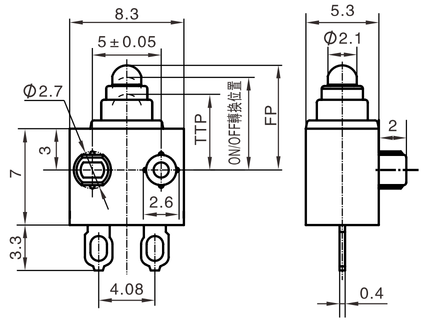
定位銷/固定銷間距 Dowel pin/fixing pin distance	直PCB端子安裝孔 Straight PCB terminal mounting hole	左右PCB端子安裝孔 Left and right PCB teminal mounting hole	壓入式安裝孔 Press fit mounting hole
			

◆ 安裝構造說明圖 Mounting construction illustration

A	B	C
		

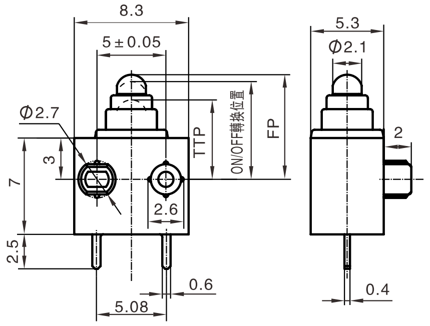
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS8–T/D–F150B



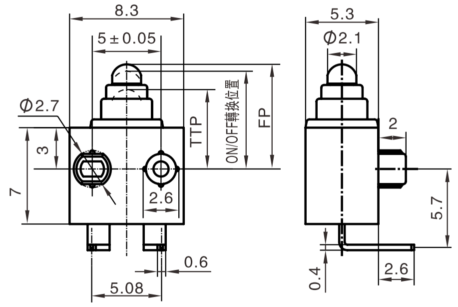
型 號 Model	WS8–T/D–F150B
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	7.1±0.2
TTP Min(mm)	5.4
FP Max(mm)	7.9

WS8–T/D–P150A



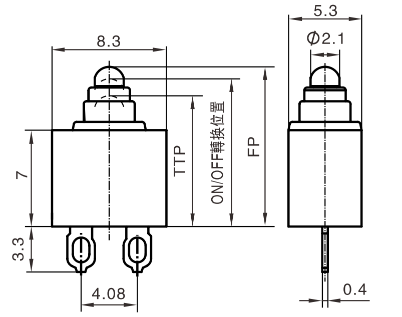
型 號 Model	WS8–T/D–P150A
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	7.1±0.2
TTP Min(mm)	5.4
FP Max(mm)	7.9

WS8–T/D–A150A



型 號 Model	WS8–T/D–A150A
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	7.1±0.2
TTP Min(mm)	5.4
FP Max(mm)	7.9

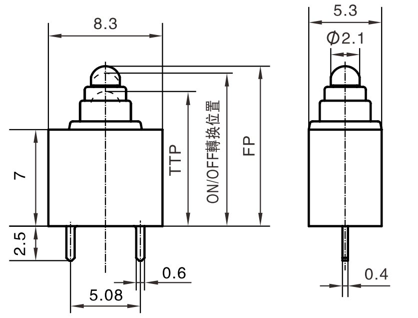
WS8–T/D–F150B



型 號 Model	WS8–T/D–F150B
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	11.1±0.2
TTP Min(mm)	5.4
FP Max(mm)	7.9

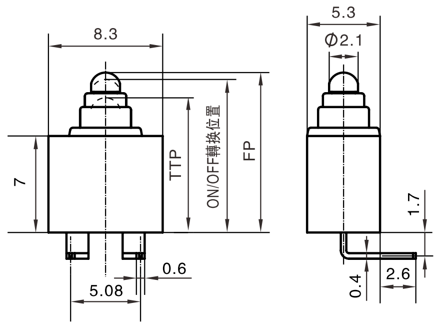
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS8-T/D-P150B



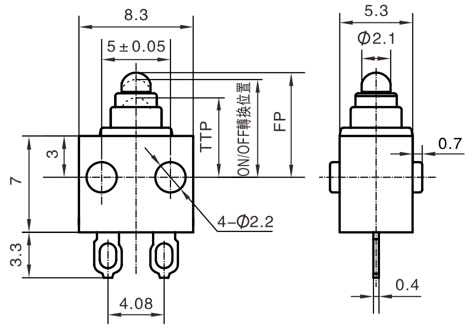
型 號 Model	WS8-T/D-P150B
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	11.1±0.2
TTP Min(mm)	9.4
FP Max(mm)	11.9

WS8-T/D-A150B



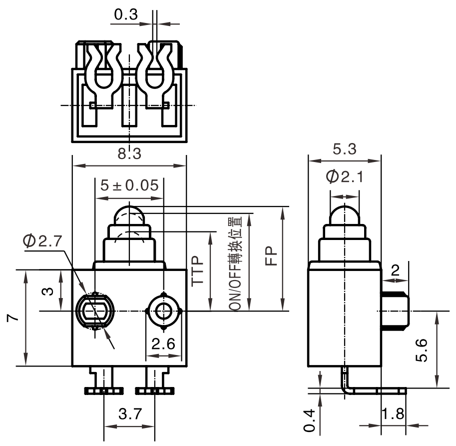
型 號 Model	WS8-T/D-A150B
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	11.1±0.2
TTP Min(mm)	9.4
FP Max(mm)	11.9

WS8-T/D-F150C



型 號 Model	WS8-T/D-F150C
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	7.1±0.2
TTP Min(mm)	5.4
FP Max(mm)	7.9

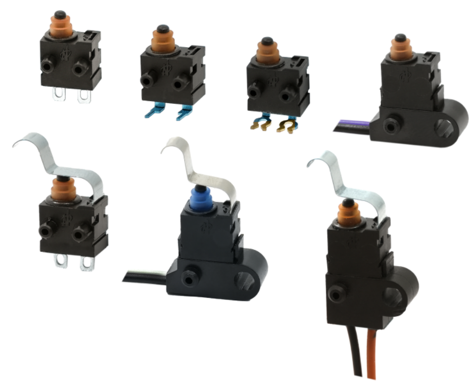
WS8-T/D-B150A



型 號 Model	WS8-T/D-B150A
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	7.1±0.2
TTP Min(mm)	5.4
FP Max(mm)	7.9

WS9 型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristics and usage



- 産品體積小，但可適配各型動臂，方便安裝
  Small in size, but it can be adapted to various types of levers,easy to install
- 觸點接觸壓力不取決于操作行程的構造
  The contact pressure of the contact point does not depend on the construction of the operating travel
- 産品為滑動觸點的靜音構造
  The product is a silent structure of moving contact
- 産品可防塵、防水的高密封性能，耐環境性強(IP67)
  The product has high sealing performance of dustproof and waterproof, and strong environmental resistance (Ip67)
- 可在汽車側門、後備箱、引擎蓋和家電中使用
  Can be used in automobile side doors, trunk, hood and household appliances

◆ 技術特性 Technical Characteristics

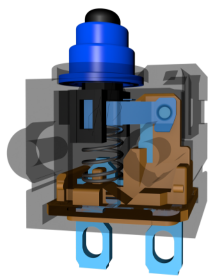
項目 Item		特性值 Value
環境溫度 Environment temperature		-40～+85℃
額定值 Ratings		16VDC,50mA(阻性負載Resistive load);5VDC,1mA(阻性負載Resistive load)
工作速度 Operating speed		30mm/s～500m/s
工作頻率 Operating frequency		機械 60次/min; 電氣20次/min Mechanical 60 cycles/min; Electrical 20cycles/min
絕緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤500mΩ (初始值)(initial value)
工頻耐電壓 Test voltage	不相接端子間 Between non connected terminals	AC500V,50/60Hz, 1min
	端子與不帶電金屬件之間 端子與地(外殼)之間 Between each terminal and other exposed metal parts Between each terminal and ground	AC1500V,50/60Hz, 1min
抗振動 Vibration resistance		單振幅single amplitude:0.75mm 振動幅度Vibration amplitude:10Hz~55Hz(周期4分鍾Cycle 4 minutes) 方向•时间:X、Y、Z方向 各30分鍾 Direction and time: 30 minutes each in X, Y, and Z directions
		振動幅度Vibration amplitude:5Hz~200Hz(周期10分鍾Cycle 10 minutes) 加速度acceleration:43.1m/s² 方向•时间:X、Y、Z方向 各30分鍾 Direction and time: 30 minutes each in X, Y, and Z directions
抗衝擊 Shock resistance		衝擊值shock value:980m/s² 方向•时间:X、Y、Z方向 各5次 Direction and time: 5 times each in X, Y, and Z directions
端子強度 Terminal strength		≥6N(各方向，允許端子發生變形In all directions, terminal deformation is allowed.)
壽命 Life		電氣≥150,000/300,000次Electrical≥150,000/300,000 cycles 機械≥500,000次 Mechanical≥500,000cycles
質量 Weight		About 0.5g (端子型terminal type);about 3.9g(導線型wire type)
防護等級 Protection degree		IP67(焊接端子型的端子露出部分除外Except exposed part of solder terminal type)

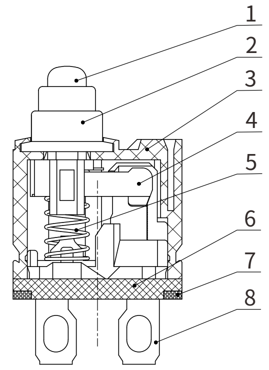
◆ 型號規格命名及含義 Model number legend and meanings

WS9 □ – □ □ □ – □ □ □ – □ □ – (□)
1 2 3 4 5 6 7 8 9 10

<table>
<tr><td>1
温度等級
Degrees of temperature</td><td>無標記No mark:40T85</td></tr>
<tr><td>2
額定值
Ratings</td><td>無標記 No mark:
1mA 5VDC～50mA 16VDC</td></tr>
<tr><td>3
接触形式
Circuit</td><td>T:常開（按通）式SPST-NO
D:常閉（按斷）式SPST-NC</td></tr>
<tr><td>4
驱动形式
Actuator forms</td><td>0:无动臂No lever;
3:(标准)直动臂Straight lever;
6:弧形动臂Arc lever;
□:非标准动臂代号Not standard lever;
(注:□为字母或字母+数字 □is a letter or a combination of letters and numbers)</td></tr>
<tr><td>5
端子类型
Terminal types</td><td>F:焊接式(长3.2)
Solder terminal(L3.2)
P:PCB端子PCB Terminal
CL:左叉式端子
left fork type terminal
CR:右叉式端子
Right fork type terminal
L:左导线型(左右的定义见图示)
Left side wire type
(definition of right and left is shown in diagram)
R:右导线型Right side wire type
B:底部导线型Bottom wire type
Y:非标准端子。
Not standard terminal</td></tr>
<tr><td>6
动作力(max)
Operating force</td><td>120:1.20N
150:1.50N
注:若是非标准作力，则用此动作力上限值表示。
Note: if it is not standard operating force, indicate with the upper limit.</td></tr>
<tr><td>7
安装构造
Mounting construction</td><td>AL:左2定位销 left 2 dowel pin
AR:右2定位销 right 2 dowel pin
AA:双面各2定位销 each 2
W:无定位销 without hole and pin
for double sides dowel pin</td></tr>
<tr><td>8
导线式端子的导线长度
Wire length of wire type terminal</td><td>导线式端子的导线长度（毫米数），
若非导线型，该位置空缺。
Wire length of wire type terminal (mm).
Vacant for non-wire type</td></tr>
<tr><td>9
防護等級
Portection degree</td><td>无标记No mark:IP67 (端子型,端子处除外
Except terminal part of terminal type)
IP67(导线型 wire leads type)
IP□□ :其它等级 Other degrees。</td></tr>
<tr><td>10
附加代号及导线颜色配置代号
Additional specs code and wire color code</td><td>用数字或字母表示。Indicate by numbers or letters
■ 表示有特殊要求，如非标准端子，特殊动作特性值；外形尺寸或结构与基本型有差异。用二位阿拉伯数字表示。
Indicates that there are special requirements, such as not standard terminals and special operation characteristic values, which are shows as two Arabic numerals.
■ 导线配置为非默认颜色：
用两个英文字母按NC、NO顺序表示导线颜色配置（颜色代号见表1）。
Nom-default color for the wire configuration: shows as two letters NC. NO to indicate the wire color configuration(see sheet 1 for color codes)
<table>
<tr><td>顏色
Color</td><td>紅</td><td>白</td><td>藍</td><td>黑</td><td>綠</td><td>黃</td><td>灰</td><td>紫</td></tr>
<tr><td>代號
Code</td><td>R</td><td>W</td><td>L</td><td>B</td><td>G</td><td>M</td><td>H</td><td>P</td></tr>
</table>
■ 若同时有附加规格代号和导线颜色代号，则导线颜色代号位于附加规格代号之后。
If there are append specs code and wire color code at the same time, then the wirecolor code should be after the append apecs code.
注：导线型开关的引线颜色默认配置规定如下：
Wire color of wire type switch is as follows:
常闭端引线NC：X色 Normally closed terminal wire NC: X
常开端引线NO：X色 Normally opened terminal wire NO: X</td></tr>
</table>

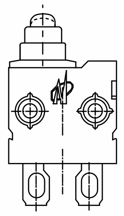
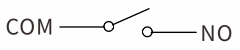
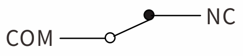
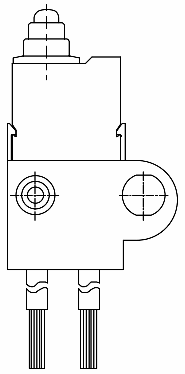
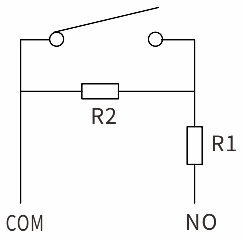
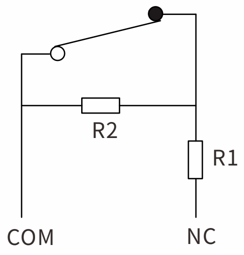
◆ 内部构造图 Internal configuration drawing



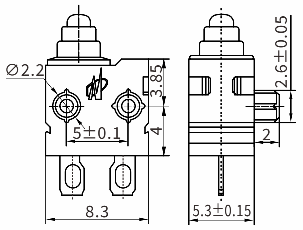
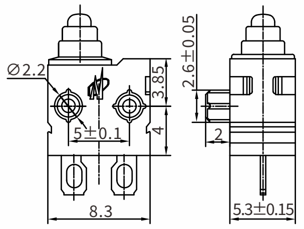
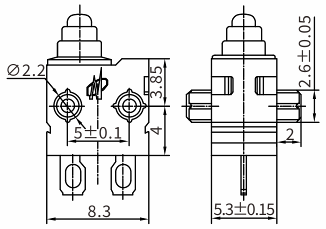
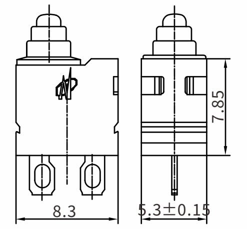


1	按鈕	Plunger
2	密封圈	Hermetic loop
3	外殼	Case
4	簧片	Reed
5	彈簧	Spring
6	底座	Base
7	環氧樹脂	Epoxlde resin
8	端子	Terminal

◆ 接触形式说明图 Circuit illustration

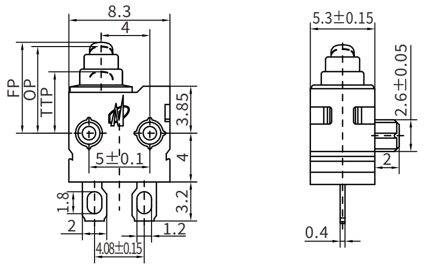
常规型	常开式 SPST-NO	常闭式 SPST-NC
		
带电阻型	常开式 SPST-NO	常闭式 SPST-NC
		

◆ 安装构造说明图 Mounting construction illustration

AR:右2定位销 Right 2 dowel pin	AL:左2定位销 Left 2 dowel pin	AA:双面各2定位销 2 for double sides dowel pin	W:无定位销 Without hole and pin
			

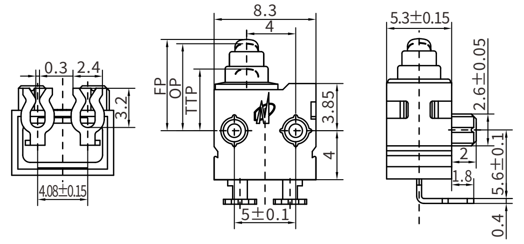
◆ **外形尺寸和动作特性** Dimensions and operating characteristics

WS9-T0-F120AR
WS9-D0-F120AR



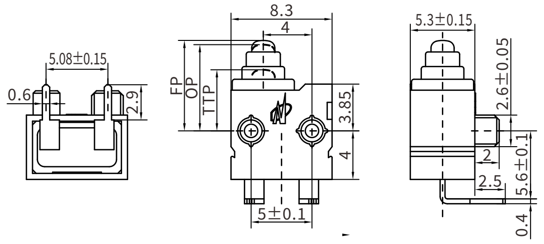
型号 Model	WS9-□0-F120AR
OF Max(N)	1.2
FP Max(mm)	7.7
OP (mm)	7.1±0.3
RP (mm)	7.15±0.3
OT Min(mm)	1.7
TTP (mm)	(5.1)

WS9-T0-CR120AR
WS9-D0-CR120AR



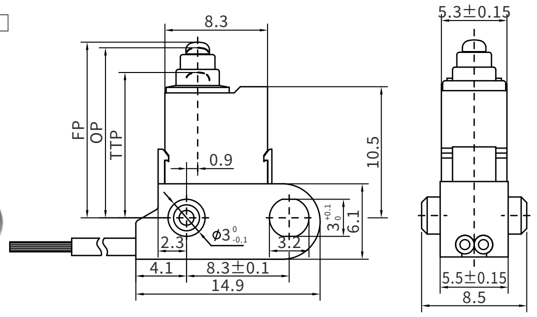
型号 Model	WS9-□0-CR120AR
OF Max(N)	1.2
FP Max(mm)	7.7
OP (mm)	7.1±0.3
RP (mm)	7.15±0.3
OT Min(mm)	1.7
TTP (mm)	(5.1)

WS9-T0-P120AR
WS9-D0-P120AR



型号 Model	WS9-□0-P120AR
OF Max(N)	1.2
FP Max(mm)	7.7
OP (mm)	7.1±0.3
RP (mm)	7.15±0.3
OT Min(mm)	1.7
TTP (mm)	(5.1)

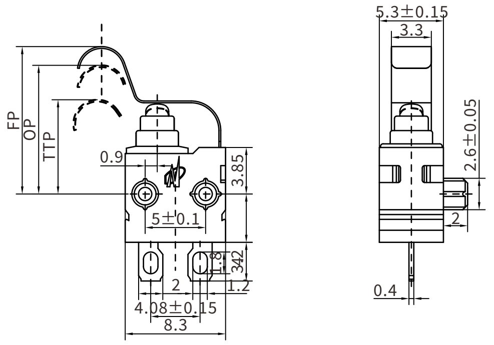
WS9-T0-L120W-□
WS9-D0-L120W-□



型号 Model	WS9-□0-L120W-□
OF Max(N)	1.2
FP Max(mm)	14.65
OP (mm)	14±0.4
RP (mm)	14.15±0.4
OT Min(mm)	1.6
TTP (mm)	(11.75)

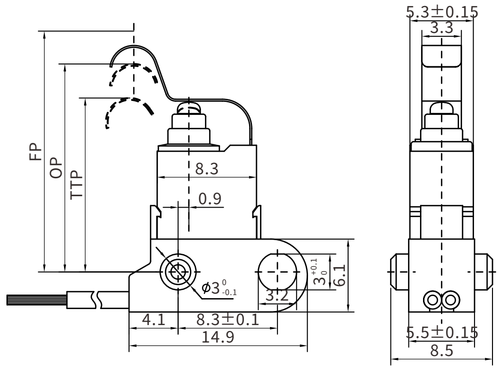
◆ **外形尺寸和动作特性** Dimensions and operating characteristics

WS9-TA-F120AR
WS9-DA-F120AR



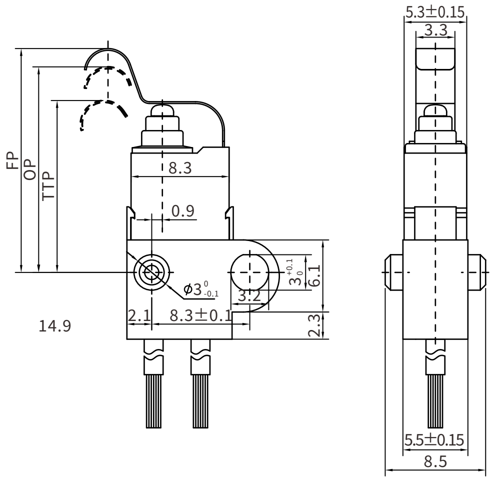
型号 Model	WS9-□A-F120AR
OF Max(N)	1.2
FP Max(mm)	13.4
OP (mm)	11±0.7
RP (mm)	11.15±0.8
OT Min(mm)	2.15
TTP (mm)	(7.9)

WS9-TA-L120W-□
WS9-DA-L120W-□



型号 Model	WS9-□A-L120W-□
OF Max(N)	1.2
FP Max(mm)	20.15
OP (mm)	17.8±0.7
RP (mm)	18±0.8
OT Min(mm)	2.05
TTP (mm)	(14.55)

WS9-TA-B120W-□
WS9-DA-B120W-□

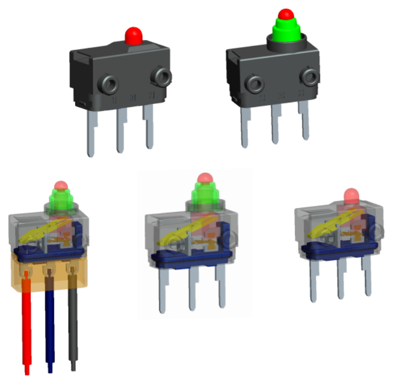


型号 Model	WS9-□A-B120W-□
OF Max(N)	1.2
FP Max(mm)	20.15
OP (mm)	17.8±0.7
RP (mm)	18±0.8
OT Min(mm)	2.05
TTP (mm)	(14.55)

WS10 型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristics and usage

- 开关端子反置型。
  Switch terminal inverted type.
- 体形小巧，结构紧凑；长行程，防尘，防水。
  Small size, compact structure, long travel, dustproof, waterproof.
- 接线端子种类齐全，可配备各种导线。
  A variety of contact terminals, provide with variety kinds of wire.
- 配备各种形式动臂。
  Varity of levers.
- 可在汽车、家用电器、工业控制设备等有耐环境性能要求的场合及户外设备、仪器中使用。
  It can be used in automobiles, home appliances, industrial control equipment and other place which has environmental protection requirements, and outdoor equipment and instruments.



◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
環境溫度 Environment temperature		-40～+85℃
額定值 Ratings		0.1A/125VAC;3A 12VDC;0.1A/250VAC 0.1A 48VDCμ 1E5
工作速度 Operating speed		0.1mm～1m/s (无动臂时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		端子型Terminal type ≤50mΩ 导线型wire type ≤100mΩ (22#, L≤200mm)
動作力 Operating Force		180 ：1.8N（IP67） 130 ：1.3N（Ip40）
工頻耐電壓 Test voltage	不相接端子間 Between non connected terminals	AC500V,50/60Hz, 1min
	端子與不帶電金屬件之間 端子與地（外殼）之間 Between each terminal and other exposed metal parts Between each terminal and ground	AC1000V,50/60Hz, 1min
抗振動 Vibration resistance		10～55Hz, 1.5mm双振幅double amplitude
抗衝擊 Shock resistance		耐久Endurance: 1000m/s2(约100G approx.100G)max 误动作Wrong action:300m/ s2(约30G approx.30G)max
防触电保护等级 Electric shock proof protection grade		I 级class
外壳防护等级 Cover protection degree		IEC IP67（端子型的端子部位除外Besides terminal part of terminal type） 或其它等级Or other grades
壽命 Life		電氣≥100,000次 Mechanical ≥100,000 cycles 機械≥500,000次 Electrical ≥500,000 cycles
安全认证 Safety approvals		UL/CUL、TUV、CE、CQC

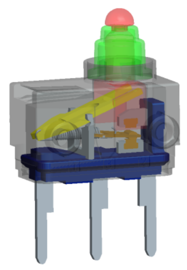
◆ 型號規格命名及含義 Model number legend and meanings

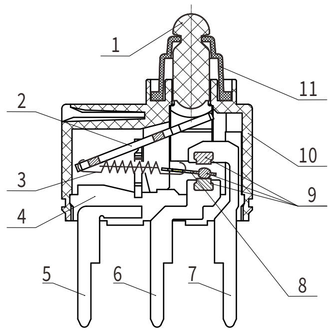
WS10 □□ - □□□ - □□ （□）
1 2 3 4 5 6 7 8

<table>
<tr><td>1
接觸形式
Circuit</td><td>Z:转换式SPDT"
T:常開（按通）式SPST-NO
D:常閉（按斷）式SPST-NC</td><td>7
防護等級
Portection degree</td><td>无标记No mark：IP67
(端子型,端子处除外 Except terminal part of terminal type)
Ip40</td></tr>
<tr><td>2
驱动形式
Actuator forms</td><td>0:无动臂No lever;
3(标准)直动臂Straight lever;
6:弧形动臂Arc lever;
□:非标准动臂代号Not standard lever;
(注：□为字母或字母+数字 □ is a letter or a combination of letters and numbers)</td><td rowspan="5">8
附加代号及
导线颜色配置代号
Additional specs code and wire color code</td><td rowspan="5">用数字或字母表示 Indicate by numbers or letters
■ 表示有特殊要求，如非标准端子，特殊动作特性值；外形尺寸或结构与基本型有差异。用二位阿拉伯数字表示。
Indicates that there are special requirements, such as not standard terminals and special operation characteristic values, which are shows as two Arabic numerals.
■ 导线配置为非默认颜色：
用三个英文字母按COM、NC、NO顺序表示导线颜色配置；若是常开式或常闭式开关，空缺位置用字母O表示。
（颜色代号见表1）
Non-default color for the wire configuration:
shows as three letters COM、NC、NO to indicate the wire color configuration;if NO or NC,
vacant place shows o.(see sheet 1 for color codes)
Sheet 1<table><tr><td>顏色 Color</td><td>紅</td><td>白</td><td>藍</td><td>黑</td><td>綠</td><td>黃</td><td>灰</td><td>紫</td></tr><tr><td>代號 Code</td><td>R</td><td>W</td><td>L</td><td>B</td><td>G</td><td>M</td><td>H</td><td>P</td></tr></table>示例：
BWR—黑白红 BOR—黑（无）红 RWO——红白（无）
Example:
BWR - black, white, and red; BOR - Black (No) Red
RWO - Red and White (None)
■ 导线配置为非默认规格（线号、牌号），也用二位阿拉伯数字表示附加代号。
The wire configuration is non default specifications (wire number, grade), and two Arabic numerals are also used to indicate additional codes.
导线默认规格：UL1007 22#
Default wire specifications：UL1007 22#
■ 若同时有附加规格代号和导线颜色代号，则导线颜色代号位于附加规格代号之后。
If there are append specs code and wire color code at the same time, then the wirecolor code should be after the append apecs code.
注：导线型开关的引线颜色默认配置规定如下：
Wire color of wire type switch is as follows:
常公共端引线COM：黑色
Common terminal wire COM:Black
常闭端引线NC：红色
Normally closed terminal wire NC: Red
常开端引线NO：白色
Normally opened terminal wire NO: White</td></tr>
<tr><td>3
端子类型
Terminal types</td><td>PA:长PCB端子Long PCB terminal
PB:宽0.9短PCB端子
Width 0.9 short PCB terminal
PC:宽0.6短PCB端子
Width 0.6 short PCB terminal
FA:长焊接端子
Long solder terminal
FB:短焊接端子
Short solder terminal
B:底部导线型
Bottom wire type
L:左面导线型(左右的定义见图示)
Left side wire type
(definition of right and left is shown in diagram)
R:右面导线型
Right side wire type
Y:非标准端子
Not standard terminal</td></tr>
<tr><td>4
动作力（max）
Operating force</td><td>130:1.30N
180:1.80N
注：若是非标准作力，则用此动作力上限值表示。
Note: if it is not standard operating force, indicate with the upper limit.</td></tr>
<tr><td>5
安装构造
Mounting construction</td><td>AL:左定位销Left dowel pin
AR:右定位销Right dowel pin
AA:双面定位销
each double sides dowel pin
W:无定位销
without hole and pin</td></tr>
<tr><td>6
导线式端子的导线长度
Wire length of wire type terminal</td><td>导线式端子的导线长度（毫米数）若非导线型，该位置空缺。
Wire length of wire type terminal (mm).
Vacant for non-wire type</td></tr>
</table>

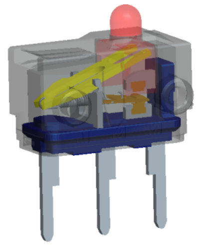
◆ 内部构造图 Internal configuration drawing

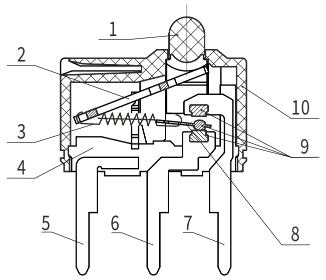
WS10 IP67



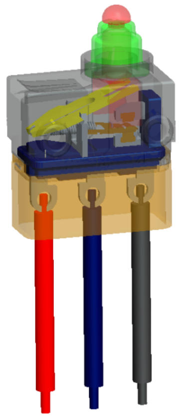


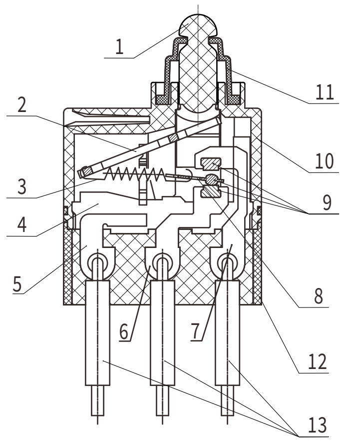
WS10 IP40





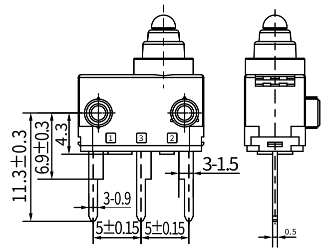
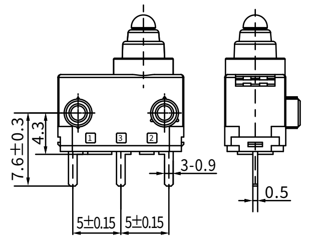
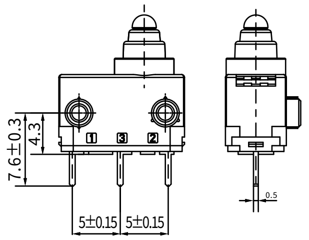
WS10 IP67 带线和防水罩

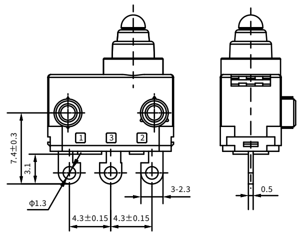
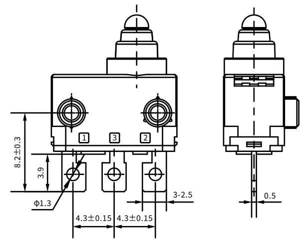




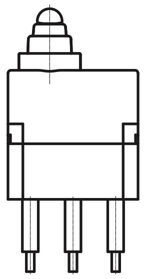
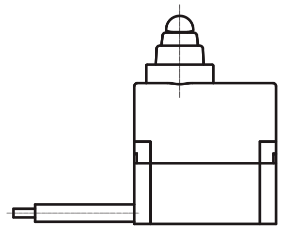
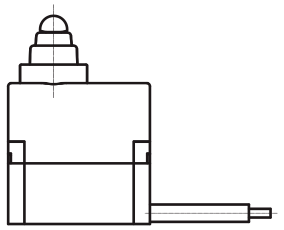
1 按鈕	Plunger
2 杠杆	Lever
3 拉簧	Pull spring
4 底座	Base
5 支架	Support
6 常闭端子	NC terminal
7 常开端子	NO terminal
8 可动片	Moving piece
9 电触点	Contact
10 外壳	Cover
11 密封圈	Hermetic loop
12 防水罩	Cover
13 导线	Wire

◆ 接线端子尺寸 Terminal dimensions

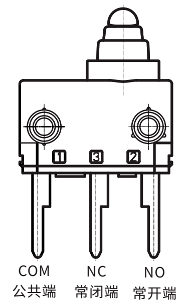
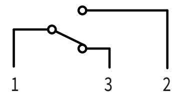
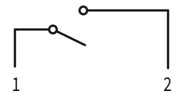
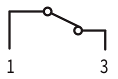
P1: 长PCB端子 Long PCB terminal	P2: 0.9宽短PCB端子 Width 0.9 short PCB terminal	P3: 0.6宽短PCB端子 Width 0.6 short PCB terminal
		

S1: 短焊接端子 Short solder terminal	S2: 长焊接端子 Long solder terminal	
		

◆ 接线端子尺寸 Terminal dimensions

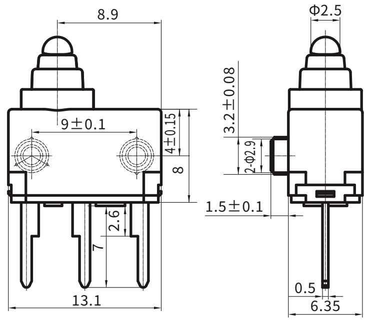
B: 底面出线型 Bottom wire type	L: 左面出线型 Left side wire type	R: 右面出线型 Right side wire type
		

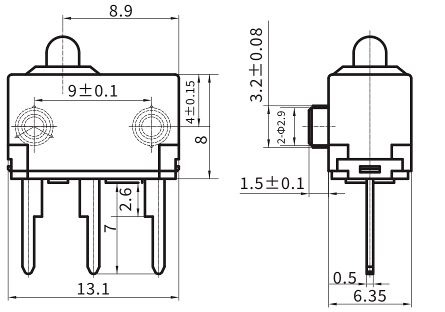
◆ 接触形式说明图 Circuit illustration

	Z: 转换式 SPDT	T: 常开式 SPST-NO	D: 常闭式 SPST-NC
			

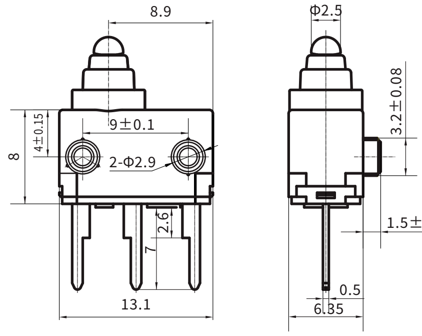
◆ 安装构造说明图 Mounting construction illustration

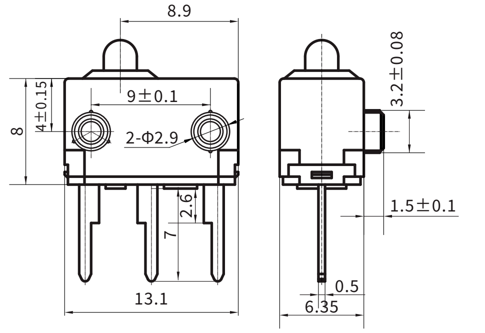
AL 左向定位短销 Left dowel pin





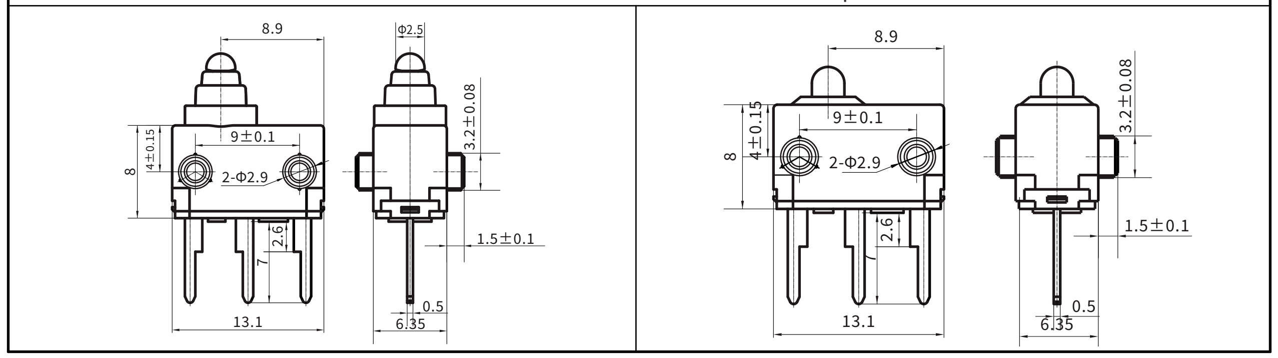
AR 右向定位短销Right dowel pin



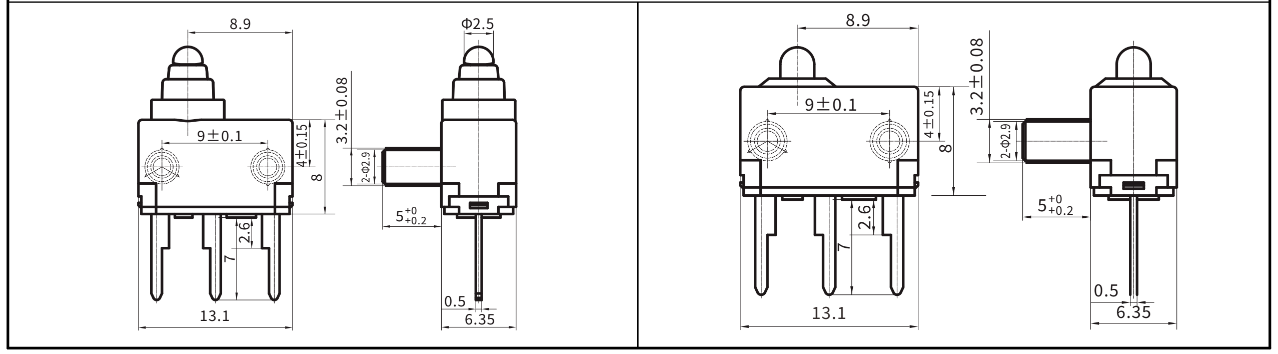


◆ 安装构造说明图 Mounting construction illustration

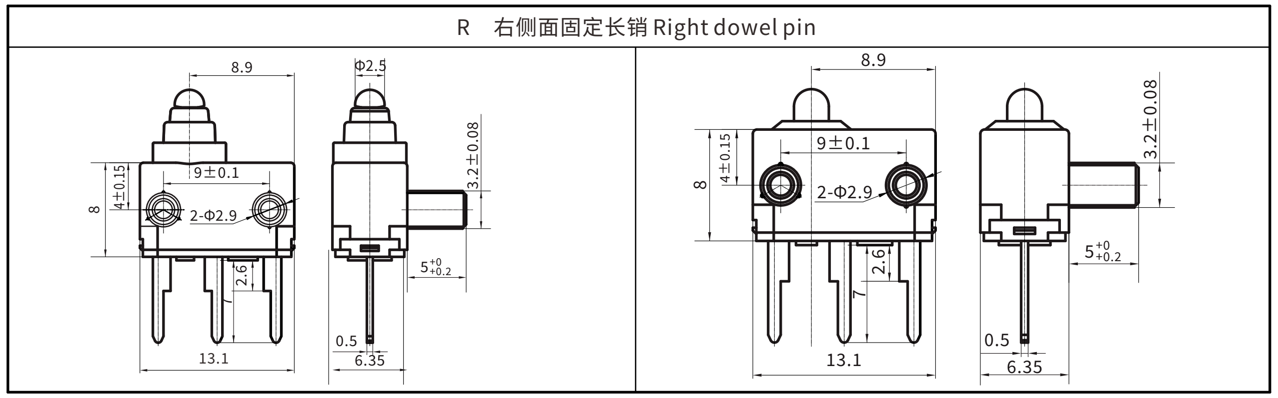
AA 双向定位短销 Each double sides dowel pin



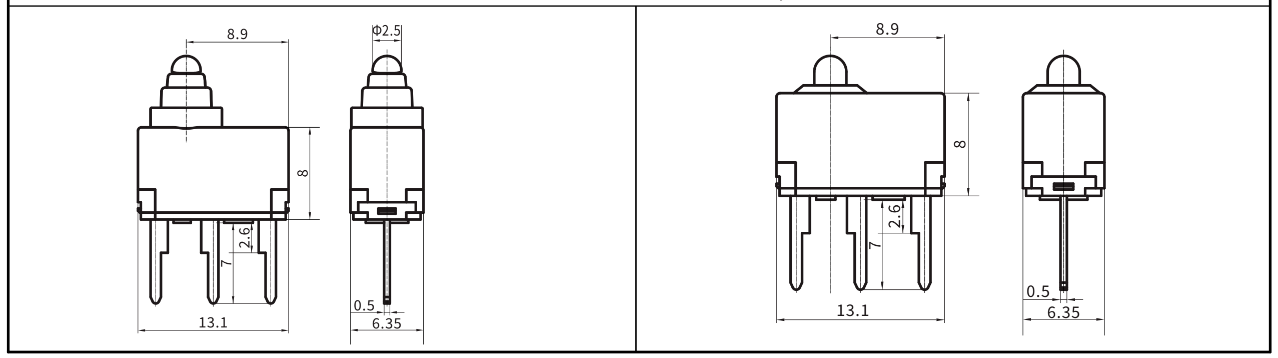
L 左侧面固定长销 Left dowel pin



R 右侧面固定长销 Right dowel pin

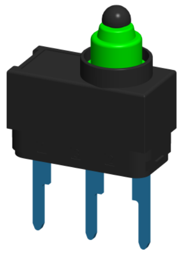


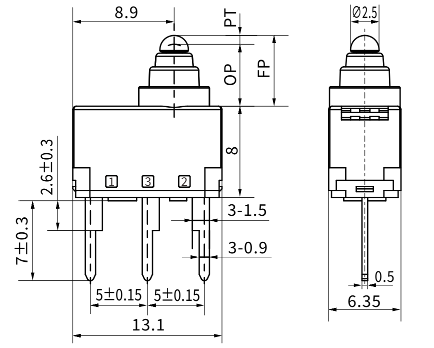
W 无孔无销 Without hole and pin



◆ 外形尺寸和动作特性 Dimensions and operating characteristics

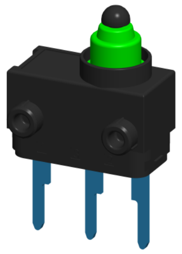
WS10-Z0-PA180W

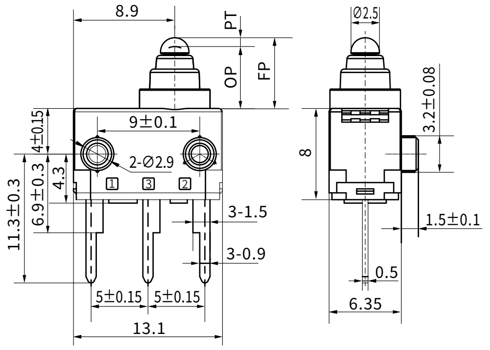




型号Model	WS10-Z0-PA180W
FP Max(mm)	6.3
OP (mm)	5.4±0.3
PT Max(mm)	1.5
OT Min(mm)	0.7
MD Max(mm)	0.4
OF Max(N)	1.8
RF Min(N)	0.2

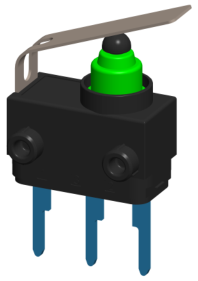
WS10-Z0-PA180AL

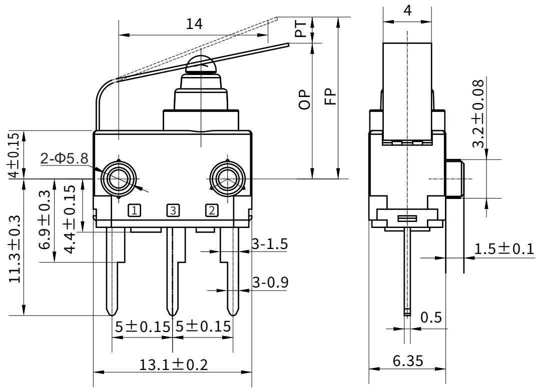




型号Model	WS10-Z0-PA180AL
FP Max(mm)	10.3
OP (mm)	9.4±0.3
PT Max(mm)	1.5
OT Min(mm)	0.7
MD Max(mm)	0.4
OF Max(N)	1.8
RF Min(N)	0.2

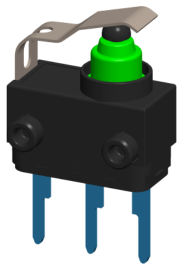
WS10-Z3-PA180AL

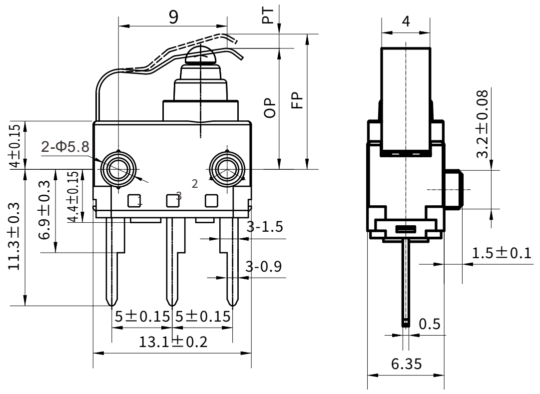




型号Model	WS10-Z3-PA180AL
FP Max(mm)	15
OP (mm)	10.7±1.5
PT Max(mm)	5.5
OT Min(mm)	0.7
MD Max(mm)	1.1
OF Max(N)	2.5
RF Min(N)	0.5

WS10-ZA-PA180AL

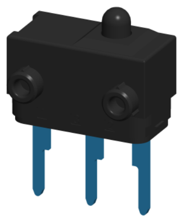


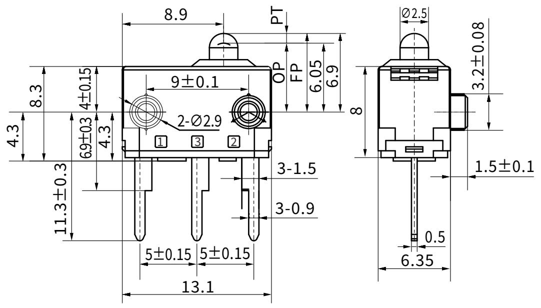


型号Model	WS10-ZA-PA180AL
FP Max(mm)	12
OP (mm)	10±1.2
PT Max(mm)	2
OT Min(mm)	0.7
MD Max(mm)	1.1
OF Max(N)	2.5
RF Min(N)	0.5

◆ **外形尺寸和动作特性** Dimensions and operating characteristics

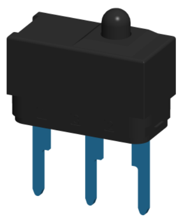
WS10-Z0-PA130AL-IP40

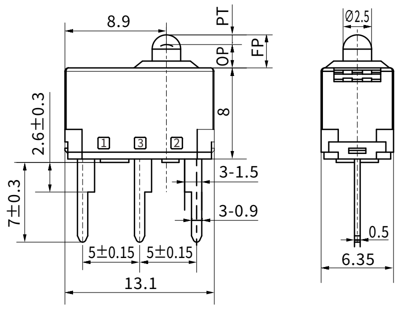




型号 Model	WS10-Z0-PA130AL-IP40
FP Max(mm)	7.3
OP (mm)	6.2±0.3
PT Max(mm)	1.5
OT Min(mm)	0.7
MD Max(mm)	0.4
OF Max(N)	1.3
RF Min(N)	0.1

WS10-Z0-PA130W-IP40





型号 Model	WS10-Z0-PA130W-IP40
FP Max(mm)	3.3
OP (mm)	2.2±0.3
PT Max(mm)	1.5
OT Min(mm)	0.7
MD Max(mm)	0.4
OF Max(N)	1.3
RF Min(N)	0.1

WS11 型防水微動開關系列 Micro switch series

◆ **特點和用途 Characteristics and usage**

- 滑动式機構可斜壓的長行程非短路式開關。密封結構為一體式結構，長行程、防塵、防水。採用雙面滑動接觸結構，接觸可靠、抗衝擊能力強。
  Long stroke non-short circuit switch sliding mechanism
  Can be inclined, sealing structure is integrated structure, long travel, dustproof, waterproof. Double-sided sliding contact structure, Reliable contact, strong impact resistance.
- 外殼備有無柱、單側和雙側柱子，可滿足不同的安裝要求。
  The housing is equipped with columnless, single side and double side columns to meet different installation requirements.
- 接線端子種類齊全，可配備符合負載要求的導線。
  All kinds of wiring terminals can be equipped with wires that meet the load requirements.
- 可在汽車側門、後備箱、引擎蓋和白色家電中使用。
  Can be used in car side doors, trunk, hood and home appliance.

◆ **技術特性** Technical Characteristics

項目 Item		特性值 Value
环境温度 Environment temperature		-40～+85℃
相對濕度 Relative humidity		95%,40℃
工作速度 Operating speed		1mm～500mm/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
绝缘电阻 Insulation resistance		⩾100MΩ (500VDC)
接触电阻 Contact resistance		⩽500mΩ
工频耐电压 Test voltage	不相接端子間 Between non-continuous terminals	AC500V,50/60Hz, 1min
	端子與不帶電金屬件之間 端子與地（外殼）之間 Between each terminal and other exposed metal parts Between each terminal and ground	
抗振动Vibration resistance		10～55Hz, 1.5mm雙振幅double amplitude
抗冲击Shock resistance		最小Min.: 294m/s²(30G) 接觸故障持續時間不超過1ms Contact opening max. 1 msec.
防觸電保護等級 Electric shock proof protection grade		Ⅰ 級 class
外殼防護等級 Degree protection provided by enclosure		IEC IP67（不包括外露端子部分） IEC IP67 (Excluding exposed terminals)
壽命Life		機械⩾300,000次　Mechanical ⩾300,000cycles 電氣⩾300,000次　Electrical ⩾300,000cycles

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

WS11 – □ □ □ – □ □ □ – □ □ – (□)
1 2 3 4 5 6 7 8 9

1 額定值 Ratings	01:0.1A 12VDC/50μA 5VDC 03:0.3A 16VDC/1mA 5VDC
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
3 驱动形式 Actuator forms	0:无动臂 No lever □:动臂代号
4 端子类型 Terminal types	F:焊接式端子Solder terminal P:PCB端子PCB terminal PL:左面PCB端子Left PCB terminal PR:右面PCB端子Right PCB terminal B:底部導線型Bottom wire type L:左面導線型Left side wire type R:右面導線型Right side wire type
5 动作力（max） Operating force	200:2N 150:1.5N 120:0.7N-1.2N
6 安裝構造 Mounting construction	L:左1固定銷Left 1dowel pin R:右1固定銷Right 1dowel pin A:雙面各1固定銷Each 2 for double sides dowel pin B:螺釘孔(+定位銷) DL:左2固定銷Left 2dowel pin DR:右2固定銷Right 2dowel pin C:雙面各2固定銷Each 2for double sides dowel pin W:無孔無銷Without hole and pin
7 導線式端子的導線長度（毫米數） Wire length of wire type terminal(mm)	非導線型該位置空缺 Vacant for non-wire type
8 防護等級 Portection degree	無標記 No mark :Ip67 (端子型，端子處除外 Except teminal part of terminal type) IP□□:其它等級 Other degrees
9 附加代號及導線顏色配置代號 Additional specs code and wire color code	■ 用数字或字母表示有特殊要求，如非標準端子，特殊動作特性值；外形尺寸或結構與基本型有差異。用二位阿拉伯數字表示。 Indicates that there are special requirements, such as non-standard terminals and special operating characteristics values; The dimensions or construction differ from the basic model. It is represented by two Arabic numerals. ■ 導線配置為非默認顏色： 用三個英文字母按COM、NC、NO順序表示導線顏色配置；若是常開式或常閉式開關，空缺位置用字母O表示。（顏色代號見表1）。 Wire configuration is not the default color: use three English letters in the order of COM, NC, NO to indicate the wire color configuration; If the switch is normally open or normally closed, the vacant position is indicated by the letter O. (See Table 1 for color codes).

顏色 Color	紅	白	藍	黑	綠	黃	灰	紫
代號 Code	R	W	L	B	G	M	H	P

示例example：BWR——黑白紅；BOR——黑（無）紅；RWO——紅白（無）

■ 若同時有附加規格代號和導線顏色代號，則導線顏色代號位於附加規格代號之後。

注：導線型開關的引線顏色默認配置規定如下：

If there is both an additional specification code and a conductor color code, the conductor color code comes after the additional specification code.

Note: The default lead color configuration of the wire type switch is as follows:

公共端引線COM：黑色

Common terminal wire COM: black

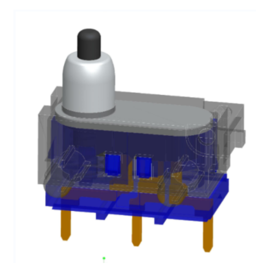
常閉端引線NC：紅色

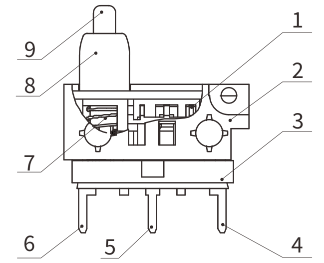
Normally closed terminal wire NC: red

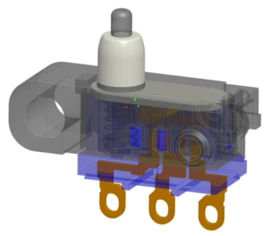
常開端引線NO：白色

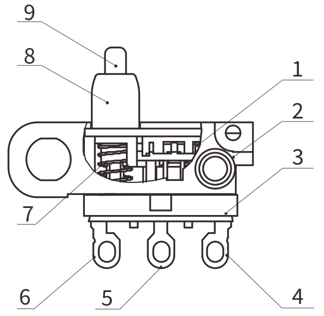
Normally opened terminal wire NO:white

◆ 内部构造图 Internal configuration drawing



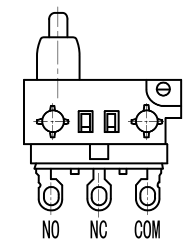
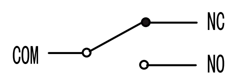
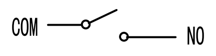
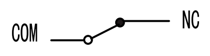




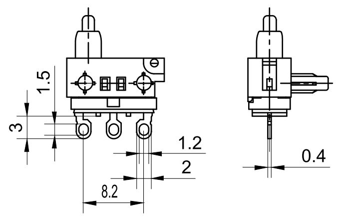
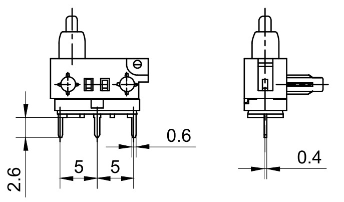


1、	可動片	Plate Moving
2、	外殼	Base
3、	底座	Case
4、	端子	Terminal
5、	常閉端子	Nc Terminal
6、	常開端子	No Terminal
7、	彈簧	Spring
8、	密封圈	Hermetic Loop
9、	按鈕	Plunger

◆ 接触形式说明图 Circuit illustration

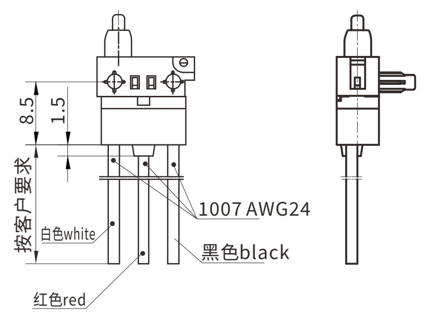
	轉換式PDT	常開式PST-NO	常閉式 SPST-NC
			

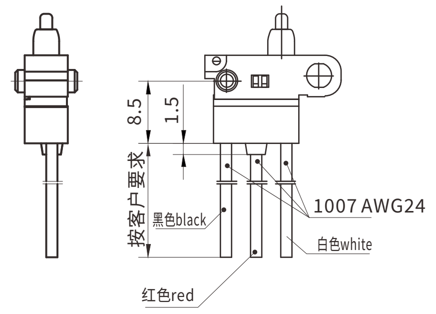
◆ 接線端尺寸 Terminal dimensions

焊接端子 Solder terminal	PCB端子 PCB terminal
	

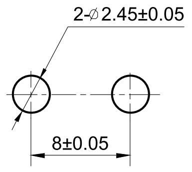
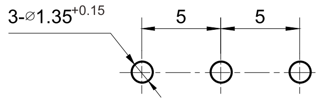
◆ 導線型外形圖 Outline drawing of wire type

底部導線型 Botton wira type

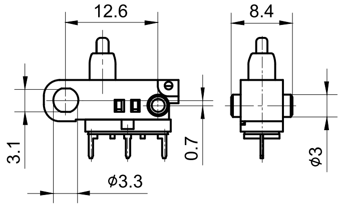
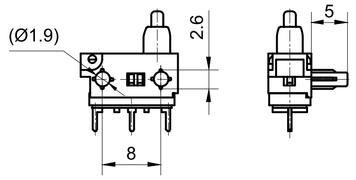
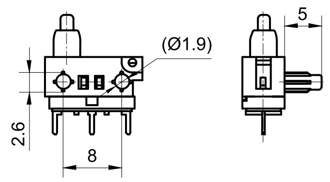
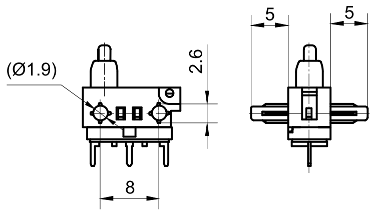
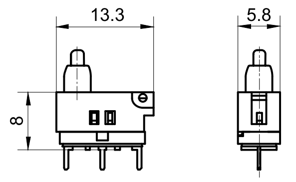




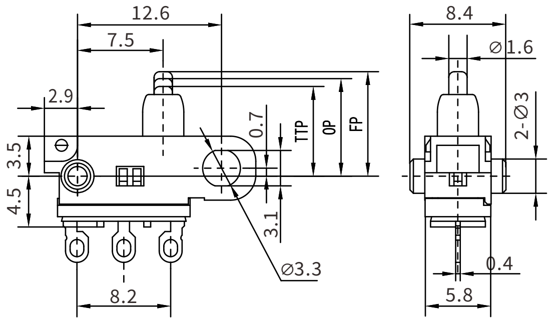
◆ 安裝孔尺寸 Mounting hole dimension

定位銷/固定銷間距 Dowel pin/fixing pin distance	直PCB端子安裝孔 Straight PCB terminal mounting hole
	

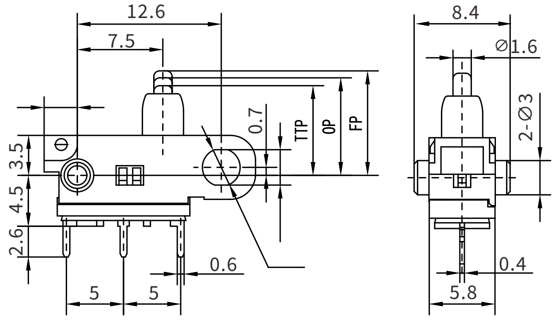
◆ 安裝構造說明圖 Mounting construction illustration

B	DL	DR
		
C	**W**	
		

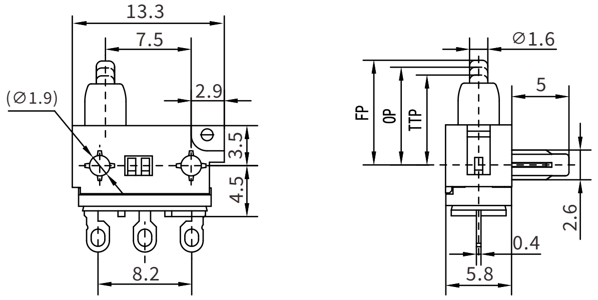
◆ 外形尺寸和動作特性 Dimensions and operating characteristics



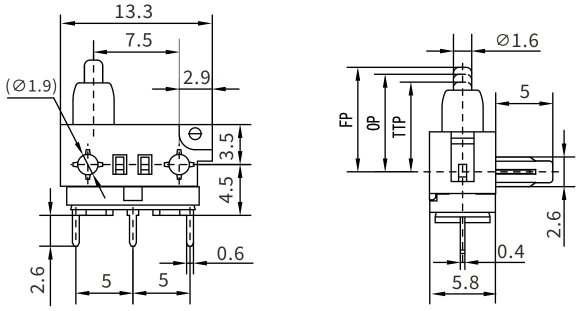
型號Model	WS11-Z0-F100B
OF (N)	1 ± 0.5
OP(mm)	8.45 ± 0.3
TTP Min(mm)	6.15
FP Max(mm)	9.3



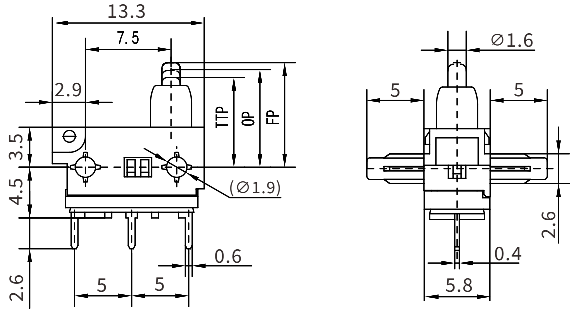
型號Model	WS11-Z0-P100B
OF (N)	1 ± 0.5
OP(mm)	8.45 ± 0.3
TTP Min(mm)	6.15
FP Max(mm)	9.3



型號Model	WS11-Z0-F100DR
OF (N)	1 ± 0.5
OP(mm)	8.45 ± 0.3
TTP Min(mm)	6.15
FP Max(mm)	9.3

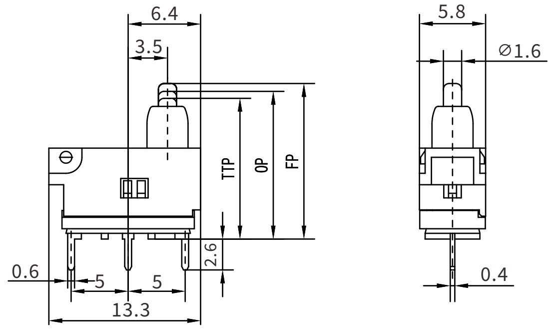


型號Model	WS11-Z0-P100DR
OF (N)	1 ± 0.5
OP(mm)	8.45 ± 0.3
TTP Min(mm)	6.15
FP Max(mm)	9.3

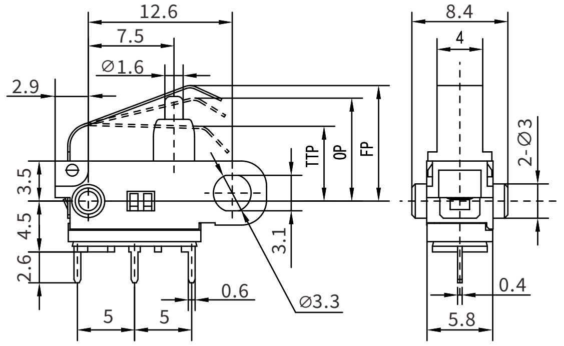


型號Model	WS11-Z0-P100C
OF (N)	1 ± 0.5
OP(mm)	8.45 ± 0.3
TTP Min(mm)	6.15
FP Max(mm)	9.3

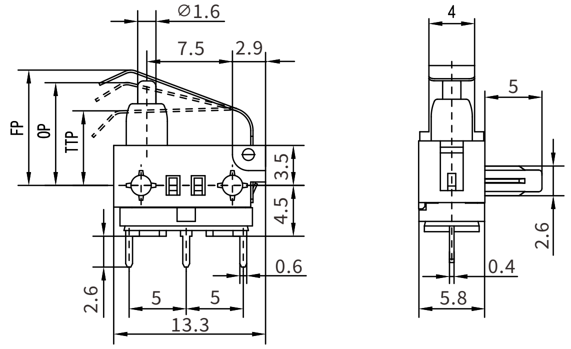
◆ **外形尺寸和动作特性** Dimensions and operating characteristics



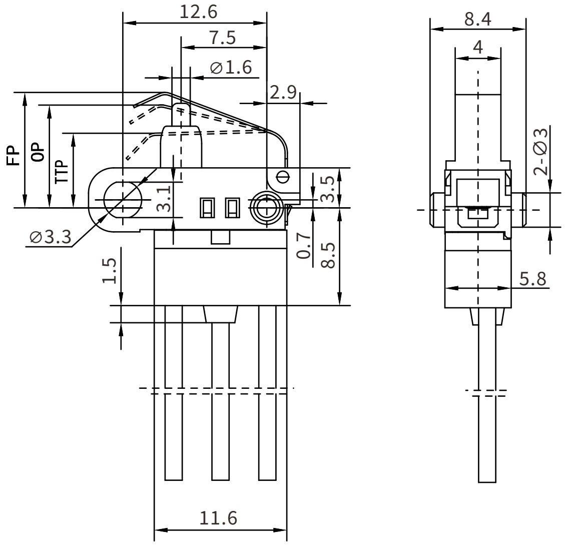
型號Model	WS11-Z0-P100W
OF (N)	1 ± 0.5
OP(mm)	12.95 ± 0.3
TTP Min(mm)	10.65
FP Max(mm)	13.8



型號Model	WS11-ZA-P300B
OF (N)	3Max
OP(mm)	9 ± 0.6
TTP Min(mm)	6.2
FP Max(mm)	10.5



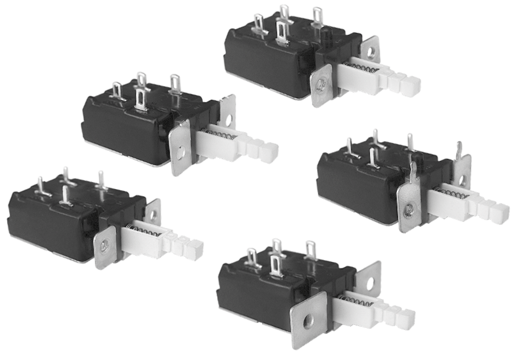
型號Model	WS11-ZA-P300DR
OF (N)	3Max
OP(mm)	9 ± 0.6
TTP Min(mm)	6.2
FP Max(mm)	10.3



型號Model	WS11-ZA-B300B
OF (N)	3Max
OP(mm)	9 ± 0.6
TTP Min(mm)	6.2
FP Max(mm)	10.3

KDC-A11 型電源開關系列 Power switch series

◆ **特點和用途** Characteristics and usage



- 具有快速動作的特點

  Quick action
- 扁平形，結構緊湊，體積小。

  Flat type, tight configuration, small size.
- 可承受大電流和浪涌電流

  Endure big current and inrush current
- 廣泛應用于彩電、音頻裝置、計算機及外圍設備，儀器儀表、電子設備等。

  Widely used in color TV, audio device, computer and its peripheral equipment, apparatus and instruments, electronic equipment etc.

◆ **技術特性** Technical Characteristics

項目 Item		特性值 Value
環境溫度 Environment temperature		-10～+85℃
相對濕度 Relative humidity		95%,40℃
額定值 Ratings		TV-8 125VAC,10GPA125/250VAC 10A125/250VAC, 4A/128A250VAC, 8A/128A250VAC
工作行程/全行程 Operating travel/full travel		2.5mm/3.5mm
動作力 Operating force		3.5～7.5N
電路 Circuit		雙刀單擲 DPST
絶緣電阻 Insulation resistance		≥100MΩ
接觸電阻 Contact resistance		≤50mΩ
耐電壓 Test voltage	同極不相接端子間 Between each terminals of the same polarity	AC2000V
	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.	AC4000V
電氣壽命 Electrical life		10,000次/cycles
質量 Weight		約12.1g Approx. 12.1g
安全認證 Safety approvals		UL、CUL、VDE、ENEC、SEMKO、DEMKO、NEMKO、FIMKO、CE、EK、CQC

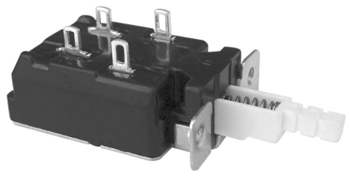
◆ 型號規格命名及含義 Model number legend and meanings

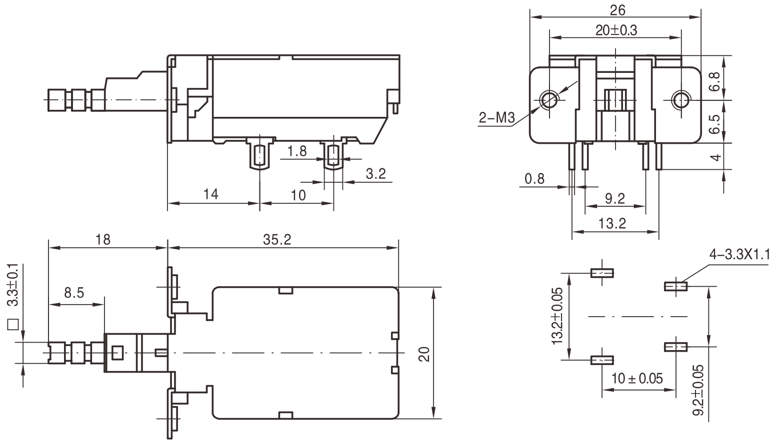
KDC–A11–□ □ □ □
1 2 3 4

1 端子類型 Terminal types	1：焊接端子 Solder terminal 2：PCB端子 PCB terminal 3：快接端子 Quick–connect terminal	**3** 蓋板支脚和 塑殼定位柱 Frame tab and case fixed pole	0：無支脚，無定位柱 No frame tab, no case fixed pole 1：有支脚，有定位柱 Frame tab，case fixed pole 2：無支脚，有定位柱 No frame tab，case fixed pole 3：有支脚，無定位柱 Frame tab, no case fixed pole
2 安裝孔類型 Mounting hole types	0：無安裝孔 No mounting hole 1：螺孔M3 Screw hole M3 2：光孔Φ3.2 HoleΦ3.2	**4** 附加代號 Additional code	用A、B、C……表示與基本型有差异或有特殊要求 A,B,C ……indicate different or special requirements with basic type

◆ 外形和安裝尺寸 Outline and mounting dimensions

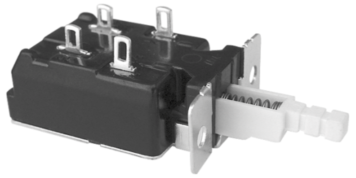
KDC–A11–110

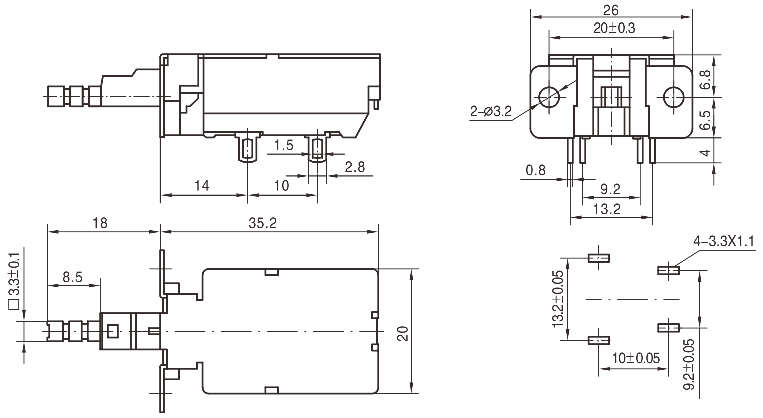




◆ 外形和安裝尺寸 Outline and mounting dimensions

KDC–A11–120





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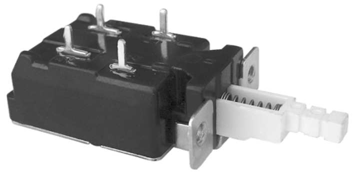
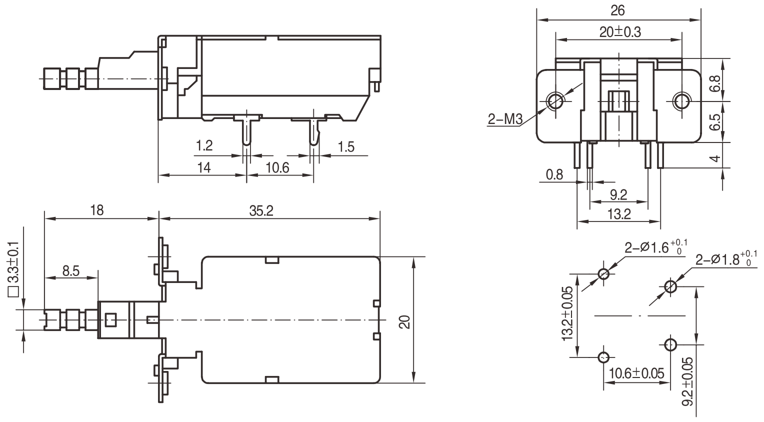
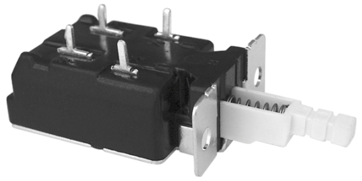
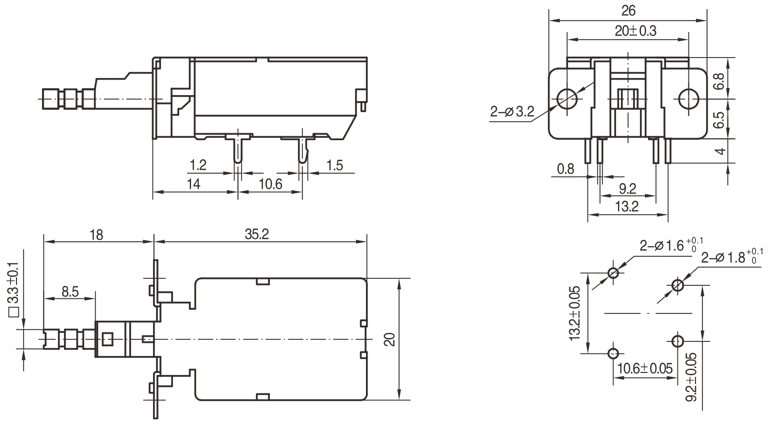


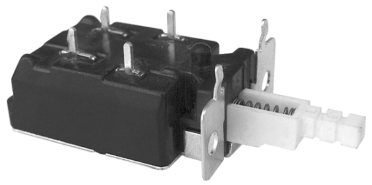


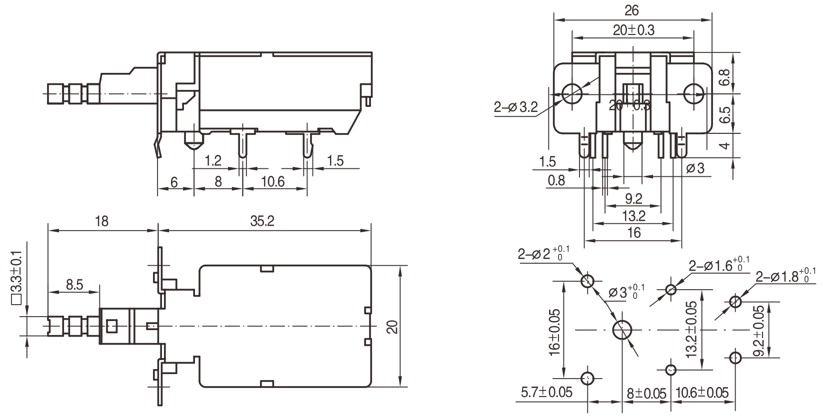
KDC–A11–220





KDC–A11–221





KDC-A04型電源開關系列 Power switch series

◆ 特點和用途 Characteristics and usage

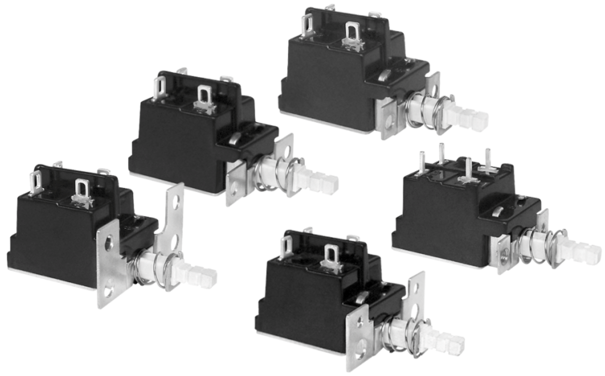
- 具有快速動作的特點

  Quick action
- 可承受大電流和浪涌電流

  Endure big current and inrush current
- 可靠性高，壽命長。

  Long life, high reliability.
- 廣泛應用于電視機、音頻裝置、計算機及外圍設備等。

  Widely used in color TV, audio device, computer and its peripheral equipment, apparatus and instruments, electronic equipment etc.



◆ 技術特性 Technical Characteristics

<table>
<tr><th colspan="2">項目 Item</th><th>特性值 Value</th></tr>
<tr><td colspan="2">環境溫度 Environment temperature</td><td>−10～+85℃</td></tr>
<tr><td colspan="2">相對濕度 Relative humidity</td><td>95%,40℃</td></tr>
<tr><td colspan="2">額定值 Ratings</td><td>TV−5 125VAC,10GPA125/250VAC,10A125/250VAC
5A/80A250VAC</td></tr>
<tr><td colspan="2">工作行程/全行程 Operating travel/full travel</td><td>2.5mm/3.5mm</td></tr>
<tr><td colspan="2">動作力 Operating force</td><td>2～8N</td></tr>
<tr><td colspan="2">電路 Circuit</td><td>雙刀單擲 DPST</td></tr>
<tr><td colspan="2">絶緣電阻 Insulation resistance</td><td>≥100MΩ</td></tr>
<tr><td colspan="2">接觸電阻 Contact resistance</td><td>≤50mΩ</td></tr>
<tr><td rowspan="2">耐電壓 Test voltage</td><td>同極不相接端子間 Between each terminals of the same polarity</td><td>AC2000V</td></tr>
<tr><td>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.</td><td>AC4000V</td></tr>
<tr><td colspan="2">電氣壽命 Electrical life</td><td>10,000次/cycles</td></tr>
<tr><td colspan="2">質量 Weight</td><td>約16g Approx.16g</td></tr>
<tr><td colspan="2">安全認證 Safety approvals</td><td>UL、CUL、VDE、ENEC、SEMKO、DEMKO、NEMKO、FIMKO、CE、EK、CQC</td></tr>
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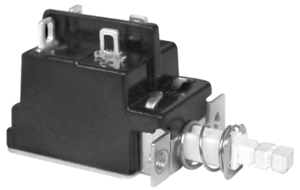
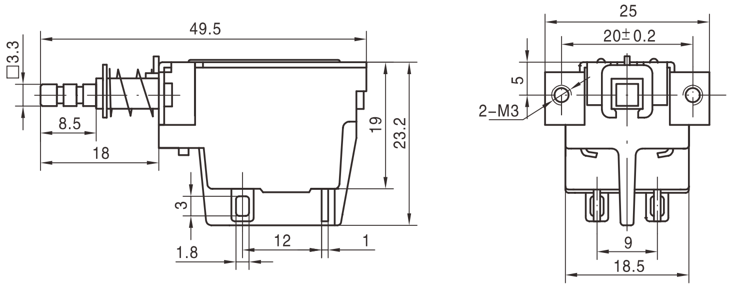
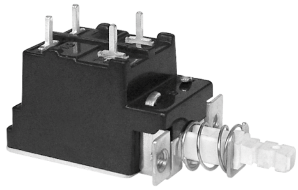
◆ 外形和安裝尺寸 Outline and mounting dimensions

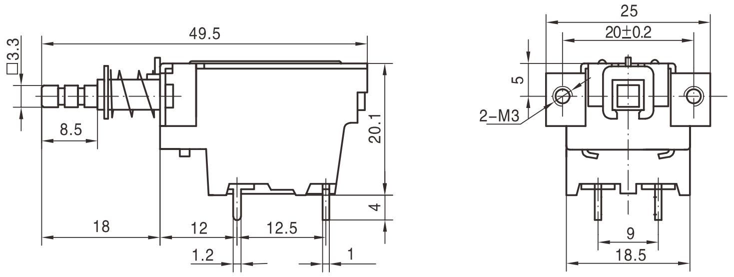
KDC−A04−001



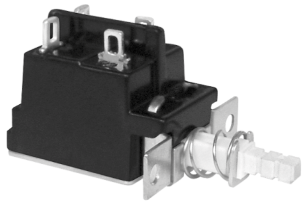


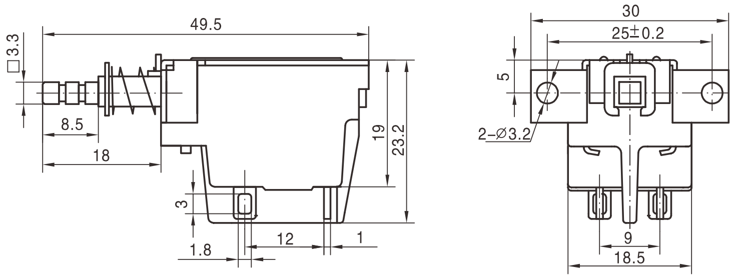
KDC−A04−002



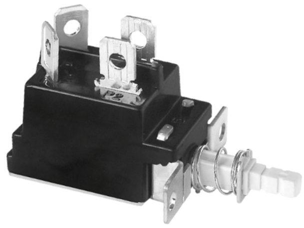


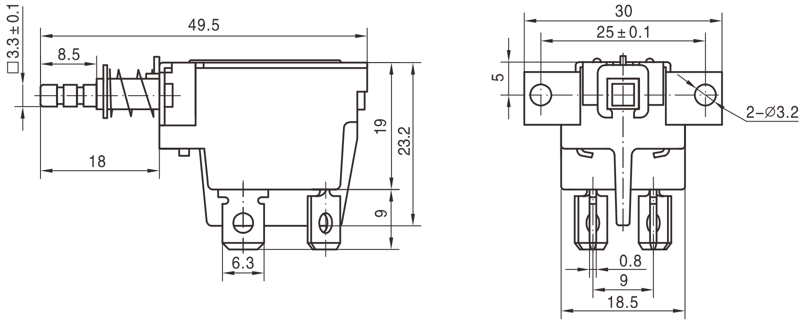
KDC−A04−004



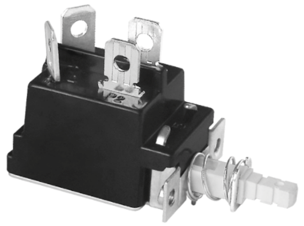


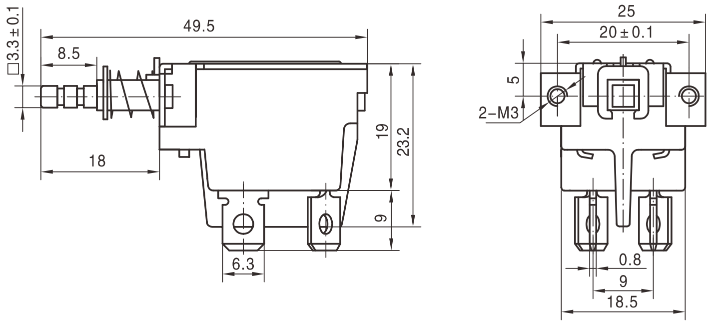
KDC−A04−007





KDC−A04−006





PS4型電源開關系列 Power switch series

◆ 特點和用途 Characteristics and usage

- 具有快速動作的特點

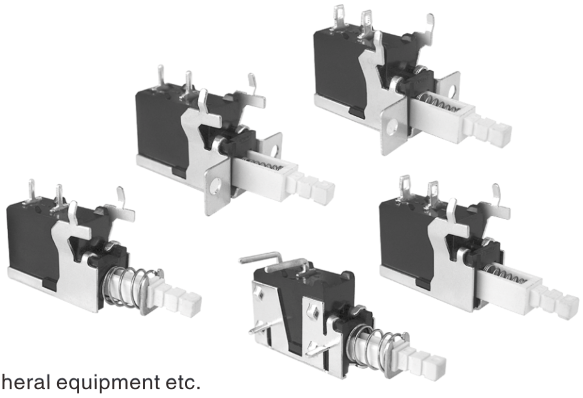
  Quick action

- 可承受大電流和浪涌電流

  Endure big current and inrush current

- 廣泛應用于電視機、音頻裝置、計算機及外圍設備等。

  Widely used in color TV, audio device, computer and its peripheral equipment etc.



◆ 技術特性 Specifications

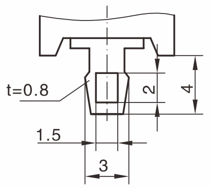
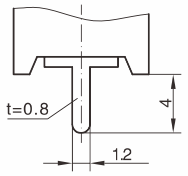
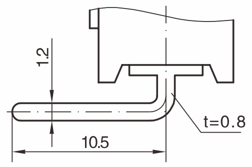
項目 Item		特性值 Value
環境溫度 Environment temperature		–10～+85℃；0～125℃
相對濕度 Relative humidity		95%,40℃
額定值 Ratings		TV–5 125VAC,10GPA125/250VAC,10A125/250VAC 8A/128A250VAC
工作行程/全行程 Operating travel/full travel		2.5mm/3.5mm
動作力 Operating force		2～6N
電路 Circuit		單刀單擲 SPST
絶緣電阻 Insulation resistance		≥100MΩ
接觸電阻 Contact resistance		≤50mΩ
耐電壓 Test voltage	同極不相接端子間 Between each terminals of the same polarity	AC2000V
	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.	AC4000V
電氣壽命 Electrical life		10,000次/cycles
質量 Weight		約7.8 g Approx.7.8g
安全認證 Safety approvals		UL、CUL、VDE、ENEC、TUV、SEMKO、DEMKO、NEMKO、FIMKO、CE、EK、CQC

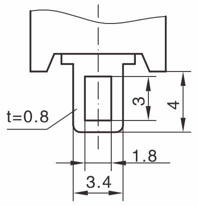
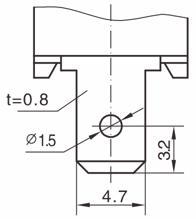
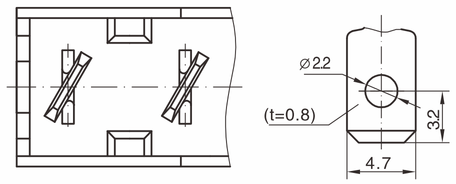
◆ 型號規格命名及含義 Model number legend and meanings

PS4–□ □ □ □ □
1 2 3 4 5

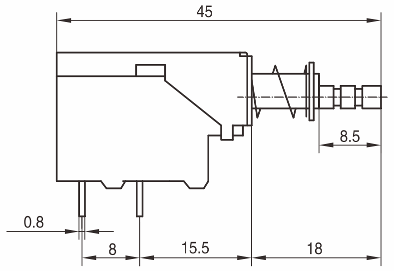
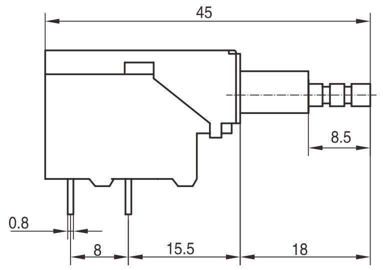
1 外形特徵 Outline characteristic	A：外彈簧形 Outside spring B：内彈簧形 Inside spring (見説明圖 See illustration)
2 端子類型 Terminal types	1：焊接端子(孔1.5×2) Solder terminal(hole 1.5×2) 2：PCB端子 PCB terminal 4：側面PCB端子 Side PCB terminal 5：焊接端子(孔1.8×3) Solder terminal(hole 1.8×3) 6：快接端子#187 Quick–connect terminal#187 7：快接端子#187，扭轉45° Quick–connect terminal#187, torsion 45° (見説明圖 see illustration)
3 安裝孔類型 Mounting hole types	0：無安裝孔 No mounting hole 1：螺孔M3 Screw hole M3 2：光孔Φ3.2 HoleΦ3.2
4 蓋板形狀特徵 Frame tab shape features	0：無支脚 No frame tab 1：支脚尺寸2.6 Frame tab dimension 2.6 2：支脚尺寸5 Frame tab dimension 5 3：支脚尺寸6.8 Frame tab dimension 6.8 4：右側卧 Right lain 5：左側卧 Left lain
5 附加代號 Additional code	用A、B、C……表示與基本型有差异或有特殊要求（如無鎖開關用W表示） A,B,C ……indicate different or special requirements with basic type(if not lockswitch indicate with W)

◆ 接綫端尺寸 Terminal dimensions

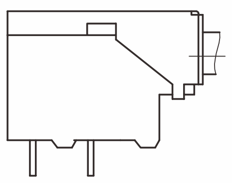
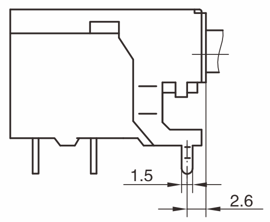
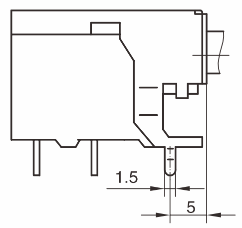
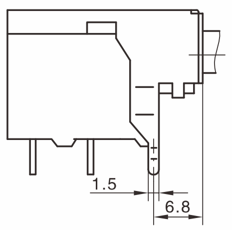
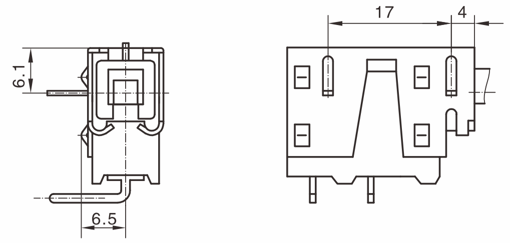
端子種類 Terminal types	1	2	4
端子尺寸 Terminal dimensions			

端子種類 Terminal types	5	6	7
端子尺寸 Terminal dimensions			

◆ 外形特徵圖 Outline characteristic drawing

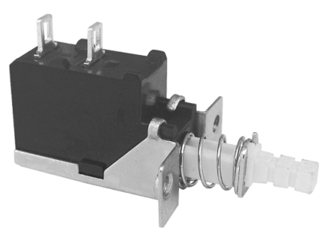
外形特徵A Outline characteristic A	外形特徵B Outline characteristic B
	

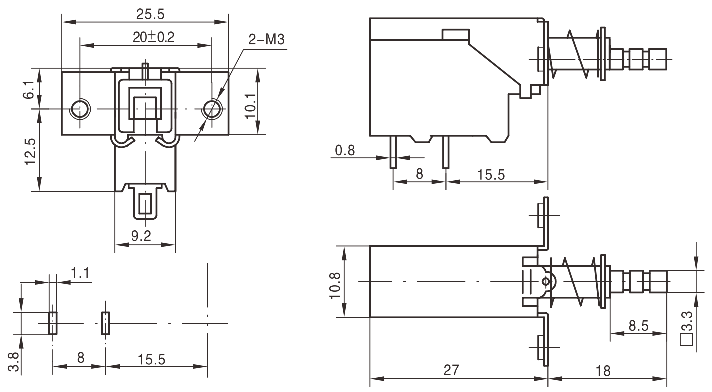
◆ 蓋板特徵圖 Frame tab characteristic drawing

蓋板特徵號 Frame tab characteristic code	0	1	2
蓋板特徵 Frame tab characteristic			
蓋板特徵號 Frame tab characteristic code	3	5	
蓋板特徵 Frame tab characteristic			

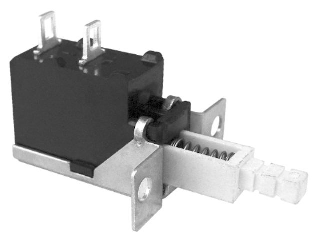
◆ 外形和安裝尺寸 Outline and mounting dimensions

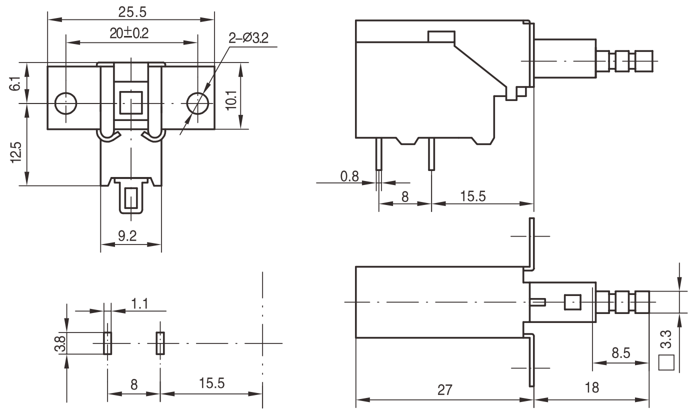
PS4–A510



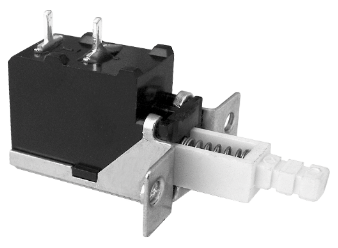


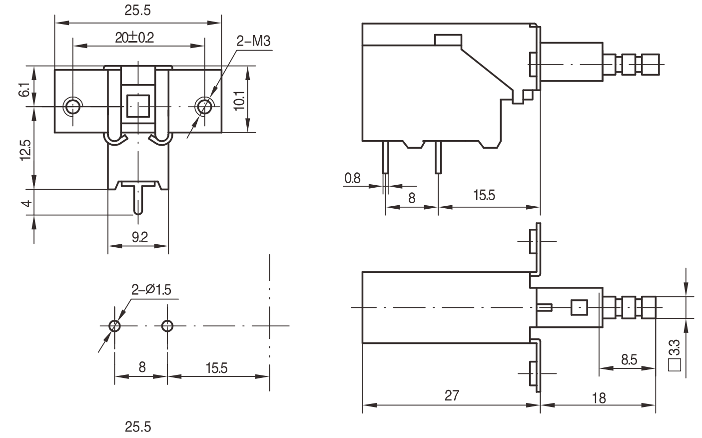
PS4–B520



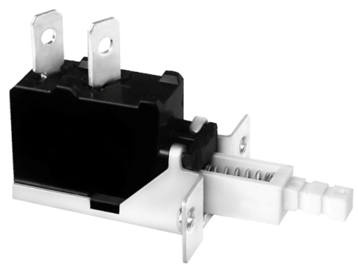


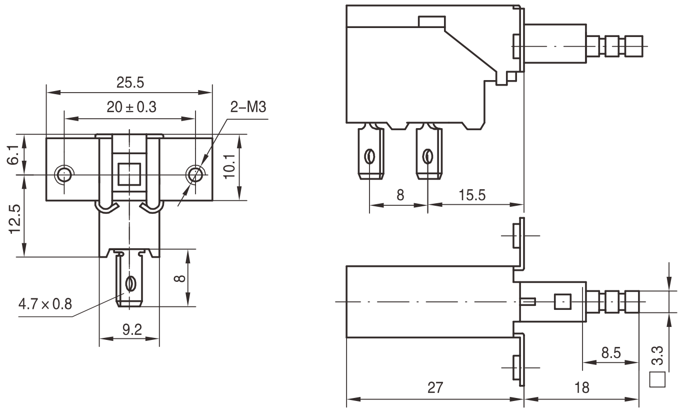
PS4–B210





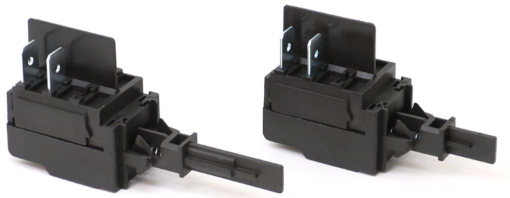
PS4–B710





PS5型電源開關系列 Power switch series

◆ 特點和用途 Characteristics and usage



- 可承受大電流和電機負載
  Endure big current and inrush current
- 應用于洗碗機等家用電器
  Used in dishwasher and other home appliances

◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
環境溫度 Environment temperature		or 0～105℃或0～125℃
相對濕度 Relative temperature		95%,40℃
工作行程/全行程 Operating travel/full travel		4.5mm/7.5mm
動作力 Operating force		12±2N
絶緣電阻 Insulation resistance		⩾100MΩ
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	AC2000V
	帶電金屬零件與地(外殻)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.	AC4000V
電氣壽命 Electrical life		10,000次/cycles
安全認證 Safety approvals		UL、CUL、TUV、ENEC、DEMKO、CE、CQC

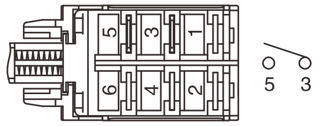
◆ 型號規格命名及含義 Model number legend and meanings

PS5 □–□ □ □ □–□
1 2 3 4 5 6

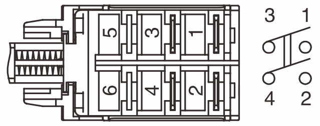
1 溫度等級 Degrees of temperature	無標記 No mark:T125(TUV) T105(UL)	**4** 端子型式 Terminal types	0：焊接端子 Solder terminal 1：250快接端子 Quick–connect terminal 2：其它端子 Other terminal
2 額定值 Ratings	16:16A125/250VAC,16GPA125/250VAC 16(8)A125/250VAC 10:10GPA125/250VAC,10A125/250VAC 10(6)A125/250VAC	**5** 推杆代號 Rod code	A B C 外形特徵見附圖 Appearance characteristic see attached drawing
3 電路轉換型式 Circuit conversion type	A:單極 single pole3–5 B:雙極 double pole 3–1/4–2 C:單極 single pole 4–6 D:單極 single pole 4–2 E:單極 single pole 3–1 F:雙極 double pole 3–5/4–6 G:雙極 double pole1 –3,3–5/2–4,4–6 H:雙極 double pole 1–3/ 4–6 J:雙極 double pole 2–4/ 3–5 K:單極 single pole 2–4,4–6	**6** 附加代號 Additional code	用于表明特殊要求 Used to indicate special requirement

◆ 轉換型式説明圖 Conversion forms illustration

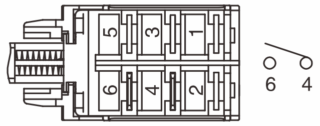
CIRCUIT DIAGRAM A



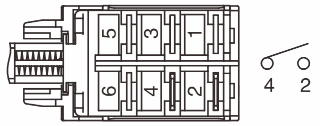
CIRCUIT DIAGRAM B



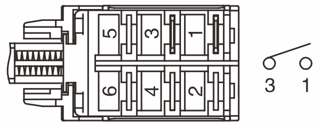
CIRCUIT DIAGRAM C



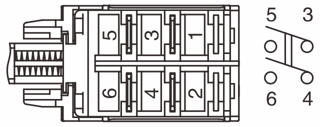
CIRCUIT DIAGRAM D



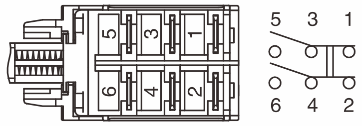
CIRCUIT DIAGRAM E



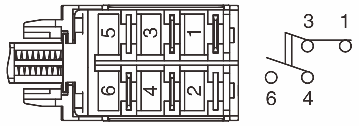
CIRCUIT DIAGRAM F



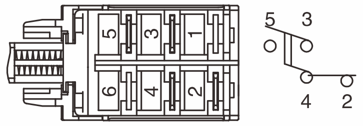
CIRCUIT DIAGRAM G



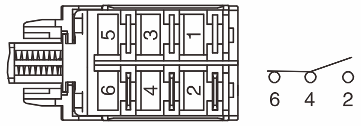
CIRCUIT DIAGRAM H



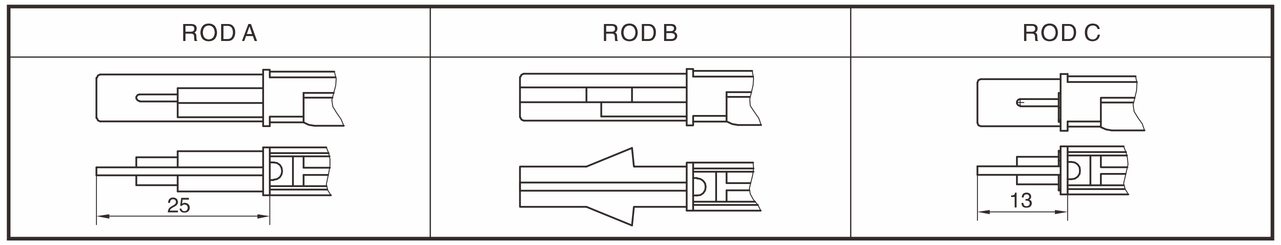
CIRCUIT DIAGRAM J



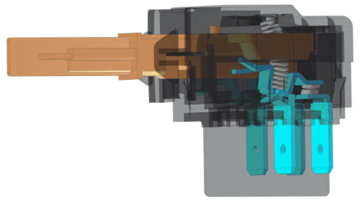
CIRCUIT DIAGRAM K

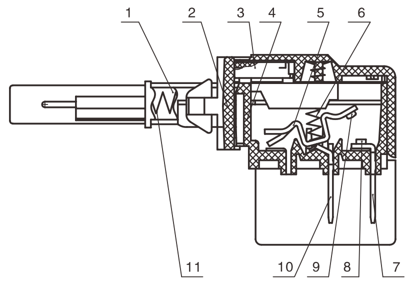


◆ **推杆特徵圖** Rod characteristics drawing



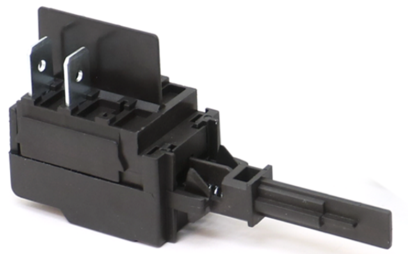
◆ **内部構造圖** Internal configuration drawing

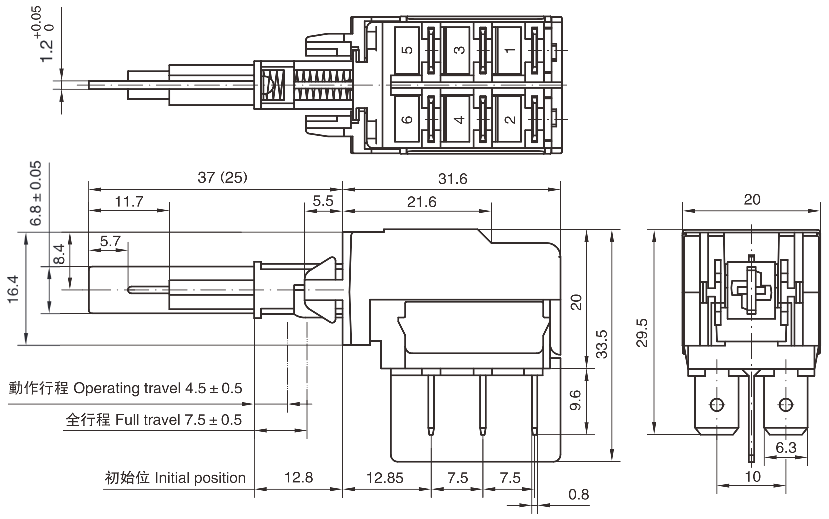




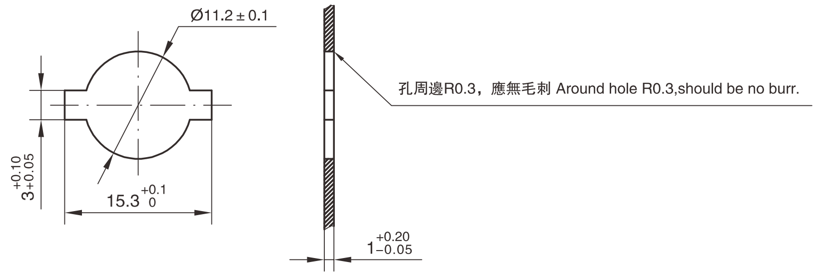
1:	推杆	Rod
2:	外殼	Case
3:	滑塊	Slippage piece
4:	基座	Base
5:	可動片	Moving piece
6:	彈簧	Spring
7:	静接觸脚	Static connect terminal
8:	電觸點	Contact
9:	電觸點	Contact
10:	静接觸脚	Static connect terminal
11:	復位彈簧	Spring

◆ **外形及安裝尺寸** Outline and mounting dimensions





◆ **安裝孔尺寸** Mounting hole dimensions



PS6 型按鈕開關系列　Button switch series

◆ **特點和用途** Characteristics and usage

- 外形美觀，結構簡單 ，具有鎖定功能，接觸穩定可靠。
  Nice appearance, simple structure,can be locked; stable and reliable contact
- 應用于家用電器、電動工具、燈具、玩具。
  Can be used in home appliances, electric tools, lamps and lanterns, toys.

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

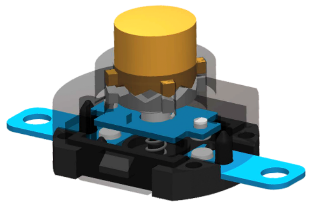
PS6 −□ □−□ □−□
1 2 3 4 5

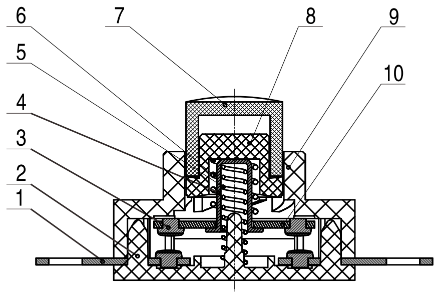
1 額定值 Ratings	B：10(3)A250VAC A：3(1)A250VAC F：16(4)A125VAC G：6(2)A125VAC	***4*** 按鈕外形 Button outside	G：高 Tall A：短 Short B：扁 Flat
2 功能 Function	無標記：鎖定 No mark:lock M：無鎖 No lock		
3 端子型式 Terminal types	1：5.0×0.5 水平Horizontal 2：5.0×0.5垂直Vertical 3：2.8×0.5垂直Vertical 6：1.5×0.5垂直Vertical 7：2.8×0.5 水平Horizontal 8：4.7×0.5垂直Vertical 9：4.7×0.5水平Horizontal	***5*** 附加代號 Additional code	用于表明特殊要求 Used to indicate special requirement

◆ **技術特性** Technical Characteristics

項目 Item		特性值 Value
温度等級 Degree of temperature		T85； T105
動作行程 Operating travel		1.8mm ± 0.2mm
全行程 Total travel		3.2mm ± 0.2mm
鎖定行程 Lock travel		3mm ± 0.2mm
動作力 Operating force		5.8N−8.6N
絶緣電阻 Insulation resistance		≥ 100M Ω
接觸電阻 Contact resistance		≤ 50 m Ω
耐電壓 Test voltage	同極不相接端子間 Between each terminals of the same polarity	AC1000V
	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.	AC1500V
電氣壽命 Electric life		1E4 次/cycles
安全認證 Safety approvals		TUV、CE、CQC

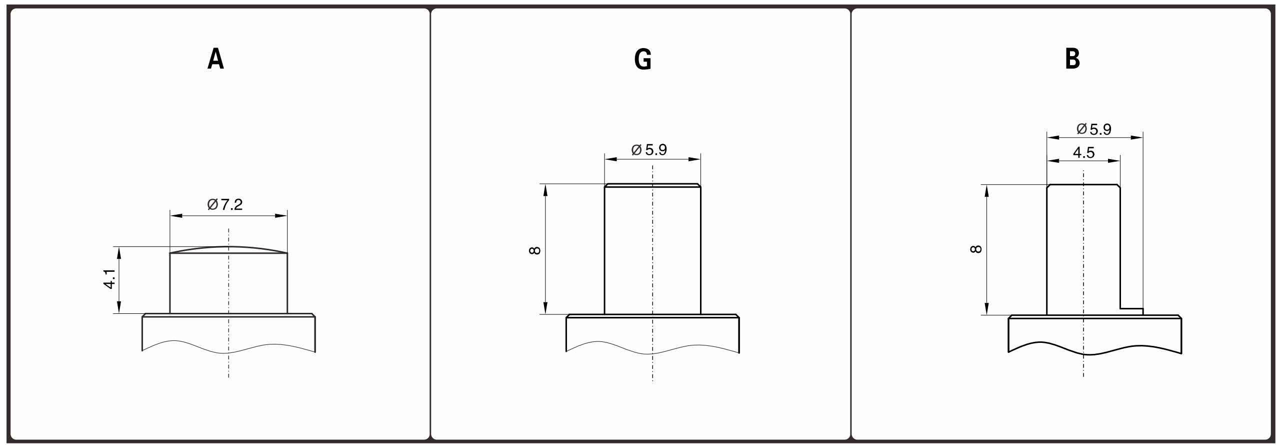
◆ 内部構造圖 Internal configuration drawing



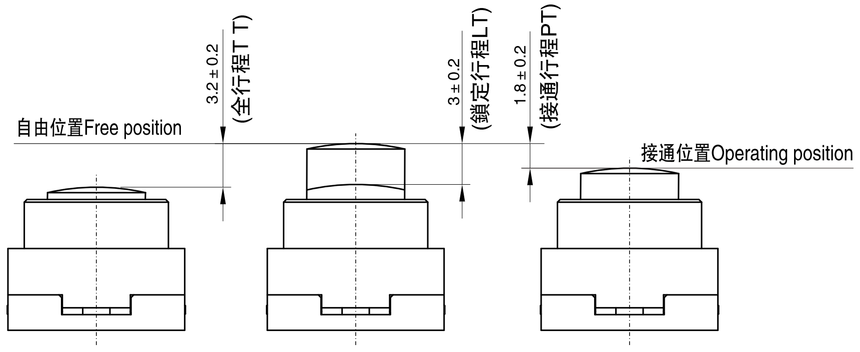


1:	端子	Terminal
2:	基座	Base
3:	電觸點	Contact
4:	芯軸	Mandrel
5:	壓簧	Spring
6:	壓簧	Spring
7:	按鈕	Button
8:	轉軸	Rotation shaft
9:	蓋	Cover
10:	動觸片	Moving piece

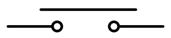
◆ 按鈕外形圖 Button shape drawing



◆ 動作特性圖 Operating characteristics drawing

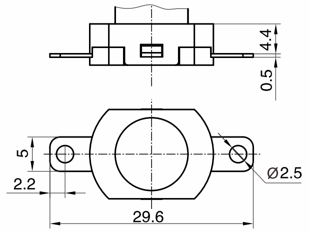


電路圖
Circuit diagram

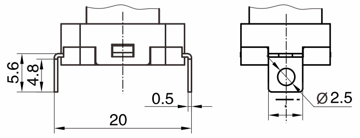


◆ 接綫端配置及尺寸 Connect terminals collocation and dimensions

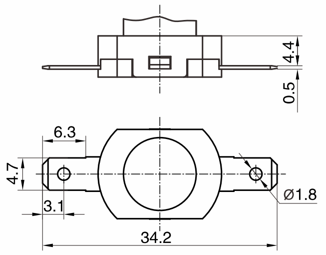
5.0×0.5 水平Horizontal



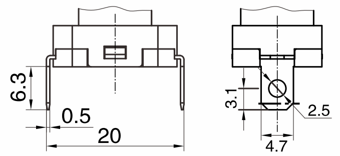
5.0 × 0.5 垂直Vertical



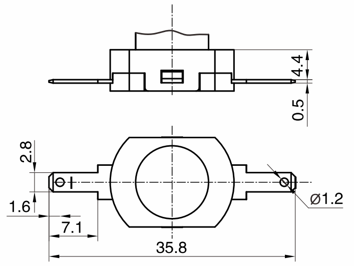
4.7×0.5 水平Horizontal



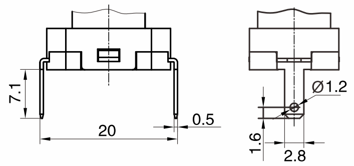
4.7 × 0.5 垂直Vertical



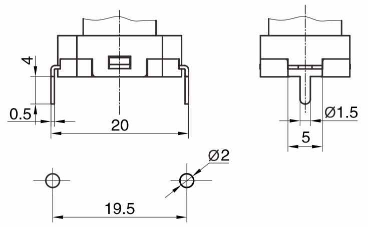
2.8 × 0.5 水平Horizontal



2.8 × 0.5 垂直Vertical

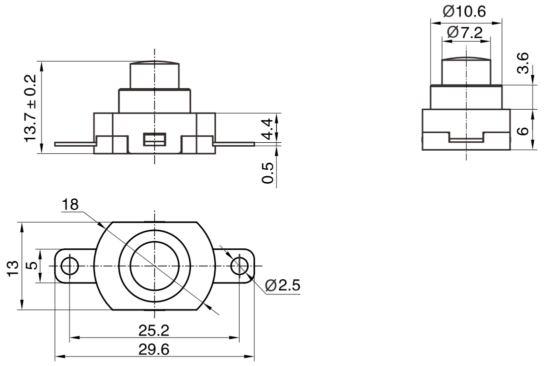


1.5×0.5 垂直 Vertical

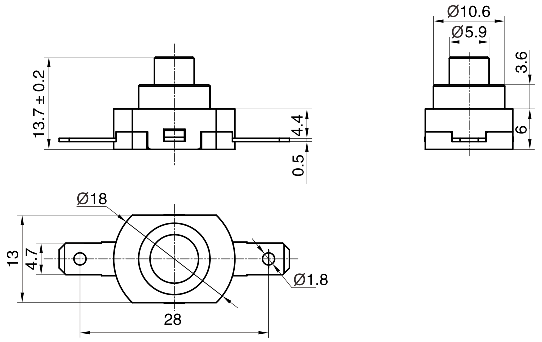


◆ **外形和安裝尺寸** Outline and mounting dimensions

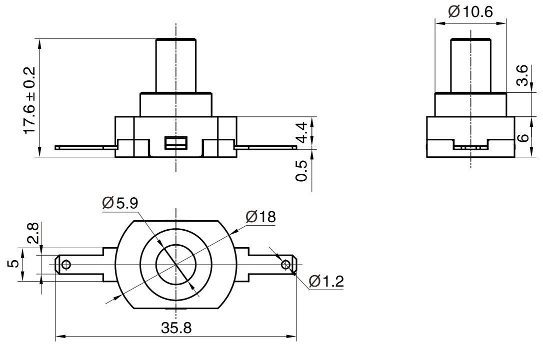
PS6–□□–1A



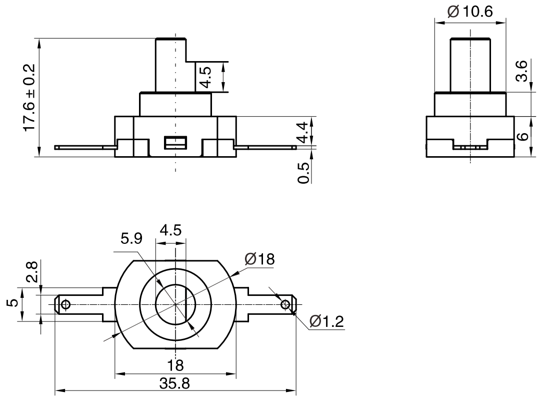
PS6–□□–9A



PS6–□□–7G

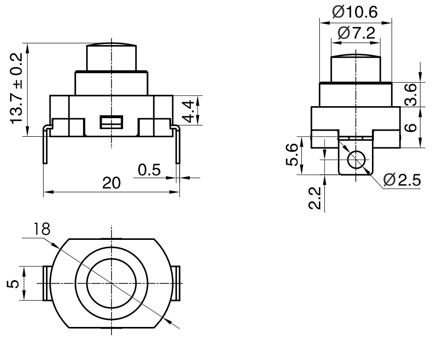


PS6–□□–7B

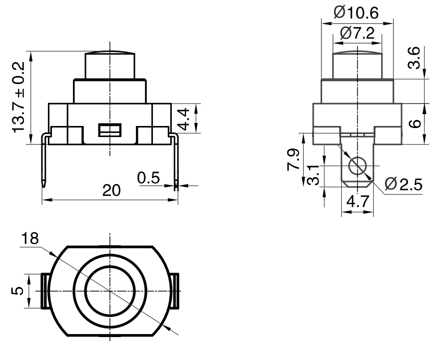


◆ **外形尺寸圖** Shape dimensional drawing

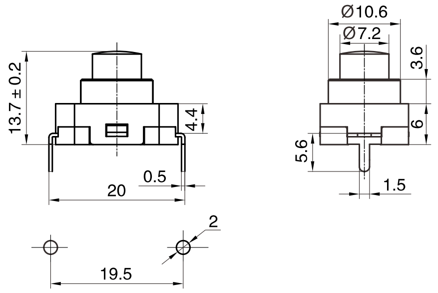
PS6–□□–2A



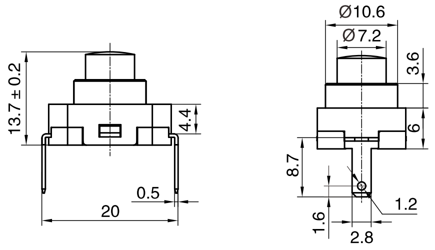
PS6–□□–8A



PS6–□□–6A



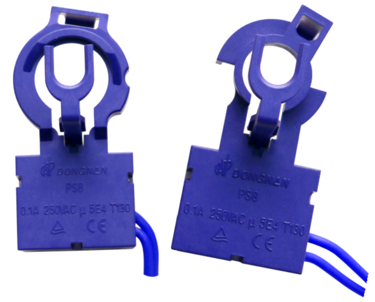
PS6–□□–3A



PS8型按鈕開關系列 Button switch series

◆ 特點和用途 Characteristic and usage

- 結構簡單可靠，安裝方便，快速連接。
  Simple and reliable structure, easy installation, quick connection.
- 具有不同的驅動杆，驅動方式靈活。
  With different driving rod, flexible driving mode.
- 可進行多個開關的組合連接。
  A combination of multiple switches can be connected.
- 用于各種燃氣竈具。
  Used for all kinds of gas cooker.



◆ 技術特性 Specifications

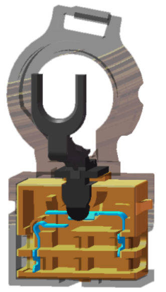
項目 Item	特性值 Value
溫度等級 Degree of temperature	T130
額定值 Rating	0.1A 250VAC μ
動作力 Operating force	8.5N max
絶緣電阻 Insulation resistance	≥100MΩ (500VDC)
接觸電阻 Contact resistance	≤5Ω
耐電壓 Test voltage	AC1500V ,50/60Hz,1min
壽命 Life	電氣≥50,000 次　Electrical ≥ 50,000cycles
安全認證 Safety approvals	TUV、CE、UL

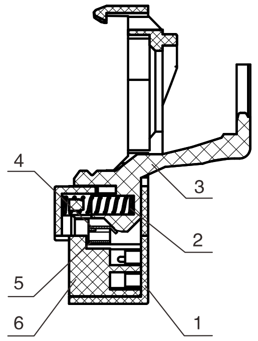
◆ 型號規格命名及含義 Model number legend and meanings

PS8 –□–(□)
　　　1　　2

1 外形特徵 Outline characteristic	A:U形推杆短卡扣 B:直形推杆短卡扣 C:U形推杆長卡扣 D:直形推杆長卡扣 A:U plunger short buckle B:Straight plunger short buckle C:U plunger long buckle D:Straight plunger long buckle (見説明圖See illuminations)	**2** 附加規格代號 Additional spec numbers	用兩位阿拉伯數字01、02……表示其與基本型有差別，或顧客有特殊要求。 With two Arabic numerals 01, 02... Indicates that it is different from the basic model, or the customer has special requirements.

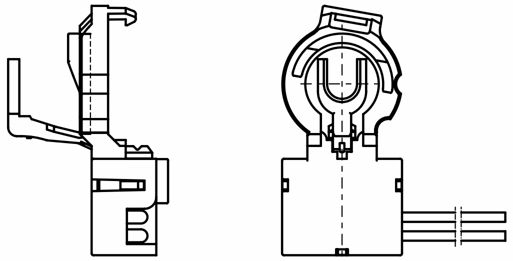
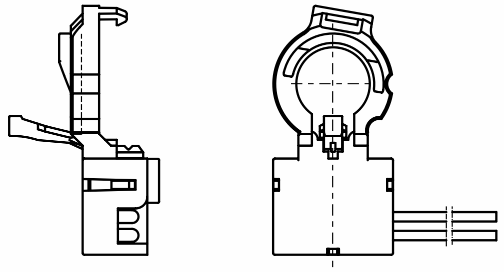
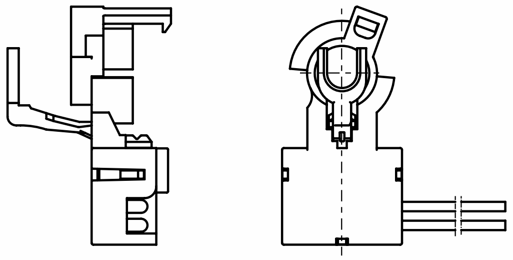
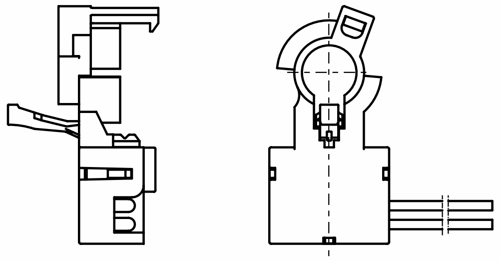
◆ 內部構造圖 Internal configuration drawing





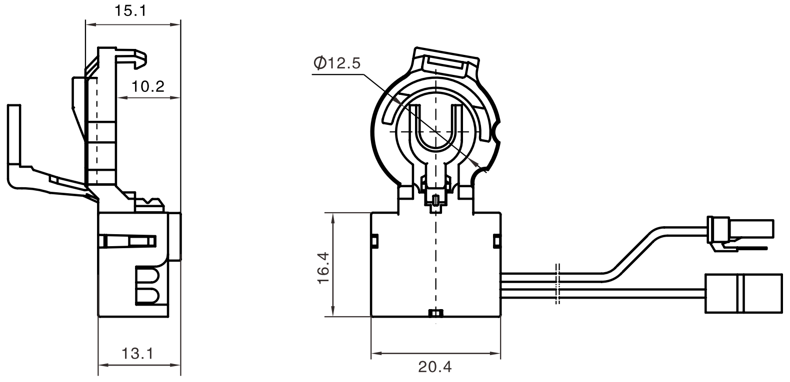
1: 蓋	Base
2: 彈簧	Spring
3: 推杆	Plunger
4: 可動片	Moving piece
5: 端子	Terminal
6: 底座	Case

◆ 外形特徵説明圖 Outline characteristic illustration

A U形推杆短卡扣 U plunger short buckle	
B 直形推杆短卡扣 Straight plunger short buckle	
C U形推杆長卡扣 U plunger long buckle	
D 直形推杆長卡扣 Straight plunger long buckle	

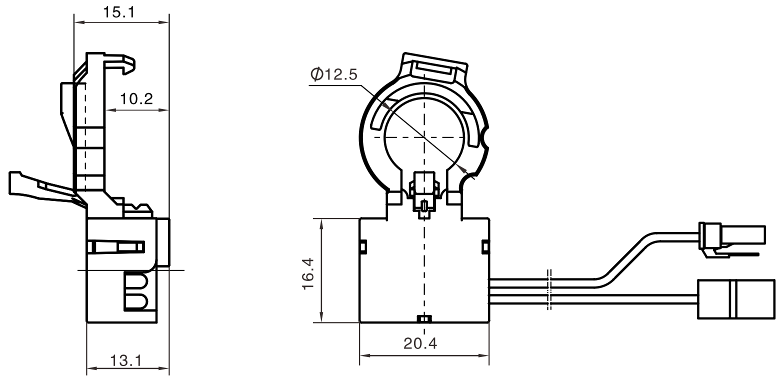
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

PS8–A–□



型 號 Model	PS8–A–□
OF Max(N)	8.5
OP(mm)	15.7 ± 0.5
FP Max(mm)	17 ± 0.2
TTP (mm)	14 ± 0.3

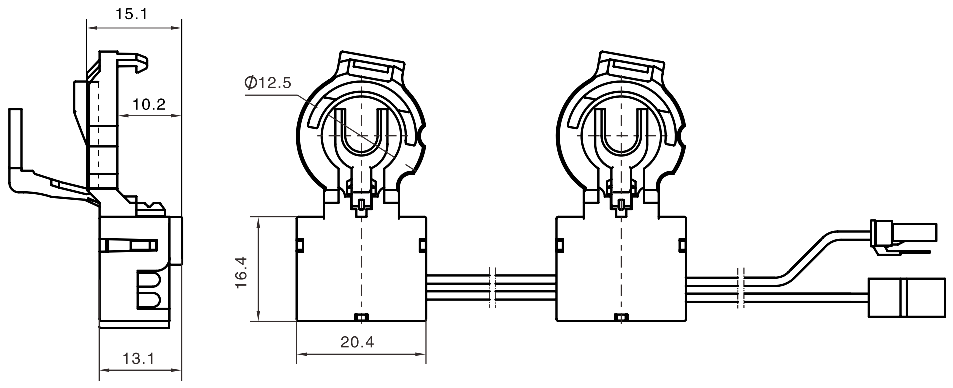
PS8–B–□



型 號 Model	PS8–B–□
OF Max(N)	8.5
OP(mm)	13.8 ± 0.5
FP Max(mm)	15.7 ± 0.2
TTP (mm)	12 ± 0.3

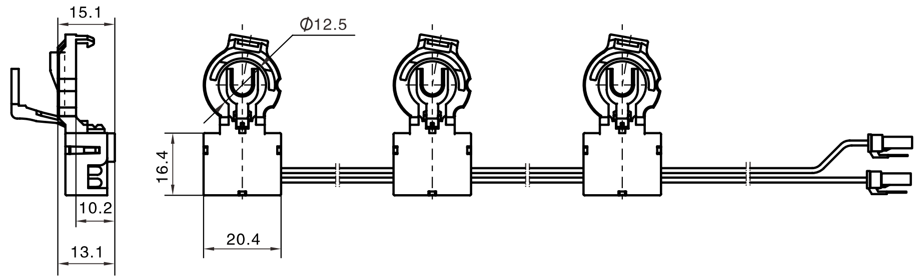
◆ 多聯開關外形尺寸 Multiple–switch dimensions

PS8/2–BG–□–□

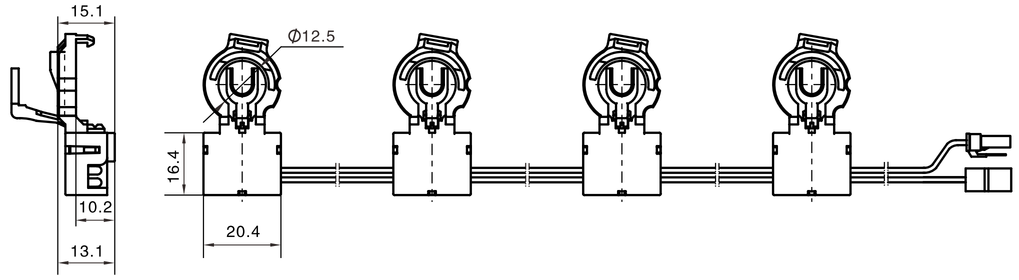


◆ 多聯開關外形尺寸 Multiple–switch dimensions

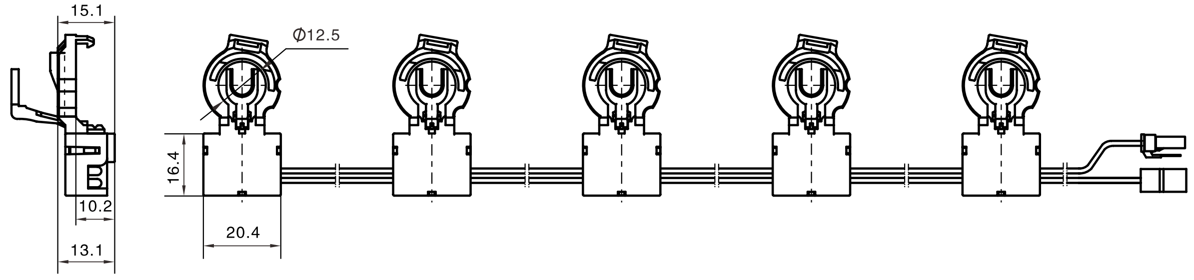
PS8/3–AB–□–□



PS8/4–AB–□–□



PS8/5–AB–□–□



注：1)多聯開關組合按特定命名方法確定型號規格
Note: 1)thetypespecificationofmulti–connectionswitchcombinationisdetermined
byspecificnamingmethod
2)多聯開關的動作特性值取决于單個開關
2)thetypespecificationofmulti–connectionswitchcombinationisdetermined
byspecificnamingmethod

PS9型按鈕開關系列 Button switch series

◆ 特點和用途 Characteristics and usage

- 壽命長、可靠性高、接觸穩定可靠；廣泛應用于家用電器、冰箱和照明等。
  Long Life, high reliability, contact stability and reliability; widely used in home appliances, refrigerators and lighting and etc.
- 點接觸穩定可靠
  Stable and reliable contact

◆ 技術特性 Technical Characteristics

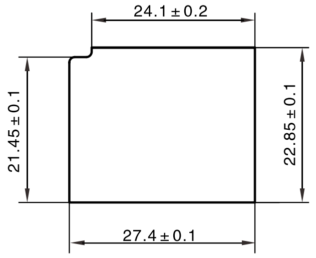
項目 Item		特性值 Value
環境溫度 Environment temperature		-40～+85℃
工作速度 Operating speed		30mm～600mm/s
工作頻率 Operating frequency		機械 60次/min;電氣 15次/min Mechanical 60 cycles/min;Electrical 15 cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ
耐電壓 Test voltage	同極不相接端子間 Between terminals 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.	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 Cover protection degree		IEC IP54
電氣壽命 Electrical Life		≥50,000次; cycles
機械壽命 Mechanical Life		≥500,000次; cycles

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

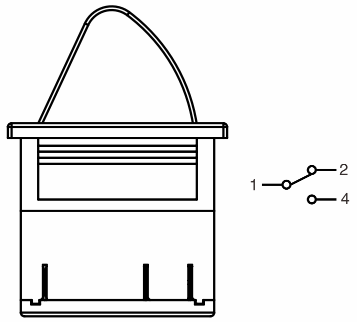
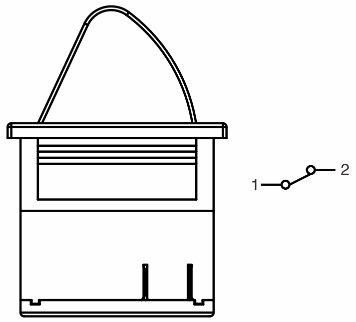
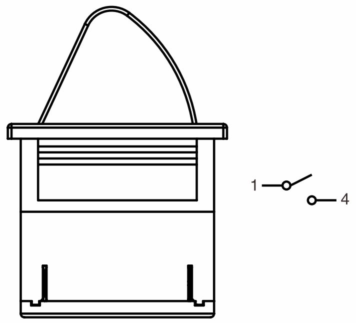
PS9 －□ □ －(□)
1 2 3

1 接觸形式 Circuit	Z：轉換式 SPDT T：常閉式 SPST-NO
2 端子類型 Terminal types	1：187快接端子187# Quick-connect terminal 2：其它端子 Other terminals
3 附加規格代號 Additional specs code	特殊要求（用兩位阿拉伯數字表示） Special Requirements (Shows as Arabic numerals or letters)

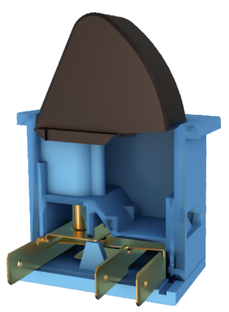
◆ 安裝孔尺寸 Mounting hole dimension

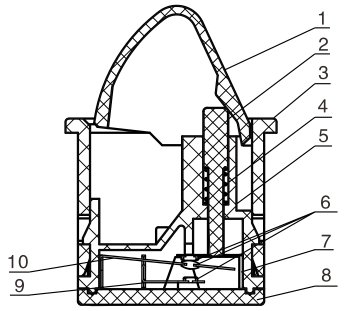


◆ 接觸形式説明圖 Circuit illustration

轉換式 SPDT	常開式 SPST-NO	常閉式 SPST-NC
		

PS9

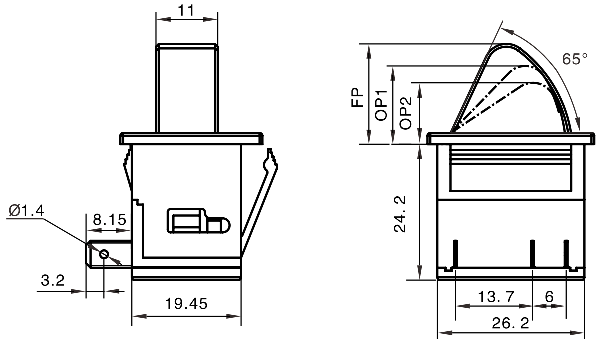




1:	按鈕	Plunger
2:	按鈕	Plunger
3:	外殼	Cover
4:	壓簧	Spring
5:	底座	Case
6:	電觸點	Contact
7:	常閉端子	NC terminal
8:	底蓋	Bottom cap
9:	常開端子	NO terminal
10:	可動片	Moving piece

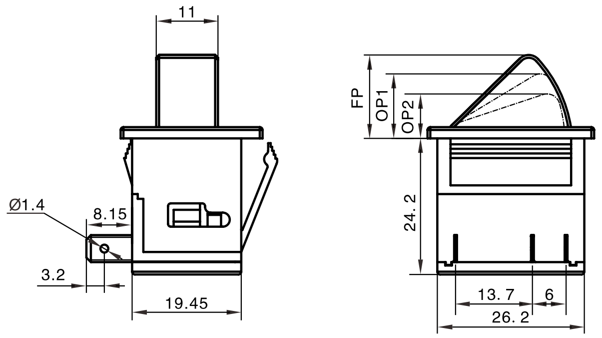
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

PS9–Z1–02
(A型按扭,標準款 Plunger type A ,standard type)



參數 Parameters	
FP Max(mm)	19.0
OP1 (mm)	14.0 ± 1.5
OF1 Max(N)	0.7
OP2 (mm)	11.0 ± 2.0
OF2 Max(N)	1.0

PS9–Z1–B
(B型按扭 Plunger type B)



參數 Parameters	
FP Max(mm)	15.2
OP1 (mm)	11.5 ± 1.5
OF1 Max(N)	0.7
OP2 (mm)	8.0 ± 2.0
OF2 Max(N)	1.0

PS12

PS12型按扭开关系列 Button switch series

◆ 特点和用途 Characteristics and usage

- 寿命长、可靠性高、接触稳定可靠；广泛应用于家用电器、冰箱和照明等。
  Long Life, high reliability, contact stability and reliability; widely used in household appliances, refrigerators, lighting and etc.
- 点接触稳定可靠
  Stable and reliable contact.

◆ 技術特性 Technical Characteristics

項目Item		特性值 Value
環境溫度Environment temperature		-40℃～+85℃
工作速度Operating speed		30mm/s～600m/s
工作頻率Operating Frequency		機械 60次/min; 電氣15次/min Mechanical 60 cycles/min; electrical 15 cycles/min
絕緣電阻 Insulation resistance		⩾100MΩ (500VDC)
接觸電阻 Contact resistance		⩽100mΩ
工頻耐電壓 Test voltage	不相接端子間 Between non connected terminals	AC500V,50/60Hz, 1min
	端子與不帶電金屬件之間 端子與地(外殼)之間 Between each terminal and other exposed metal parts Between each terminal and ground	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/s2(約100G approx.100G)max 误动作Wrong action:300m/ s2(約30G approx.30G)max
壽命 Life		電氣⩾150,000/300,000次Electrical⩾150,000/300,000 cycles 機械⩾500,000次 Mechanical⩾500,000cycles
防護等級 Protection degree		IEC IP40

PS12型按扭开关系列 Button switch series

◆ 特点和用途 Characteristics and usage

- 寿命长、可靠性高;广泛应用于家用电器、冰箱和照明等。
  Long Life, high reliability, contact stability and reliability; widely used in household appliances, refrigerators, lighting and etc.
- 点接触稳定可靠
  Stable and reliable contact.

◆ 技術特性 Technical Characteristics

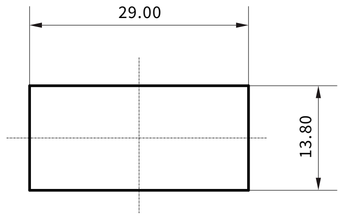
項目Item		特性值 Value
環境溫度Environment temperature		-40℃~+85℃
工作速度Operating speed		30mm/s~600m/s
工作頻率Operating Frequency		機械 60次/min; 電氣15次/min Mechanical 60 cycles/min; electrical 15 cycles/min
絕緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤100mΩ
工頻耐電壓 Test voltage	不相接端子間 Between non connected terminals	AC500V,50/60Hz,1min
	端子與不帶電金屬件之間 端子與地(外殼)之間 Between each terminal and other exposed metal parts Between each terminal and ground	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/s2(约100G approx.100G)max 误动作Wrong action:300m/ s2(约30G approx.30G)max
壽命 Life		電氣≥150,000/300,000次Electrical≥150,000/300,000 cycles 機械≥500,000次 Mechanical≥500,000cycles
防護等級 Protection degree		IEC IP40

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

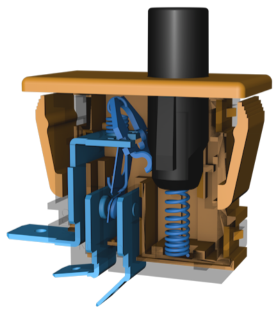
PS12 □ □-□ □ □- (□)
1 2 3 4 5 6

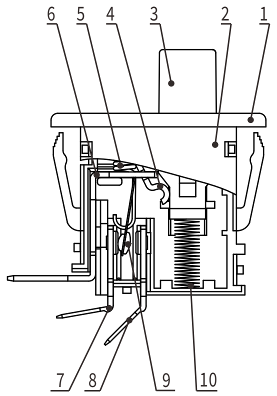
1 額定值 Ratings	A:16A 125/250 VAC B:10A 125/250VAC 1/3 HP 125/250VAC 5E4 40T85 C:10(4)A 250VAC 5E4 D:0.1A 125/250VAC E:4A 24VDC F:5mA 5VDC
2 接觸形式 Circuit	Z:转换式SPDT D:常闭SPST-NC T.常开 SPST-NO
3 端子類型 Terminal types	A:250快接端子 Quick-connect terminal 250 B:187快接端子(厚0.8) Quick-connect terminal 187(0.8 thick) C:187快接端子(厚0.5) Quick-connect terminal 187(0.5 thick) D:250快接端子,弯形 Quick-connect terminal 250, bend shape E:187快接端子(厚0.8),弯形 Quick-connect terminal 187(0.8 thick),bend shape F:187快接端子(厚0.5),弯形 Quick-connect terminal 187(0.5 thick),bend shape 注:端子代号以COM支架端子为命名基准,当NC、NO端子与支架不同时,用附加代号表示。 Note: The terminal code is based on the COM support terminal. When the NC and NO terminals are different from the support, they are indicated by additional codes.
4 動作力(max) Operating force	10:10N max 07:7N max 05:5N max
5 按钮类型 Plunger type	A:Φ8.6 B:
6 附加規格型號 Additional specs code	附加规格代号用两位阿拉伯数字表示,如01、02、03......用以表示有特殊要求。 Additional spec number shows as 01, 02, 03......used to express special requirements.

◆ 安裝孔尺寸 Mounting hole dimensions



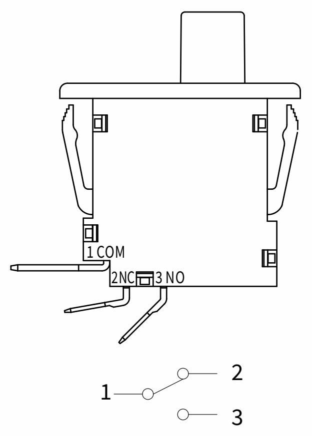
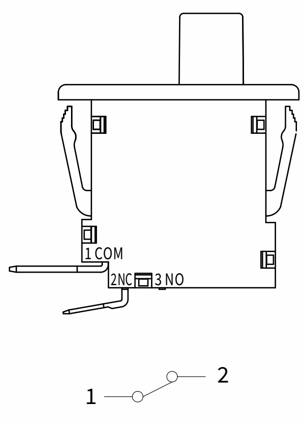
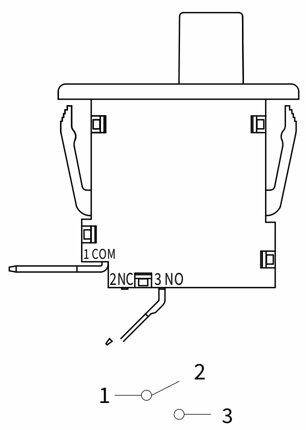
◆ 內部構造圖 Internal configuration drawing



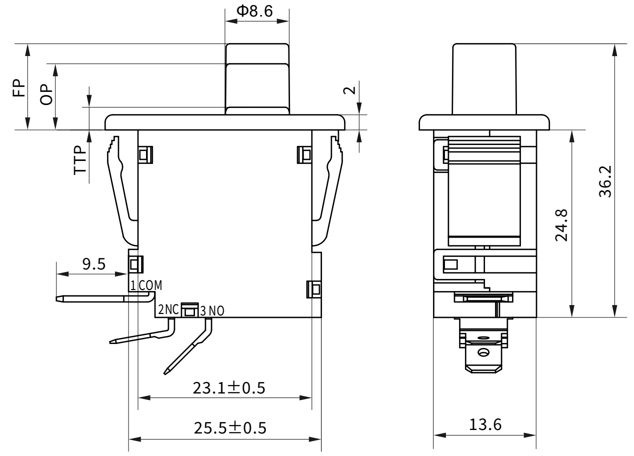


1. 基座	Base
2. 盖	Cover
3. 按扭	Plunger
4. 杠杆	Lever
5. 拉簧	Spring
6. 支架	COM terminal
7. 常闭接触件	NC terminal
8. 常开接触件	NO terminal
9. 动接触件	Moving piece
10.压簧	Spring

■ 接觸形式說明圖 Circuit illustration

转换式 SPDT	常闭式 SPST-NC	常开式 SPST-NO
		

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



参数 Parameters	
FP Max(N)	11.4±0.7
OP (mm)	8.9±1.2
OF Max(mm)	7
TTP Max (mm)	3.18

RS1型船形開關系列 Rocker switch series

◆ 特點和用途 Characteristics and usage

- 多種轉換方式，多檔位。

  Multiply conversion types,multi–action places.

- 各種接綫端子型式

  A variety of contact terminals

- 多種外殼和按鈕顏色

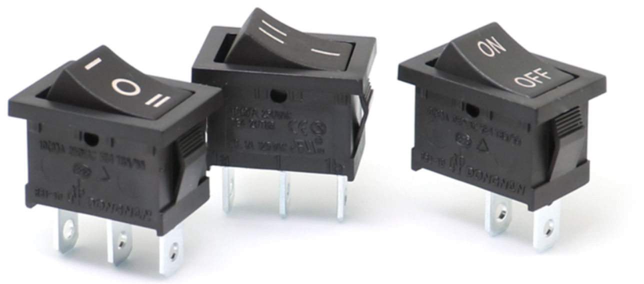
  A variety colors of covers and buttons

- 具有多種額定值等級

  A variety of current degrees

- 廣泛應用于家用電器、電子設備、自動化設備及類似設備。

  Widely used in home appliances, electric equipments, automatization equipments and similar equipments.



◆ 技術特性 Specifications

項目 Item		特性值 Value
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		≤30mΩ (初始值 Initial value)
耐電壓 Test voltage	同極不相接端子間 Between not connect terminals of the same Polarity	AC1500V,50/60Hz，1min
	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.	AC1500V，50/60Hz，1min
抗振動 Vibration resistance		10～55Hz，1.5mm雙振幅 Double amplitude
電氣壽命 Electrical life		50,000次/cycles
安全認證 Safety approvals		UL、CUL、TUV、SEMKO、CE、CQC

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

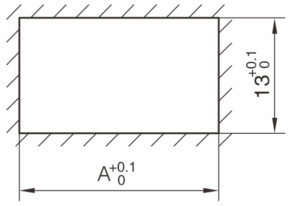
RS1 □－□ □ □－□ □ □－□
1 2 3 4 5 6 7 8

1 溫度等級 Degrees of temperature	無標記 No mark：T85	**5** 端子類型 Terminal types	0:焊接端子 Solder terminal 1:187#快接端子 Quick–connect terminal (thick 0.8mm) 2:187#快接端子 Quick–connect terminal (thick 0.5mm) 3:PCB端子 Terminal 4:左彎PCB端子 Left side PCB terminal 5:右彎PCB端子 Right side PCB terminal 6:非標準端子 Not standard terminal
2 額定值 Ratings	10：10(3)A250VAC /10.1A125VAC 06：6(2)A250VAC /6A125VAC 01：1(0.3)A250VAC /1A125VAC	**6** 按鈕顏色 Button color	B:黑色black
3 轉換方式 Conversion type	A：ON–OFF B：ON–ON C：ON–OFF–ON (見說明圖 See illustration)	**7** 外殼顏色 Cover color	B:黑色black
4 按鈕標記 Button mark	(見說明圖) (See illustration)	**8** 附加代號 Additional code	用01、02、03 ……表示。適用于： shows as 01, 02, 03……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）當顧客有特殊要求時。 When customer has particular requirements. 在沒有附加代號時，該位置空缺。 If there is no additional numbers, the place is vacant.

◆ 按鈕標記說明圖 Button mark illustration

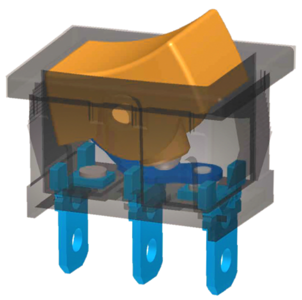
代 號 Code	按鈕標記 Button mark	標記含義 Mark signification	代 號 Code	按鈕標記 Button mark	標記含義 Mark signification
0	無 None		**5**	I II	ON–ON
1	— O	ON–OFF	**6**	L H	ON–ON
2	I O	ON–OFF	**7**	—O=	ON–OFF–ON
3	ON OFF	ON–OFF	**8**	I O II	ON–OFF–ON
4	— =	ON–ON	**9**	ON OFF	ON–OFF

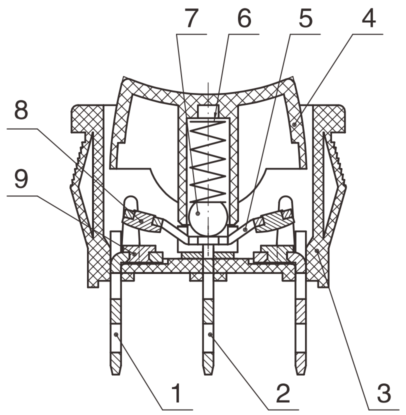
◆ 安裝板開孔尺寸 Panel hole dimension



面板厚度 Panel thickness	A
0.75–1.25	19.2
＞1.25–2.0	19.4
＞2.0–3.0	19.6

◆ 內部構造圖 Internal configuration drawing

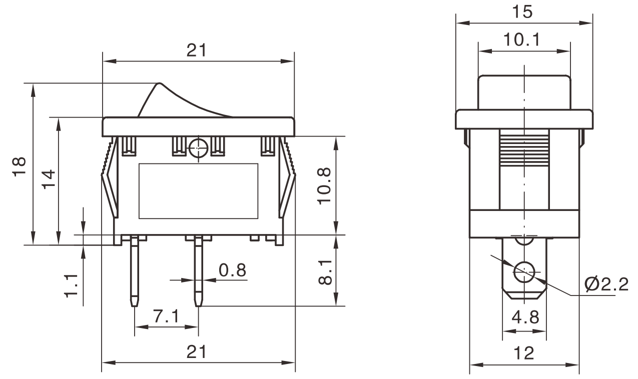




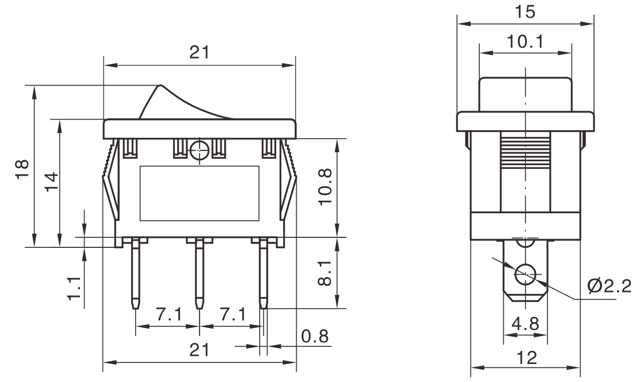
1：	端子	Terminal
2：	支架	Support
3：	基座	Case
4：	按鈕	Button
5：	可動片	Moving piece
6：	彈簧	Spring
7：	鋼珠(或套筒)	Steel ball(or sleeve)
8：	電觸點	Contact
9：	電觸點	Contact

◆ 外形特徵圖 Outline characteristics drawing

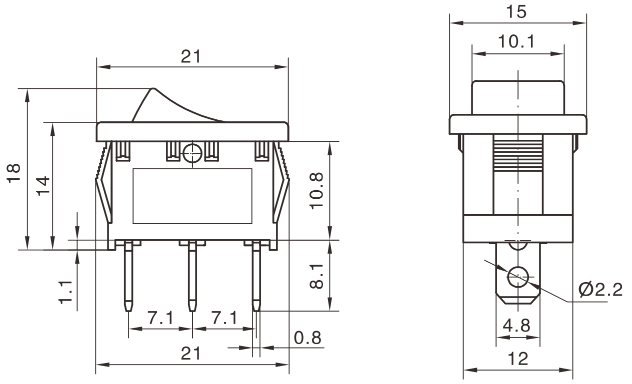
RS1□–□A3–1BB



RS1□–□ B4–1BB



RS1□–□C7–1BB



RS2型船形開關系列 Rocker switch series

◆ 特點和用途 Characteristics and usage

- 多種轉換方式，多檔位。
  Multiply conversion types,multi-action places.
- 多種接綫端子型式
  A variety of contacts terminals
- 廣泛應用于家用電器、電子設備、自動化設備及類似設備。
  Widely used in home appliances, electric equipments, automatization equipments and similar equipments.

◆ 技術特性 Technical Characteristics

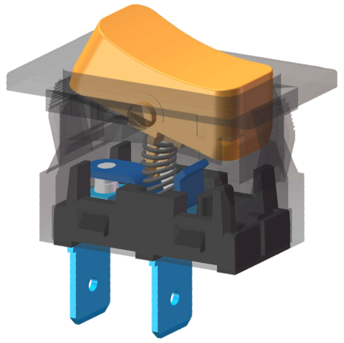
項目 Item		特性值 Value
溫度等級 Degrees of temperature		25T105，25T125
額定值 Ratings		10(8)A 125/250VAC; 16GPA 125/250VAC；1/2hp 125/250VAC
動作力 Operating force		5.5～8.5N
工作频率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ (初始值Initial value)
耐電壓 Test voltage	同極不相接端子間 Between each terminals of the same polarity	AC1500V,50/60Hz，1min
	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.	AC1500V，50/60Hz，1min
抗振動 Vibration resistance		10～55Hz，1.5mm雙振幅 Double amplitude
電氣壽命 Electrical life		50,000次/cycles
安全認證 Safety approvals		UL、CUL、ENEC、DEMKO

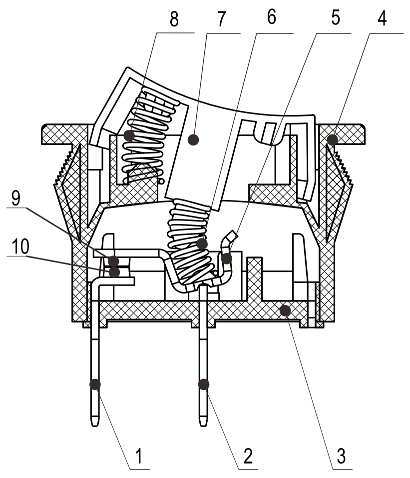
◆ 型號規格命名及含義 Model number legend and meanings

RS2 －□□□□□－□
1 2 3 4 5 6

1 轉換方式 conversion type	A:ON-OFF自復位至OFF automatic reset to OFF B:ON-OFF自復位至ON automatic reset to ON C:ON-OFF D:ON-ON自復位 automatic reset E:ON-ON (見説明圖Seeillustration)	**3** 按鈕標記 button mark	0～9 （見説明圖See illustration）
		4 按鈕顏色 button color	B:黑色black
		5 外殼顏色 Case color	B:黑色black
2 端子類型 terminal types	0:焊接端子Solder terminal 1:250#快接端子(t 0.8) 250Quick-connect terminal 2:187#快接端子(t 0.8) 187Quick-connect terminal 3:187#快接端子(t 0.5) 187Quick-connect terminal 4:PCB端子terminal 5:左彎PCB端子Left side PCB terminal 6:右彎PCB端子Right side PCB terminal 7:非標準端子Not standard terminal	**6** 附加代號 Additional code	用01、02、03……表示。適用于： Shows as 01, 02, 03……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）當顧客有特殊要求時。 When customer has particular requirements. 在沒有附加代號時，該位置空缺。 If there is no additional numbers, the place is vacant.

◆ 內部構造圖 Internal configuration drawing



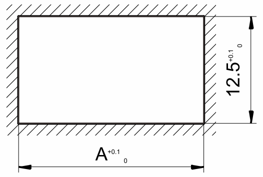


1:	端子	Terminal
2:	支架	Support
3:	底座	Base
4:	外殼	Base
5:	可動片	Moving piece
6:	彈簧	Spring
7:	按鈕	Button
8:	復位彈簧	Reset spring
9:	電觸點	Contact
10:	電觸點	Contact

◆ 按鈕標記說明圖 Button mark illustration

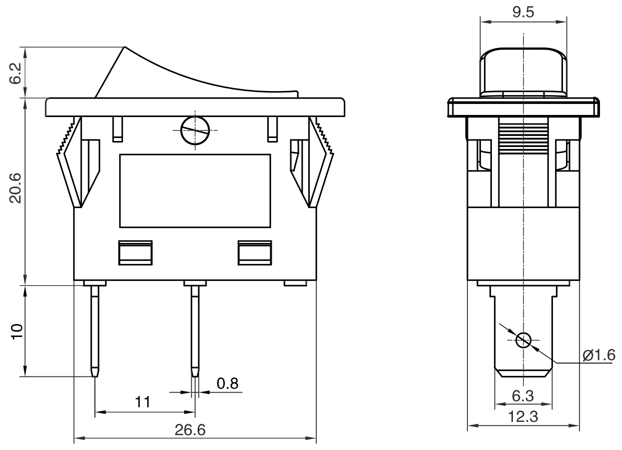
代 號 Code	按鈕標記 Button mark	標記含義 Mark signification
0	無 None	
1	– O	ON–OFF
2	I O	ON–OFF
3	ON OFF	ON–OFF
4	– =	ON–ON
5	I II	ON–ON
6	L H	ON–ON
7	ON OFF	ON–OFF

◆ 安裝板開孔尺寸 Panel hole dimension

	面板厚度 Panel thickness	A
	0.75–1.25	27.4
	> 1.25–2.0	27.6
	> 2.0–3.0	27.8

◆ 外形特徵圖 Outline characteristics drawing

RS2–B20BB



RS3型船形開關系列　Rocker Switch series

◆ 特點和用途 Characteristics and usage

- 多種轉換方式，多檔位。

  Multiply conversion types,multi-action places.
- 多種接綫端子型式

  A variety of contacts terminals
- 廣泛應用于家用電器、電子設備、自動化設備及類似設備。

  Widely used in home appliances, electric equipments, automatization equipments and similar equipments.

◆ 技術特性 Technical Characteristics

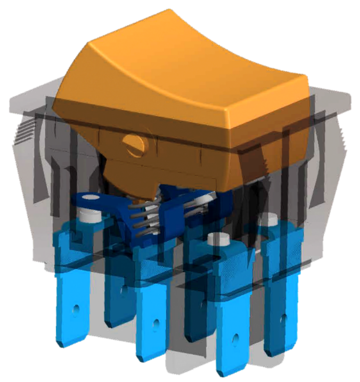
項目 Item		特性值 Value
溫度等級 Degrees of temperature		25T105，25T125
額定值 Ratings		16(4)A 250VAC； 6GPA 125/250VAC；3/4hp 250VAC
動作力 Operating force		5.5～8.5N
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絶緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ (初始值Initial value)
耐電壓 Test voltage	同極不相接端子間 Between each terminals of the same polarity	AC1500V,50/60Hz，1min
	帶電金屬零件與地（外殻）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.	AC1500V，50/60Hz，1min
抗振動 Vibration resistance		10～55Hz，1.5mm雙振幅 Double amplitude
電氣壽命 Electrical life		50,000次/cycles
安全認證 Safety approvals		UL、CUL、ENEC

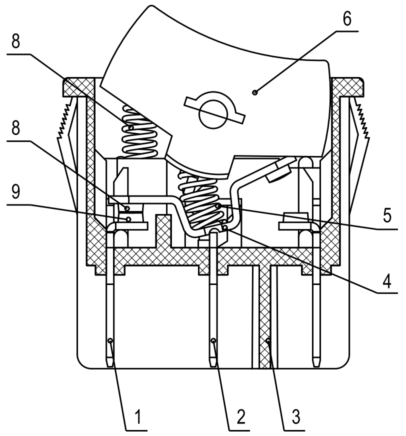
◆ 型號規格命名及含義 Model number legend and meanings

RS 3 －□ □ □ □ □－□
1 2 3 4 5 6

1 轉換方式 conversion type	A:ON-OFF自復位至OFF automatic reset to OFF B:ON-OFF自復位至ON automatic reset to ON C:ON-OFF D:ON-ON自復位 automatic reset E:ON-ON (見説明圖Seeillustration)	**4** 按鈕顏色 button color	B:黑色black
2 端子類型 terminal types	0:焊接端子Solder terminal 1:250#快接端子(t 0.8) 250Quick-connect terminal 2:187#快接端子(t 0.8) 187Quick-connect terminal 3:187#快接端子(t 0.5) 187Quick-connect terminal 4:PCB端子terminal 5:左彎PCB端子Left side PCB terminal 6:右彎PCB端子Right side PCB terminal 7:非標準端子Not standard terminal	**5** 外殻顏色 Case color	B:黑色black
3 按鈕標記 button mark	（見説明圖See illustration）	**6** 附加代號 Additional code	用01、02、03……表示。適用于：Shows as 01, 02, 03……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）當顧客有特殊要求時。When customer has particular requirements. 在没有附加代號時，該位置空缺。If there is no additional numbers, the place is vacant.

◆ 內部構造圖 Internal configuration drawing



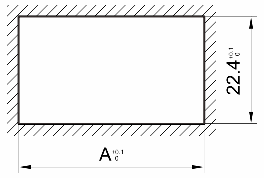


1:	端子	Terminal
2:	支架	Support
3:	底座	Base
4:	可動片	Moving piece
5:	彈簧	Spring
6:	按鈕	Button
7:	復位彈簧	Reset spring
8:	電觸點	Contact
9:	電觸點	Contact

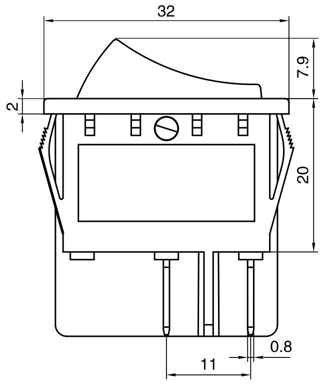
◆ 按鈕標記說明圖 Button mark illumination

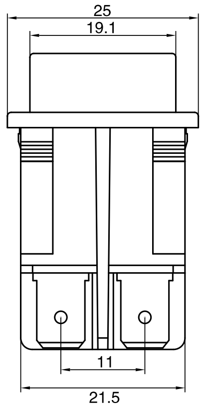
代 號 Code	按鈕標記 Button mark	標記含義 Mark signification
0	無 None	
1	– O	ON–OFF
2	I O	ON–OFF
3	ON OFF	ON–OFF
4	– =	ON–ON
5	I II	ON–ON
6	L H	ON–ON
7	ON OFF	ON–OFF

◆ 安裝板開孔尺寸 Panel hole dimension

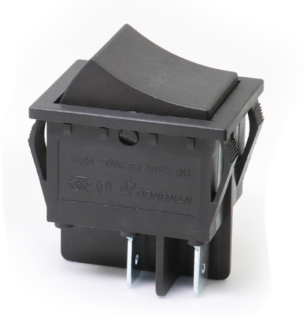
	面板厚度 Panel thickness	A
	0.75–1.25	30.1
	> 1.25–2.0	30.2
	> 2.0–3.0	30.3

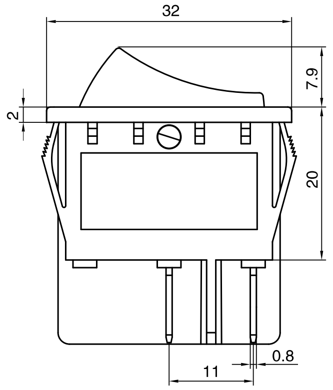
RS3–B21BB

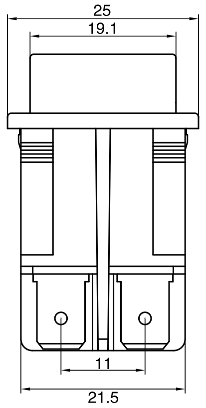




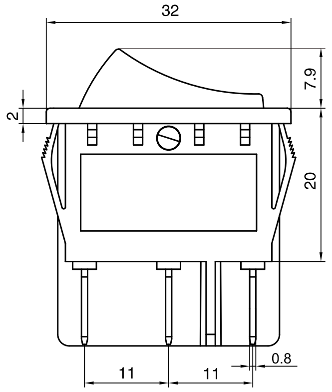
RS3–C20BB

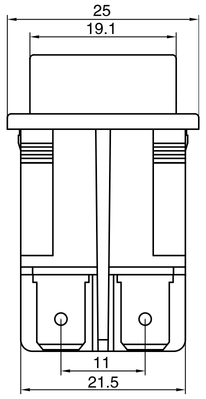






RS3–D20BB





RS4型船形開關系列 Rocker Switch series

◆ 特點和用途 Characteristics and usage

- 多種接綫端子型式
  A variety of contact terminals
- 多種外殼和按鈕顏色
  A variety colors of cover and button
- 廣泛應用于家用電器、電子設備、自動化設備及類似設備。
  Widely used in home appliances, electric equipments, automatization equipments and similar equipments.

◆ 技術特性 Technical Characteristics

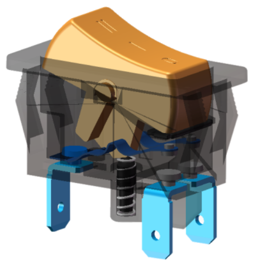
項目 Item		特性值 Value
温度等級Degrees oftemperature		T85/55
動作力Operating force		0–1：5.5±1.5N;1–2：7.5±1.5N
額定值Rating		8A 250VAC；16A 125VAC (UL) 12(10)A 250VAC (TUV)
工作頻率 Operating frequency		機械 60次/min; 電氣 20次/min Mechanical 60 cycles/min; Electrical20cycles/min
絶緣電阻 Insulation resistance		≥100 mΩ (500VDC)
接觸電阻 Contact resistance		≤50 mΩ (初始值Initial value)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1500V，50/60Hz，1min
	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.	AC1500V，50/60Hz，1min
抗振動 Vibration resistance		10～55Hz，1.5mm 雙振幅 Double amplitude
電氣壽命 Electrical life		10,000次cycles
安全認證 Safety approvals		UL、TUV、

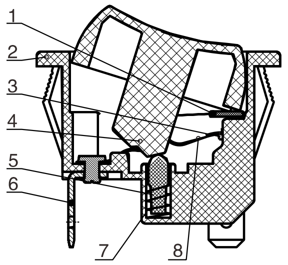
◆ 型號規格命名及含義 Model number legend and meanings

RS4 –□□□□□–(□)
1 2 3 4 5 6

1 轉換方式 Conversion type	無標記No mark： OFF–ON–ON	**4** 按鈕顏色 Button color	B:黑色Black
2 端子類型 Terminal types	0:焊接端子 Solder terminal 1:250#快接端子(t 0.8) 250Quick–connect terminal 2:187#快接端子(t 0.8) 187Quick–connect terminal 3:187#快接端子(t 0.5) 187Quick–connect terminal 4:PCB端子terminal 5:非標準端子 Not standard terminal	**5** 外殼顏色 Case color	R:紅色Red
3 按鈕標記 Button mark	1,2 （見説明圖See illustration）	**6** 附加規格代號 Append specs code	用01、02、03……表示。適用于： Shows as 01, 02, 03……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）當顧客有特殊要求時。 When customer has particular requirements. 在没有附加代號時，該位置空缺。 If there is no additional numbers, the place is vacant.

◆ 內部構造圖 Internal configuration drawing



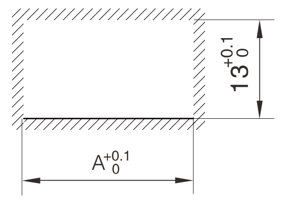


1:	擋板	Baffle
2:	基座	Case
3:	電觸點	Contact
4:	按鈕	Button
5:	定位帽	Positioning cap
6:	端子	Terminal
7:	彈簧	Spring
8:	可動片	Moving piece

◆ 按鈕標記說明圖 Button mark illustration

代號 Code	按鈕標記 Button mark	標記含義 mark signification
1	○ − =	OFF–ON–ON
2	○ I Ⅱ	OFF–ON–ON

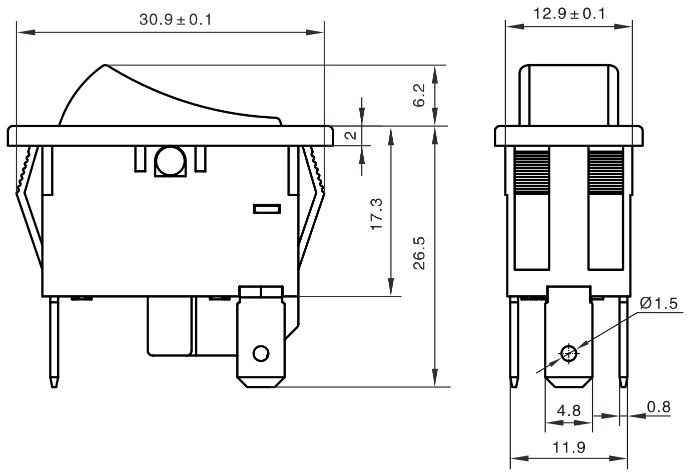
◆ 安裝板開孔尺寸 Panel hole dimension



面板厚度Panel thickness	A
0.75–1.25	28.4
> 1.25–2.0	28.6
> 2.0–3.0	28.8

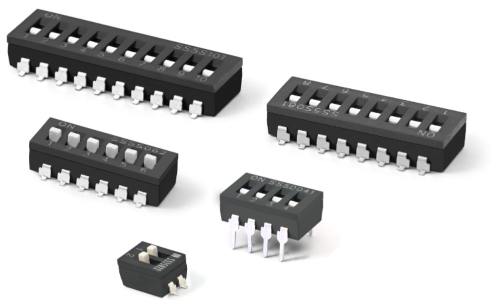
◆ 外形特徵圖 Outline characteristics drawing

RS4-21R



SS5 編码开关系列 Dip switch series

◆ 特點和用途 Characteristics and usage



- 結構緊凑，體積小；接觸穩定；廣泛應用于計算機主板的超頻、無綫通訊、廣播電視等設備。

  Compact structure, small size; stable contact; widely used in computer motherboard overclocking, wireless communication, radio and television and other equipments.

- 點接觸穩定可靠

  Stable and reliable contact.

◆ 技術特性 Technical Characteristics

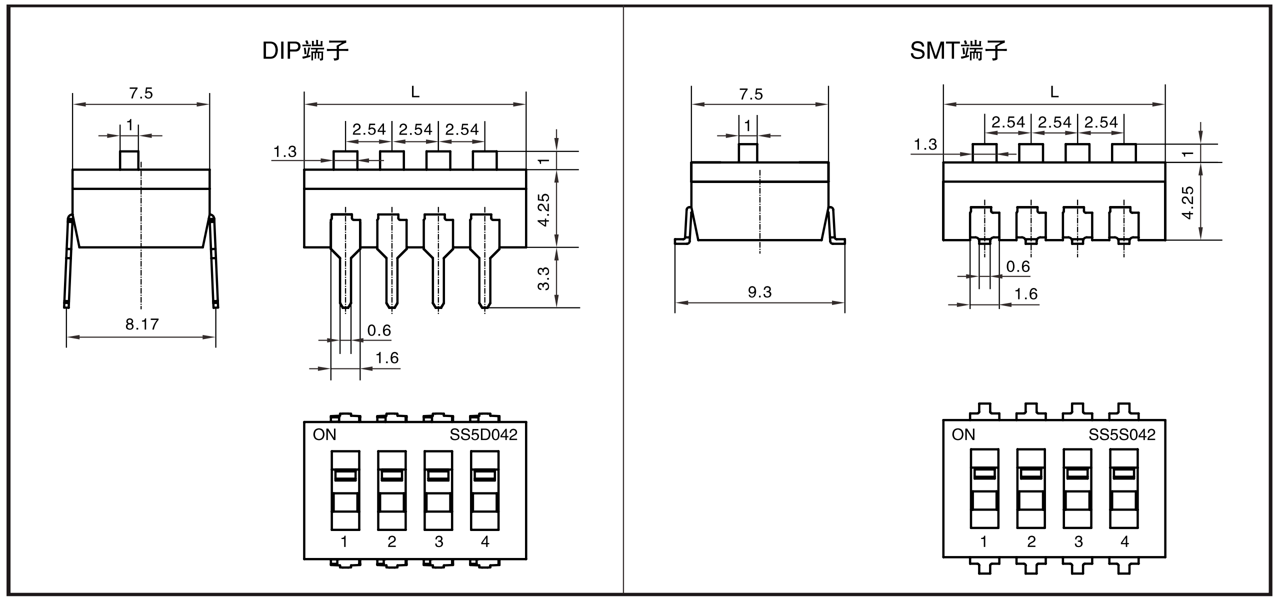
項目 Item		特性值 Value
環境温度 Environment temperature		–30～+85℃
工作速度 Operating speed		30mm～600mm/s
工作頻率 Operating frequency		機械 60次/min; 電氣 15次/min Mechanical 60 cycles/min; Electrical 15cycles/min
絕緣電阻 Insulation resistance		⩾100MΩ (100VDC)
接觸電阻 Contact resistance		⩽50MΩ
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC 300V,50/60Hz，1min
	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.	AC 500V，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
電氣壽命Electrical life		⩾1,000次cycles
機械壽命Mechanical life		⩾1,000次cycles

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

SS5 –□ □–□–□ – (□)
1 2 3 4 5

1 接觸形式 Circuit	D:直插式DIP S:貼片式 SMT	**4** 額定值 Rating	無標記：鍍銀 Unmarked Silver plated A:鍍金 Gold plated
2 極數 Pole number	02，03，04……10，12 (Expressed in Arabic numerals)	**5** 附加規格編號 Additional spec numbers	特殊要求（用兩位阿拉伯數字表示） Special Requirements (Expressed in Arabic numerals)
3 按鈕類型 Plunger spec	1：低型 low 2：高型 high		

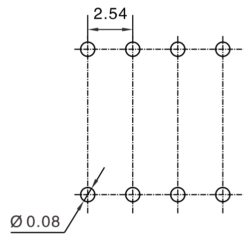
◆ 端子類型圖 Terminal dimensions



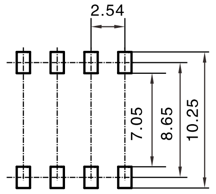
◆ 極數對應的長度尺寸L Item name and dimension

極數	L (mm)
2	7.06
3	9.06
4	12.14
5	14.68
6	17.22
7	19.76
8	22.30
9	24.84
10	27.38
12	32.5

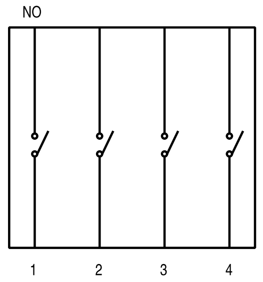
◆ 直插式端子安裝孔尺寸 Attachment hole dimension for DIP



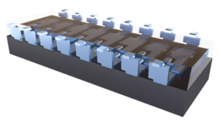
◆ 貼片式端子布局尺寸 PCB layout for SMT

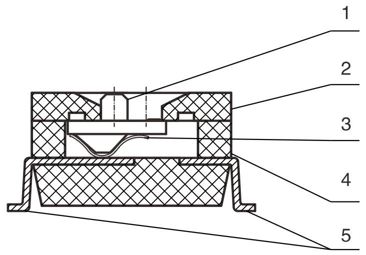


◆ 電路圖 Schematic diagram



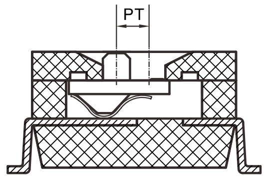
◆ 內部構造圖 Internal configuration drawing





1: 開關子	Plunger
2: 蓋	Cover
3: 可動片	Moving piece
4: 基座	Case
5: 端子	Terminal

◆ 動作特性 Operating characteristics

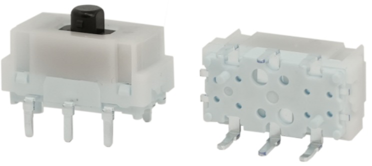


動作力Operating force (OF)	9.8N MAX
動作行程 Pretrave1(PT)	1.2±0.1mm

SS6 型拨动开关 Toggle switch series

◆ 特點和用途 Characteristics and usage

- 外形体积小巧，产品性能可靠
  Small size and reliable product performance.
- 产品主要用于汽车座椅及门窗自动调节开关
  The product is mainly used for automatic adjustment switches of car seats and doors and windows



◆ 技術特性 Technical Characteristics

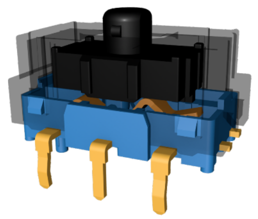
項目 Item		特性值 Value
環境溫度 Environment temperature		-40～+85℃
額定值 Ratings		12VDC,10(4)A;12VDC,10mA
动作力 Operating force		5.39±1.96N
移动量 Moving amount		2.5±0.3mm
絕緣電阻 Insulation resistance		≥50MΩ (500VDC)
接觸電阻 Contact resistance		≤200mΩ(初始值initial value)
工頻耐電壓 Test voltage	不相接端子間 Between non connected terminals	AC500V,50/60Hz,1min
	端子與不帶電金屬件之間 端子與地(外殼)之間 Between each terminal and other exposed metal parts Between each terminal and ground	AC500V,50/60Hz,1min
抗振動Vibration resistance		10～55Hz,1.5mm两倍振幅double amplitude
电气寿命 Electrical Life		≥40,000次；≥40,000 cycles
工作频率Operating Frequency		6次/min electrical 6cycles/min
質量 Weight		约3.8g Approx.3.8g

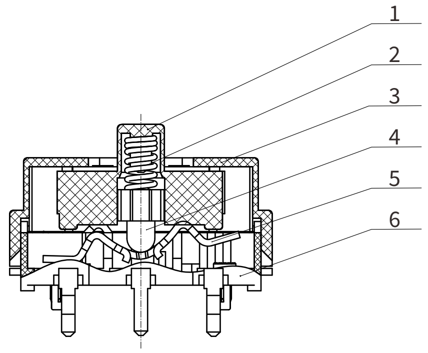
◆ 型號規格命名及含義 Model number legend and meanings

SS6-□

└── 规格代号，用阿拉伯数字表示
Specification code, represented by Arabic numerals

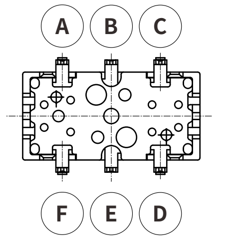
◆ 内部构造图 Internal configuration drawing

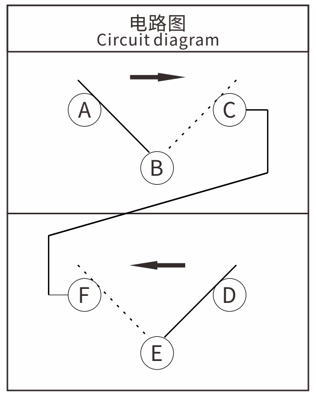




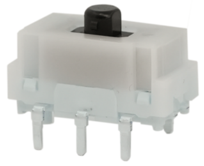
1、按鈕	Plunger
2、压簧	Spring
3、外殼	Case
4、滑塊	Slippage piece
5、可動片	Moving piece
6、底座組件	Base component

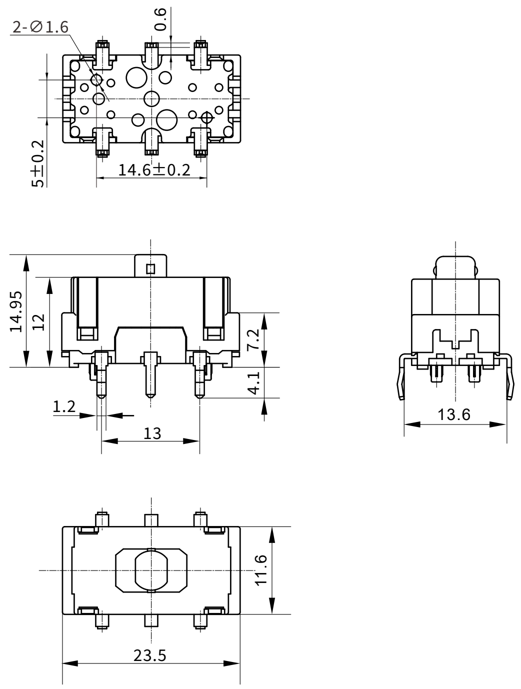
■ 接觸形式說明圖 Circuit illustration





◆ 外形尺寸和安装尺寸 Overall dimensions and mounting dimensions





SP02型門控開關 Gating control switch

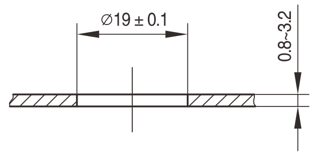
◆ 特點和用途 Characteristics and usage

- 按鈕式開關，結構緊湊，安裝方便。
  Push plunger power switch, tight configuration, convenient to mount
- 接觸可靠，工作壽命長
  Contact reliable,long operating life
- 用于電烤箱及類似設備的門控。
  Can be u sed in gating switch in electronic oven and other similar equipments

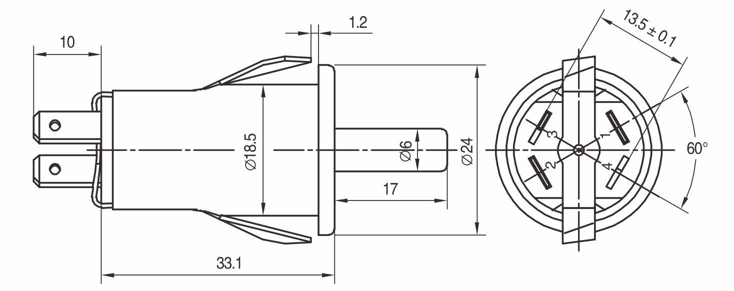
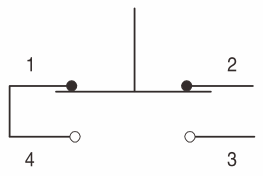
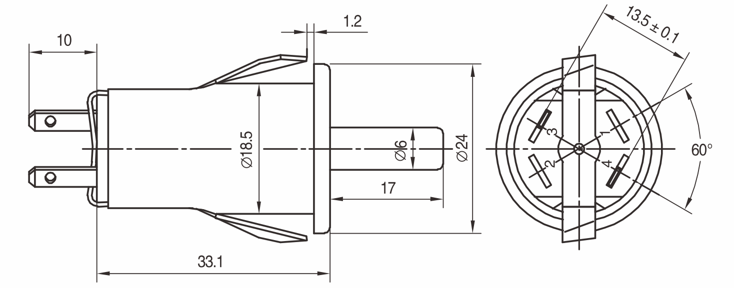
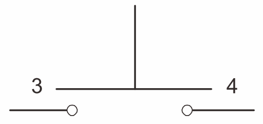
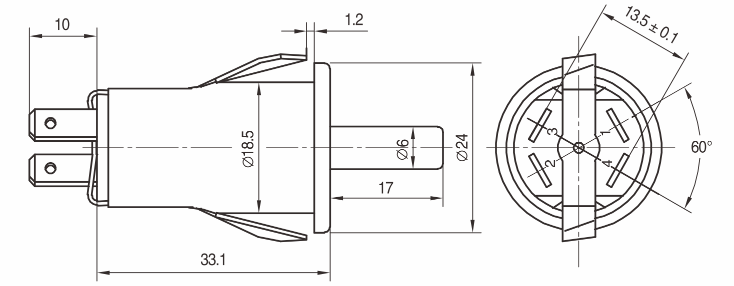
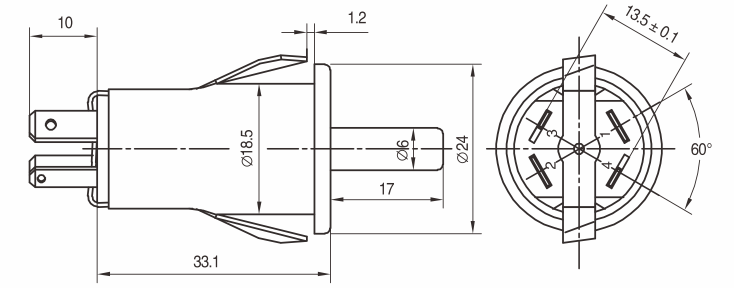
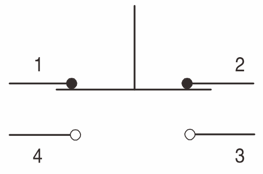
◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
環境溫度 Environment temperature		0～200℃
相對濕度 Relative humidity		95%,40℃
額定電流 Rated current		2A
額定電壓 Rated voltage		AC125V/250V
工作行程/全行程 Operating travel/total travel		1.5mm/15mm
動作力 Operating force		5±1.5N
絶緣電阻 Insulation resistance		≥100MΩ(DC500V)
接觸電阻 Contact resistance		≤30mΩ
耐電壓 Test voltage	端–端 Terminal–terminal	AC1000V
	端–殼 Terminal –case	AC1500V
電氣壽命 Electrical life		100,000次/cycles
質量 Weight		約15g Approx.15g
安全認證 Safety approvals		UL、CUL

◆ 安裝孔尺寸 Mounting hole dimensions



◆ 外形尺寸 Outline dimensions

SP02–Z		電路圖 Circuit diagram 
SP02–T		電路圖 Circuit diagram 
SP02–D		電路圖 Circuit diagram 
SP02–S		電路圖 Circuit diagram 

KXZ2旋轉開關系列 Rotery switch series

◆ 特點和用途 Characteristics and usage

- 有多種檔位和多種換檔旋轉角度

  Various gears and various shifting rotation angles
- 可自動復位

  Automatic resettable
- 用于料榨機等家用電器

  Used in home appliances,such as Blender

◆ 技術特性 Technical Characteristics

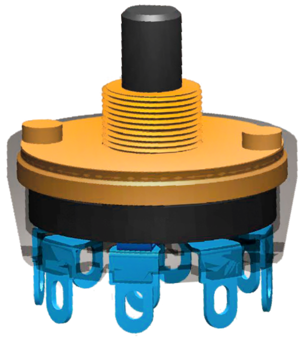
項目 Item		特性值 Value
環境溫度 Environment temperature		−25～+105℃
相對濕度 Relative humidity		95%,40℃
額定電流/電壓 Rated current / voltage		8GPA125VAC, 6(3)A250VAC
旋轉角度 Rotary angle		45°/檔 position ；36°/檔 position ；30°/檔 position
絕緣電阻 Insulation resistance		≥100MΩ(DC500V)
接觸電阻 Contact resistance		≤50mΩ
耐電壓 Test voltage	端–端 Terminal–terminal	AC1500V
	端–殼 Terminal –case	AC1500V
電氣壽命 Electrical life		10,000次/cycles
質量 Weight		約11.5g Approx. 11.5g
安全認證 Safety approvals		UL、CUL、ENEC、DEMKO、CQC

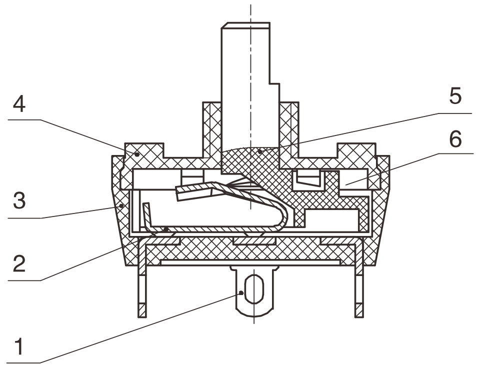
◆ 型號規格命名及含義 Model number legend and meanings

KXZ2– □ □ □ – □ □ –(□)
1 2 3 4 5 6

1 外形特徵 Outline characteristics	A:換檔角度45° Shifting rotation angle 45° 軸長8 Axis length 8 B:換檔角度45° Shifting rotation angle 45° 軸長13.5 Axis length 13.5 C:換檔角度30° Shifting rotation angle 30° 軸長8 Axis length 8 D:換檔角度30° Shifting rotation angle 30° 軸長13.5 Axis length 13.5 E:換檔角度36° Shifting rotation angle 36° 軸長8 Axis length 8 F:換檔角度36° Shifting rotation angle 36° 軸長13.5 Axis length 13.5
2 功能代號 Function code	4：4個輸出端子(檔) 4 pin 5：5個輸出端子(檔) 5 pin n：n個輸出端子(檔) n pin 注：公共端不計入端子數 Note: Common terminal is not included in the terminal number
3 端子規格 Terminal specs	A:3.8×0.8×5.5 B:2.4×0.8×5.5
4 空檔位代號 Neutral position code	00：無空檔 No neutral position 0□：□#爲空檔位 □# is neutral position 注：空檔位可以有多個 Note: Can have several neutral position
5 自動復位代號 Automatic reset code	無代號:無自動復位 No code: no automatic reset F: 有自動復位 Automatic reset
6 附加代號 Additional specs code	適用于 apply to： 顧客有特殊要求時 When customer has particular requirements.

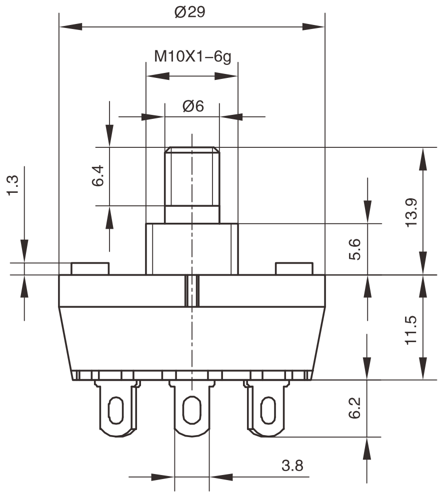
◆ 內部構造圖 Internal configuration drawing

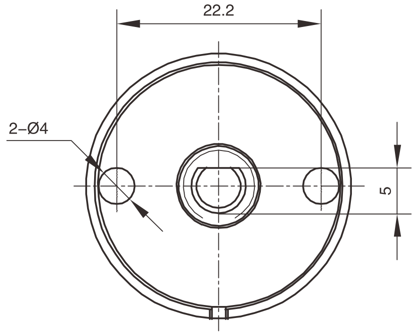




1: 端子 Terminal
2: 簧片 Spring sheet
3: 基座 Base
4: 蓋 Cover
5: 轉軸 Run axis
6: 彈簧 Spring

◆ 外形尺寸圖 Dimensions drawing

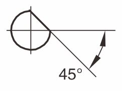
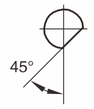
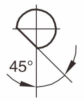
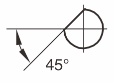
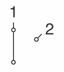
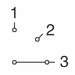
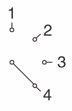
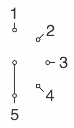
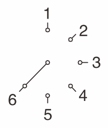
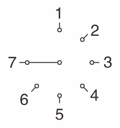
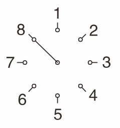




◆ 電路轉換功能表(示例) Circuit transform function table (examples)

KXZ2–A8A–00電路轉換功能表

KXZ2–A8A–00 Circuit transform function table

旋轉角度 Rotary angle								
電路圖 Schematic diagram								

KXZ4旋转开关系列 Rotery switch series

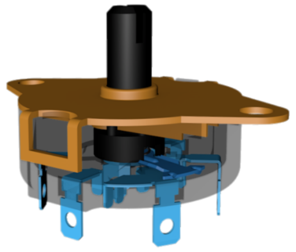
◆ 特点和用途 Characteristics and usage

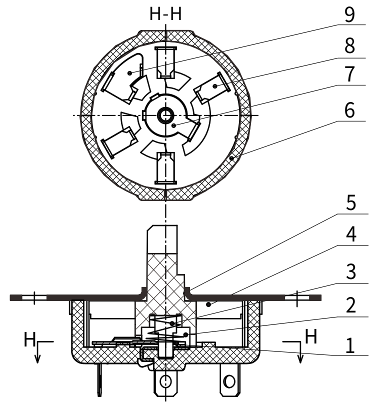
- 多种转换选择
  Multiple conversion options
- 多电路选择器
  Multiple circuit selector
- 结构紧凑，长寿命
  Compact structure and long service life.
- 可在家用电器、仪器中使用。
  Used in household appliances and

◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
額定值 Rating		2A/125VAC;1A/250VAC 1E4
環境溫度 Environment temperature		-10℃～+85℃
工作速度 Operating speed		30mm/s～600m/s
工作頻率 Operating frequency		機械 60次/min; 電氣15次/min Mechanical 60 cycles/min; Electrical 15 cycles/min
絕緣電阻 Insulation resistance		⩾100MΩ (500VDC)
接觸電阻 Contact resistance		⩽50mΩ
工頻耐電壓 Test voltage	不相接端子間 1.Between non connected terminals	AC500V,50/60Hz, 1min
	端子與不帶電金屬件之間 端子與地(外殼)之間 Between each terminal and other exposed metal parts Between each terminal and ground	AC1800V,50/60Hz, 1min
壽命 Life		電氣⩾100,000次 Electrical⩾100,000 cycles 機械⩾500,000次 Mechanical⩾500,000cycles
安全认证 Safety approvals		UL/CUL、TUV、CE、CQC

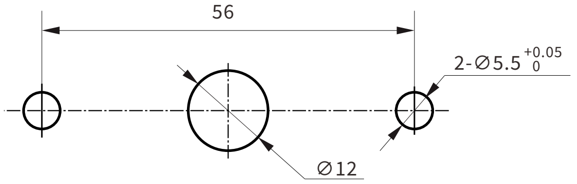
◆ 内部构造图 Internal configuration drawing





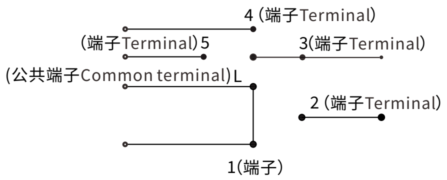
1、动触片	Moving piece
2、转轴	Run axis
3、压簧	Spring
4、簧片	Spring sheet
5、盖板	Cover
6、基座	Case
7、中端子	Intermediate terminal
8、边端子	Side terminal
9、公共端子	Common terminal

◆ 安裝孔尺寸 Mounting hole dimensions



■ 接觸形式說明圖 Circuit illustration

电路图Circuit diagram

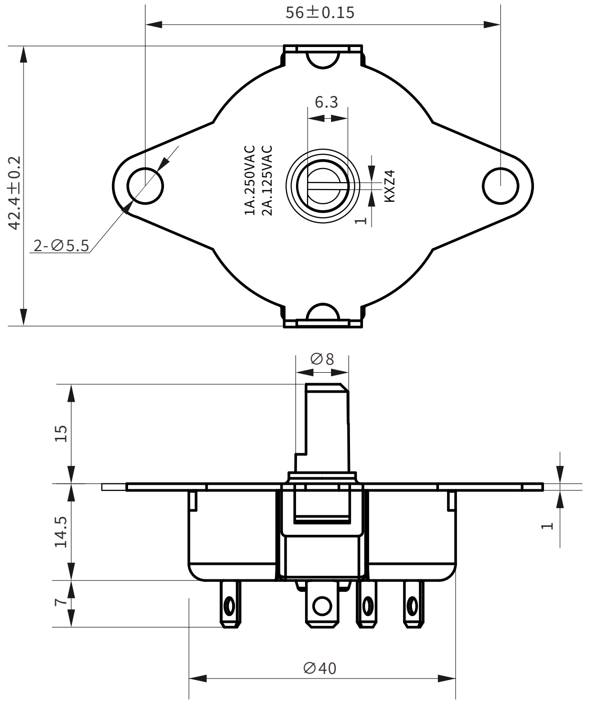


电气功能如下 Electrical functions：

旋转角度(A) Rotation angle	0°	60°	120°	180°	240°	300°
1 (端子) Terminal	○	●	○	○	○	○
2 (端子) Terminal	○	○	●	○	○	○
3 (端子) Terminal	○	○	○	●	○	○
4 (端子) Terminal	○	○	○	○	●	○
5 (端子) Terminal	○	○	○	○	○	●

● 表示通电 Power supply ○ 表示不通电 No power supply

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



AS1型空氣開關組件 Air switch assembly

◆ 特點和用途 Characteristic and usage

- 將電與人隔離，更加安全。

  It is safer to isolate electricity from people.

- 廣泛應用于洗碗機,垃圾粉碎機,净水機等家用電器的配套。

  Widely used in dishwasher, garbage crusher, water purifier and other home appliances.

◆ 技術特性 Technical Characteristics

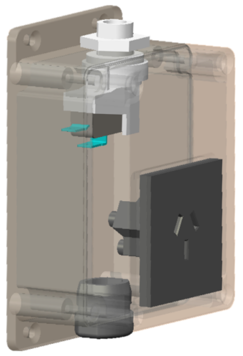
項目 Item		特性值 Value
工作頻率 Operating frequency		電氣 10次/min Electrical 10 cycles/min
絶緣電阻 Insulation resistance		冷態≥100MΩ (500VDC)；潮態≥10MΩ (500VDC) Cold state≥100MΩ (500VDC)；Tidal state≥10MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V,50/60Hz，1min
	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.	AC1500V，50/60Hz，1min
抗振動 Vibration resistance		10～55Hz，1.5mm雙振幅 Double amplitude
插座性能Socket performance		將插座反復拔插5000次 Unplug the socket 5000 times repeatedly
壽命 Life		電氣≥15,000次； Electrical ≥15,000 cycles

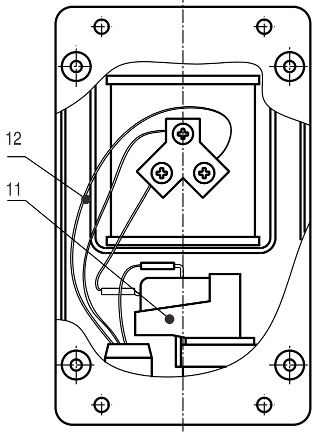
◆ 型號規格命名及含義 Model number legend and meanings

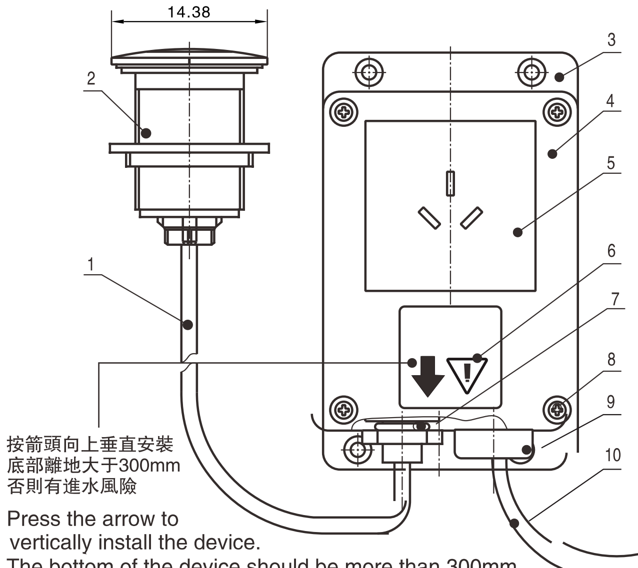
AS1 □ □–□ □–□ □–（□）
1 2 3 4 5 6 7

1 插孔類別代號 Jack category code	A—國標 National standard B—歐標/德標European standard/German standard C—美標American Standard D—法標Legal standard E—英標British Standard F—澳標Australian Standard	**4** 外殼結構特徵代號 Shell structure characteristic code	2個三插ST–A02–003K， 1個兩插ST–A02–002C 2–Cuboid,156×76×95 black; 1 triple plugs ST–A02–003K, 1 two plugs ST–A02–002C
2 插座額定值代號 Socket rating code	10—10A 250VAC	**5** 氣動按鈕規格代號 Specification code of pneumatic button	A—ANQ1–B32B–850
3 微動開關規格代號 Specification code of microswitch	A—KW3AT–E21T0B–A200B	**6** 電源插頭特徵代號 Characteristic code of power plug	1—國標3插，黑色導綫53RVV，綫長950±50mm 1—National standard triple plugs,black wire 53 RVV,wire lenth 950±50mm 2—LBY–16(220VAC,10A連體漏電插頭)，國標3插，黑色導綫53RVV，綫長1500±50mm 2—LBY–16(220VAC,10A leakage plug with head), national standard triple plugs,black wire 53RVV, wire lenth 1500±50mm
4 外殼結構特徵代號 Case structure characteristic code	1–長方體，123×75×54.5黑色；1個三插 1–Cuboid,123×75×54.5 black;1 triple plugs 2–長方體，156×76×95黑色；	**7** 附加代號 Additional code	與標準規格有不同處，用01,02……表示。 There are differences with the standard specifications, shows as 01,02……

◆ 內部構造圖 Internal configuration drawing







按箭頭向上垂直安裝
底部離地大于300mm
否則有進水風險

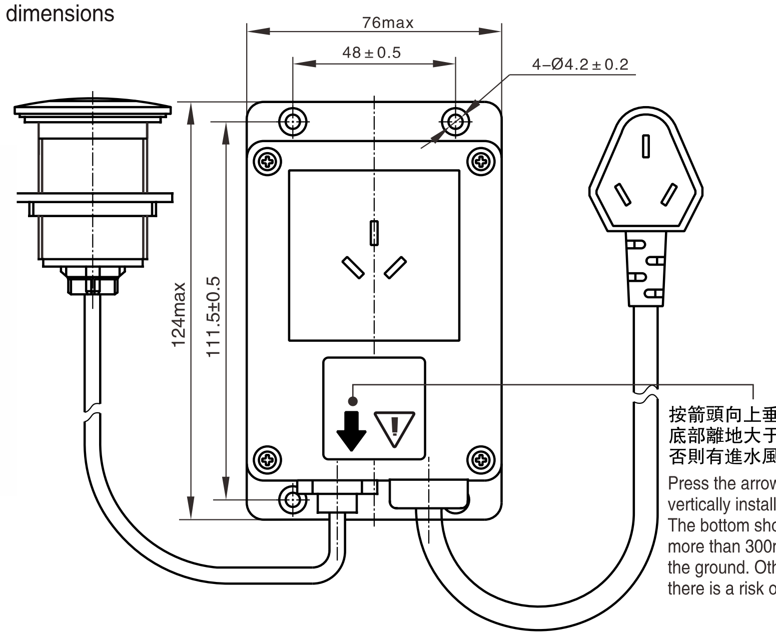
Press the arrow to
vertically install the device.
The bottom of the device should be more than 300mm
above the ground. Otherwise, there is a risk of water inflow

1: PVC氣管	PVC trachea
2: 氣動按鈕	Pneumatic button
3: 基座	Case
4: 蓋	Cover
5: 插座	Socket
6: 標識卡	Identification card
7: O形圈	O–ring
8: 自攻螺釘	Self tapping screw
9: 綫扣	Cord buckle
10: 電源綫	Power cord
11: 氣動壓力開關	Pneumatic pressure switch
12: 導綫組件	Wire assembly

注：11,12 見上頁圖（PS:11,12 see last page drawimg）

◆ 外形和安裝尺寸 Outline and mounting dimensions

AS1–A10–A1–A1

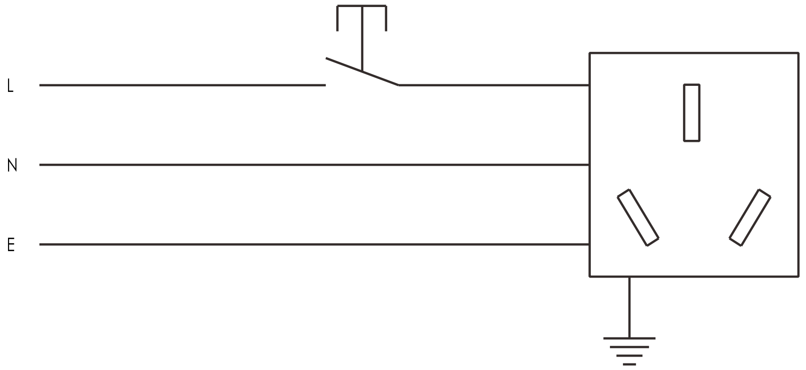


按箭頭向上垂直安裝
底部離地大于300mm
否則有進水風險

Press the arrow to
vertically install.
The bottom should be
more than 300mm above
the ground. Otherwise,
there is a risk of water inflow

◆ 電氣原理圖 Schematic diagram

氣動自鎖開關 Pneumatic self–lock switch



ANQ1型氣動按鈕 Pneumatic button

◆ 特點和用途 Characteristics and usage

- 結構穩定，裝配更加方便。
  Stable structure and easy assembly.
- 軟管和接頭之間連接穩固，氣密性好。
  The connection between the hose and the joint is stable and the air tightness is good.
- 主要應用于垃圾處理器、按摩浴缸等開關控制用。
  It is mainly used for garbage disposal, massage bathtub and other switch control.

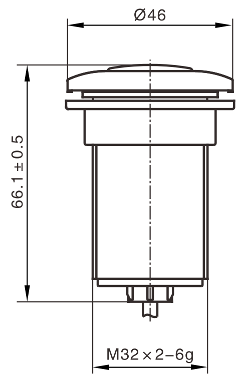
◆ 型號規格命名及含義 Model number legend and meanings

ANQ1－□ □ □－□－(□)
1 2 3 4 5

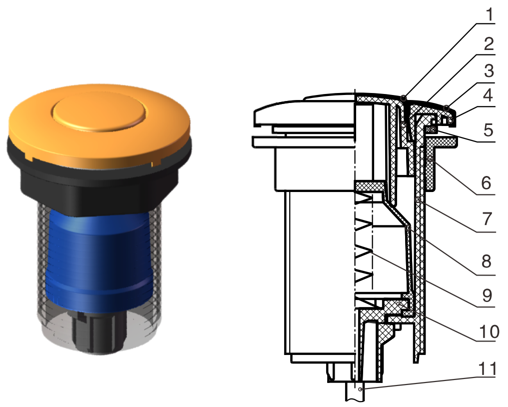
1 外蓋材質代號 Material code of outer cover	H—黄銅　Brass B—不銹鋼 Stainless steel	**4** 尾部有無帶氣管代號 Does the tail have the code of air pipe	O—無氣管 No trachea □—氣管長度（毫米數） Length of trachea (mm)
2 外殼螺紋代號 Case thread code	32—M32×2 28—M28×2	**5** 附加代號 Additional code	與標準規格有不同處，用01,02……表示。 There are differences with the standard specifications, shows as 01,02……
3 外殼顏色代號 Case color code	W—白色 White B—黑色 Black		

◆ 外形和安裝尺寸
Outline and mounting dimensions

ANQ1-B32B-□



◆ 內部構造圖
Internal configuration drawing

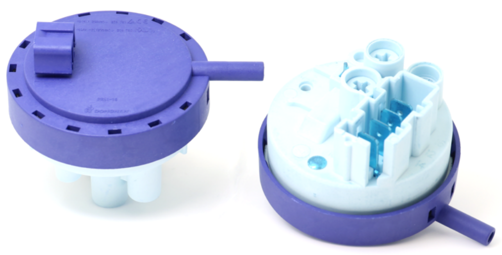


1:	按鈕帽	Button cap
2:	按鈕	Button
3:	外蓋	Outer cover
4:	按鈕蓋	Button cover
5:	墊圈	Washer
6:	螺紋圈	Screw ring
7:	外殼	Shell
8:	氣囊	Gasbag
9:	彈簧	Spring
10:	氣嘴	Air nozzle
11:	PVC氣管	PVC trachea

PRS1 型壓力開關系列 Pressure Switch series

◆ 特點和用途 Characteristics and usage

- 結構緊凑可靠，安裝方便。
  Compact and reliable structure, easy installation.
- 多種結構型式
  A variety of structures
- 具有多種額定值等級
  A Variety of current degrees
- 多種動作壓强
  A variety of action pressure
- 應用于洗碗機、洗衣機等家用電器及水位控制設備。
  Used in dishwashers and other home appliances and similar equipment



◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
環境溫度 Environment temperature		0℃～85℃
相對濕度 Relative humidity		95%,40℃
絶緣電阻 Insulation resistance		≥100MΩ；試驗後 After test ≥50MΩ (500VDC)
接觸電阻 Contact resistance		≤50mΩ； 試驗後 After test≤200 mΩ
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.	AC1800V ，50/60Hz，1min
抗振動 Vibration resistance		10～55Hz，1.5mm 雙振幅 Double amplitude
防觸電保護等級 Electric shock proof protection degree		Ⅰ級 class
密封性 Sealability		施加 0.15MPa水壓，保持 5 min各處無泄漏。 Apply 0.15MPa water pressure, keep 5min, no leakage anywhere.
阻燃等級 Flammability class		750℃/2s
電氣壽命 Electrical life		≥20,000 次 cycles
安全認證 Safety approvals		UL、CUL、TUV、CE

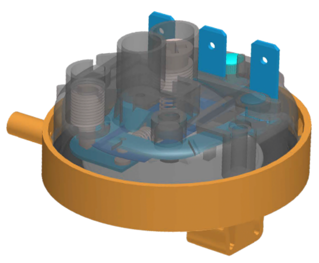
◆ 型號規格命名及含義 Model number legend and meanings

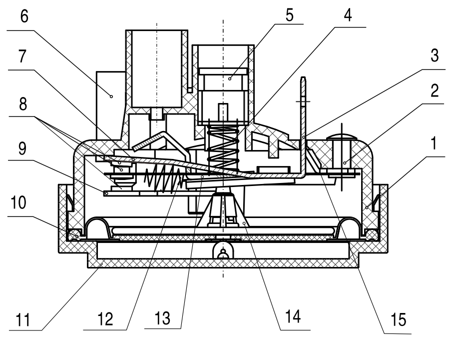
PRS1- □ □ □-□
1 2 3 4

1 額定值 Ratings	16: 16GPA 125/250VAC μ 2E4 T85 10: 10GPA 125/250VAC μ 2E4 T85 05: 5GPA 125/250VAC μ 2E4 T85 01:0.1GPA 125/250VAC μ 2E4 T85
2 結構型式 Structure style	A：普通式 無卡扣 Ordinary type without buckle B：普通式 有卡扣 Ordinary type with buckle C: 插座式 無卡扣 Socket type without buckle D: 插座式 有卡扣 Socket type with buckle （見說明圖See illustration)
3 動作壓强 / 復位壓强 Action pressure / reset pressure (mmH₂O)	A：140/120 mmH₂O B：135/115 mmH₂O C：83/63 mmH₂O D：59/40 mmH₂O E：100/78 F：70/50
4 附加代號 Additional specs code	用 01、02、03 ……表示。適用于： Shows as 01, 02, 03……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)當蓋的安裝方位與默認方位不同時 When the installation position of the cover is different with the default position 3)當蓋的顏色與默認顏色不同時 When the color of the cover is different with the default color 4)當顧客有特殊要求時 When customer has particular requirements 5)在沒有附加代號時，該位置空缺。 If there is no additional numbers, the place is vacant.

◆ 内部構造圖 Internal configuration drawing

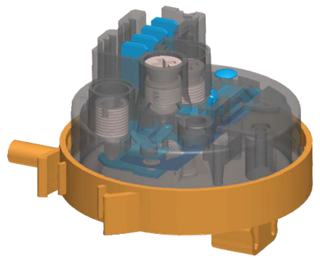
普通式 Ordinary type

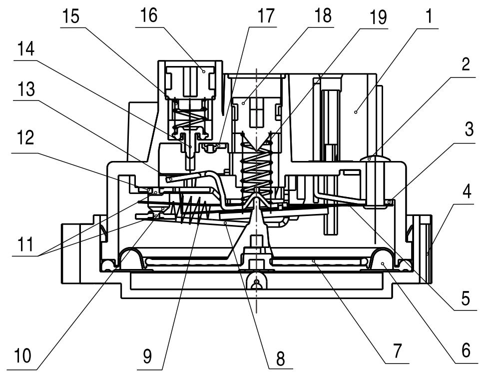




1: 外殼	Case
2: 鉚釘	Rivet
3: 端子	Terminal
4: 彈簧	Spring
5: 動片螺杆	Screw
6: 静件螺杆	Screw
7: 常閉端子	NC terminal
8: 電觸點	Contact
9: 常閉端子	NO terminal
10: 密封件	Seal element
11: 蓋	Cover
12: 壓簧	Spring
13: 支架	Support
14: 推盤	Plate
15:可動片	Moving piece

插座式 Socket type





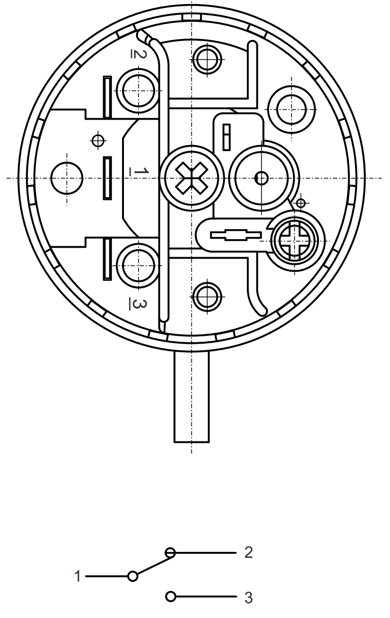
1: 外殼	Case
2: 鉚釘	Rivet
3: 端子	Terminal
4: 蓋	Cover
5: 可動片	Moving piece
6: 密封件	Seal element
7: 推盤	Plate
8: 常開端子	NO terminal
9: 壓簧	Spring
10: 静件螺杆	SCREW
11: 電觸點	Contact
12: 常閉端子	NC terminal
13: 支架組件	Support assembly
14: 杆	Handspike
15: 短彈簧	Short spring
16: 支架螺杆	Support screw
17: 常開端子2	NO termina 2
18: 可動片螺杆	Moving piece screw
19: 彈簧	Spring

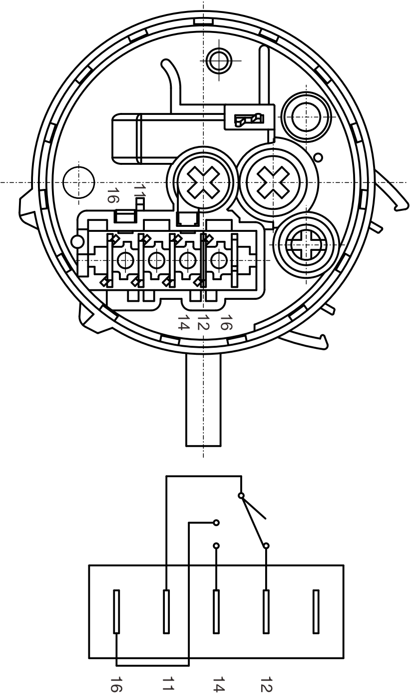
◆ 接觸形式説明圖 Circuit illustration

普通式 Ordinary type

转换式 SPDT

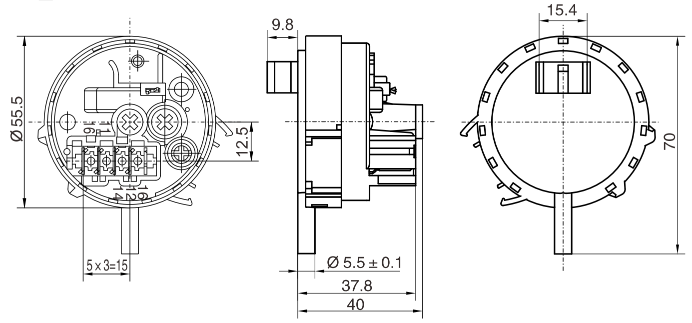
插座式 Socket type





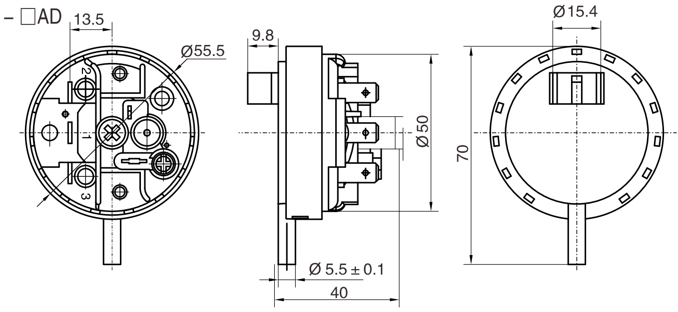
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

PRS1- □DE
PRS1- □DF



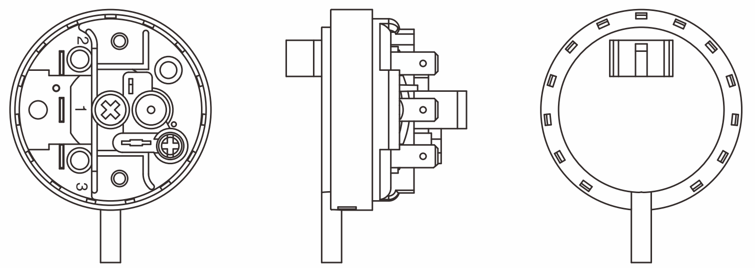
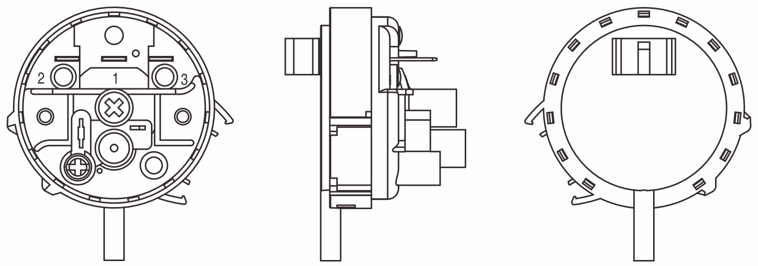
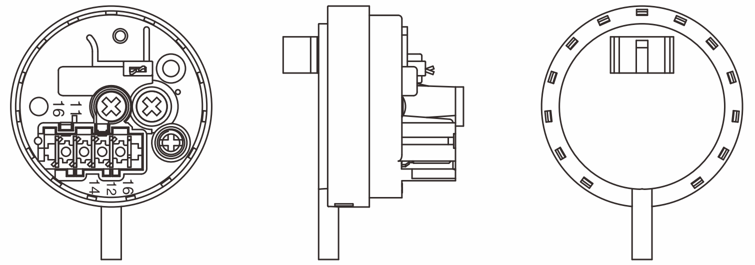
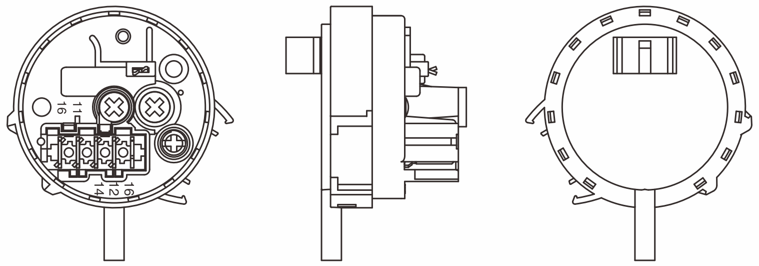
型號 Model	動作值 mmH_2O Action value	復位值 mmH_2O Reset value	溢流 mmH_2O Overflow
PRS1- □DE	100±3	78±3	300±25
PRS1- □DF	70±3	50±3	340±25

PRS1- □AA
PRS1- □AB
PRS1- □AC
PRS1- □AD



型號 Model	動作值 mmH_2O Action value	復位值 mmH_2O Reset value	壓差 Differential pressure
PRS1- □AA	140±3	120±3	⩾18
PRS1- □AB	135±3	115±3	⩾18
PRS1- □AC	83±3	63±3	⩾18
PRS1- □AD	59±3	40±3	⩾18

◆ 結構型式説明圖 Structural style illustration

普通式 無卡扣 Ordinary type without buckle	
普通式 有卡扣 Ordinary type with buckle	
插座式 無卡扣 Socket type without buckle	
插座式 有卡扣 Socket type with buckle	

BD1型门按钮 Door button

◆ 特點和用途 Characteristics and usage

- 超长驱动杆
Extra long drive rod
- 应用于电烤箱及类似设备的门控按钮触发装置。。
Door control button triggering device applied to electric ovens and similar equipment.

◆ 技術特性 Technical Characteristics

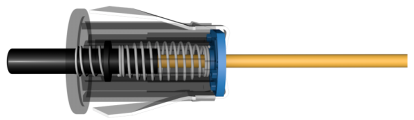
項目 Item	特性值 Value
溫度等級 Degree of temperature	T150
相对湿度 Relative humidity	95%，40℃
驱动行程 Drive stroke	11.6mm±0.3
动作力 Operating force	4.0±1.0N
寿命 Life	机械≥200,000次 Mechanical ≥200,000 cycles

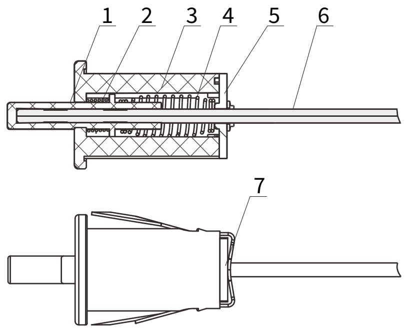
◆ 型號規格命名及含義 Model number legend and meanings

BD1 – □ – (□)
1 2

1 驱动杆长度 Drive rod length	A:551.3±1.0 B:571.8±1.0
2 附加规格代号 Additional specs code	适用于apply to： 1) 当顾客有特殊动作特性值或其它要求时； When customer has particular operating value or other requirements. ■ 附加规格代号用两位阿拉伯数字表示，如01、02、03…… 在没有附加规格编号时，该位置空缺。 Additional specs number shows as 01, 02, 03…… If there is no additional numbers, the place is vacant.

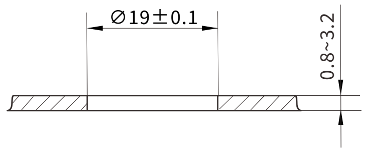
◆ 內部構造圖 Internal configuration drawing





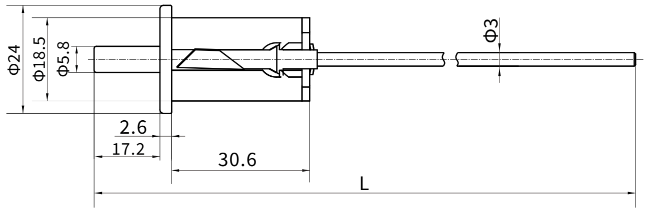
1、按柄	Handspike
2、限位弹簧	Limit spring
3、外壳	Base
4、压簧	Spring
5、盖	Cover
6、驱动杆	Drive rod
7、夹板	Splint

◆ 安装孔尺寸 Mounting hole dimensions

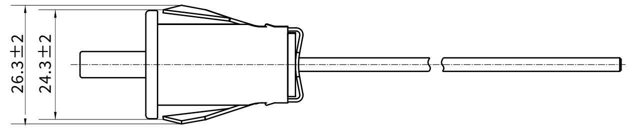


◆ 外形尺寸和動作特性 Dimensions and operating characteristics

动作力 Operating force	4.0N±1.0N
行程 Travl	11.6mm ±0.3mm



型號 Model	L
BD1-A	551.3±1.0
BD1-B	571.8±1.0



BS1 型条形开关 Bar switch

◆ 特點和用途 Characteristics and usage

- 外形体积小巧，产品性能可靠
  Small size, reliable performance
- 产品主要用于汽车引擎盖及门窗控制开关
  Mainly used for car hood, door and window control switch.
- 采用压接标准连接用端子，方便接线及更换，更加环保
  Using crimping standard contact terminals,
  easy connection and replacement, more environmentally friendly.

◆ 技術特性 Technical Characteristics

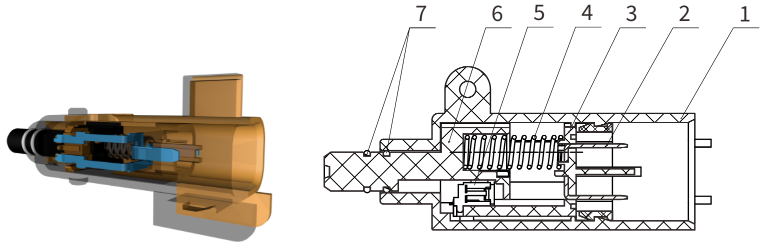
項目 Item		特性值 Value
環境溫度 Environment temperature		40T85
額定值 Rating		30VDC,0.1A
动作力 Operating force		7.5±1.5N
全行程力 Total travel force		20N (MAX)
絕緣電阻 Insulation resistance		≥50MΩ (500VDC)
接觸電阻 Contact resistance		≤500mΩ
工頻耐電壓 Test voltage	不相接端子間 Between non-continuous terminals	AC300V,50/60Hz，1min
	端子與不帶電金屬件之間 端子與地（外殼）之間 Between each terminal and non-current-carrying metal parts Between each terminal and ground(case)	AC300V,50/60Hz，1min
抗振動 Vibration resistance		10～55Hz，1.5mm两倍振幅double amplitude
抗衝擊 Shock resistance		衝擊值Shock value：980m/s^2 方向•时间：X、Y、Z方向 各5次 Direction and time: 5 times each in X, Y, and Z directions
电气壽命 Electrical Life		≥50,000次 ≥50,000cycles
質量 Weight		约10.8g Approx.10.8g
防護等級 Protection degree		IP67

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

BS1 − □ (□)
1 2

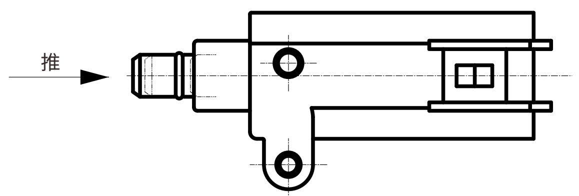
1 规格号 specs	用数字1、2……表示 Shows as 01、02、……
2 附加规格代号 Additional specs code	附加规格代号用两位阿拉伯数字表示，如01、02、03……用以表示有特殊要求。 Additional specs number shows as 01, 02, 03…… used to express special requirements.

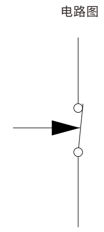
◆ 內部構造圖 Internal configuration drawing



1、外殼	Cover
2、端子	Terminal
3、底座	Base
4、彈簧	Spring
5、限位开关	Limit switch
6、推杆	Push rod
7、O形圈	O-ring

◆ 接触形式说明图 Circuit illustration

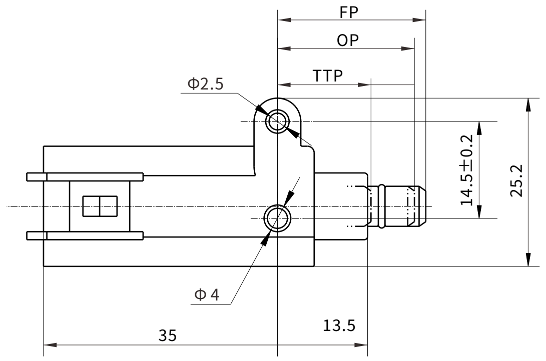


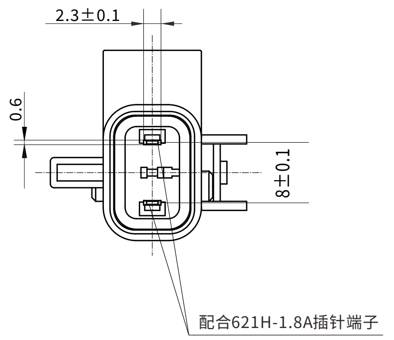


◆ 外形尺寸和動作特性 Dimensions and operating characteristics

BS1-1

型号 Model	BS1-1
OF (N)	7.5±1.5
TF Max(N)	20.0
FP (mm)	22.2±0.2
TTP Max(mm)	14.0
OP (mm)	20.5±0.6





MTW1 型蠟馬達驅動器 Wax motor actuator

◆ 特點和用途 Characteristics and usage

- 結構簡單可靠、安裝方便、推力大、無噪聲、省電。
  Simple and reliable structure, easy to install. High thrust, no noise, energy-saving

- 廣泛應用于液體及清潔劑的分配器、洗衣機、洗碗機、冰箱、電烤箱、嵌入式蒸汽爐、換氣扇、氣流控制器、空氣阻尼器、水流換向閥、熱延時器、安全門扣及隔音裝置、風冷冰箱的風門控制器等。
  Widely used in liquid and detergent distributors, washing machines, dishwashers, refrigerators, electric ovens, embedded steam stoves, ventilation fans, air flow controllers, air dampers, water flow reversing valves, thermal delay devices, safety buckles, sound insulation devices and air door controllers of air-cooled refrigerators, etc.

- **蠟馬達驅動器工作原理**
  Working principle of wax motor actuator

蠟馬達驅動器是一種驅動裝置。該裝置由一個正溫度系數的熱敏電阻，安裝在一個裝滿固體蠟的密封容器內，當熱敏電阻通電後發熱，使容器內的固體蠟達到一定溫度時，蠟開始熔化及膨脹，推動被彈簧壓住的活塞向外運動，依靠殼體內腔的導向及彈簧的結構，該活塞可拉進或推出一個負載。當熱敏電阻被切斷電源時，液態蠟冷卻收縮，同時彈簧複位力使活塞回複到原始位置。

The wax motor actuator is a driving device. The device consists of a thermistor with positive temperature coefficient, which is installed in a sealed container filled with solid wax. When the thermistor is energized and generates heat, causing the solid wax in the container to reach a certain temperature, the wax begins to melt and expand, pushing the piston pressed by the spring to move outward.By relying on the guidance of the inner cavity of the shell and the structure of the spring, the piston can pull in or push out a load. When the power of the thermistor is cut off, the liquid wax cools and contracts, while the spring resetting force causes the piston to return to its original position.

◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value			
額定值Ratings		110~240VAC, 50/60Hz, 穩態電流 Steady state current 0.12Amax, 脈衝電流 Pulse current 0.75AMax			
溫度等級Degrees of temperature		10T70			
絕緣電阻Insulation resistance		≥100MΩ (500VDC) (端terminal-殼case)			
耐電壓 Test voltage	端子與不帶電金屬件 (外殼) 之間 Between each terminal and other exposed metal parts(case)	AC2500V, 50/60Hz, 1min (端terminal-殼case)			
動作行程(mm)Pretravel		MTW1-AL635	MTW1-AS635-01	MTW1-AS800	MTW1-AS1200
		4.98~6.35	4.98~6.35	6~8.2	9~12.3
壽命Life		環境溫度20～25℃,通電90s後斷電300s Environmental temperature 20-25 °C, power on for 90 seconds and power off for 300 seconds		環境溫度20～25℃,通電120s後斷電300s Environmental temperature 20-25 °C, power on for 120 seconds and power off for 300 seconds	
		18000次 MIN(無負載No load) 10000次 MIN(30N)		18000次 MIN(無負載No load) 7000次 MIN(70N)	10000次 MIN(無負載No load) 5000次 MIN(70N)
安全認證 Safety approvals		UL、CQC 、TUV、CE			

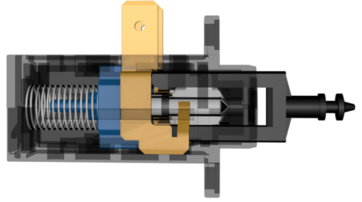
◆ 型號規格命名及含義 Model number legend and meanings

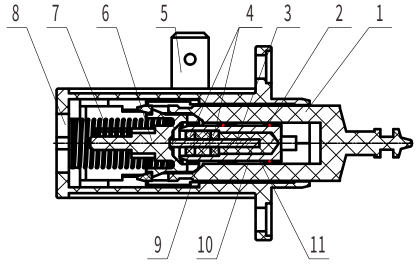
MTW1–□□□–(□)
1 2 3 4

1 額定值 Ratings	A:110~240VAC, 50/60Hz B:12VDC C:24VDC	**3** 工作行程 Operating travel	600-1200:6.00-12.00mm (例如such as635:6.35mm, 1200:12.00mm)
2 驅動形式 Actuator forms	L:拉式 Pull type S:推式 Push type	**4** 附加代碼 Additional specs code	空白Blank/數字Number(00-99)/ 字母Letter(A-Z) (Not related to product structure)

◆ 內部構造圖 Internal configuration drawing

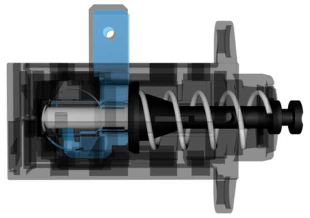
MTW1-AL635
拉式 Pull type

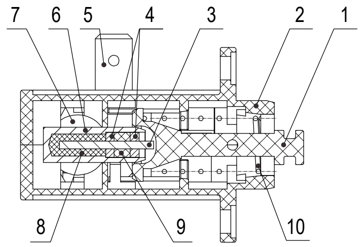




1.推杆 Push rod
2.殼體 Housing
3.鋼針 Stainless Needle
4.墊片 Shim
5.端子 Terminal
6.滑塊 Slider
7.彈簧 Spring
8.基座 Case
9.密封圈 Seal Ring
10.蠟 Wax
11.電阻 Resistor

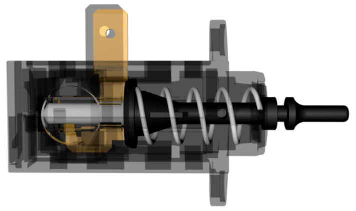
MTW1-AS635
推式 Push type

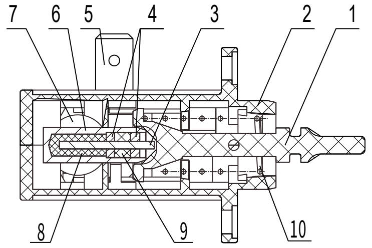




1.推杆 Push rod
2.基座 Case
3.鋼針 Stainless Needle
4.墊片 Shim
5.端子 Terminal
6.殼體 Housing
7.電阻 Resistor
8.蠟 Wax
9.密封圈 Seal Ring
10.彈簧 Spring

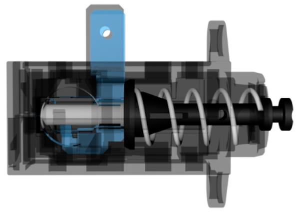
MTW1-AS635-01
推式 Push type

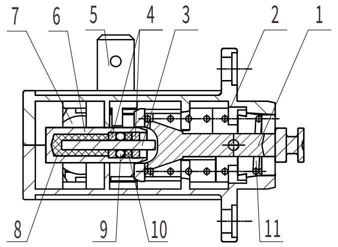




1.推杆 Push rod
2.基座 Case
3.鋼針 Stainless Needle
4.墊片 Shim
5.端子 Terminal
6.殼體 Housing
7.電阻 Resistor
8.蠟 Wax
9.密封圈 Seal Ring
10.彈簧 Spring

MTW1-AS800
推式 Push type

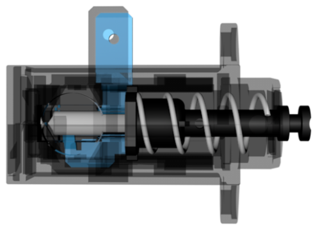


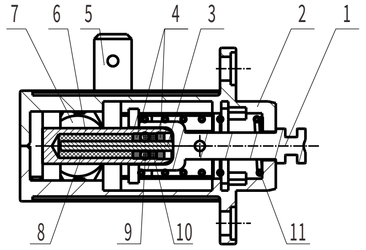


1.推杆 Push rod
2.基座 Case
3.鋼針 Stainless Needle
4.墊片 Shim
5.端子 Terminal
6.殼體 Housing
7.電阻 Resistor
8.蠟 Wax
9.密封圈 II Seal Ring II
10.密封圈 Seal Ring
11.彈簧 Spring

MTW1

MTW1-AS1200
推式 Push type

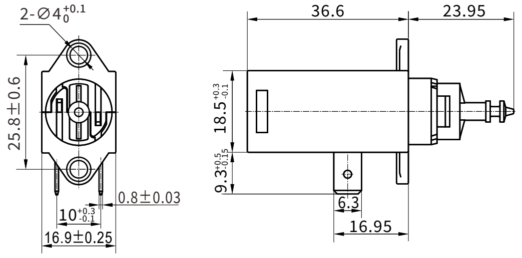




1、推杆	Push rod
2、基座	Case
3、鋼針	Stainless Needle
4、墊片	Shim
5、端子	Terminal
6、殼體	Housing
7、電阻	Resistor
8、蠟	Wax
9、密封圈 II	Seal Ring II
10、密封圈	Seal Ring
11、彈簧	Spring

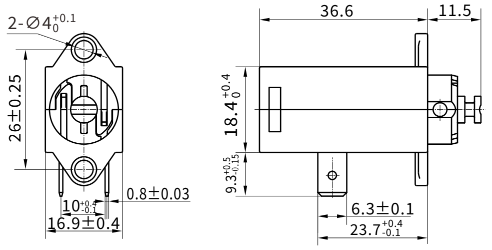
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MTW1-AL635



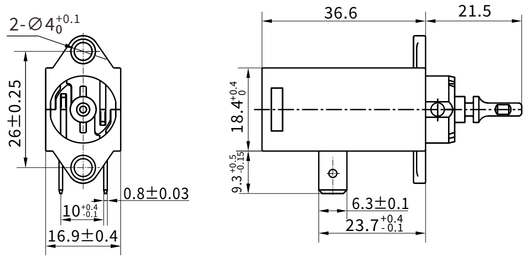
型號Model	MTW1-AL635
環境溫度 Environment temperature	20～25℃
通電時間 Power on time	90s
負載 Load	30N
行程Travel	4.98~6.35

MTW1-AS635



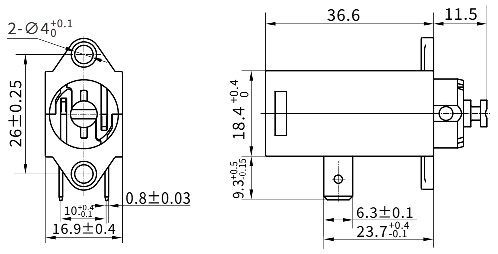
型號Model	MTW1-AS635
環境溫度 Environment temperature	20～25℃
通電時間 Power on time	90s
負載 Load	30N
行程Travel	4.98~6.35

MTW1-AS635-01



型號Model	MTW1-AS635-01
環境溫度 Environment temperature	20～25℃
通電時間 Power on time	通电90s
負載 Load	30N
行程Travel	4.98~6.35

MTW1-AS800
MTW1-AS1200



型號 Model	MTW1-AS800	MTW1-AS1200
環境溫度 Environment temperature	20～25℃	
通電時間 Power on time	通电120s	
負載 Load	70N	
行程 Travel	6~8.2	9~12.3

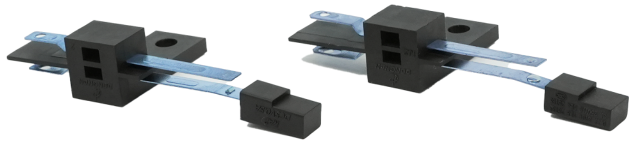
KA2

KA2型安全開關 Safety switch

◆ 特點和用途 Characteristics and usage

- 結構簡單可靠，安裝方便。
Simple and reliable structure, easy installation.

- 廣泛應用于洗衣機等家用電器。
Widely used in household appliances such as washing machines.



◆ 技術特性 Technical Characteristics

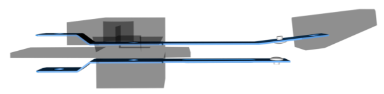
項目 Item		特性值 Value
額定值Ratings		0.5A 6VDC; 3A 250VAC; 6A 110/120VAC;
溫度等級Degrees of temperature		-25℃~ 85℃
絕緣電阻Insulation resistance		⩾100MΩ (500VDC)
接觸電阻Contact resistance		≤50mΩ（以A為基准，操作杆頂點P壓至7.2mm時的觸點接觸電阻） With A as the basis, the contact resistance of the operating rod vertex P when pressed to 7.2mm
耐電壓 Test voltage	端子與不帶電金屬件（外殼）之間 Between each terminal and non-current-carrying metal partscase)	AC1500V，50/60Hz，1min
	不相接端子間 Between non-continuous terminals	AC1500V,50/60Hz，1min
動作位置Operating position		3.25±1.0 mm (以A為基准，操作杆頂點P由A向B運動操作杆頂點在開關轉換時與A的距離) With A as the basis, the operating lever vertex P moves from A to B, the distance between the operating lever vertex and A during the switch transition
壽命Life		電氣⩾50,000次　Electrical ⩾50,000 cycles
安全認證 Safety approvals		UL、CQC

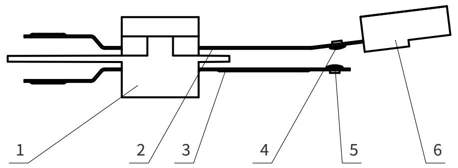
◆ 型號規格命名及含義 Model number legend and meanings

KA2 – □ (□)
1　2

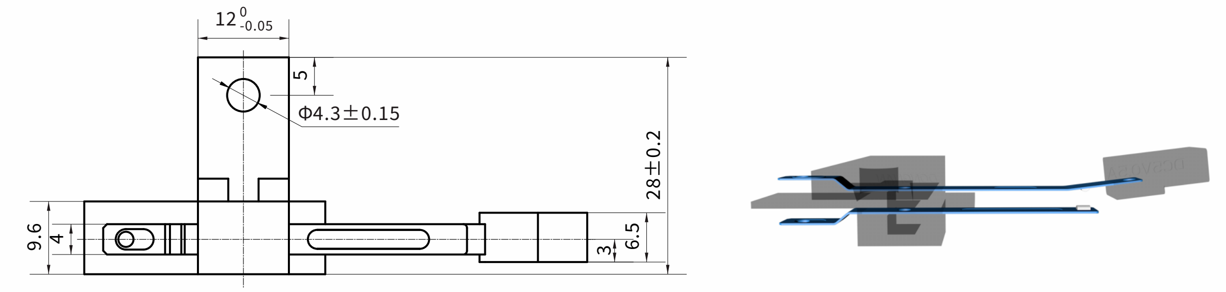
1 規格号 Specs code	用数字1、2……表示 Shows as 01、02、……
2 附加規格編號 Additional specs code	附加規格代号用两位阿拉伯数字表示，如01、02、03……用以表示有特殊要求。 Additional specs number shows as 01, 02, 03...... used to express special requirements.

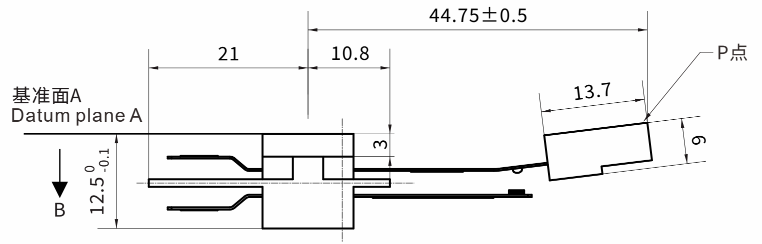
◆ **內部構造圖** Internal configuration drawing



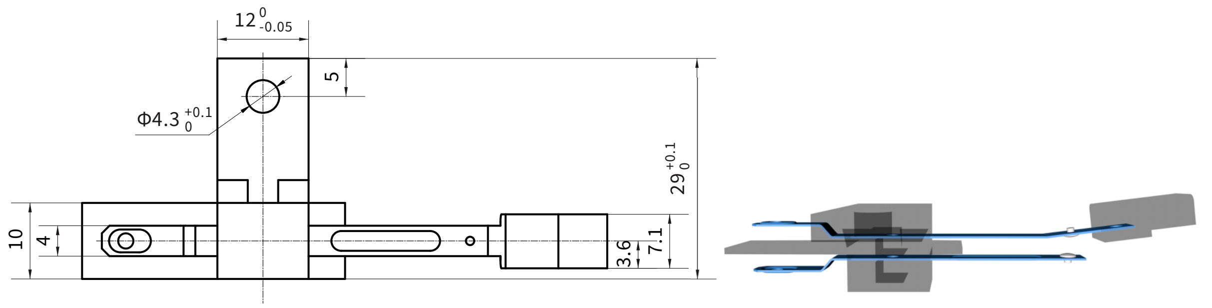


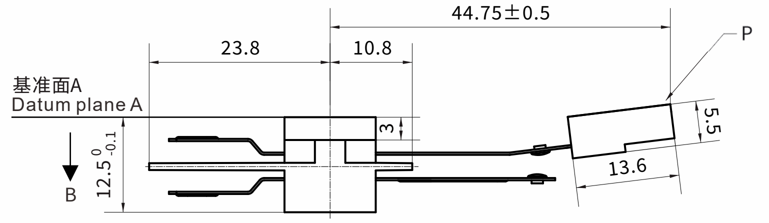
1、基座	Case
2、可動片	Moving piece
3、靜端子	Terminal
4、電觸點	Contact
5、電觸點	Contact
6、驅動件	Drive part



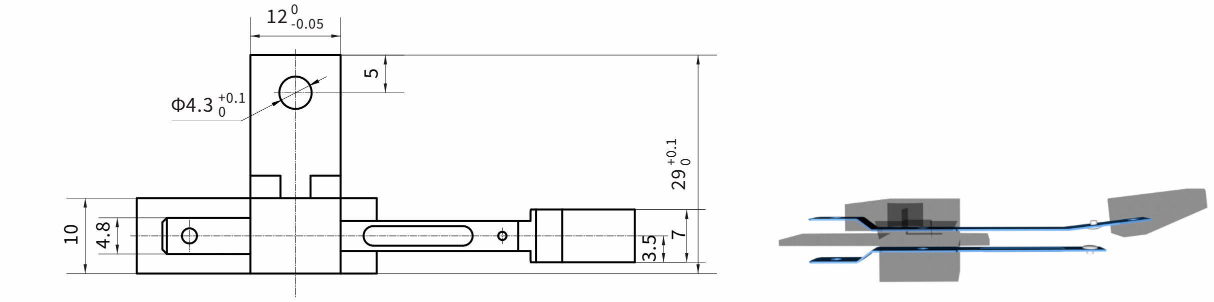


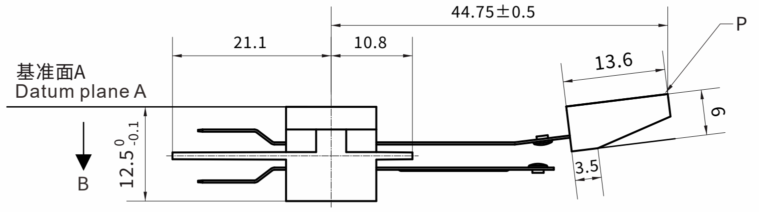
型號 Model	KA2-1
動作位置(OP)	3.25±1.0 mm
接觸電阻 Contact resistance	⩽50mΩ





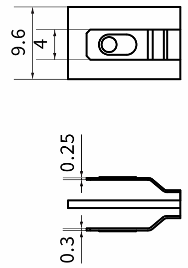
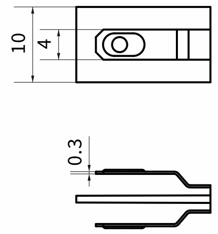
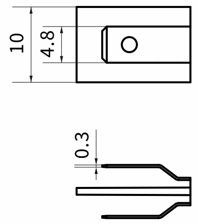
型號 Model	KA2-2
動作位置(OP)	3.25±1.0 mm
接觸電阻 Contact resistance	⩽50mΩ



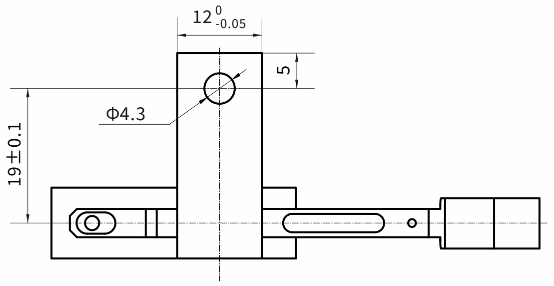


型號 Model	KA2-3
動作位置(OP)	3.25±1.0 mm
接觸電阻 Contact resistance	⩽50mΩ

◆ **接綫端尺寸** Connect terminals dimensions

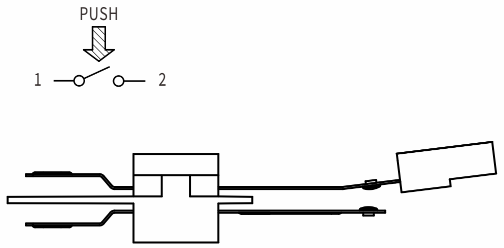
焊線端子KA2-1 Solder terminal	焊線端子KA2-2 Solder terminal	快插端子KA2-3 Quick plug terminal
		

◆ **安裝孔尺寸** Mounting hole dimensions



◆ **接觸形式說明圖** Circuit illustration

常開式SPST-NO



電子鎖止裝置 Electronic locking actuator DNL101E-D250-01

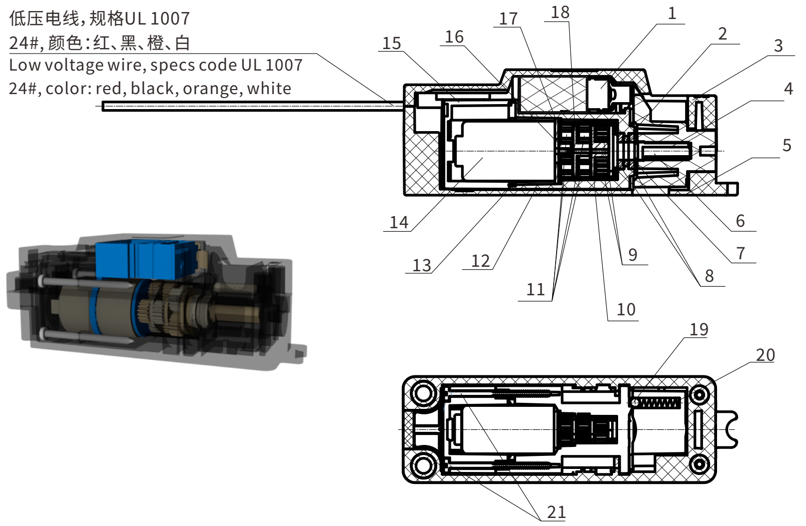
◆ 特點和用途 Characteristics and usage

- 結構可靠。
  Reliable structure.
- 電子鎖止裝置為汽車充電槍內部的鎖止機構。
  The motor lock is the locking mechanism inside the automobile charging gun.
- 电子锁止装置工作原理 Working principle of motor lock
  通電後，內置電機旋轉，輸出扭矩，並通過內部的行星齒輪結構減速增加扭矩，使旋轉塊旋轉到鎖止位置充電槍鎖止無法拔出，旋轉塊旋轉操作內置的反饋微動開關；當馬達鎖處于解鎖狀態時，反饋微動開關處于導通狀態，處于上鎖狀態時，反饋微動開關處于斷開狀態。
  After electrifying, the built-in motor rotates to output torque, and the internal planetary gear structure decelerates to increase the torque, causing the rotating block rotates to the locking position and the charging gun cannot be pulled out, and the rotating block rotates to operate the built-in feedback micro switch, when the motor lock is in the unlocked state, the feedback micro switch is in the on state. When it is in the locked state, the feedback micro switch is in the off state.

◆ 技術特性 Technical Characteristics

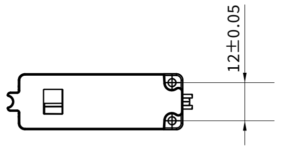
項目Item		特性值 Value
最大电流 Max current		450mA
額定电压 Rated voltage		12V
响应时间 Response time		⩽300ms
絕緣電阻 Insulation resistance	线芯与地(外壳)之间 Between core and ground (case)	⩾100MΩ (500VDC)
旋转角度 Rotation angle		45°±5°
工頻耐電壓 Test voltage	线芯与地(外壳)之间 Between core and ground (case)	AC600V，50/60Hz，1min(漏电流0.5mA Leakage current 0.5mA)
温度等级 Degrees of temperature		30T85
最大通电时间Max power on time		6S
壽命 Life		電氣⩾30,000次 Electrical⩾30,000 cycles
防護等級 Protection degree		IEC IP55

◆ 內部構造圖 Internal configuration drawing



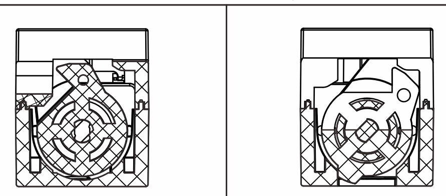
1、开关(常闭)	Switch(NO)
2、防水圈	Waterproof loop
3、下壳体	Lower shell
4、旋转块	Rotating block
5、上壳体	Upper shell
6、输出齿轮架	Output gear frame
7、防水圈	Waterproof loop
8、小垫片	Gasket
9、16齿齿轮	16 gears
10、11齿齿轮架	11 gears
11、17齿齿轮	17 gearsr
12、电机外壳	Motor Case
13、密封圈	Hermetic loop
14、电机	Motor
15、电机后盖	Motor rear cover
16、9齿齿轮	9 gears
17、大垫片	Gasket
18、9齿齿轮架	9 gears gear frame
19、钢珠	Steel ball
20、压簧	Spring
21、半牙自攻螺丝	Self tapping screw

◆ 安装孔尺寸 Mounting hole dimensions



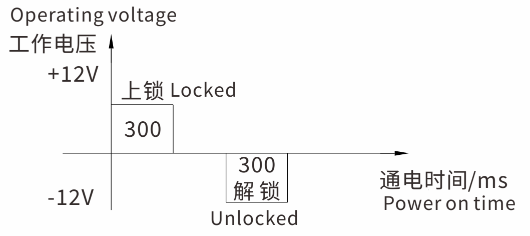
◆ 接觸形式説明圖Circuit illustration

电控示意图
Electric control diagram

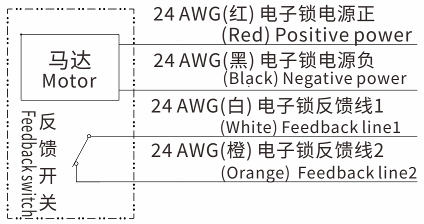


上锁状态下连杆轴位置
Position of connecting rod shaft in locked state

解锁状态下连杆轴位置
Position of connecting rod shaft in unlocked state



电控示意图
Electric control diagram



12V(电源+)红色线 (Power+) Red line	GND黑色线 Black line	电子锁状态 Motor lock state	反馈开关状态 Feedback switch state
+	-	解锁状态	导通 on
-	+	锁止状态	断开 off

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

	型号 Model No.	编号(图号) DWG No.	用途 Usage
产品名称 Product	DNL101	3.259.001	充电枪 Charging gun
	DNL201	3.259.002	充电车端 Charging car
	DNL301	3.259.003	充电桩端 Charging pile

◆ 按照左边型号命名规则：
According to the model naming rules on the left
1) 用于充电枪的，均属于1系列，依次给出101,102,103……
1)For charging guns, all belong to the 1 series, giving 101,102,103......
2) 用于充电车端的，均属于2系列，依次给出201,202,203……
2)For the charging car end, all belong to the 2 series, in order to give 201,202,203......
3) 用于充电桩端的，均属于3系列，依次给出301,302,303……
3)For the charging pile end, all belong to the 3 series, giving 301,302,303......

安全環保

符合RoHS 2.0指令

Accord with RoHS 2.0 Directive

標有“符合RoHS”的產品中限制以下所述的10種物質的使用
Products marked “RoHS” limit using following 10 materials

RoHS 2.0 限制物質 Restriction of Hazardous Substances Limit value		限制值 Limit value
鎘及其化合物 Cadmium compound	(Cd)	100 ppm
鉛及其化合物 Blumbum compound	(Pb)	1,000 ppm
水銀及其化合物 Hydrargyrum compound	(Hg)	1,000 ppm
六價鉻化合物 Hexavalent chromium	(Cr^{+6})	1,000 ppm
多溴化聯苯類 Polybrominated Biphenyls	(PBB)	1,000 ppm
多溴二苯醚類 Polybrominated Dipheny l Ethers	(PBDE)	1,000 ppm
鄰苯二甲酸二（2－乙基己基）Bis(2－ethylhexyl) phthalate	(DEHP)	1,000 ppm
鄰苯二甲酸丁酸苯甲酯 Butyl benzyl phthalate	(BBP)	1,000 ppm
鄰苯二甲酸二丁酯 Dibutyl phthalate	(DBP)	1,000 ppm
鄰苯二甲酸二异丁酯 Diisobutyl phthalate	(DIBP)	1,000 ppm

完全按照RoHS2.0指令，限制10種有害物質的使用。

Entirely according to RoHS Directive, restrict using 10 hazardous materials.

爲了生產出全球都能安心使用的產品，東南電子采取了全球性的對環境有害的化學物質的控制。針對2006年7月起執行的RoHS指令(電子電氣設備中有害物質使用禁止令)，我們已在2006年1月起嚴格執行RoHS指令。

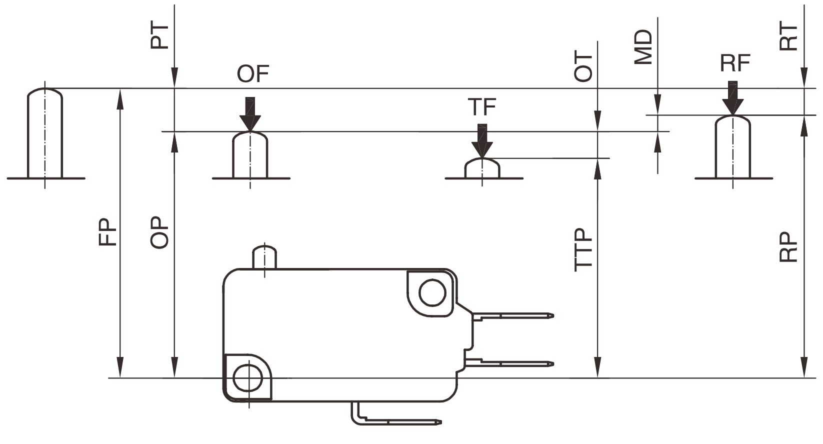
In order to produce safe products for whole world’s use, we DongNan Electronics strictly control chemistry materials which do harm to the world. RoHS Directive (Restriction of the use of certain hazardous substances in electrical and electronic equipment) carried out after July 2006, and we have carried out after January 2006.

認證標誌一覽表
Certification mark table

認證標誌 Mark	國家 Country
CQC	中國 China
CE ENEC 15	歐洲 Europe
VDE	德國 Germany
c RU ® US	美國 USA 加拿大 Canada
KC	韓國 Korea
N	挪威 Norway
FI	芬蘭 Finland
D	丹麥 Denmark
S	瑞典 Sweden

代號 Code	參數名稱 Name	含 義 Meanings
PT	動作行程(預行程) Pretravel	驅動件從自由位置到動作位置間的位移 The displacements of actuator from free position to operating position.
OT	超行程 Overtravel	驅動件從動作位置到全行程位置間的位移 The displacements of actuator from operating position to total travel position.
MD	差動行程 Movement differential travel	驅動件從動作位置到釋放位置的位移 The displacements of actuator from operating position to release position.
RT	釋放行程 Release travel	驅動件從釋放位置到自由位置間的位移 The displacements of actuator from release position to free position.
OF	動作力 Operating force	驅動件從自由位置移動到動作位置所必須的操作力 The force of displacements of actuator from free position to operating position.
TF	全行程力 Total travel force	驅動件在全行程位置所承受的最小操作力 The smallest force of displacements of actuator on total travel position.
RF	釋放力 Release force	驅動件自正向動作位置返回到釋放位置，操作力必須減小到的數值 The force must be smallest when the actuator moved back to release position from obverse operating position.
TTP	全行程位置 Total travel position	驅動件被止動時所處的位置 The position where the actuator be stopped.
OP	動作位置 Operating position	驅動件在速動機構發生正向動作瞬間所處的位置 The position where the actuator moved obverse on quick–moving parts.
RP	釋放位置 Release position	驅動件在速動機構發生反向動作瞬間所處的位置 The position where the actuator moved reversely on quick–moving parts.
FP	自由位置 Free position	驅動件在不承受操作力以及力不足以引起位移時所處的位置 The position where the actuator lead the displacements when its out of force is not enough.

◆ 微動開關動作特性圖解 Operating characteristic diagramming



開關額定值標識説明
Switch rating identification

標記示例 Marking example	含義 Meaning	備注 Remark
16(4)A	電阻性負載額定電流16A （電動機負載額定電流4A） Resistive load rated current 16A (motor load rated current 4A)	
16GPA	功率因數不小于0.75的感性負載額定電流16A Inductive load rated current is 16A with power factor not less than 0.75	北美風格符號 North American style symbol UL61058
hp	馬力horsepower	
4A/128A	電阻性負載和電容性負載額定電流4A/ 峰值浪涌電流128A Resistive load and capacitive load rated current 4A/ Peak inrush current 128A	
10T105	額定環境溫度範圍–10℃~+105℃ Rated ambient temperature range	
5E4	額定操作循環數5×10^4=50000（科學計數法 Scientific notation) Rated operating cycle number	
μ	微斷開Micro disconnect	

共通注意事項 Common Points for Attention

◆ 關于開關的使用 Concerning how to use switches

資料中標明的額定性能值，在没有特别指明的情况下，是指在標凖試驗狀態(温度15～35℃、相對濕度25～75%、氣壓86～106kPa)下的數值。在用實際設備進行測試時，請確認不僅是負載條件要相同，使用環境也應和實際使用狀態的條件相同。

The rating values listed in the documents refers to the value under standard testing condition(i.e.temperature 15~35℃,relative humidity 25~75%,air pressure 86~106kPa)if no other conditions specified. When testing with actual equipment, please confirm not only the loading condition but also the using environment should be the same as the actual using condition.

◆ 正確選擇開關 How to choose switch properly

請根據使用環境和負載條件選擇合適的開關使用。

Please choose the proper switch according to the using environment and the loading condition.

- 請根據額定電流、操作力、驅動杆(動臂)的種類、環境條件，在產品目録中選擇適合的開關。

  Please choose the suitable switch in catalogue according to the type of current,operating force,driving rod(levers) and the environment condition.

- 用較大電流的開關代替微小電流開關使用會影響觸點接觸的可靠性,因此請盡量避免;在可能被水等液體澆淋的,雜質、塵埃較多的環境中，請使用密封型開關。

  Using big current switch instead of small current switch will affect the contact reliability,so please try to avoid it. If the environment is easily be poured with liquid(such as water),or have much impurity and dust,please select the sealed switch.

◆ 電氣事項 Electrical Issue

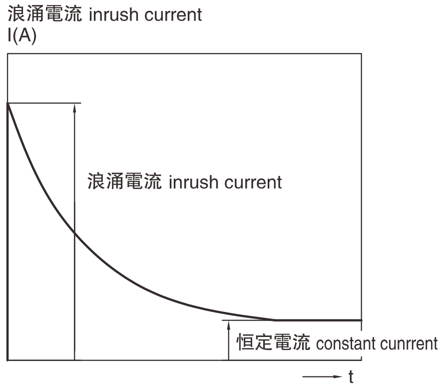
(1) 關于使用負載 Concerning the working load

- 同一開關用于交流電路和直流電路的控制能力相差很大。 直流場合控制容量非常小，這主要是由于直流時一旦產生電弧後就很難消除，導致電弧時間變長；此外還會引起觸點材料的遷移，造成觸點無法斷開；也容易產生誤動作。因此請確認額定值。采購時，請明示開關是用于直流還是交流。

The control capability of the same switch used in the AC circuit or DC circuit is different. The DC control capacity is small, this is mainly because when it is in DC current, once electric arc occurred, it is very difficult to eliminate and the electric arc time will be longer. Besides, the contact material will move and the contact cannot be separated which will cause wrong actions to occur. Thus,please confirm the rated value you require. When placing order, please indicate whether the switch is used in DC or AC current.

- 各種額定值的條件如下：Each rating conditions as follows:

感性負載：功率因數0.4以上(交流)，時間常數7ms以下(直流)
Inductive load: power factor more than 0.4 (AC), time constant less than 7ms (DC)
燈泡負載：有相當于恒定電流10倍的浪涌電流
Lamp load: have the inrush current which equals to 10 times of constant current
電動機負載：有相當于恒定電流6倍的浪涌電流
Motor load: have the inrush current which equals to 6 times of constant current



(2) 關于在電子回路中使用開關 Concerning using switch in electronic loop

微動開關在觸點切換時，會產生跳動、震顫，從而引起電子回路和音響設備的噪聲幹擾和脉衝出錯等故障。爲了避免這種影響，請采取下面措施：
Jumpiness and tremor will occur in changing contact of micro switch,this will cause failure in electronic loop,noise disturbing in acoustic equipment and the pulse mistake etc. In order to avoid this kind of influence, please take the following measures:

- 設計電路時，設置CR電路等浪涌吸收電路；
  Set up CR electric circuit and other swrge absorption circuits when designing circuit
- 選用采用了鍍金觸點的微小負載用開關，這種開關不易受到環境影響。
  Selected small load switch with gold–plated contact, this kind of switch will not easily affected by environment.

(3) 關于微小負載的使用 Concerning tiny load uses

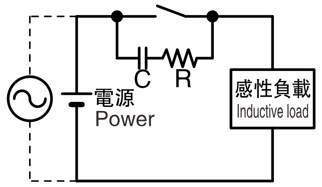
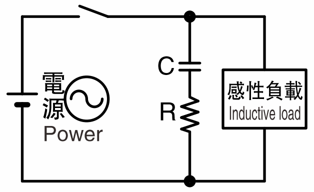
如果在微小負載電路中使用一般負載用開關，可能會導致接觸不良， 請選用使用區域内的開關，并根據需要插入正確的觸點保護電路(浪涌抑制器)；請選用采用了鍍金觸點的微小負載用開關。
If general load switch is used in the tiny load circuit,it may cause unstable contact.Please select the switch within the using region and insert the correct contact protection circuit (inrush suppresser) accordingly. Please select tiny load switch with gold–plated contact.

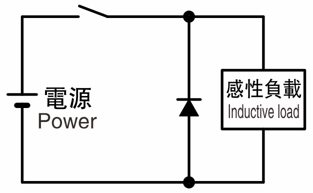
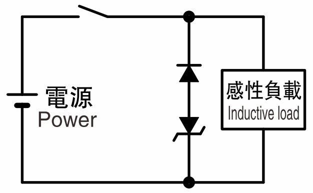
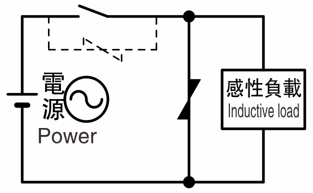
(4) 關于接點保護電路 Regarding contact protection circuit

- 爲了延長接點的壽命，防止噪聲，以及減少電弧引起的碳化物、硝酸的生成，可以使用接點保護電路(浪涌抑制器)，但如果使用不正確則適得其反。下面介紹接點保護電路(浪涌抑制器)的代表例。另外，在濕度高的環境中，由易產生電弧的負載(例如開關感性負載時)的電弧生成的NO_3和水分會生成硝酸(HNO_3)，腐蝕内部金屬部分并導致動作故障。在高頻率且產生電弧的電路條件下使用時，請根據下表使用接點保護電路(浪涌抑制器)。此外使用接點保護電路（浪涌抑制器）時，請注意負載的動作時間可能多少會變慢。

Contact protection circuit (inrush suppressor) can be used for the purpose to extend contact life, prevent noise and reduce carbides & nitric acid caused by electric arc. However, if it is used incorrectly, it will take effect on the contrary. Contact protection circuit (inrush suppressor) example is illustrated below. In addition, arc load (e.g. when switch is in inductive load) can easily generated NO_3 & moisture generated nitrate acid (HNO_3) under high humidity environment and internal corrosion in metal parts caused malfunction action. When it is used in high frequency and circuit arcing conditions, please use contact protection circuit (inrush suppressor) according to below table. Besides, when using contact protection circuit (inrush suppressor), please note that operation time for loading may be slower.

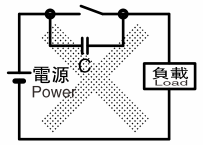
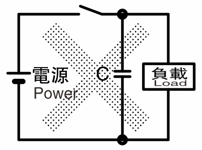
接點保護電路(浪涌抑制器)的代表例
Contact protection circuit (inrush suppressor) representative example

電路舉例 Circuit example		適用 Application		特點、其它 Characteristics, others	元件的選擇方法 Selection method of the component
		AC	DC		
CR方式 CR method		△*	○	*AC電壓下使用時，負載的阻抗必須比C、R的阻抗小得多。 When it is used under AC voltage, load resistance must be smaller than CR's resistance.	CR的標準是 CR standard C：接點電流1A爲1~0.5(μF) contact current 1A is 1~0.5(μF) R：接點電壓1V爲0.5~1(Ω) contact voltage 1V is 0.5~1(Ω) 根據負載的性質，可能不一致。可以認爲C影響接點斷開時的放電抑制效果，R起到下次通電時限制電流的作用，請在試驗中加以確認。C的耐壓一般使用200~300V的產品，AC電路請使用AC用電容器（無極性）。 但是直流高電壓時接點間電弧的斷路能力有問題時，在接點間連接C、R可能要比在負載間連接效果好，請實機確認。 According to the nature of load, it may be inconsistent. It is believed that C influence the discharge inhibitory effect of contact disconnection, R can limit electric current when the power is switched on next time, please confirm this point by testing. The withstand voltage of C is generally used for 200~300V product, please use AC capacitor for AC circuit (non–polarity). However, when it is in DC high voltage and there is problem with the ability of arcing to cutoff, to connect C, R with contact may be better than load connection, please confirm this point by actual machine.
		○	○	負載爲繼電器、螺綫管等的情况下動作時間變慢，電源電壓爲24～48V時連接在負載之間，100～200V時連接在接點間，效果比較好。 Operating time of loading under relay & solenoid conditions will be slower, when power voltage is 24~48V it is connected between the load, when it is 100~200V, it is connected between the contacts, it will enhance effectiveness.	

二極管方式 Diode method		×	○	儲存在綫圈中的能量通過并聯二極管，以電流的形式流向綫圈，在感性負載的電阻部分作爲熱能消耗掉。此方法比CR方式的復位時間更慢。 Energy stored in the coil connected parallel with diode flows to the coil in the form of electric current be used as heat energy in inductive load resistance component. Release time by this method is slower than by CR method.	請使用反向擊穿電壓爲電路電壓的10倍以上，且正向電流超過負載電流的二極管。 Please use opposite breakdown voltage that is above 10 times of circuit and forward current exceed load current diode.
二極管+齊納二極管方式 Diode + Zener diode method		×	○	二極管方式下復位時間太慢的情況下使用有效。 It is effective to use if release time is too slow by diode method.	有些環境下負載可能無法工作，因此請使用齊納電壓爲電源電壓1.2倍左右的齊納二極管。 Loading may not perform under some circumstances, please use zener diode with zener voltage that is 1.2 times of power voltage.
可變電阻方式 Variable resistance method		○	○	利用可變電阻的定壓特性，確保施加于接點間的電壓不至于過高的一種方法。這種方法下復位時間多少會變慢。 電源電壓爲24~48V時連接在負載間，100~200V時連接在接點間，效果比較好。 Using the constant pressure characteristics of variable resistance is the way is to ensure that the voltage between the contacts will not be too high. Release time will slow down under this method. When power voltage is 24~48V it is connected between the load, when it is 100~200V, it is connected between the contacts, it will enhance effectiveness.	可變電阻的截斷電壓Vc請根據下面的條件選擇。交流時必須爲$\sqrt{2}$倍。 Vc＞(電源電壓 × 1.5) 但是，如果Vc設定得過高，高壓就無法截斷，效果也將變差。 Please choose from below conditions for the cutoff voltage of variable resistor. (Vc)Alternating must be $\sqrt{2}$ times. Vc＞ (power voltage × 1.5) However, if Vc setting is too high, high pressure can't be cutoff, the result will become worse.

請不要如下使用接點保護電路(浪涌抑制器)

Please don't use contact protection circuit (inrush suppressor) as below.

 對于斷路時的消弧非常有效，但接點開路時C中儲存了容量，因此接點接通時C出現短路電流，接點很容易熔接。 It is effective to remove arcing when circuit breaking, however, C stored capacity when contact open. Thus, when contact is switched on, short circuit current will appear on C, contact will easily weld.	 對于斷路時的消弧非常有效，但接點接通時出現流向C的帶電電流，因此接點很容易熔接。 It is effective to remove arcing when circuit breaking, however, when contact is switched on, electric current with power flow towards C. Thus, contact will easily weld.

◆ 機械事項 Mechanical Issue

(1) 關于操作行程的設定 Concerning the operating travel setup

操作行程的設定將影響開關的可靠性，要得到高可靠性，開關必須在合適的接觸力範圍内使用 。因此安裝開關時，請特别注意：

The setup of operating travel will affect the reliability of the switch, if you want to obtain high reliability, the switch must be used in the appropriate contact force scope. Please pay special attention to the followings when installing the switch:

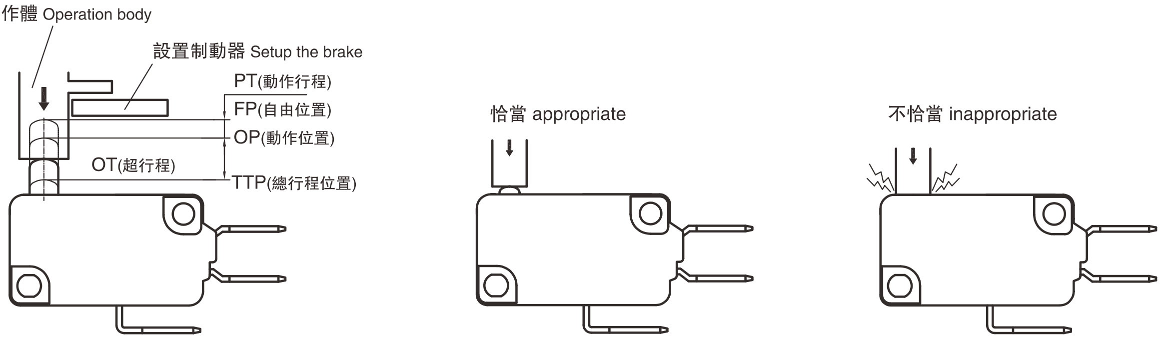
- 使用常閉(NC)觸點時，操作體設定必須保證驅動杆(按鈕或動臂)能返回到自由位置；使用常開(NO)觸點時，請以過行程(OT)值的70 ~ 100%爲標準來安裝。

  When using NC contact, operation body setup should ensure the driving rod (button or lever) can return to free position; When using NO contact, please install it according to 70 ~ 100% of the over travel(OT).
- 行程設定在動作位置(OP)和復位位置(RP)附近時，觸點間接觸力會較小且不穩定，無法保證較高的接觸可靠性，也容易由于振動和衝擊産生誤動作。

  When the travel setup is near the operating position (OP) and release position (RP) , the contact force between the contacts will be small and unstable i.e. high contact reliability cannot be ensured and vibration and impact will cause wrong action easily

  行程設定超過了全行程，即操作體在全行程位置(TTP)之下時，可能由于操作體的慣性力造成驅動杆和開關本體的損壞,同時加到内部可動彈簧的應力也會變大，由此導致開關的壽命縮短。

  When the travel setup exceed the total travel i.e. the operation body is below the total travel position (TTP), may be the inertia force of the operation body caused damage to the driving rod and switch body and also the moving spring stress inside will be bigger,then the switch life will be shortened.



- 特别提醒：請正確理解“全行程位置”的含義，它是指驅動件(按鈕或動臂)允許到達的最低位置(此位置能保持開關特性正常),而并非驅動件所能到達的機械極限位置(在這個位置，開關會受到損傷)。特别是在開關安裝有動臂(擺杆)的情况下,操作體如果强行將動臂驅動到超過全行程的位置，則不僅損傷開關内部零件，而且會使動臂嚴重變形，導致開關失效，請避免發生此現象。

  Special attention: please comprehend the meaning of “total travel position”correctly, it means the lowest position(the position can ensure normal switch specifications)of driving rod(button and lever)allowed,it does not mean the driving rod can reach mechanical limit position (switch will be damaged in this position) . Especially under the condition of driving lever (rod) mounted on the switch, if operation body moves the lever to surpass the total travel position forcefully,not only the parts inside will be damaged,but also the lever will be distorted heavily, then the switch will fail, please avoid this situation.

(2) 關于操作速度和操作頻率 Concerning operation speed and operation frequency

操作速度和頻率的設定，會影響開關的性能。請注意以下要點：

Operation speed and operation frequency setup will affect switch functions. Please pay attention to the followings:

- 操作速度極慢，則觸點的切换將不穩定，可能導致接觸不良和熔接。

  If the operating speed is too slow, then the contact change will be unstable which may cause the bad contact and fusion.
- 操作速度極快，則會變成衝擊動作，引起早期損壞。

  If the operating speed is too fast which will turn to impact movement, and it will cause early damage.
- 操作頻率太高，則觸點的切换可能會跟不上。

  If the operating frequency is too high, then the contact change may not be able to follow up.
- 操作頻率極低(1次以下/月)，觸點表面會産生氧化膜，導致接觸不良。

  The operating frequency is extremely low (for less then 1 time/month), the contact surface will be oxide, which will cause bad contact.

容許操作速度、容許工作頻率是用來保證開關的可靠性的，開關的壽命是在特定操作速度下的數值。

Allowed operating speed & operating frequency is used to guarantee switch reliability; switch life is under the specific operating speed value.

(3) 關于使用狀態 Concerning the using status

請不要在一直按下的狀態下長期使用，否則會加快彈性零件的劣化，改變其特性。

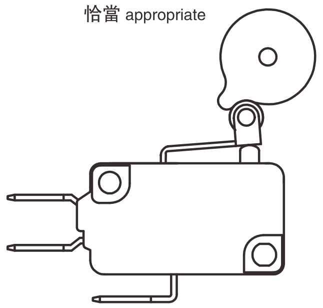
Please avoid using it when pressing continuously for a long time, otherwise, it will speed up the deterioration of elastic parts and change its characteristic.

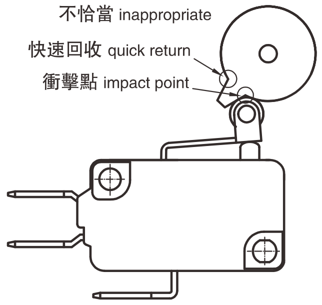
(4) 關于開關的操作方法 Regarding the way how to operate the switch

開關的操作方法直接影響開關的性能。操作時應注意：

Switch performance directly influenced by the way to operate switch. Please pay attention to the followings when operating switch:

- 請使用形狀平滑的開關操作體(凸輪、擋塊等)。開關的驅動杆快速回收受到衝擊時,可能導致驅動杆的破損和壽命的縮短。
  Please use the smooth shaped switch operation body (cam,stop piece etc.).When switch driving rod return quickly under impact which may cause driving rod breakage and life reduction.


恰當 appropriate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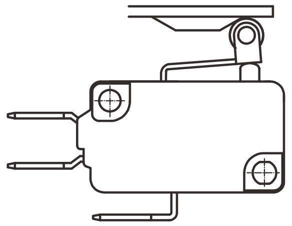
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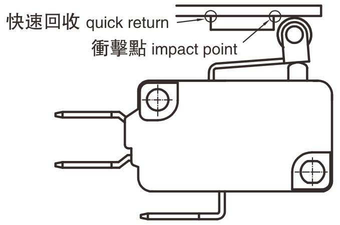
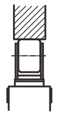

不恰當 inappropriate

- 操作時請不要在驅動杆上施加偏負荷。否則，局部摩擦可能導致驅動杆的破損和壽命的縮短。
  Please do not add leaning load on the driving rod when it is in operation. Otherwise, the part friction may cause driving rod breakage and life reduction.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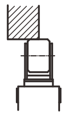
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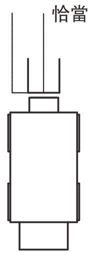
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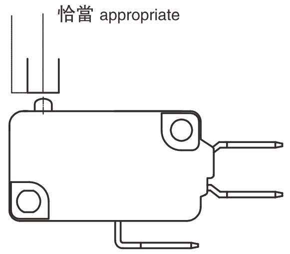
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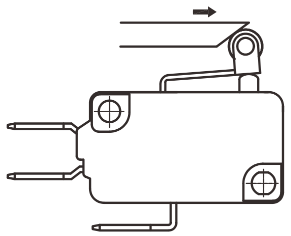
- 請根據驅動杆的動作方向進行操作。
  Please operate according to the movement direction of driving rod.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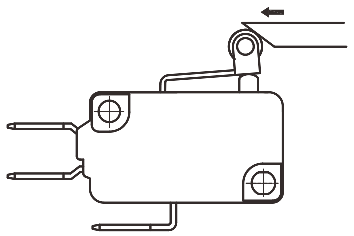
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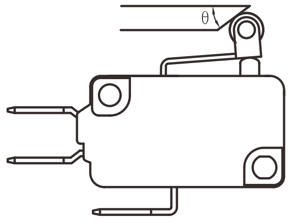
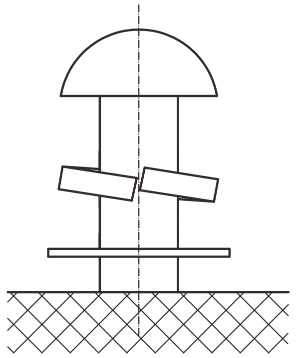
- 在針狀按鈕型中，請垂直按下按鈕。
  For the needle button type, please press button vertically.
- 滾輪擋塊的角度θ請設定在30°~45°的範圍內。角度過大，會對動臂造成异常的橫向應力。
  Please set the angle θ of the roller block in the range of 30 ° to 45 ° . Excessive Angle will cause abnormal lateral stress on the lever.



◆ 關于安裝 Concerning installation

(1) 開關的固定 Switch fixing

- 安裝開關時，使用安裝螺釘應配合平墊圈和彈簧墊圈。不能將彈簧墊圈直接壓在開關外殼上,以免損壞外殼。此外,緊固螺釘時，轉矩過大會導致觸點黏着和開關破損 。請選用與開關安裝孔相應尺寸的螺釘，螺釘直徑太小會造成安裝位置的不一致性。
  When installing switch, mounting screw have to match with the plain washer and the spring washer. Do not press the spring washer directly to the switch cover,in order not to damage the cover.In addition, when fastening screw,torque oversized will cause the contact to stick together and switch breakage. Please choose corresponding sized screw with the switch mounting hole. If the screw diameter is too small, it will cause nonconformity of mounting position.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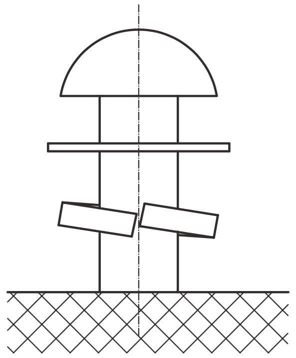
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- 請不要對開關本體進行擴大安裝孔等加工。
  Please do not add processing on the switch body such as expand mounting hole.
- 關于固定劑的使用：使用黏合劑、固定劑時，請不要使其附着在開關的可動部位或進入開關內部，否則可能導致動作不良、接觸障礙。此外有些種類可能產生有毒氣體造成惡劣影響，因此請充分確認後使用。
  Concerning fixing dosage using : When use adhesive, fixing dosage, please do not let it stick to moving parts or enter into the switch, otherwise, it may cause bad movement & bad contact. In addition, it may produce harmful gas in some cases which cause bad influence, thus, please use it after full consideration.
- 配綫方法：配綫時請不要在導綫上施加拉力。
  Wiring method: When wiring, please do not add pulling force on the wire.
- 安裝場所：請安裝在不容易引起開關誤當作的場所。
  Install place: Please install it in place where it will not cause switch mis-operation easily.
- 維護、檢查：安裝時請確保其容易檢查，便于更換。
  Maintenance check: When installing, please guarantee that it is easy to check and changed easily.
- 安裝方向:在低荷重(動作力)型開關上安裝長動臂(擺杆)時,請注意安裝方向,應保證動臂的自重不會直接對按鈕産生壓力,否則可能導致開關復位不良。
  Install directions: When assembling the long lever (rod) on the switch which is low load (operating force), please pay attention to install direction and should guarantee that the lever weight will not cause pressure to button directly, otherwise, it may cause bad release of the switch.

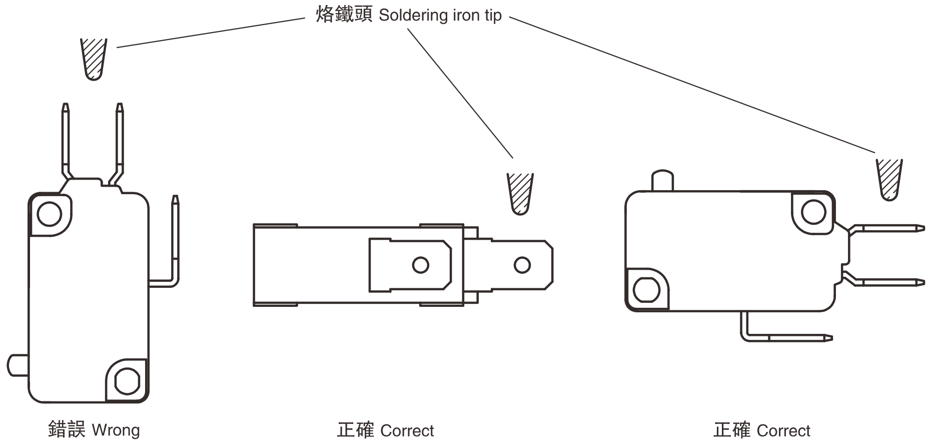
(2) 關于和端子的連接 Concerning the connection with terminals

- 焊接端子:用烙鐵進行焊接時,烙鐵頭的溫度請控制在380℃以下。如果開關在焊接不良的情況下使用,可能會引起异常發熱，燒毀。焊接溫度和時間爲380℃・3s以內。長時間加熱可能導致外殼軟化熔解，導綫表皮燒焦和內部結構變化等,造成開關特性下降。
  Solder terminal : When jointing with the soldering irons, please control the soldering iron tip, temperature below 380℃. If the switch uses in the bad jointing condition, it may cause exceptional heat, then burning. Jointing temperature and time: 380℃・3s. If it is heated for a long time, it may cause cover soften & melt, wire surface burn, the inside structure change and so on, will cause reduction in switch characteristics.
- 快接端子：請使用標準形狀的插套直向插入端子 。如果從端子的橫向或上下方向施加過大的外力 ，可能造成端子的變形和外殼破損。
  Quick connect terminal : Please use the standard shaped inserter to insert straightly to the terminal. If exert oversized external force transverse or above-below direction from the terminal, it may cause the terminal distort and the cover breakage.
- 隔板的使用：擔心絶緣距離無法確保或附近有其他金屬部件和銅綫時，請使用絶緣隔板來確保絶緣距離。
  Using of separator: If you're worry about the insulation distance are unable to be guaranteed or there are other metal parts and the copper wire nearby, please use insulator board to guarantee the insulation distance.

(3) 焊接注意事項 Soldering issue

- 手工焊接時，將端子橫放(與地面平行)，用熱容量合適的電烙鐵和適量的焊錫迅速焊接，還要注意用換氣扇等排放焊劑揮發的氣體。防止烙鐵頭碰觸到開關本體等導致焊劑流入開關內部。焊劑氣體進入開關內部，可能引起接觸不良 。焊接後請不要立刻向導綫和端子部位施力。

  When jointing with hands , please put the terminal flat (parallel with ground) , jointing rapidly with suitable thermal capacity electric soldering iron and suitable soldering tin , attention should be paid to use of ventilating fan so as to discharge the solder volatility gas.To avoid the soldering iron tip touch the switch body which will cause soldering dosage flows into switch inside. Soldering dosage gas enters into the switch may cause bad contact. After jointing, do not press the wire and terminal immediately.



- 自動焊接時，請調節好焊劑的量，不要讓焊劑漫到基板上。焊劑進入開關內部可能導致接觸不良。

  When joint automatically, please measure the solder dosage quantity, do not let it flow to the base plate. Soldering dosage flow inside the switch may cause bad contact.

◆ 使用和儲存環境 Using and storage environment

(1) 關于使用 Concerning usage

請不要往按鈕部位、驅動部位等運動部位加油，否則可能引起工作失常、接觸不良。

Please do not oil on the button and driving part, otherwise, maybe it will cause switch works abnormally, bad contact.

(2) 關于使用環境 Concerning the using environment

- 一般開關都不是防水結構。因此在水等液體飛散、噴射的環境中請對開關采取保護措施。

  Normal switch are not waterproof , thus , please take protective measures to switch against liquid such as water disperse or spraying environment.

- 請不要在對開關連續施加振動和衝擊的狀態下使用。隨着磨損粉屑的產生，可能導致觸點故障和工作失常、壽命縮短等。此外，如果施加過大的振動或衝擊，觸點可能發生誤動作、黏着、破損等。請在不產生共振的方向和沒有振動、衝擊的位置上安裝。

  Please do not use the switch under condition of exert vibration and continuous impact . Attrition dust produce may cause contact failure , malfunction and life shortened etc . Furthermore , if there is oversized vibration or impact , the contact may be mis–operated , stick together, breakage and so on. Please install it in the position with no resonating direction, no vibration and no impact.

- 請不要在有硫化氣體(H_2S、SO_2)、氨氣(NH_3)、硝酸氣體(HNO_3)、氯氣(CL_2)等有害氣體和高温、高濕的環境中使用，否則可能會由于觸點接觸不良和腐蝕導致破損等功能故障。

  Please do not use it with exposure to harmful gas such as H_2S、SO_2、NH_3、HNO_3、CL_2,high temperature and high humidity condition, otherwise, it may cause breakage and failures by bad contact and corrosion.

- 請在開關規定的使用温濕度範圍内使用。在高温下使用可能會導致特性改變。如果温度急劇變化，也會導致特性的變化。建議您盡量安裝在離熱源遠的地方以免受到影響。

  Please use it in the stipulated temperature scope.If it is used in high temperature,the characteristic of switch will change.If temperature changed rapidly , it will also cause switch characteristic change . We suggest installing in place as far as possible from the heat in order to avoid the influence.

(3) 關于儲存環境 Concerning storage environment

保存開關時，爲了防止由于鍍銀端子的硫化變色，請裝入聚乙烯袋中。

When keep switches, please pack it in polyethylene bag to prevent silver plated terminal vulcanization and change color.

請避免保存在會產生有害氣體的場所和高温、高濕度場所。在有些保存場所，建議您對出廠後超過3–6個月的產品進行重新檢查後再使用。

Please do not store it in places where there is harmful gas,high temperature and high humidity.In some storage places,we suggest you to re–inspect it before use when it is out of factory over 3–6 months.